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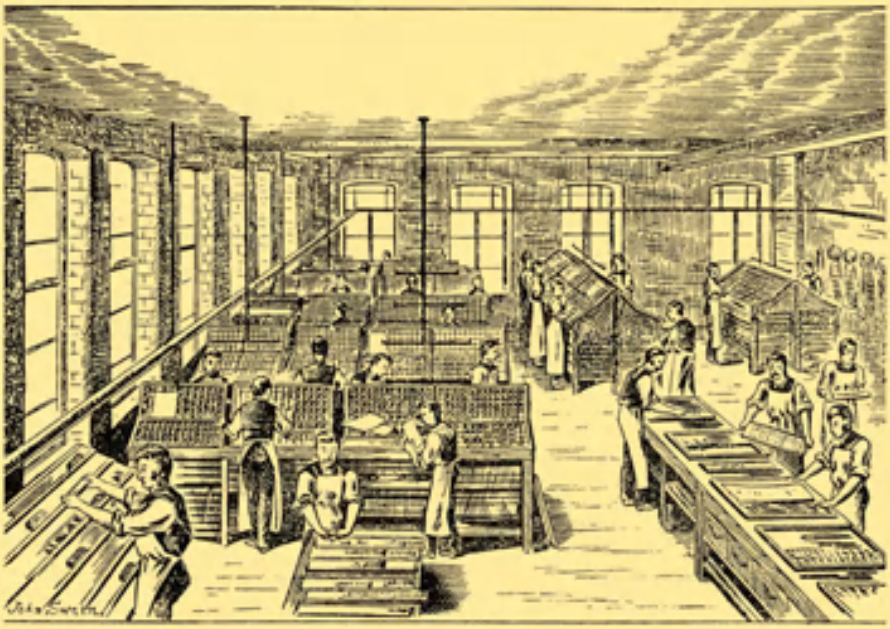
DICTIONARY OF TYPOGRAPHY AND ITS ACCESSORY ARTS

JOHN SOUTHWARD



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Printing and Publishing History

The interface between authors and their readers is a fascinating subject in its own right, revealing a great deal about social attitudes, technological progress, aesthetic values, fashionable interests, political positions, economic constraints, and individual personalities. This part of the Cambridge Library Collection reissues classic studies in the area of printing and publishing history that shed light on developments in typography and book design, printing and binding, the rise and fall of publishing houses and periodicals, and the roles of authors and illustrators. It documents the ebb and flow of the book trade supplying a wide range of customers with products from almanacs to novels, bibles to erotica, and poetry to statistics.

Dictionary of Typography and its Accessory Arts

The son of a Liverpool-based printer, John Southward (1840–1902) was a prolific writer and editor of books on the subject. He edited the Printers' Register from 1886 to 1890, and his Modern Printing: A Handbook remained a standard work for apprentice printers and compositors well into the twentieth century. This dictionary of terms employed in printing offices was one of his earlier works, initially issued as a monthly serial within the Printers' Register. The resulting high demand led to the publication of a second edition in book format in 1875. Painstakingly compiled, it covers the history and practice of typography, and gives references to other works where further information can be found. Over a century later, the technology and terminology of typesetting and printing have undergone enormous changes, but this book remains a fascinating snapshot of the British printing industry in the mid-to-late nineteenth century.

Dictionary of Typography and its Accessory Arts

John Southward

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JOHANN GUTENBERG.

Frontispiece.

A

Dictionary of Typography

AND

ITS ACCESSORY ARTS.

BY

JOHN SOUTHWARD,

Corresponding Member of the Franklin Society of Chicago.

Second Edition.

LONDON:

JOSEPH M. POWELL,

PRINTERS' REGISTER OFFICE, ST. BRIDE STREET.

1875.

PREFACE.

THIS Dictionary of Typography was originally compiled at the suggestion of the late Mr. JOSEPH M. POWELL, and issued in monthly instalments with the *Printers' Register*.

On its completion it was so well received, both by the Press and Printers generally, that a demand sprang up for copies which it was found impossible to satisfy.

Mr. POWELL then proposed a re-issue, and arranged with the author for the complete revision of the book. This second edition will, it is hoped, be found at least as useful to the trade as was the first.

Simultaneously with its original publication in England, the Dictionary was published in the *Printers' Circular* of Philadelphia, United States, by the editor of which it was revised. The improvements made in this way have been adopted in preparing this edition for press.

J. S.

July, 1875.

List of Authorities.

Among the various works on the Art of Printing consulted in the compilation of this Dictionary may be named the following :—

Abridgments of Specifications relating to Printing.
Ames & Herbert's Typographical Antiquities, 1785-90.
Andrew's History of British Journalism, 1859.
Annales de la Typographie Francaise et etrangére.
Annales de l' Imprimerie.
Annals of Our Time.
Annuaire de la Librairie et de l'Imprimerie.
Aresti's Lithozographia, 1856.
Arnett's Bibliopegia, 1835 ; Books of the Ancients, 1837.
Babbage's Economy of Machinery and Manufactures.
Beadnell's Guide to Typography, 1859.
Biographical Memoirs of William Ged, 1781.
Blades's Life of Caxton, 1861-3 ; How to tell a Caxton, 1870.
Buckingham's Personal Memoirs and Recollections of Editorial Life.
Buckingham's Specimens of Newspaper Literature.
Camus's Histoire et procédés du Polytypage et du Stéréotypage.
Chambers's Encyclopædia, 1866-7. Printing—vol. vii, p. 764. Type—vol. ix. p. 606. Stereotyping—vol. ix, p. 117. Newspapers—vol. vi, p. 748.
Chevallier's l'Origine de l'Imprimerie de Paris.
Cowie's Printers' Pocket Book and Manual.
Crapelet's De la profession d'Imprimeur, 1840.
Crapelet's Des Progrès de l'Imprimerie en France.
Crapelet's Etudes Pratiques et Littéraires sur la Typographie, 1837.
Dibdin's Bibliomania, Typographical Antiquities, 1810-19.
Dictionnaire Encyclopédique, 1843. Typographie—p. 1407.
Dictionnaire Universel, 1854. Impression—p. 844. Imprimerie—p. 845. Imprimeur—846. Presse—p. 1348. Lettre—p. 926. Typographie—p. 1684. Journaux—p. 887 Moniteur—p. 1068.
Dudin's l'Art du Relieur doreur de Livres.
Encyclopædia Britannica, 1859. Printing—vol. xviii, p. 537.
Encyclopædia Metropolitana. Art. Typography—p. 563.
Encyclopédie Méthodique. L'Imprimerie—v. iii, p. 537. Fonderie—v. i, p. 377. Papier—vol. v, p. 463.
English Cylopædia, 1860. Printing—vol. vi, p. 744.
Fournier's Caractères de l'Imprimerie.
Fournier's Manual Typographique.
Great Exhibition of 1851 at London. Reports of Juries.
Hansard's Biographical Memoir.
Hansard's Typographia, 1825.
Haydn's Dictionary of Dates, 1868.
Hullmandel's Lithography, 1820 ; Art of Drawing on Stone, 1824, 1835 (2nd ed.).
Houghton's Printers' Practical Every-day Book.
Humphreys's History of the Art of Printing, 1867.
Hunt's Fourth Estate, 1850.

International Exhibition of 1862. Reports of Juries, London, 1863.
Jackson & Chatto's Treatise on Wood Engraving.
Johnson's Introduction to Logography, 1783.
Johnson's Typographia, 1824.
Knight's Caxton, 1844.
Knight's Old Printer and the Modern Press, 1854.
Linde's Haarlem Legend, 1871.
London Encyclopædia, 1829. Printing—vol. xviii, p. 84.
MacKellar's American Printer.
Mason's Practical Lithographer, 1852.
Maverick's Henry J. Raymond and the New York Press.
McCreery's Press, a Poem, 1803.
Morgan's Dictionary of Terms used in Printing, 1863.
Moxon's Mechanick Exercises, 1677-83; Regulæ Trium Ordinum Literarum Typographicarum, 1676.
Munsell's History and Chronology of Paper and Paper Making.
National Cyclopædia, 1850. Printing—vol. ix, p. 847. Printing Press—vol. ix, p. 849. Printing Machine—vol. ix, p. 851.
New American Cyclopædia, 1863. Printing—vol. xiii, p. 585. Type Founding—vol. xv, p. 688. Newspapers—vol. xii, 306.
Newspaper Press Directory, 1846 to 1875.
Nicholl's Literary Ancedotes of the Eigthteenth Century,
Nicholson's Manual of the Art of Bookbinding.
Noveau Manuel complet de l'Imprimeur Lithographe.
Paper Mills Directory.
Penny Cyclopædia, 1841. Printing—vol. xix, p. 14.
Renouard's Annales de l'Imprimerie des Aldes.
Ree's Cyclopædia, Art. Printing.
Revista Bibliographica, Madrid.
Ringwalt's American Encyclopædia of Printing, 1871.
Ruse & Straker's Printing and its Accessories, 1860.
Savage's Account of the London Daily Newspapers, 1811.
Savage's Dictionary of the Art of Printing. 1841.
Savage's Decorative Printing, 1822,
Savage on Printing Ink, 1832.
Senefelder's L'Art de la Lithographie Munich, 1819.
Specimen des Caractères Typographiques (or Specimens of Old Printing Types in the possession of John Enschedé & Sons, Haarlem), 4to, 1789.
Specimen of the various sorts of Printing Types belonging to the University of Oxford, at the Clarendon Printing House, 1786.
Stower's Printers' Grammar.
Stower's Printers' Price Book, 1814.
The Stationer's Handbook.
Timperley's Encyclopædia of Literary and Typographical Anecdote.
Timperley's Printers' Manual, 1839.
Tomlinson's Cyclopædia, 1866.
Trübner's Guide to American Literature.
Typographia Espanola.
Vita del Cavalier Giambattista Bodoni, Tipografo.
Vocabulaire des Termes usués dans l'Imprimerie.
Walter's Address to the Public, showing the great Improvement he has made in the Art of Printing by Logographic Arrangements.
Walter's Miscellanies in Prose and Verse, intended as a Specimen of the Types at the Logographic Printing Office.
Watt's Bibliotheca Britannica, 1824.
Wilson's Treatise on English Punctuation.

OPINIONS OF THE PRESS

ON

The First Edition.

THE ECHO.

A very important work on the History and Practice of Typography.

THE LIVERPOOL ALBION.

Southward's DICTIONARY OF TYPOGRAPHY AND ITS ACCESSORY ARTS is now complete. It has been issued as a supplement to that exceedingly useful and practical magazine—the *Printers' Register*—in instalments extending over two years, and is already recognised as a standard authority on the important subject on which it treats with so much ability and perspicuity.

THE STAFFORDSHIRE ADVERTISER.

The announced completion of the valuable DICTIONARY OF TYPOGRAPHY AND ITS ACCESSORY ARTS in the *Printers' Register* affords an opportunity of calling attention to that valuable work. It deserves in every respect to become the standard book on printing, and it is no less complete than accurate. An equal amount of information of this kind was never previously condensed into one volume, and it is in fact a monument of the painstaking and research of its compiler.

THE WARRINGTON GUARDIAN.

A very valuable Dictionary of the terms employed in printing offices, a description of printing machinery, &c.

THE PRINTERS' REGISTER.

It will undoubtedly become the standard English treatise on printing, especially after the many improvements and additions which have been made by the author, Mr. John Southward, who has already rendered himself an authority in this branch of literature.

PRESS NEWS.

A book that is an indispensable acquisition to every printer.

PRINTERS' CIRCULAR (Philadelphia, U.S.A.).

A very valuable contribution to the literature of our special department of industry in the shape of a comprehensive and complete Dictionary of all the terms used in typography and its accessory arts. A vast amount of information, technical and otherwise, is embraced under its numerous divisions, with abundant references to all the works in which the several subjects are treated at large.

DICTIONARY

OF

TYPOGRAPHY AND ITS ACCESSORY ARTS.

A

AAS the Printer's direction to the Bookbinder, designates the first signature of every book. When the title-page commences the first sheet the signature is not employed, as the title-page sufficiently indicates how the sheet is to be collated and folded; B being the first signature commencing the body of a work. In Parliamentary Bills, Chancery Bills, and similar work, however, it is usual and necessary to insert the letter.

In wood-letter fount specimens in this country, and in the general specimen sheets of jobbing letter issued by the American Founders, the number of letter A is indicated to denote the number of letters in the rest of the fount.

WOOD TYPE.—The following scale shows the number of letters for each fount, from 3 A to 5 A:—

	Caps.	Caps, Lower	Cp. Lr. Fg.	Lower	Figures	Dozen.
3 A fount ..	74	138	164	64	26	13 ¾
4 A ,, ..	106	196	222	90	26	18 ½
5 A ,, ..	120	224	250	104	26	20 ¾

ABBREVIATION.—The form to which a word or phrase is reduced by contraction or omission; or a letter or a combination of letters standing for a word or phrase of which they are a part; as S. for south; J. for Joseph. In the primitive times of Printing most Latin words were abbreviated, in order to save paper, composition, and presswork. As reading, however, became more general, they were by degrees abolished, except in legal works. The ancient Printers did not divide words at the ends of lines by hyphens. To avoid divisions they used vowels with a mark of abbreviation to denote that one or more letters were omitted in the word: *e.g.*, cōpose for *compose;* cōpletiō for *completion*, &c. The present practice in regard to abbreviations,—as in side-notes, &c.,—is not to abridge a word at the end of a syllable, but always to annex one or more letters of the next syllable; and always to carry the reading part so far that it cannot be mistaken for any other word. A vast number of abbreviations are in use at present, a complete list of which will be found in most good Dictionaries, but Printers should remember that the custom of using a multitude of contractions is more honoured in the breach than in the observance. After every contraction a period must be placed. Occasionally, as in poetry and conversational matter, a word is contracted by an apostrophe, as can't and don't, or as th', but that sign renders the full-point unnecessary.

ABRIDGEMENT.—An epitome of a book, made by omitting the less important matter.

ABSIES.—The name, by quick pronunciation, of the A B C books which before the invention of Printing were written by the London Stationers or Text-writers, who were the English predecessors of Booksellers and Printers.

ABSTRACT.—A summary or epitome, as an abstract of title, *i.e.* an epitome of the evidences of ownership.

ACCENTS.—"Certain marks over vowels to direct the modulation of the voice. In the English language they are chiefly used in Spelling-books or Dictionaries, to mark the syllables, and where to lay particular stress in pronunciation."—*Murray.*

ACCENTED LETTERS.—Letters which in English-speaking countries are by Printers called *accented* are the five vowels, marked as follows:—

Acute	á	é	í	ó	ú	Long	ā	ē	ī	ō	ū
Grave	à	è	ì	ò	ù	Short	ă	ĕ	ĭ	ŏ	ŭ
Circumflex	â	ê	î	ô	û	Diæresis	ä	ë	ï	ö	ü

There is no pure English word that requires an accent. Some reckon the French ç and the Spanish ñ, and other letters used in foreign languages, as accented letters. The grave accent is, in English, sometimes used in poetry to prevent the omission of sounding a syllable, and the metre thereby being impaired. Similarly, the diæresis is sometimes employed in words like Coöperate, instead of the hyphen; but this plan is not generally adopted by many Printers at the present day. The term accent applied to the whole series is only allowable as an office technicality; the fourth and fifth items indicate *quantity* only, and the sixth guards against a diphthongal absorption of a syllable.

ACCOUNT-BOOK HEADINGS.—See JOB PRINTING.

ACCOUNT-LINE.—This is a term used in a Compositor's bill for the week. It is supposed to represent the value of certain portions of the work really executed, but which from being in an unfinished state cannot be entered with a specific charge; it is therefore the custom to charge "on account" somewhere about the estimated value of the work done, and which is deducted, week after week, until the general bill is made out, when the account is balanced.—See DEAD HORSE.

ACTS OF PARLIAMENT RELATING TO PRINTERS.—See LAWS RELATING TO PRINTERS.

AD.—A colloquial abbreviation of *Advertisement.*

ADDRESSING MACHINES.—Machines which print the addresses on franks, or newspaper wrappers, much more readily than the ordinary machines. In America they are called mailing machines.

ADMIRATION (Note of).—This is otherwise called the Sign of Exclamation, and is formed thus (!).

ADVERSARIA.—Commonplace books: a miscellaneous collection of notes, remarks, or extracts.

ADVERTISEMENT.—The public notification of a fact, either in the columns of the Press or by circular, handbill, placard, &c. Technically, however, advertisements are regarded as being paid announcements in newspapers and periodicals. They are set up in two different styles—either "run on" or "displayed." The London papers and most of the leading provincial papers confine themselves to the former style, on account of the better appearance resulting from uniformity, and the greater expedition attained when a variety of type is avoided. The smaller papers and the magazines usually "display" their advertisements. A run-on advertisement consists of an initial letter of two-line titling, one single line of large type, and the rest of small type without any break, as in an ordinary paragraph. The displayed advertisement approaches to the style of a handbill, as various roman, antique, and ornamental types are used. In setting up advertisements it should be remembered that at least one two-line letter must be used in each. They are divided from one another merely by a single cross-rule, the measure of the column.

ADVERTISEMENT COLLECTOR.—One who is employed by the Proprietor of a publication to collect or canvass for advertisements.

ADVERTISEMENT DUTY.—A duty formerly levied on advertisements. This duty was first levied in the reign of Queen Anne, by 10 Anne, c. 19 (1712), and it was charged according to length, Some change took place, and the duty, which had been reduced from 3s. 6d. to 1s. 6d. in Great Britain, and from 2s. 6d. to 1s. in Ireland, by 3 and 4 William IV., c. 23 (June 23, 1833), was entirely repealed by 16 and 17 Victoria, c. 63, s. 6 (August 4, 1853).

ADVERTISEMENT RULES.—The cross rules which separate advertisements.

ADVERTISING AGENT.—One who receives, from the public, advertisements for one or several publications, contracting as to price, and receiving, as remuneration, a certain commission on the amount of the order from the Proprietor.

ADVERTISEMENT-PARAGRAPHS. — See PARAGRAPH-ADVERTISEMENTS.

AFFICHE (*Fr*).—A paper or bill affixed to a wall; a placard, bill, or handbill.

AFFIX.—A syllable added to a word, as ing, ly, &c. See SUFFIX.

ADJUSTING BARS.—An arrangement of moveable bars which are used to keep formes steady on the bed of the machine. They obviate the use of furniture and sidesticks, the latter of which are highly dangerous, as the rapid motion of the table tends to loosen them, and the consequences of their getting between the forme and the cylinder would be very disastrous.

AGATE.—The American name of a size of type which is equal in depth to Emerald.

ALBION PRESS.—An iron press in which the power is gained by causing an inclined piece of steel to become perpendicular; in so doing the platen is forced down, and the impression takes place at the moment the piece of steel is brought into a vertical position. On the return of the bar, the platen is raised by a spiral spring fixed on the head of the press. The great merits of this press are—Its great power, and, the means whereby it is obtained being so simple, there is little danger of its getting out of order; it is smooth and easy in working; the pull is short; and it is extremely light. It is very easily taken down for cleaning, and put up again. Following are instructions for its erection:—

1. Put the feet on the staple, as marked, and raise the staple on them; then place the spring and box on top of staple, dropping in the long loop bolt, which is connected with it, into the long hole in the centre.
2. Connect the piston by passing the round bolt through the hole in the staple, and fasten with pin and washer.
3. Put the pull-handle in its place with bolt, tightening it so as to allow the pull-handle to be free.
4. Attach on, with the four screws, the slides or guide pieces to the piston.
5. Place the chill, or crooked piece, in the piston, also the tumbler, or wedge-shaped piece, taking care the bright or numbered side is toward the pull-handle.
6. Connect the chill with the bolt in pull-handle, and screw up the nut or top of the spring-box sufficiently to draw back the pull-handle, so as to keep all parts in their places. The wedge and brass guard in front of piston are intended to regulate the impression exerted on the forme.

The other parts of this press may be fixed in the same manner as the Columbian (*q.v.*).

ALDINE EDITIONS.—The editions published by the famous Aldus Manutius, at Venice and Rome, from 1494 to 1597.

ALGEBRAIC MARKS.—See SIGNS.

ALLEY.—The space between two frames.

ALMANACK, or ALMANAC.—A table or book containing a calendar of days, weeks, and months, to which are usually attached astronomical data and other matter for reference during the year.

AMES.—The Author of "Typographical Antiquities, being an historical account of Printing in England, with memoirs of our ancient Printers, and a register of the books printed by them, from the year 1471 to 1600, with an appendix concerning Printing in Scotland and Ireland to the same time." London, 1749. He was born at Yarmouth, 1688; died, 1758.

AMPERSAND.—A word used to describe the character &, being a contraction of the words and, per, se, and.

ANA.—A collection of memorable sayings.

ANASTATIC PRINTING (from *Anasatsis*, resuscitation, raising again).—This process for producing copies of manuscript, or printed documents, or engravings, that can with difficulty be detected from the originals, was invented by M. Baldermus, at Erfurt, about the year 1840. It was soon after made public, and Faraday explained the process at the Royal Institution on the 25th April, 1845. It has since transpired that a similar process had been employed in England some time before M. Baldermus's invention was made known. The invention was improved and extended by Strickland and Delamotte in 1848. The process is analogous to lithography, but a zinc plate is employed instead of a stone. A printed page, an engraving, or a bank note may be exactly copied by this invention. The printed paper being moistened with dilute phosphoric acid, it is laid downwards on a clean sheet of zinc, and put it into a press for a short time. The acid of the unprinted parts etches the zinc beneath, while the printed part also sets-off on the zinc, and thus produces a reverse copy of the printing. The plate is washed with an acid solution of gum, and is ready for use. The plate is next treated as the stone in lithographic printing; first damped and then rolled. The affinity of the ink to the letters already "set-off" on the plate, and the repulsion of the other parts of the plate, cause the lines of the device to take the ink, but the other parts remain clean; the printing then follows.

ANTIMONY.—An alloy in type metal.—See TYPE-FOUNDING.

ANTIQUE.—The name of a style of fancy jobbing letter, of which the following is a specimen :—

NONPAREIL ANTIQUE.

A. P.—A technical abbreviation for Author's Proof (*q.v.*).

APOSTROPHE.—The aspostrophe (') generally denotes the possessive case of the noun-substantive, or the omission of one or more letters in a word; and is doubled at the end of quotations which are commenced by inverted commas.

APPRENTICE.—An apprentice is a person described in law books as a species of servant, and so called from the French verb *apprendre*—to learn—because he is bound by indenture to serve a master for a certain term, receiving in return for his services instruction in his master's trade, profession, or art; the master, on the other hand, contracting to instruct the apprentice and, according to the nature of the agreement, to provide him with food and clothing, and to pay him small wages. Sometimes a premium is paid by the apprentice, or on his behalf, to his master. By a provision of the 5th Elizabeth, c. 4, which remained in force until a recent period, it was in general required that every person exercising a trade in England should have previously served as apprentice to it for seven years, but by 54 George III., c. 96, that provision was abolished. The term of apprenticeship is now determined by the mutual convenience of the contracting

parties and the custom of the Trade. A mere agreement does not constitute an apprenticeship; there must be regular indentures formally entered into. It is not usual to apprentice boys to the Printing business until the age of fourteen years. They then serve seven years' apprenticeship, and, on their completion of this term of servitude, they are said to be "out of their time," to celebrate which event a very peculiar custom is in vogue in some printing-offices. (See OUT OF HIS TIME.) An apprentice who does not complete the whole of the term with one master, and is transferred to another, is called a TURN OVER (*q.v.*). An apprentice who lives within the residence or premises of his employer is called an in-door apprentice; one who resides with his parents or friends is called an out-door apprentice. Formerly the majority of apprentices were "in-door," but at present by far the larger number are out-door. The qualifications which ought to be required in every boy desirous of being apprenticed are, that he should have had a fair education; that he is a good speller; has a turn for reading; and that his eyesight is good. He should be particularly enjoined to be punctual, obedient, and courteous.

ARMING PRESS.—A press used by Bookbinders for embossing the covers of books. It is made on the principle of the Albion and Imperial presses.

ASCENDING LETTERS are, the Roman and Italic capitals; in the lower-case, b, d, f, h, i, k, l, t.

ASTERISK.—The Asterisk (*) is the chief of the reference-marks, which presents itself to the eye more readily than the others, on account of its having its figure on the top, and leaving a blank below, which makes it a superior. It sometimes denotes an hiatus, in which case the number of asterisks is multiplied according to the largeness of the chasm. Arranged in this form (***) asterisks are sometimes used to draw attention to some particular announcement. Technically, they are called Stars.

ASTRONOMICAL SIGNS will be found under the heading SIGNS.

ATHOL SCREW PRESS.—A standing press, in which the power is obtained by an arrangement of levers similar to the three legs in the arms of the Isle of Man, or the Athol family, after which it is named.

AUTHOR'S MARKS are the alterations made in a proof by the Author or Publisher after the work has been duly composed according to copy.

AUTHOR'S PROOF.—The proof with the Author's corrections marked in it. After the ordinary errors of composition—literals, turned letters, and the various defects arising from hasty workmanship are rectified, a clean proof is pulled to be sent to the Author, who returns it marked with such alterations or amendments as he may think proper. These alterations, when made by the Compositor, are charged for, whereas ordinary corrections are not. (See PROOFS).

B

BACK BOXES.—The whole of the boxes in the upper-case not appropriated to either capitals, small capitals, or figures, are generally so termed, whether they happen to be in the front or back part of the case; as are also the small boxes on the outer portion of the lower-case.

BACKING.—In Electrotyping, is the process of filling-in the back of the electrotype with metal. In presswork it is synonymous with Perfecting (*q.v.*).

BACKS.—In the Imposition of a forme, the first division to the left; that is, between the first and last pages. The next division is the gutter; the next the back; and so on.

BAD COPY.—Intricate, involved, or carelessly or unintelligibly written copy. An arrangement as to extra payment for such should be made before the job is taken in hand, if it is to be done on "piece."

BAKE.—This is a term used in some instances where, when letter is rinsed or laid-up for distribution, it adheres so closely together that it is separated with difficulty; the Compositor's fingers are made sore by pressing the types against the edge of the cases in order to distribute them into the proper boxes. All new letter is difficult to separate and distribute if it remains long in chase after it is worked off, from the lye penetrating the interstices of the letters. New type should always be saturated with a solution of soft soap and water before being laid into case. This not only prevents baking, but takes off the extreme brightness which is so unpleasant to the eye, and renders the type better to feel with the fingers. Old type will become baked if the ink is not properly washed off and well rinsed before the types are put away.

BALLS.—Balls, made either of skins or of composition similar to roller composition, were in use previous to the invention of rollers. When composition rollers were first introduced into London, they were violently opposed by some Masters and by many Pressmen. They were made of molasses, glue, and a portion of tar, boiled together into a proper consistency. Johnson, writing in his "Typographia" (1824), says:—"With respect to the rollers our ideas still remain the same, having pronounced (long before having seen them in action) that they would *not* execute the work equal to balls; this opinion time has fully verified; we are ready to admit their excellence for heavy formes and the general run of work, but not for fine work or wood engravings, for neither of which are they so well adapted as the balls; as to the last they are totally unfit to produce impressions worthy of notice"! The BALL-KNIFE was a blunt knife, used to scrape balls; BALL-NAILS, the tacks used in knocking-up balls.

BANK AND HORSE.—The Bank is a deal table, usually three feet four inches long, twenty-two inches wide, and three feet high, used by Pressmen to keep their paper upon. About five inches from the bottom a board is placed within two inches of the length and breadth of the bank, and fastened to the legs, which serves as a convenient shelf for the Pressmen to lay their worked-off heaps upon. The Paper-Horse of a corresponding size is made of deal, two feet two inches long and twenty-four inches wide, forming an angle of forty-five degrees, six inches of the higher end of it rising nearly to a perpendicular. The horse receives the wet paper, and is placed on the bank near the tympan.

BAR.—That portion of the press which, in connection with the handle, acts as a lever for bringing down the platen and effecting the impression required.

BASTARD FOUNTS.—Founts of type which are cast with a small face on a large body, such as Pica face on English, Brevier on Bourgeois. The object in casting them thus is to obviate the use of leads.

BASTARD TITLE.—The short or condensed title preceding the full title of the work.

BATTER.—Any injury to the face of the type sufficient to prevent its showing clearly in printing.

BEARD OF A LETTER.—The outer-angle of the square shoulder of the shank, which reaches almost to the face of the letter, and is commonly scraped off by the Founders, serving to leave a white space between the lower part of the face of the type and the top part of any ascending letter which may happen to come in the line following.

BEARER.—A piece of wood or other furniture, to bear the impression off a blank page or to surround very small formes, to prevent them causing the platen of a press to be strained.

BEATING. — Before the use of rollers, when balls were employed, the process of inking the type was called beating. It formed a very important part of a Pressman's business, the great object being to secure uniformity of colour. The plan adopted was to lay the balls on the left-hand near corner of the forme while the tympan was being lifted; they were then carried over to the near right-hand corner. In beating over the forme the elbows had to be kept rather inward and the ball-stock handle inclining outward, in order that the balls might be perfectly upright. The beater then went up the right-hand side of the forme and returned, leaving off at the left-hand near corner, taking care to make the forme feel the force of the balls by beating hard and close. The balls were kept constantly turning round in the hands.

BED OF THE FRAME.—The platform or ledge at the bottom of the frame.

BED OF THE PRESS.—The flat surface on which the forme is placed.

BEGIN EVEN.—See MAKE EVEN.

BEVELLING MACHINE.—A machine used by Bookbinders for making a bevel on the edges of millboards which form the covers of books. Owing to the recent fashion for binding books in this style, bevelling is constantly done, and a special machine has been invented for performing the operation with greater precision, economy, and expedition.

BIENVENUE.—An obsolete term, by which was meant, formerly, the fee paid on admittance into a "Chapel."

BILL OF TYPE.—A statement of the proportionate number of letters in a fount of type of a given weight.—See TYPE-FOUNDING.

BINDS.—When the furniture is carelessly put together so that it overlaps, and the pressure of the quoin is exerted not on the type, but on the furniture, it is said to "bind."

A BITE.—A want of ink on any part of the impression caused by an improper interposition of the frisket, owing to its not being properly cut out between the type and the paper to be printed.

BLACK LETTER.—The name given to the Old English or modern or Gothic character, which was introduced into England about the middle of the fourteenth century, and was the character generally used in manuscripts before the introduction of Printing. After the invention of that art, the Type-founders copied this style of letter in order to pass off printed books as manuscripts. Various alterations have been made in the shape of some of the letters in modern times.

BLANKETS.—Cloth of various texture, interposed between the type and the impressing surface, and used to break the force of the platen upon the type, and by their elasticity to cause the paper more readily to adapt itself to the surface of the type. Welsh flannel was formerly used, but the fine-Printers substituted broad cloth; within the last generation, however, a superior article has been manufactured specially for the purpose, and of different qualities suitable for every description of work. Blankets are of two classes, intended respectively for press and machine.

BLANK LINES.—See WHITE LINES.

BLANK PAGES.—Pages on which no matter appears.

BLANK TABLES.—Tables in which only the headings are printed, leaving the columns to be filled up with the pen.

BLOCK.—The piece of wood as prepared for the draughtsman, See BOLTED BLOCKS and BOXWOOD.

BLOCKED UP.—Letter is said to be "blocked up" when the whole of it is composed, and none can be sent to press so as to proceed with the work, owing to the Author not returning the proofs regularly, the proofs not being read up, other work employing the same type, non-attendance of Compositors, scarcity of sorts, Pressmen or Machinemen not being able to work, &c.

BLOCKS.—The wood or metal frames on which stereotype plates are mounted for printing; sometimes called Risers.

BOARD RACK.—An arrangement of strong boards, with ledges nailed on the inside of the two sides, to slide letter-boards in. They are used for keeping standing pages and jobs securely, and without occupying unnecessary room.

BODKIN.—A pointing steel instrument, used in correcting, to pick wrong or imperfect letters out of a page.

BODY OF THE LETTER,—The shank of the letter.

BODY OF THE WORK.—The subject-matter of a work is thus termed to distinguish it from the preface, introduction, notes, index, &c.

BOLSTER.—A piece of wood placed between the ribs of a press to prevent the table running out too far, and to ease the sudden strain which would otherwise be caused on the girthing. Also, a contrivance consisting of hard paper rolled up and pasted on to the frisket, to guard the outsides of light and open pages when there is an inclination to slur. In a forme of border rules they are laid in the middle of the pages each time after the forme is rolled, to prevent the sheet from being soiled by dipping upon the furniture. Some Pressmen use cork for this purpose; others use sponge, which, from its elasticity, is very useful.

BOLTED BLOCKS.—As it is difficult to procure very large pieces of box-wood, owing to the small circumference of the box-tree, an ingenious method of bolting several blocks together was invented, in order to produce large engravings. This is done by means of screws inserted at the back of the block and fastened by nuts. Owing to this invention, there is practically no limit to the size of a woodcut.

BOLTS.—The furniture which forms the margin at the heads of the pages in the off-cut in a form of twelves.

BOTCHED.—Carelessly or badly done work.

BOOK-WORK.—That portion of the Printing business which is connected with the printing of books, as distinguished from jobbing and news-work. It is the branch of the business which requires the greatest care and the largest amount of knowledge, as well as the best taste. It is divided thus: Casting-off copy; composing; making-up; imposing—each of which subjects will be referred to in its proper place. The great excellencies which should characterise book-work more especially than any other class of work are, correct punctuation, uniform capitalling, proper division of words, and even spacing. The order in which the different parts of a book follow each other is, the half or bastard title, the title, advertisement, preface, contents, then the text, and finally the index. The sizes of book-work are both regular and irregular, according to the manner in which the sheet is folded. The former includes those which double their number the first and every subsequent fold of the sheet, such as folio, quarto, octavo, sixteens, thirty-twos, &c.; the latter those which fold in odd numbers before they double into the required size, such as twelves, eighteens, twenties, twenty-fours, thirty-sixes, &c.

BOTTLE-ARSED.—Type that is wider at the bottom than at the top.

BOTTLE-NECKED.—Type that is thicker at the top than at the bottom. Types are now cast and finished with such precision that this and the preceding term have become almost obsolete.

BOTTOM LINE.—The last line of the page, or that which immediately precedes the signature or white-line.

BOURGEOIS.—A size of type the next larger than Brevier. Two lines of this letter are equal to one line of Great Primer, or four lines of Diamond.

BOW THE LETTER.—This term was formerly applied to the bending of the bad letters taken from a forme in correcting, lest they be used again. The best plan, however, is to break all that are defective, that they may be placed in the "shoe" at once, and that time may not be afterwards wasted in weeding them out of the forme.

BOXES.—The compartments in a case, in which the several varieties of letters are kept. Thus, that in which the A is kept is called the A box, and so on with all the rest.

BOX IT UP.—To enclose any figure or other work within a border of brass rule.

BOTTOM NOTES.—See FOOT-NOTES.

BRACE.—A character larger than a bracket, composed of two

long pothook curves, joined by the foot of the first meeting the top of the second. It is used to embrace or group such particulars as have a common class or import, and thus avoids much tautology and circumlocution. The bracing side of a brace is always turned to that part of an article which makes the most lines. Braces are generally cast to two, three, and four ems, but are made larger if so ordered. Middles and corners with metal rules are used when the brace is required to extend over any considerable space.

BRACKET [ ].—A character composed of three lines at right angles and made to face right and left; used to mark a phrase either supplied or rejected, or an interpolated sentence.

BRANCHING OUT.—The insertion of leads, reglets, or white lines, in titles or jobs, so as to open or extend the matter.

BRASS RULES.—Thin strips of metal of the height of type, used for forming lines, and generally manufactured in lengths of sixteen or twenty-four inches, and of various thicknesses, corresponding to the thickness of leads, and of various shades of breadth or darkness. They are made either single, double, or triple, are also either plain, curved, waved, dotted, or made to various fanciful designs.

BRASS-RULE CASES.—Cases made specially for holding brass rule when cut-up to various measures, like leads. A variety of ingenious plans for the arrangement of these cases may be seen in the catalogues of the principal Founders and Printing-material Manufacturers. It is usual to inflict a fine on any Compositor who cuts case-rules without authority.

BRASS-RULE CUTTER.—An apparatus for cutting-up brass rule with greater readiness and accuracy than with the shears.

BRASS SPACE-LINES.—These answer the same purpose as leads; they are now in use in most of the morning-newspaper offices, and effect a great saving over the leads, as they cannot be broken, and do not contract in stereotyping.

BRAYER.—A wooden or glass rubber, flat at the bottom, used to bray or spread ink on the inking-table.

BRAYER INK-TABLE.—A table with recesses or platforms on which the brayer stands.

BREAK LINE.—A short line; the end of paragraph.

BREVIER.—A type which in size is larger than Minion and smaller than Bourgeois.

BRILLIANT.—The smallest type that has yet been cast. It is about half the depth of Minion.

BRING UP.—To bring-up a forme is to place overlays on those parts in which the impression is defective, and to cut away those portions in which it is too heavy, so as to equalise the pressure over the whole forme.

BROAD.—A piece of furniture equal in width to a broad quotation, or four ems Pica.

BROADSIDE.—A forme of one page, printed on one side of a whole sheet of paper.—See POSTERS.

BROKEN MATTER.—Pages of type disrupted, and somewhat intermingled.

BULK.—A platform or table affixed to the end of a frame, to hold a board containing wet matter for distribution.

BULLET.—The dismissal of a person, whether from misconduct or from any other cause.

BUNDLE.—A heap of paper consisting of two perfect reams, or one thousand sheets.

BURR.—The roughness on types which have been imperfectly dressed, and on brass rule cut with blunt shears.

C

CANCEL.—From *Cancella*, a lattice. It signifies the drawing a pen several times obliquely across the page, in the manner of lattice-work. In printing, matter is said to be cancelled which, after being duly composed, is not printed. Bookbinders call all sheets or leaves cancelled which are rejected or left out of the volume, on account of errors or imperfections.

CANCELLED FIGURES.—See SCRATCHED FIGURES.

CANDLESTICK.—In former times, when Compositors worked at night by the light of candles, they used a candlestick loaded at the base to keep it steady. It was invariably placed in the lower-case *c* box. A few offices use candlesticks at the present day.

CANON.—A type one size larger than Trafalgar; the body is equal to four lines of Pica.

CAPITALS.—Letters distinguished in manuscripts by having three lines drawn under them. For their use, see PUNCTUATION.

CAP PAPER.—A thin description of paper used for wrapping light articles. Milliners' and other paper bags are made of it. Pressmen use the term as an abbreviation of Foolscap paper.

CARD, OR CARDBOARD.—Several sheets of paper, pasted together until they attain a required thickness.

CARD BACKS.—The backs of playing-cards. The patterns of these are frequently very beautiful, and large sums are expended to secure fine designs. The printing, sometimes in seven colours, is executed with great care, and by experienced workmen who usually confine themselves to this

branch of the business. The front is worked at Machine, but the backs are done at a hand press, from electro plates, some of the pulls requiring the united efforts of two men. Sometimes, however, an unskilled labourer is employed to do this; and experienced workmen, often at a salary of more than forty shillings per week, are engaged to make ready, roll, &c. Enough cards are printed on a sheet to make one pack, with the exception of two aces.

CARD-CUTTING MACHINE.—A machine to which a large knife is attached, which by means of a lever is made to cut the cards according to the gauge, which must be set beforehand to the required size.

CARD PRINTING.—A branch of job-printing requiring tasteful composition, and light impression and handling in its press-work. A card to be well printed requires nearly the same treatment, and as much care, as a wood engraving. It should be worked without a blanket and with the finest ink. The manner of making ready is this: Get a light impression on the tympan sheet, place the pins so as to bring the matter as near as possible in the centre of the card, one pin at the lower end and two at the side—of course, taking care that the pins do not come in contact with the type. The impression should be exceedingly light, until properly regulated, and should not be more than is actually necessary to bring up the face of the type.

CARD-PRINTING MACHINE.—When large quantities of cards are ordered, they are now usually worked on a card or small jobbing machine, many varieties of which are manufactured.

CARET.—A mark (^) used to denote where words or points are to be inserted.

CARRIAGE.—That part of the press which runs in under the platen and carries the forme.

CARTRIDGE PAPER.—A thick, hard paper, having the appearance of parchment. In first-class offices it is used for the purpose of sheeting rollers, and sometimes for bringing-up cuts.

Copy	20 in. × 16¾ in.	Elephant	28 in. × 23 in.
Demy	22½ in. × 17½ in.	Double Crown	30 in. × 20 in.
Royal	25 in. × 20 in.	Double Demy	35½ in. × 22½ in.
Cartridge	26 in. × 21 in.	Imperial	30 in. × 22 in.

CASE.—A shallow wooden tray, fitted with strips of wood, which divide it into various compartments called "boxes," and in which letter is kept to compose with. A "pair" of cases consists of the Upper Case and Lower Case. Cases should always be lined with paper, or they are likely to damage the face of types at the bottom of the boxes. The word Case is frequently used as synonymous with composition, as, To work at Case. The cases of various countries vary, according to the nature of the language whose characters they are intended to contain.

CASE RACK.—A strong frame with ledges, in which to slide cases that are not in use, to keep them safely and without occupying any unnecessary room.

CASSIE PAPER.—Imperfect paper—the outside quires of a ream.

CAST-OFF.—To examine copy and determine how many pages it will make in any given size and type. This is done in manuscript by composing five or six lines selected from some part which seems to be of the average style of writing, and thus ascertaining how many lines of manuscript will make even lines of print. Suppose there are six hundred pages of manuscript, averaging thirty lines in a page, and that it is required to know how many pages of foolscap folio they will occupy in print. There are altogether eighteen thousand lines of manuscript; nine lines of manuscript make five of print; therefore there will be ten thousand lines of print, which, at fifty-three lines to a page, will make one hundred and eighty-nine pages. Sometimes it is necessary to cast-off reprint

copy, to determine what quantity will be got n, or driven out, by setting in larger or smaller type.

CAST-UP.—A calculation of the number of types in a page, forme, or sheet, and a valuation for work done at so much per thousand letters. The following is the method of proceeding:—Measure the length of the page, including folio and bottom white-line, with em-quadrats, and the breadth with en-quadrats of the fount in which the matter is set; multiply them together, and the product will be the number of letters in a page. This, multiplied by the number of pages in a sheet, will give the total number of letters contained in it, and the thousands multiplied by the price per thousand will give the total value of the sheet or half-sheet to the Compositor, who is paid for work done. In casting-up it is usual if the number of types over a thousand amount to less than five hundred to strike them off; and if they amount to five hundred or more, to reckon them as a thousand.

CATCH-LINE.—The small insignificant lines, in titles, cards, chapter-headings, &c., are technically termed Catch-lines; such as A, AND, THE, BY, FOR, ALSO, ETC.

CATCH-WORD.—The first word of the following page placed at the right-hand corner at the foot of the page. Catch-words are seldom used at the present day, except in law work or manuscripts. The signature, when required, is placed in the same line.

CATER-CORNERED (*obs.*).—A term applied to uneven paper, or to paper whose sides are not at right angles with each other.

CEDILLA.—A mark (ç) used in French to denote that the letter is to be pronounced softly. Some Printers who do not possess these sorts, and do not care to purchase a few, use an inverted figure of 5, thus ç.

CERIPHS.—The fine lines and cross-strokes at the end of a letter.

CHAFF.—A word belonging to the slang dictionary, but too frequently heard in the printing-office, when one Compositor teases another as regards his work, habits, disposition, &c. It is often a source of unpleasantness and bad feeling among otherwise agreeable companions; but it is essentially a bad practice, to which no gentleman is ever addicted.

CHAPELS.—Meetings in the office for the consideration of trade matters, the settling of disputes respecting the prices of work, and any other business embraced by trade rules. Readers and Overseers are excluded, except on occasions when a wayze-goose is under consideration. Chapels have for their head a personage who from the day of his inauguration is known as the "Father," and it is he who not only presides over the deliberations of Chapels, but whose advice is taken on all difficult questions, even before a Chapel is convened. A very amusing account of the Chapels of ancient times will be found in Moxon's "Mechanick Exercises," 1683, which is copied into Hansard's "Typographia," p. 302, and Savage's "Dictionary," p. 10.

> "Our art was hailed from kingdoms far abroad,
> And cherished in the hallowed house of God;
> From which we learn the homage it received,
> And how our sires its heavenly birth believed;
> Each Printer hence, howe'er unblest his walls,
> E'en to this day his house a CHAPEL calls."
>
> "THE PRESS," by JOHN M'CREERY.

CHASE.—A rectangular iron frame in which pages are securely fastened, so as to convey the whole safely to and from the press or machine, and to keep the type fixed during the process of printing. A chase should bear equally on the imposing surface or stone and the press-table; the cross-bars should be perfectly true, so as to give good register; and the inside in all its parts must be

quite straight and square. The cross-bars ought never to be used for any other purpose than that for which they were originally intended.

CHEQUES.—Ornamental designs used to separate the counter-foil from the cheque, and to cover the place of separation. Very complicated designs are sometimes adopted with the view of preventing imitation.

CHESSES.—The word used in some parts of Scotland for chases.

CHESSMEN.—These were formerly cut in wood, but now each character is cast as a separate type, for the use of newspapers and periodicals, to illustrate games of chess. A complete assortment consists of sixty-four pieces.

CHOKED.—Type filled up with dirt, or the sediment of ink, so that it does not work clear, is said to be choked. This term is also used when too much ink has been spread on the forme.

CHROMO-LITHOGRAPHY.—The art of printing in colour from lithographic stones. It is used chiefly for the production of copies of coloured drawings and paintings. The object being to produce as nearly as possible fac-similes in colour, touch, and texture, as well as in drawing and light and shadow, of pictures from the pencils of painters of the highest standing, it has been found necessary to employ a large number of stones, in order to produce the almost infinite varieties of tints which are found united in a single picture—every stone giving a separate impression in its own particular colour or tint. The mode of procedure is somewhat as follows: First, an outline of the entire subject is made by means of transfer paper, or otherwise, on a stone which is called the outline or keystone of the work. This stone yields impressions which are transferred as guides to all the other stones. On a second and third stone, which serves as the basis of the print, the general effect of the drawing is washed in, and from these are printed what may be called the chiaroscuro, in a faint tint of sepia and of a neutral colour of gray,—corresponding, in fact, very nearly to the neutral or dead colouring of a water-colour drawing in the method adopted by the early water-colour painters. The stones which follow are each charged with a particular colour or tint, and each leaves its impression on only a particular portion of the print,—one stone printing only the parts which are intended to be yellow or a modification of yellow, another red, another blue, and so on. Other stones charged in parts with grays or secondary colours serve to blend and harmonise the crude colours; others follow which modify these; and, finally, one gives the sharp dark touches, and is usually followed by another which supplies a sort of glaze or finishing wash, and subdues and harmonises the whole. Of course, we have merely indicated the general method. It will be understood that the sequence of the colours in the printing, the special quality and strength to be given to each particular print, the effect to be produced by their superposition, and many other particulars, have all to be taken into account in planning the arrangement of the colours on the stones;—since a sequence in some respects different and an entirely different modification of colours, have to be employed for the works of most artists: and it happens that much of the colour on each of the earlier stones is covered by that of succeeding stones, and that thus only can the broken tints of the original be imitated. It is, in fact, only by watching the progress of a print through all its stages that any clear idea can be obtained of the beauty and accuracy of the whole process, of the prevision that must be exercised, and of the skill, care, and taste required at every step to carry it to a successful termination. For some of the more elaborate prints, from thirty to forty stones have been required to produce a finished print. And, in order to produce this print, it must be borne in mind that each sheet of paper has to be passed as many times through the press as there are stones, since each stone imprints upon it only its own particular section of the work. Of course, in proportion to the increase in the number of the stones does the difficulty increase of making the work upon each fall exactly upon its proper place in the general design; for, if any one were misplaced only the fiftieth of an inch, the drawing and colour of the whole would be disturbed. Hence it is found necessary to arrange the *register*, or adjustment of the stones, with the utmost care and precision, and

to exercise the most careful supervision in the printing (which is generally a hand process), since the sheet of paper expands considerably in passing through the press, and has to be dried and re-damped before it can be passed through again. But practically this is all accomplished with seeming ease, and a large and most complex subject will be found, when the last stage has been reached, to bear the most minute scrutiny; and the result, even when the copy is placed alongside the original, will surprise and delight equally those who have followed the work through its several steps, and those who may only examine the completed work.

CICERO.—The French and German name for Pica. It is said to have derived this name from the circumstance of the Epistles of this writer having been first printed in letter of that size, but it is doubtful whether the name was first given by the French or the Germans.

CIRCUMFLEX.—The accent marked thus, â—See ACCENTS.

CLEAN PROOF.—A proof with but few faults in it; or, a proof succeeding the revise (*q.v.*). Two copies are pulled carefully after correction to send to the Author, and on which the Reader marks any queries of his own.

CLEARING-AWAY.—Taking out leads, head and white lines, and smaller type from the body of a work after printing, so that the type may be papered-up and put away. The type should be washed, the chase and furniture put away, the pages lifted on galleys, and after the heads, whites, and all irregular matter are extracted and distributed, and leads, brass rule, &c., placed in their proper receptacles, the solid matter is tied up in convenient portions, put on a letter-board until quite dry, when it is papered-up and marked with its proper name and description,—viz., "solid," "open," or "figures."

CLEARING PIE.—Separating various sizes or kinds of type from a confused mass, and placing each letter in its proper box and case. Not only does every distinct size require to be separated, but different founts of the same size.

CLEARING THE STONE.—It is a rule in all offices that, after imposing or correcting, the mallet, shooting-stick, furniture, quoins, saw, saw-block, and shears are to be returned to their respective places; type distributed, and bad letter put into the shoe or batter box, so that no impediment shall be offered to the next person using the stone. Any of the articles, or two letters left on the stone, will render the party offending liable to a fine in many well-regulated offices.

CLERICAL ERRORS.—Errors made in the copy by the Editor or transcriber.

CLICKER.—The Compositor who in a Companionship receives the copy and gives it out to be composed, and attends to the correct making-up and imposition.

CLICKING.—This is a term applied to the mode pursued in London of getting out work by the formation of a Companionship, or selected number of men, who are appointed to go on with a certain work or works.—See COMPANIONSHIPS.

CLOSE MATTER.—Pages with but few breaks or whites, or without leads between the lines.

CLOSE SPACING.—Putting as little space as possible between words.

CLOSE-UP.—When an article is divided into short "takes," and the second "take" is emptied on the galley before the first is finished, the Compositor setting the first "take" has to "close up" the "opening," by pushing the subsequent matter up to his own; and so on, wherever an "opening" occurs. If, however, the first "take" is finished before the second is emptied, the second Compositor is told to empty "close up."

CLUMPS.—Metal clumps are used in place of white-lines at the

bottom of newspaper and other columns, to protect the letters from slipping in locking-up, when the foot-stick is short. They are cast in the same manner as leads, only of a thicker body, such as Nonpareil, Pica, &c.—For STEREOTYPE CLUMPS, see STEREOTYPING.

COLLATE.—To examine the signitures in each gathering of a book, to see that they are consecutive.

COLON (:).—The colon is employed in a sentence to separate parts requiring a pause somewhat less than would be given to a distinct sentence. See PUNCTUATION.

COLOUR PRINTING.—See PRINTING IN COLOURS.

COLUMBIAN PRESS.—A press invented by Mr. George Clymer, of Philadelphia, and completed about 1817. The first press of this kind constructed in London was put up in 1818; Mr. Clymer died in 1834, but the manufacture of the presses was continued by Mr. Dixon, under the name of Clymer & Dixon. The Columbian press is an iron press without a screw. The head is a powerful lever, acted on by other levers, to which the bar is attached, and produces the pressure. The platen is attached to the head by a strong iron bar, and the descent is made steady and regular by two iron girders which project from the cheeks. The power of this press is very great, and its construction is extremely simple. The mode of setting up this press is as follows:—Put the feet in their respective places on the staple, as marked, and raise it upon them; then place the bar-handle, with the bolt belonging to it, as marked: put the principal lever into its place, and then the bolt which connects it to the staple; next put the angular or crooked part which has one square and three round holes, through it, into the mortice, which is in the projecting part of the long side of the staple, and place the bolt that attaches it to the staple. In the extremity of the edges of the heads of those two before-mentioned bolts you will observe marks, and corresponding marks over the holes through which they pass; put in the bolts so that the said marks meet together and correspond, and so on until you have all the remaining parts in their respective places. The four platen screws, which have heads on one side, are intended to attach the platen to the piston, being placed in their respective places, and are secured by the four small blocks of iron which accompany them. To increase the power turn the nut in the rod so as to shorten it; to decrease it, turn it the contrary way. By the nut on the iron screw which connects the main and top counterpoise levers, you are to regulate the ascent and descent of the platen, so as to clear the headbands of the tympan, which is done by screwing the iron nut up as far as it is necessary. In adjusting the platen so as to approach the forme exactly parallel, you must, after hanging on the platen and having a forme on the table, square it to your tympans; then make a pull, and hold the bar-handle home until some other person screws the four platen-screws tight alike. The small holes which communicate with the respective bolts require a small quantity of machine oil occasionally. The impression may be increased by placing thin pieces of tin, or sheet iron, cut to the size of the plate of iron which lies between the platen and the piston, secured by the four screws on the top of the platen, and placing it under the piston. You may easily judge whether everything is in its proper place by the perfect ease with which the bar-handle moves. Pressmen should take all the bolts out of their places once a week.

COLUMNS.—In newspapers, &c., are the subdivisions of a page separated by column rules.

COLUMN GALLEY.—A long narrow galley, with brass or zinc bottom, used principally for newspaper work.—See GALLEYS.

COLUMN RULE.—The rule which divides two columns of matter. Column rules are made to various thicknesses and bevelled on each side, to obviate the use of leads.

COMBINATION BORDERS.—Borders composed of several distinct pieces of type, most of which form separate borders of themselves; but,

when any or all of them are combined, some very tasteful and ingenious designs may be effected.

COMMA (,).—The point which marks the smallest grammatical division, and in reading represents the shortest pause. Two inverted commas are used to denote extracts or quotations from other works, dialogue matter, &c. They are placed at the commencement of the passage quoted, a thin space dividing them from the first letter; the end of the extract is denoted by two apostrophes. A single inverted comma is used as an abbreviation of the word Mac, as in M'Arthur. Inverted commas were first used by Guillemet, a Frenchman, to supersede the use of Italic letter. As an acknowledgment, his countrymen call them after his name.—See PUNCTUATION.

COMP.—An abbreviation for Companion, also of Compositor. Members of Companionships are in the habit of addressing each other as Comps.

COMMERCIAL SIGNS.—The following are those mostly used at the present day:—

@ At or to.	£ *Libra, libræ*, pound or pounds sterling.
℔ *Per*, each.	/ *Solidus, solidi*, shilling or shillings.
℔ Pound in weight.	
$ Dollar or dollars.	

COMPANIONSHIPS.—For many years past, a system has been adopted in the composing departments of large English Book-printing offices—particularly in London—of giving out the work to Companionships. The great advantage attending this plan is, that while all the pages are made up in a uniform style by the Clicker—which was seldom the case when each man made up his own matter—works of considerable extent are printed with greater despatch, and at the same time it is found to produce a saving in the cost of production. This benefit is equally shared by Journeymen and Employers: for, while the former are enabled to earn more wages, the latter, by greater facility in the execution of the work, can undertake larger orders, and thus obtain greater profits. The Clicker, on receiving copy from the Overseer, calls the members of his Companionship together for a few moments, and informs them what cases to put up and what letter to distribute; at the same time, he gives them any general directions which he may deem expedient for their guidance in composing. While his Companions are "putting in their letter," the Clicker proceeds to get together what leads and other matter he may require for the making-up. He then draws out a table in a simple form. In the first column he sets down the name of each Compositor as he takes copy; and in the second, the folio of the copy, so that he may be able to ascertain instantly in whose hands it lies. In the third column, he notes down the number of lines each man has composed, opposite to his name, as fast as the galleys are brought to him. In the fifth, he sets down such remarks respecting the copy as may be necessary; also any circumstance that occurs in the Companionship. When the Companions are quite ready for their first taking of copy, the Clicker invariably doles it out in small quantities, giving the first two or three Compositors rather less than those that follow. This plan is adopted to prevent any delay in the "making-up" (*q.v.*). During the time the first taking of copy is in hand the Clicker sets the first-page heading, the folios and white-lines, signatures, notes, poetry, and any other extraneous matter. As soon as he discovers that the first two or three takings are completed (which he is soon informed of by a second application for copy), he proceeds to the making-up of the first sheet. As he takes each man's galley he counts the lines and enters the number against the Compositor's name in the before-mentioned table, which serves as a check against the man's bill when he presents it at the end of the week. Having thus made up the first sheet, he lays down the pages on the stone, and immediately informs the "Quoin-drawer Overseer" (*q.v.*) of it, who provides chases and furniture. The Clicker then takes the cords off the pages, and locks up the forme ready for the proof-puller. The Companions are thus kept busily engaged at their cases, while the Clicker goes regularly about the little odd jobs which so frequently take the Compositors' attention off their work under the old system of each making-up and imposing his own pages. The start being made, it only requires a plentiful supply of letter, leads, &c., and the work will proceed

rapidly. If the Clicker finds that from any cause—such as abundance of notes, poetry, or other peculiarities in the work—that he cannot make up and impose the matter as fast as it is composed, he generally calls to his aid one of the Companions who, in his opinion, is best capable of assisting him. Should he not have finished his taking, either the person next to him takes it and sets up to himself; or, if there is a great deal to set, the man who took copy last finishes it for him. When this is the case, the Clicker sets down the number of lines he has composed, and takes notice of the number of hours he is engaged "on time," which he enters in the form referred to. As soon as the proofs are read, they are forwarded to the Clicker, who immediately tells the person whose name appears at the beginning to lay-up the sheet and correct his matter. The proof is then passed on regularly from one to the other until all have corrected, the last one locking-up the forme and carrying it to the proof-press. This is the only instance in which the Companions are called from their frames, and proves at once that a great saving of time to the Compositor is effected thereby. When the last taking of copy is given out, it is the duty of the Clicker to apply to the Overseer for other work, so that the Companions shall not be kept standing. Frequently, however, one Companionship will have three or four works going on at the same time; so that, if there is a scanty supply of copy or letter of one work, the Clicker uses his judgment by employing his Companions on the others. But should it so happen that all the work is nearly finished, and there is no more copy to give out, then, so soon as one of the Companionship is out of copy, the lines of the whole are counted off, and set down in the table, and every one does what he can for the general benefit, till all is completed. At the end of the week, the Clicker makes out the bill in the following manner:—He first ascertains what amount of work has been done during the week; he then counts how many lines each Companion has set, and divides them into hours. Having done this, he refers to his table to see how many "hours" of time-work has been charged, including his own time, which is generally about fifty or fifty-four hours per week, without overtime. He then adds the number of hours of "composition," time-work, and his own together, which gives him the total number of hours to be paid for out of the bill. By reducing the sum total of the bill into pence and dividing it by the number of hours, he gets at the price per hour at which the bill pays; so that it is to his interest to work well, in order to make the bill pay as much as possible. The "fat," such as the title, blanks, short pages, folios, whites, and head lines, are all made up by the Clicker, and thrown into the general bill, so that each man gets his fair proportion of it when the bill is made out; whereas, by the old system, a considerable space of time was literally wasted by the Compositors, at the end of every work, gathering round the stone, "throwing quads" (*q.v.*) to decide who should have the title, who the blank, or any other fat matter, such as a piece of table-work, &c., often ending in disputes and angry feeling. Therefore he who picks up the largest number of stamps in the cleanest manner, comes in for the largest share of the "fat." This is how it should be. But by the old system, one man who may have a happier knack than another of throwing the quads would get the largest share of fat, when, perhaps, he has actually done the least portion of the work. Most Companionships work on the same principle, although they have a different mode of paying the Clicker. In some he is only paid for the time he is actually engaged at the work; another Companionship will equally, not proportionately, divide all the fat; while others will allow the Clicker to charge the same number of hours as the man who has composed the largest number of lines. The latter plan is bad on principle, as it affords ground for dishonesty; for it is very easy for a Clicker to give the best and fattest copy to the Compositor who can pick up the largest number of stamps. One of the largest London Firms divide their work between three different classes of Companionships, and pay their Clickers establishment wages. The first-class Companionships have all the best kind of work, and the Companions are paid sevenpence or eightpence per hour (or thousand letters); the second-class Companionship take the medium work, and are paid sixpence per hour; while the third and lowest class have to be content with the inferior work, for which they get fivepence per hour. Each of these Companionships receives the above prices irrespective of cuts, blanks, tables, or other "fat," which is claimed by the Employers, as remuneration for the Clickers' labour. On being first employed, the Overseer generally places the Compositor in the third-class Companionship. His

manner of working is closely watched, and if he proves to be a quick and clean Compositor, on the first opportunity he is drafted into the second-class; and, if his abilities are still approved of and his conduct is good, he may ultimately be promoted to the first-class Companionship. Here he will have a double advantage over his previous situation; for, not only will he be engaged on the best work, but he will be kept constantly employed; for if a slackness occurs, the inferior work is taken from the third-class "ship" (*q.v.*) and given to the second; while the best "ship" is kept going with work from the others, rather than be suffered to stand still. Perhaps, however, the fairest and most equitable method is to let the Companions choose their own Clicker, and pay him out of the general bill. If he does not work to their satisfaction, they will soon replace him by a more competent man: thus the Employer will have the satisfaction of knowing that his work is progressing with all the despatch possible, and that he is only paying the actual worth of the labour performed. This feature in the economy of the composing-room has not been adopted in America to any great extent. It was originated, and and still chiefly prevails, in English offices.

COMPOSING.—A term which includes several exercises as well of the mind as of the body; for when we are said to compose we are at the same time engaged in reading and spelling what we are composing, as well as in taking care to space and justify the matter. When the copy of a work is put into the hands of the Compositor he should receive directions respecting the style of the work. He then makes his measure to the exact number of Pica ems directed, which is done by laying them flatwise in the composing-stick, and then screwing it up, not too tight, as that would be apt to strain it, nor so slack as to allow the measure to give. He then fits a setting-rule to the measure, and, his case being supplied with letter, he is prepared for composing. Having taken notice of the state of the copy, he begins his work. His chief endeavour should be to compose with ease, accuracy, and expedition. An ill-habit once acquired is with difficulty shaken off. The variety of motions exhibited by some Compositors are truly ludicrous; such as nodding the head, agitating the body, throwing out the arm, ticking the letter against the case or the setting-rule, with many other false movements, which not only waste time, but fatigue the mind and exhaust the body. The swift action of the hand is not the criterion of a quick Compositor. Having placed himself opposite the centre of the lower-case, the Compositor takes the stick in his left hand, his thumb being over the slide, resting on the setting-rule; with the thumb and first finger of his right hand he takes up the letters, spaces, quadrats, &c., one by one, and places each upon the setting-rule, supporting and placing them together by the action of the left thumb, the other hand being constantly disengaged for picking up the next letter. The whole of these movements are performed with a degree of celerity not easily conceivable by a stranger to the art. Upon arriving near the end of his measure he observes whether the line will end with a complete word, or an entire syllable, including the hyphen, and, if his last word or syllable happens exactly to fill the measure, or makes the line completely tight, he has nothing more to do to that line; but if—which is far more likely to be the case—he finds the measure not entirely filled by perfect words or syllables, he increases the distances between the words in that line by equally adding more space between each until the measure is moderately tightened. This operation is called "justifying," and if done properly, is one that displays much nicety and skill, every line requiring to be of an equal degree of tightness, neither too tightly wedged into the composing-stick, nor yet at all loose and uneven; neither the words placed too close together in one line, or too wide apart in others. This is one great criterion of a good workman. The Compositor may as often have to lessen the spaces first used in a line as to add to them, particularly in narrow measures of large type, of course containing fewer words in a line, and it frequently happens that a long monosyllabic word or syllable will not, as the line is first spaced, go in at the end, and to drive out which the line would appear with great gaps; he must therefore change his spaces for thinner; some of which, from their being very thin, are called hair spaces. The line having been completed, the rule is drawn out and placed over or upon that line, and the Compositor proceeds with the next, and so on with the succeeding lines, until his composing-stick is filled, which takes perhaps ten or twelve lines of middling-sized type. He then places the rule in front of the last line, and fixing his forefingers of each hand in front of the rule, he presses the

middle fingers up against the sides of the lines, and his thumbs behind the first lines, raising the whole out of the composing-stick at once. He then conveys the stickful to the galley, disengaging the thumbs as he places the lines against the head of the galley, or against the lines that have been previously emptied and placed thereon.—*Hansard.*

COMPOSING MACHINES.—Machines for setting types without manual labour. Many ingenious inventions for this purpose have been produced in Great Britain, France, and in the United States. Almost all of them, however, have been found to be of no real economy in the composition of general matter.

COMPOSING RULE.—See SETTING RULE.

COMPOSING STICK.—An instrument in which letters are set, or arranged in lines. Composing-sticks of the old-fashioned makes consist of the following parts: The plate, which forms the bed of the instrument; the flanch, turned up from the plate at right angles, and five-eighths of an inch above the plate, through which are bored holes, about one inch apart from each other, to receive the screw; the head, which is of the same height as the flanch, but much stronger, securely fastened to it and the plate by rivets, dovetail, or brazing; the slide, having an opening in the lower leg, or part which rests against the flanch, to admit the tenon of the nut, which is shouldered to fit into this groove, and which nut is to receive the screw on its being passed through one of the holes, to fasten the slide to any measure that may be required. This is done by means of the groove in the slide being moved backward or forward on the screw and nut, and by the screw being used at the hole convenient to the distance required, so as to set the slide at the point wanted from the head. Some descriptions of Composing-sticks are made to obviate the necessity of perforating the flanch; the slide being fixed from the desired distance from the head by a screw or by a lever, so arranged as to grasp tightly the slide and the flanch. The chief advantage of this arrangement is, that an alteration of measure can be made with the utmost facility. Composing-sticks are made of iron, brass, or gun-metal; the latter, owing to their not being liable to corrosion, are the most suited for warm climates. They are made of various lengths, from about four inches up to ten or twelve; above that size, for broadsides, they are chiefly made of mahogany. Sometimes the slide is split, and when the two parts are put asunder, they can be adjusted to a short measure, so that the Compositor can have his work proceeding in two different measures at one time, without altering his stick. The depth of English sticks is about two inches, but in France they are much shallower, frequently holding no more than six lines. The most usual defects in Composing-sticks are, the slides and heads not being perfectly square to each other, and each of them to the plate; also, the slides and heads are sometimes not square, or at right angles to the flanch.

COMPOSITION.—Type-setting; also material for ink-rollers.—See COMPOSING AND ROLLERS.

COMPOSITOR.—The workman who composes type.

COMPOSITORS' PRICES.—See SCALE OF PRICES.

COPE'S PRESS.—See "ALBION" PRESS.

COPPER-PLATE PRESS.—A Press employed in taking off prints or impressions from copper or steel plates, engraven, etched, or scraped, as in mezzo-tint. It is a description of rolling press, and consists of two rollers or cylinders supported on a strong frame. These rollers are moveable on their axes, one being placed just above the other. The table on which the plate to be printed is laid runs between the two. The upper cylinder is turned round by means of a cross, fixed on its axis; the lower one is turned by the action of the upper on its surface. These rollers are so arranged as to admit of a greater or less amount of pressure.

COPY.—Literary matter to be printed, whether a book, pamphlet, circular, card, or other job. It is of two kinds—manuscript and reprint.

COPYRIGHT.—The right to the sole publication of literary matter. The Act of Parliament relating to this subject is 5 and 6 Victoria c. 45. In the preamble and first clause various former Acts are repealed; in the second clause, the word "book" is enacted to include a volume, part or division of a volume, pamphlet, sheet of letter-press, sheet of music, map, chart, or plan separately published, and "copyright" to mean the sole and exclusive liberty of printing or otherwise multiplying copies of any subject to which the said word is applied in the Act. The three leading sections of the Act are:—

"And be it enacted, that the copyright in every book which shall after the passing of this Act be published in the lifetime of its Author shall endure for the natural life of such Author, and for the further term of seven years, commencing at the time of his death, and shall be the property of such Author and his assigns: provided always, that if the said term of seven years shall expire before the end of forty-two years from the first publication of such book, the copyright shall in that case endure for such period of forty-two years; and that the copyright in every book which shall be published after the death of its Author shall endure for the term of forty-two years from the first publication thereof, and shall be the property of the proprietor of the Author's manuscript from which such book shall be first published, and his assigns.—*Sec.* 3.

"And whereas it is just to extend the benefits of this Act to Authors of books published before the passing thereof, and in which copyright still subsists: be it enacted, that the copyright which at the time of passing this Act shall subsist in any book heretofore published (except as hereinafter mentioned) shall be extended and endure for the full term provided by this Act in cases of books thereafter published, and shall be the property of the person who at the time of passing of this act shall be the proprietor of such copyright; provided always, that in all cases in which such copyright shall belong in whole or in part to a publisher or other person who shall have acquired it for other consideration than that of natural love and affection, such copyright shall not be extended by this Act, but shall endure for the term which shall subsist therein at the time of passing of this Act, and no longer, unless the Author of such book, if he shall be living, or the personal representative of such Author, if he shall be dead, and the proprietor of such copyright, shall, before the expiration of such term, consent and agree to accept the benefits of this Act in respect of such book, and shall cause a minute of such consent in the form in that behalf given in the schedule to this Act annexed to be entered in the book of registry hereinafter directed to be kept, in which case such copyright shall endure for the full term by this Act provided in cases of books to be published after the passing of this Act, and shall be the property of such person or persons as in such minute shall be expressed.—*Sec.* 4.

"And whereas it is expedient to provide against the suppression of books of importance to the public: Be it enacted, that it shall be lawful for the Judicial Committee of Her Majesty's Privy Council, on complaint made to them that the proprietor of the copyright in any book after the death of its Author has refused to republish or to allow the republication of the same, and that by reason of such refusal such book may be withheld from the public, to grant a licence to such complainant to publish such book, in such manner and subject to such conditions as they may think fit, and that it shall be lawful for such complainant to publish such book according to such licence.—*Sec.* 5.

"A printed copy of the whole of every book which shall be published after the passing of this Act, together with all maps, prints, or other engravings belonging thereto, finished and coloured in the same manner as the best copies of the same shall be published, and also of any second or subsequent edition which shall be so published with any additions or alterations, whether the same shall be in letter-press, or in the maps, prints, or other engravings belonging thereto, and whether the first edition of such book shall have been published before or after the passing of this Act, and also of any second or subsequent edition of every book of which the first or some preceding edition shall not have been delivered for the use of the British Museum, bound, sewed, or stitched together, and upon the best paper on which the same shall be printed, shall, within one calendar month after the day on which any such book shall first be

sold, published, or offered for sale within the bills of mortality, or within three calendar months if the same shall first be sold, published, or offered for sale in any other part of the United Kingdom, or within twelve calendar months after the same shall first be sold, published, or offered for sale in any other part of the British dominions, be delivered on behalf of the Publisher thereof at the British Museum.—*Sec.* 6.

"Every copy of any book which under the provisions of this Act ought to be delivered as aforesaid shall be delivered at the British Museum between the hours of ten in the forenoon and four in the afternoon on any day except Sunday, Ash Wednesday, Good Friday, and Christmas Day, to one of the officers of the said Museum, or to some person authorised by the Trustees of the said Museum to receive the same;" and such officer or other person is required to give a receipt in writing for the same."—*Sec.* 7.

By another clause in the Act a penalty of a sum not exceeding £5, besides the value of the copy which ought to have been delivered, is imposed for every default in delivering books pursuant to the Act.

[Publications due to the British Museum under the Copyright Act are to be delivered at the Copyright-office only. No other delivery will be legal.]

The Act proceeds to direct that to secure copyright in literary productions, the proprietor shall make entry "in the Registry Book of the Stationers' Company of the title of such book, the time of the first publication thereof, the name and place of abode of the Publisher thereof, and the name and place of abode of the Proprietor of the copyright of the said book, or of any portion of such copyright, in the form in that behalf given in the Schedule of this Act annexed, upon payment of the sum of five shillings to the officer of the said company; and that it shall be lawful for every such registered Proprietor to assign his interest, or any portion of his interest therein, by making entry in the said book of Registry of such assignment, and of the name and place of abode of the assignee thereof, in the form given in that behalf in the said Schedule, on payment of the like sum; and such assignment so entered shall be effectual in law to all intents and purposes whatsoever, without being subject to any stamp or duty, and shall be of the same force and effect as if such assignment had been made by deed." The following is the form of requiring entry of proprietorship:—

I, *A. B.* of ..... do hereby certify, That I am the Proprietor of the copyright of a book intituled *Y. Z.*, and I hereby require you to make entry in the Register Book of the Stationers' Company of my proprietorship of such copyright, according to the particulars underwritten:

Title of Book.	Name of Publisher and Place of Publication.	Name and Place of Abode of the Proprietor of the Copyright.	Date of First Publication
Y. Z.		*A. B.*	

Dated this ..... day of ..... 18....

Witness, *C. D.* (Signed) *A. B.*

In the United States, copyrights are granted by the United States District Courts, through their respective clerks, on payment of one dollar by the applicant and a deposit of the copy of the title of the work, and a further deposit of one copy of the first edition of such work within three months after the publication of the same. Fourteen years is the specified term of copyright, renewable for a second term of like duration.

CORRECT.—For Correcting in metal, see CORRECTING.—For Correcting proofs, see PROOF-READING.

CORRECTING.—As soon as the proof has been read and given out, the Compositor should lay up his forme (unless his matter is on a galley), and unlock it all round, being careful not to leave the quoins too loose, or the matter may be squabbled, or types fall out at the ends of the lines. He should then set up the types required for the corrections in his stick, with a few spaces on a piece of paper, or, what is more handy, in a small tray with partitions in it, similar to the plan annexed. Taking his bodkin in his right hand, the corrector should place the point of it against the end of the line he wishes to correct, and with the middle finger of his left hand against the other end of the line, raise it altogether, high enough to give him a clear view of the spacing. He can then change the faulty letter, and make the necessary alterations in the spacing, before dropping the line. By this method the type will not be injured, as it so often is when the bodkin is forced into the sides or heads, and regularity in the spacing may be secured, as well as much time saved. In tables, or in any matter in which rules prevent the type being raised as directed, the letters must be drawn out by the bodkin, and great care will be necessary to avoid injuring the types. The point should be stuck into the neck of the letter, between the beard and the face, drawing it just high enough above the other letters to allow of taking hold of it with the forefinger and thumb of the left hand. In this operation as small an angle as possible should be made with the blade of the bodkin, in order that it may not touch any of the surrounding types, as a trifling graze will injure the face of the letters near it.

Hair.	Thin.	Thick.
Em.	En.	Quads.

CORRECTORS OF THE PRESS.—See PROOF-READING.

COVENTRY.—When a workman does not conform to the rules of the Chapel, he is sent to Coventry; that is, no person is allowed, on any consideration, to speak to him, apart from business matters, until he pays a due regard to the rules.

CRAMPED.—Work is said to be cramped when whites are used sparingly, short pages avoided, and the matter squeezed more closely than usual, to get a certain quantity of matter into a given number of pages. A Compositor cramps his matter when he does not insert whites in proportion to the open character of his work.

CROSS.—The long and short crosses of a chase are bars of iron, crossing each other at right angles, and dovetailed into the rim, dividing it into four parts. The short cross is the broadest, and has a groove cut for the point-spurs to fall in.

CROTCHETS.—Otherwise brackets [ ], are used to enclose a word or sentence intended to supply some deficiency, or to rectify some mistake.

CUT-IN-NOTES.—Side notes, inserted in the text, the lines of which are shortened to receive them.

CUTS.—See ILLUSTRAEED BOOKS.

CUT THE LINE.—A term used among Compositors to signify leaving work. Generally, when several Compositors are engaged upon a work, and one of them is out of copy or letter, the whole of them are expected to "cut the line"—*i.e.*, leave work when he has finished the line he is then composing,—and all stand idle till a fresh supply arrives. It is a silly practice, and we are glad to hear that Compositors in many houses have abandoned the system. Because one Compositor is out of letter, it is no reason why he should demand that all the others should leave their work, especially as this often happens near the end of a volume.

CUTTING THE FRISKET.—Cutting off those parts of the paper which would prevent the forme being completely printed.

CYLINDRICAL PRINTING.—See MACHINES.

D

DAGGER.—When used as a reference mark, the Dagger (†) stands next in order after the star.—See OBELISK.

DANCES.—See FORME DANCES.

DASH.— A mark (—) signifying, in general, that a sentence is broken off abruptly. For its use, see PUNCTUATION.

DEAD HORSE.—When a Compositor or Pressman has drawn more money on account than he has actually earned, he is said to be "horsing it," and, until he has done enough work in the next week to cover the amount overdrawn, he is understood to be working a "dead horse."—See ACCOUNT-LINE.

DEDICATION.—The Dedication which generally follows the title of a book, is properly set in capitals and small capitals, displayed in long and short lines. The name of the person to whom the work is dedicated should always be emphasized, and the name of the Author also, but in a less degree.

DELE.—The second person, singular, imperative mood of the Latin verb *deleo*, to blot out, to expunge.—See PROOF-READING.

DEMY.—The name of a size of paper, 22½in. × 17½in.—See DIMENSIONS OF PAPER.

DESCENDING LETTERS.—The letters so called are—g, j, p, q, y, of the lower-case. In Italic founts, however, the letter *f* is both ascending and descending.

DEVIL.—Otherwise "Printers' Devil," is a term applied to the boy who does the drudgery work of a printing-office. In former years it was commonly used; of late it has become almost obsolete in London, owing to the number of boys employed. On newspapers, the boy who waits on the Editor for "copy" is generally termed "the Devil." It is more frequently employed by provincial Printers. There is an old tradition, says Disraeli's "Curiosities of Literature," concerning the relations supposed to exist between one of the first printers and his Satanic Majesty. When the Bibles of Faust appeared before the world, they were designed to imitate those which were commonly sold as MSS. Faust attempted the sale of his books at Paris, and he considered it to be his interest to conceal the art of printing with moveable types. He was enabled to sell his books at sixty crowns each, while the scribes demanded five hundred for theirs. This circumstance excited universal astonishment, and still more when he produced copies as fast as they were wanted, and even lowered his price. The uniformity of the copies increased the popular wonder still further. Informations were given to the authorities against him, as a magician; and, on searching his lodgings, a great number of copies were found. The red ink—and Faust's red ink is peculiarly brilliant—which embellished his copies was said to be his blood; and it was solemnly adjudged that he was in league with Satan. Faust was at length obliged, to save himself from a bonfire, to reveal his art to the authorities, who then discharged him from all prosecution in consideration of this useful invention. Such is the tradition, but authorities on the early history of Typography differ as to its authenticity.

DIÆRESIS.—The diæresis (See ACCENTS) placed over a vowel denotes in general that that vowel forms a syllable, and does not constitute part of one with another vowel preceding or following it. Thus, *aërial* is pronounced *a-e-rial*. So *preëminent* and similar words, where the two vowels are part of two different syllables, are sometimes distinguished by the diæresis; but the usual plan is to insert a hyphen between the two vowels, as in *co-operate*.

DIAMOND.—The name of a type a size smaller than Pearl.

DIMENSIONS OF PAPER.—The following table gives, in inches, the dimensions of the various sizes of paper, and the different divisions into which the respective sheets may be cut:—

Double Super-Royal.	
Broadside	40 × 27½
Long Folio	40 × 13⅝
Long Thirds	40 × 9⅛
Double Royal.	
Broadside	40 × 25
Long Folio	40 × 12½
Long Thirds	40 × 8⅓
Double Demy.	
Broadside	35½ × 22½
Long Folio	35½ × 11¼
Long Thirds	35½ × 7½
Double Large Post.	
Broadside	33 × 21
Long Folio	33 × 10½
Long Thirds	33 × 7
Double Crown.	
Broadside	30 × 20
Long Folio	30 × 10
Long Thirds	30 × 6⅔
Double Post.	
Broadside	31 × 19
Long Folio	31 × 9½
Long Thirds	31 × 6⅓
Double Foolscap.	
Broadside	27 × 17
Long Folio	27 × 8½
Long Thirds	27 × 5⅔
Double Pott.	
Broadside	25 × 15½
Long Folio	25 × 7¾
Long Thirds	25 × 5⅛
Imperial	
Broadside	30 × 22½
Long Folio	30 × 11¼
Long Thirds	30 × 7½
Broad Folio	22½ × 15
Broad Thirds	22½ × 10
Quarto	22½ × 7½
Quarto (Common)	15 × 11¼
Octavo (Common)	11¼ × 7½
Super Royal.	
Broadside	27½ × 20
Long Folio	27½ × 10
Long Thirds	27½ × 6⅔
Broad Folio	20 × 13¾
Broad Thirds	20 × 9⅛
Broad Quarto	20 × 6⅞
Quarto (Common)	13¾ × 10
Octavo (Common)	10 × 6⅞
Royal.	
Broadside	25 × 20
Long Folio	25 × 10
Long Thirds	25 × 6⅔
Broad Folio	20 × 12½
Broad Thirds	20 × 8⅓
Broad Quarto	20 × 6¼
Quarto (Common)	12½ × 10
Octavo (Common)	10 × 6¼
Medium.	
Broadside	24 × 19
Long Folio	24 × 9½
Long Thirds	24 × 6⅓
Broad Folio	19 × 12
Broad Thirds	19 × 8
Broad Quarto	19 × 6
Quarto (Common)	12 × 9½
Octavo (Common)	9½ × 6
Demy.	
Broadside	22½ × 17¾
Long Folio	22½ × 8⅞
Long Thirds	22½ × 5⅞
Broad Folio	17¾ × 11¼
Broad Thirds	17¾ × 7½
Broad Quarto	17¾ × 5⅝
Quarto (Common)	11¼ × 8⅞
Octavo (Common)	8⅝ × 5⅝
Large Post.	
Broadside	21 × 16½
Long Folio	21 × 8¼
Long Thirds	21 × 5½
Broad Folio	16½ × 10½
Broad Thirds	16½ × 7
Broad Quarto	16½ × 5¼
Quarto (Common)	10½ × 8¼
Octavo (Common)	8¼ × 5¼
Crown.	
Broadside	20 × 15
Long Folio	20 × 7½
Long Thirds	20 × 5
Broad Folio	15 × 10
Broad Thirds	15 × 6⅔
Broad Quarto	15 × 5
Quarto (Common)	10 × 7½
Octavo (Common)	7½ × 5
Post.	
Broadside	19 × 15½
Long Folio	19 × 7⅝
Long Thirds	19 × 5⅛
Broad Folio	15½ × 9½
Broad Thirds	15½ × 6⅓
Broad Quarto	15½ × 4¾
Quarto (Common)	9⅝ × 7½
Octavo (Common)	7⅜ × 4¾
Foolscap.	
Broadside	17 × 13⅜
Long Folio	17 × 6⅝
Long Thirds	17 × 4½
Broad Folio	13⅜ × 8½
Broad Thirds	13⅜ × 5⅝
Broad Quarto	13⅜ × 4¼
Quarto (Common)	8½ × 6¾
Octavo (Common)	6¾ × 4¼
Pott.	
Broadside	15½ × 12½
Long Folio	15½ × 6½
Long Thirds	15½ × 4⅓
Broad Folio	12½ × 7¾
Broad Thirds	12½ × 5⅛
Broad Quarto	12½ × 3⅞
Quarto (Common)	7¾ × 6¼
Octavo (Common)	6¼ × 3⅞

DIPHTHONGS.—A diphthong in a coalescence of two vowels into one syllable, as æ, œ. The English language is, happily, unencumbered by these combinations of letters. Some Printers, however, use them in such words as archæology, mediæval, manœuvre, &c., forgetting that æ and œ do not differ in sound from the simple vowel e; they are, in such words, utterly worthless, and no better than a mere pedantic encumbrance. They have already been excised from such words as cemetery, celestial, economical, ether, &c., but they may be retained in proper names, as Cæsar, Phœnicia, &c.

DIRECTION PAPER.—See BOOKWORK.

DIRECTION WORD.—A word formerly placed at the bottom of a page, on the right hand, to show the connexion with the page following. Directions are now only occasionally used in Law Work.—See CATCH WORD.

DIS.—A familiar abbreviation of *Distribution*.

DISTRIBUTION.—The process of replacing the types in their respective boxes in the cases, in order to be set up again. This work is done very rapidly by the Compositor, who, placing a rule or lead at the head of the matter, takes up what is termed a handful, and, keeping the face of the letter towards him,

with the nick on the upper side, rests one end of the rule or lead against the ball of the thumb of the left hand, pressing the other end with the third finger, steadies the matter with his forefinger. He thus has the right hand at liberty, with the thumb and two fingers of which he takes one or more words from the uppermost line and drops the several letters into their respective boxes. It is usual to wet matter before distribution, so as to render it less cohesive, the operation being performed with more facility in that state than when dry, and with less chance of the matter being broken. Only so much should be taken up at one time as can be conveniently held in the left hand; too much tires the wrist, and is in danger of going into pie. The Compositor should be careful not to throw letters into the case with the face downwards, as such a process tends to batter them; neither should he distribute his case over full, as the sorts are apt to overflow into the boxes beneath, thereby creating pie and causing errors to appear in his composition. He should not care so much for distributing quickly as correctly—expedition will come by practice—much time being lost by composing from a foul case. Many lose time by not carefully looking at the word between their fingers before distributing it; by proper attention this may be avoided, and the workman become an expeditious as well as clean distributor. The learner should never take more between his fingers than he can conveniently hold; if possible, always taking an entire word or words, and keeping the left hand slightly inclined, so that the face of the letter may come immediately under his eye. By practice he will become so well acquainted with the appearance of the beard of the type, that he will be able to know what word he has in his fingers with the very cursory view he may have while lifting it. In distributing, the utmost care should also be taken to place the different spaces in their proper boxes: mixing them is a characteristic of a careless or inferior workman. In winter-time some Compositors have a habit of wetting matter with hot water, and, after distribution, of placing their cases in front of a fire to dry the letter. Type thus heated should not be handled until perfectly cold, as the antimony used in its manufacture emits a noxious vapour, which affects the respiration and the sinews of the person manipulating the type.

DISTRIBUTING MACHINE.—A machine for performing automatically the operation of type distributing.

DIVISION OF WORDS.—In the process of composition it is frequently found that a complete line cannot be formed without making use of a portion of a word. It then becomes the duty of the workman to consider how he may divide the word with judgment and propriety. The art of dividing words is called Syllabification, and it has engaged the attention of most of the lexicographers and grammarians. Although a large number of formal rules have been drawn up to guide the Compositor in this respect, the following, by Lindley Murray, contain all that is practically necessary to be borne in mind:—

1. A single consonant between two vowels must be joined to the latter syllable; as de-light, bri-dal, re-source; except the letter x, as ex-ist, ex-amine; and except, likewise, words compounded, as up-on, un-even, dis-ease.

2. Two consonants proper to begin a word, must not be separated; as fa-ble, sti-fle. But when they come between two vowels, and are such as cannot begin a word, they must be divided; as, ut-most, un-der, in-sect, er-ror, cof-fin.

If the preceding syllable is short, the consonants must be separated; as, cus-tard, pub-lic, gos-ling.

3. When three consonants meet in the middle of a word, if they can begin a word, and the preceding vowel be long, they are not to be separated; as de-throne, de-stroy. But when the vowel of the preceding syllable is pronounced short, one of the consonants always belongs to that syllable, as dis-tract, dis-prove, dis-train.

4. When three or four consonants, which are not proper to begin a word, meet between two vowels, the first consonant is always kept with the first syllable in the division; as, ab-stain, com-plete, em-broil, daw-dler, dap-ple, con-strain.

5. Two vowels, not being a diphthong, must be divided into separate syllables; as, cru-el, deni-al, soci-ety.

A diphthong immediately preceding a vowel is to be separated from it; as, roy-al, pow-er, jew-el.

6. Compounded words must be traced into the simple words of which they are composed; as ice-house, glow-worm, over-power, never-the-less.

7. Grammatical and other particular terminations are generally separated; as, teach-est, teach-eth, teach-ing, teach-er, contend-est, great-er, wretch-ed, good-ness, free-dom, false-hood.

Two consonants which form but one sound are never separated; as, e-cho, fa-ther, pro-phet, an-chor, bi-shop. They are to be considered as a single letter.

8. In derivative words, the additional syllables are separated; as, sweet-er, sweet-est, sweet-ly; learn-ed, learn-eth, learn-ing; dis-like, mis-lead, un-even; call-ed, roll-er, dress-ing; gold-en, bolt-ed, believ-er, pleas-ing.

EXCEPTIONS.—When the derivative word doubles the single letter of the primitive, one of these letters is joined to the termination; as, beg, beg-gar; fat, fat-ter, bed, bed-ding.

When the additional syllable is preceded by c or g soft, the c or g is added to that syllable; as, of-fen-ces, cotta-ges, pro-noun-cer, in-dul-ging; ra-cing, pla-ced, ran-ger, chan-ging, chan-ged.

When the preceding or single vowel is long, the consonant, if single, is joined to the termination; as, ba-ker, ba-king, ho-ping, bro-ken, po-ker, bo-ny, wri-ter, sla-vish, min-ced, sa-ved.

The termination y is not to be placed alone; as, san-dy, gras-sy, du-ty, dus-ty, mos-sy, fros-ty, hea-dy, woo-dy; except, dough-y, snow-y, string-y, and a few others. But even in these exceptions it would be proper to avoid beginning a line with the termination y.

There are methods, differing in some respects to the preceding, for dividing Latin, Greek, and French respectively, which readers acquainted with the languages will understand.

Wilson's "Treatise on English Punctuation" contains several additional rules for the division of English words, which are of value:—

It is desirable that compound and derivative words should at the ends of lines, be divided in such a manner as to indicate their principal parts. Thus school-master is preferable to schoolmas-ter, dis-approve to disap-prove, resent-ment to re-sentment, ortho-doxy to or-thodoxy; though, as regards the analyses of words into syllables, the latter is unobjectionable. From the narrowness of the printed line, however, in some books, the principle recommended cannot always be adhered to.

The terminations tion, sion, ceal, tial, and many others, formerly pronounced as two syllables, but now only as one, must not be divided either in spelling or at the end of a line.

A syllable consisting of only one letter, as the a in creation, should not commence a line. This word would be better divided crea-tion; and so all others of a similar kind. But such a syllable, coming immediately after a primitive, is by some Printers brought to the beginning, as consider-able.

A line of print must not end with the first syllable of a word when it consists of a single letter, as a-bide, e-normous, nor begin with the last syllable, when it is formed of only two letters, as nation-al, teach-er, similar-ly. For regard should be had to the principles of taste and beauty as well as to the laws of syllabification.

Three or more successive lines should not end with a hyphen. A little care on the part of the Compositor will in general prevent an appearance so offensive to a good eye. Divisions, indeed, except for purposes of spelling and lexicography, should take place as seldom as possible, and when they are absolutely necessary, should only be made with the utmost care.

DOC.—A familiar abbreviation of "document;" *i.e.*, the memorandum a Compositor keeps of the quantity of work he has executed.

DOTTED QUADRATS.—Quadrats are cast similarly to leaders, in sizes of one to four ems, but with the dots much lighter and closer together, so as to imitate dotted brass rule, which they are intended to supersede for certain classes of work. They are very useful for setting collecting-cards, as a number of rows can quickly be set up, with similar rows of whites, allowing so many two ems or three ems for the squares and the remainder for a wider

column, upon which a name can be written. The required number of lines having been set, the Compositor has then only to drop in the column rules and the table is complete, with the exception of the heading.

DOUBLE.—When a word, line, or sentence is composed twice over it is called a "double." In presswork a sheet is said to be doubled when instead of one clear impression being upon it, there are traces of two indistinct ones.

DOUBLE CYLINDER.—See MACHINES.

DOUBLE DAGGER.—A reference mark, thus (‡), which stands third in order, and follows the dagger or obelisk.

DOUBLE ATLAS.—A size of drawing paper. The sheet is 55 in. × 31½ in.

DOUBLE LETTERS.—Two letters cast on one shank, as æ, œ, fl, fi, &c.—See LIGATURES.

DOUBLE NARROW.—A piece of furniture equal in breadth to two narrow quotations, or six picas.—See FURNITURE.

DOUBLE PICA.—The name of a type one size smaller than two-line pica, and equal in depth to two small pica bodies. Reglet is also made to this body.

DRAW.—When a forme has been badly locked up or the lines insufficiently justified, the action of the roller frequently causes one or more of them to be drawn up, either causing an "out," if the letter is removed altogether, or a batter if it falls upon the face of the forme. Care on the part of the Compositor effectually guards against this accident.

DRESSING A CHASE.—Fitting a chase or forme with the proper furniture, sidesticks, and quoins.—See MAKING MARGIN.

DRIVE OUT.—Matter is driven out when it is purposely set widely, or branched out. Many compositors indulge in a greedy habit of spacing their matter widely near the end of a paragraph, in order to drive it out so as to secure a fat break-line. This system is reprehensible, as it disfigures the page, and should be checked by the reader marking it back again on the proof. When, by reason of insertions in an author's proof, the sheet is overrun, the surplus lines at the end are termed "driven-out matter."

DROPPING OUT.—Letters, spaces, or quadrats which drop out of a forme after it is locked up or while being lifted from the imposing surface or the press. The causes of this are, bad justification, some of the leads riding, furniture binding, wrong founts, &c.

DRY COLOURS.—Printing inks made by mixing fine dry colours with varnish. The following particulars are extracted from the *American Printer*:—

1. No more should be mixed at a time than will be required for the job in hand.

2. Coloured inks should be mixed upon a slate or marble slab, by means of the muller, and never upon an iron or other metallic table. The table, before mixing, should be thoroughly clean, and perfectly free from the slightest soil or trace of other inks.

3. For working coloured inks the roller should not be too hard, and should possess a biting, elastic face. When change of colour is required it should be cleaned with turpentine, and a moist sponge passed over the face, allowing a few minutes for the roller to dry before resuming its use.

4. Various shades may be produced by observing the following directions:—

Bright Pink Ink.—Use Carmine or Crimson Lake.
Deep Scarlet.—To Carmine add a little deep Vermilion.
Bright Red.—To pale Vermilion, add Carmine.
Deep Lilac.—To Cobalt Blue, add a little Carmine.

Pale Lilac.—To Carmine, add a little Cobalt Blue.
Bright Pale Blue.—Cobalt.
Deep Bronze Blue.—Chinese.
Green.—To pale Chromo, add Chinese Blue; any shade can be obtained by increasing or diminishing either colour.
Emerald Green.—Mix pale Chrome with a little Chinese Blue, then add the Emerald until the tint is satisfactory.
Amber.—To pale Chrome, add a little Carmine.
Deep Brown.—Burnt Umber, with a little Scarlet Lake.
Pale Brown.—Burnt Sienna; a rich shade is made by adding a little Lake as above.

DUODECIMO.—The size of a book, usually written 12mo. It is formed by folding a sheet of paper into twelve portions or leaves, making twenty-four pages.

DUSTING COLOURS.—These are similar to those described above under the heading DRY COLOURS, only they are ground in a mill to a very fine powder. In using them, however, for printing purposes, instead of being mixed with the varnish, they are dusted over it; that is to say, the forme is rolled over with varnish, as with ordinary ink, and after the impression is pulled the colours are dusted over it with a broad camel's-hair brush or a clean hare's foot; some pressmen use wool. When the colours are well dried on the impression, the superfluous powder can be cleared off the sheet.

E

EAR OF THE FRISKET.—A small piece of iron which projects from the edge of the frisket nearest to the workman, and otherwise called the thumb-piece. By taking hold of it he turns down both the frisket and the tympan. After the sheet has been printed, he raises the tympan, and then nimbly turns up the frisket again by means of the ear.

EIGHTEENMO.—A sheet of paper folded into eighteen leaves, making thirty-six pages. It is usually termed eighteens, from being written 18mo.; but is sometimes more correctly called Octodecimo.

ELECTROTYPING.—A process which has come into use in place of, or auxiliary to, stereotyping, to which it is superior in two ways, especially for woodcuts or newspaper headings. The copy or plate being of copper, and therefore much harder than type metal, long numbers can be more profitably and clearly produced; and the strokes being finer, and the sunk parts deeper, the impression from an electrotype more nearly approaches one from the type or engraving itself. The art of plating by electrotype was invented almost simultaneously by Spencer, of Liverpool, and Professor Jacobi, of St. Petersburg, in 1837; made public by the latter, October, 5th, 1838, and by the former, September 12th, 1839. Murray applied blacklead to non-metallic bodies as a conducting surface in January, 1840, and in the following April the first specimen of printing from an electrotype appeared in a London periodical. For an account of the chemical processes involved, we must refer the reader to any elementary book on the subject of electro-metallurgy, as well as for a description of the utensils employed, such as the battery and the depositing trough; the metals, solutions, &c., are the same as those used in various trades which have utilised electricity in this manner. What we propose to do is to show their special adaptation to the process of obtaining copper casts of type formes, and the system of preparing these for the press. Smee's battery is the most preferable for this purpose. The mechanical part of the process now familiarly known as electrotyping, consists of

Moulding, Backing-in the Plates, and Finishing. Mouldings may be made from woodcuts. The most effectual moulding substance is the best yellow wax, to which two to fifteen per cent. of turpentine may be added in cold water to prevent it from cracking whilst cooking. New wax should be boiled several hours before moulding. It should be kept in a large iron fish-kettle, to be ladled out as required. Should it become burnt it is useless. To prepare woodcuts for moulding, lock up the woodcut in a chase with a type-high bevelled metal clump border all round it. Brush the cut over sparingly with turpentine to remove the printing ink which remains on the block from the taking off of proofs. Should the cut be an old one, and the fine lines much clogged up, which the turpentine fails to remove, it is better to brush the cuts with a hard tooth-brush, dipped in *liquor potassæ*. The type-high clumps prevent the wax from spreading, and the facsimile of them forming an outside border to the shell, becomes a barrier to the metal, retarding it from getting to the face of the shell during the process of backing; it also forms a wall for the dogs of the lathe to bite firmly to while the back of the plate is being turned. A wooden straight-edge should now be placed across the forme to see if the cut is of the same height as the clumps; if not, the cut must be underlaid—for it is desirable that the cut should be a trifle higher than the clumps. Let the cut now stand until it is perfectly dry, then proceed to blacklead the forme by placing it in the blackleading tray, and well brush it over with the blacklead, taking care that the cut be well bronzed over, and that no particles of the lead be left in any of the fine lines of the engraving. The blacklead should be free from all adulteration. To prepare a type forme for moulding, surround it with the bevelled type-high clumps, placing the bevelled side against the type. When locked up and planed down perfectly even, lay the forme on a board, and take it to a trough containing clean water; next mix plaster of Paris and clean water to the consistency of cream, then pour the mixture over the forme, well plastering it with the hand into the lines and spaces. Let the forme rest till the plaster begins to set, then, with a piece of reglet, scrape off the plaster level with the face of the letter, and with a water-brush wash out the plaster to the depth required, which should be to about the shoulder of the type. This process is exactly similar to the first in the plaster system of stereotyping. Well sluice the forme at the back as well as the face, and stand it on end in the forme-rack to drain for an hour or so. After observing that the forme is tightly locked up, plane it again, so as not to crack the plaster, and see that the face of the forme is even; take it to the blacklead trough, and well bronze it all over, as described for woodcuts, taking care that the forme is dry and free from moisture. It is now ready for being moulded. The moulding tray should be something in the shape of the forme to be moulded; it may be made of stereotype metal. In appearance it resembles a shallow printer's galley, but surrounded on all four sides; about a Pica or an English in depth. Two pieces of stout copper wire are soldered on to the edge in such a manner that it may be suspended in the depositing trough. Warm the moulding tray a little, lay it on a flat table, perfectly level, and with a tin ladle pour out the wax into the tray in a continuous stream, with a slow, steady, rotary motion, within an inch or so of the sides of the moulding tray. Let the wax set all over, and then brush over the surface with plenty of blacklead, laying it on with a soft hat-brush. The sooner the blacklead is applied to the surface of the wax, without disturbing the wax or marking the surface with the hairs of the brush, the better will be the mould, as more blacklead will be held on the surface. The forme or woodcut must be moulded while the wax is yet warm; but it must be perfectly set. The temperature of the room in which this important process is performed must be maintained at summer-heat. The wax, in cooling, ought to present a smooth and even surface. The moulding press may be either (for small jobs) a copying press or a stereotype moulding press; the higher the temperature at which the wax is moulded the less the pressure required. Now place the forme exactly under the centre of the plaster, with the moulding tray containing the slightly-warm wax upon it. The amount of pressure requisite to displace the wax must be learned by experience: too shallow an impression causes a deal of work for the building knife, and an unnecessary depth of dip may result in damage to the mould in delivery. To deliver the mould from the forme a pair of lifters is wanted, although a thin screwdriver may be used. Insert the lifters between the furniture of the forme and the

edge of the moulding tray at the top and bottom of the page, and gently, with a steady hand, apply leverage gradually until the mould is relieved from the mould or woodcut. Should the mould not be a good one, melt the wax and commence again. Never lift a mould from the sides of the forme, or damage will result to the raised excrescences of the mould, which are to form the counters in the plate. The building knife is made of copper. It is half knife and half spoon. Have close at hand a small cauldron of melted wax, and a gas jet by which to warm the building knife. Draw the knife along the projections that are to be raised still higher, and the wax will follow. The object of this is, that where paragraphs or open work occur, the parts can be lowered, to obviate the necessity of chiselling the plates, as in stereotyping. The building knife can be heated by dipping it in molten metal, and the building can be done by holding the hot knife in one hand, and a stick of hard dry wax in the other, feeding the building knife as you go along the spaces between the lines. The mould having been finished and pronounced satisfactory, blacklead it all over, filling all its interstices and brushing the blacklead well in. Now brush out all the particles of the latter, except what is bronzed on by the previous operation. A pair of bellows may be used, or a flat badger's hair brush. If the mould be held in the light, at a certain angle, the operator may discern whether even the finest lines are highly polished. If any line or letter appears dull, the blacklead is not sufficiently blown or brushed out of such parts. To prepare the blacklead mould for immersion into the depositing trough, paint the back and sides, and also the edges of the moulding tray, leaving a spot here and there all round for the copper deposit to start from. These spots may be slightly scraped bright, to facilitate the deposit of the copper, which will shoot out from these spots towards the centre of the blackleaded surface, gradually covering it. As soon as it is placed in the depositing trough containing the copper solution the moulding tray containing the mould must be hung on to the brass rod of the depositing trough with brass S hooks. The connections must all be clean and bright. The connection of the battery having been made, and the copper plate to be produced placed in its proper position, the current of electricity being complete, submerge the mould in the sulphate of copper solution, hang on to the S hooks, and see that the whole of the moulding frame is under the solution, where it can remain until the deposit is sufficient to enable you to judge if all is going on well. Should the copper deposit in places where it is not required, the spot must be dried, and the place stopped out with hot wax. The time usually occupied to deposit thick enough for ordinary purposes is twenty-four hours; but this must be regulated by judgment. To prevent air-bubbles forming on the face of the mould, take it out of the trough and dip it in diluted methylated spirit (half spirit and half water). The copper being deposited of the required thickness, proceed to disengage the shell from the wax by placing the mould with its back on an inclined board; then pour boiling water over the shell, gradually lifting it at one corner. The boiling water melts the surface of the wax, and allows the shell to be released, not, however, without having a thin coating of wax over the face of it, which should be washed out with a mixture of turpentine, benzole, and powdered emery. To prepare the shell for backing, procure a small earthenware gallipot; into this place some zinc cuttings. Take it into the open air and pour on a quantity of hydrochloric acid (muriatic acid or spirits of salts). The instant the acid comes in connection with the zinc heat is generated, an offensive gas is given off, and ultimately a soldering fluid is formed, which must stand till it is cool. The back of the shell may be evenly wetted with this fluid with a brush. The next step is to tin and back in the shell. Procure some good strip solder, fuse it, and pour from a ladle through a gauze strainer, letting it fall into water, which will cause it to become like irregular shaped spots. Some of these must be sprinkled over the back of the shell, after it is wetted with the soldering fluid. For the next process a furnace is required, with a crane and tackle apparatus over it, to which is attached a pan, the shell being placed therein. Fix the tackle, swing the crane to its position, and lower the pan to the top of the type metal contained in the pot above the furnace. The heat must gradually extend itself to the shell and the solder, and when the solder is fused the shell will be tinned all over the back, and ready to receive the fused

type-metal. The iron melting pot should be square, with a flange; it should be about three inches deep. Lower gradually, till it floats on the top of the metal. The solder being melted, pour molten type metal (of the same temperature as the shell, if possible) over the shell, gradually and with a rotary motion, until the shell shall be covered and thick enough to enable the electrotype to undergo the process of finishing. After remaining some time, draw up the pan, and let it cool as gradually as possible. The metal for backing-in must be poor, say a hundredweight of type-metal to an equal weight of lead, and five pounds of bar tin. The plate, when cool, must be released from the backing pan, and the face washed with turpentine, benzole, and emery powder. It must then be dried and polished by rubbing it with sawdust, and it is ready for the back being turned in the lathe. Having, by means of the plane and block, roughly squared the plate, pass a wooden straight-edge over it. Make it perfectly level, then "chuck" it into the lathe. The back now requires to be turned, taking off at one cut not more than a Long Primer or Pica at the most. The best gauge for the thickness of a plate is a Pica. The remainder of the process is the same as for Stereotyping (*q.v.*).

ELLIPSIS.—Marks denoting the omission of a part of a word consisting of short lines, called rules, of various lengths, according to the number of letters omitted, as *The Right Hon. John B——t.* If one or more words are omitted, or supposed to be omitted, it is more usual, and has a neater appearance, to use dots or leaders. Thus :—

The comparative of superiority is expressed in Spanish by the words, *mas . . . . . que;* and that of inferiority by *menos . . . . . que.*

If a line or more be omitted, then the most conspicuous marks are asterisks; as,

Let us go forth in summer's glorious prime,
And leave the din of cities for a while;
* * * From the breezy heights
Of Pyrenean pinnacles behold
Deep vales and forests, purple glens, and plains.

EM.—The square of the body of a type. An em Pica is the unit of measurement in the length and breadth of pages. Furniture, rule, leads, and clumps are made into measures which are multiples of the Pica em.

EM DASH.—A dash (—) of the length and depth of a fount of which it forms part.

EMBOSSED TYPOGRAPHY.—A system of printing for the use of the blind. Instead of colour being used, the surface of the sheet is embossed, and the characters can be distinguished on the fingers being passed over them. Many systems are in use, ranging from modifications of the Roman alphabet to stenography, and each, according to its supporters, possessing many advantages. It has not been decided upon which is the best system, but the importance of the subject, involving the ability of the blind to read with ease and rapidity, has engaged the attention of many philanthropists.

EMBOSSING PRESS.—A press used in embossing by book-binders and in embossed printing. Various patterns are made by different manufacturers.

EMERALD.—The name of a type one size larger than Nonpareil, and one smaller than Minion.

EMPTY CASE.—When some of the sorts of a case are exhausted, so that a compositor can set no more matter from it, it is said to be empty, although there may still be many types of other sorts.

EN.—Half the breadth of an em, in any body of type. In reckoning the work done by compositors, the en is considered as the equivalent of a letter. Thus, if the measure of a page be twenty ems Pica, there are forty ens in it, and the breadth of an en being taken as the average breadth of a type, the compositor is paid for setting up forty letters. But if a work is set

up in any other type that may cause it to be a thick space more than the number of even ens in the width, an extra en is charged. Likewise, in casting up the length of a page, an en counts for an extra em, if it is that much over the number of even ems. It is a rough-and-ready system, but not at all an accurate one, as a very little experimenting will show. A whole fount, upper and lower, varies in breadth from a thick space to about an em; all the capitals, except the *I*, being more than an en, while a majority of sorts in the lower-case, excepting the *m*, *w*, *ff*, *fi*, and a few sorts equal to an en quadrat, are less than an en. If a capital letter was used in every word, the en might be nearly the average, but as nearly all the composition comes out of the lower case, compositors are certainly losers by the present method of casting up matter. For example, take the type in which this Dictionary is set (Nonpareil); the five vowels being the most frequently used, it will be found that instead of making five ens, as they ought, they require a thin space to make them so. In this case there are six pieces composed and only five charged; a loss to the compositor of one-sixth, which is brought out more plainly as follows:—The space between the colons is the space which ought to be occupied by the words, were the en the true average of the breadth.

: Sure my true love's natal day should inspire a thrilling lay. :

In this case, sixty-one pieces have been lifted, but as the space they occupy is only that of fifty-seven ens, and the compositor is paid only for that number of letters, he loses a fifteenth by the present system. In bastard founts the difference is still greater; but when the scale was altered, at the time of the Advance of Wages Movement, a provision was made that an extra charge should be made on founts whose lower-case alphabet occupied less space than twenty-six ens. A committee of compositors was appointed in 1847, in London, to devise a better mode of casting up type, but failed in its object, the present mode of averaging being preferred to any other suggested. In the United States composition is charged by ems only.

EN DASH.—A dash ( ) half the length of the em of the fount to which it belongs.

ENAMELLED CARDS.—Cards with a glazed surface, the fine glaze for which is obtained by employing sulphate of baryta. More difficulty is experienced in working enamelled cards than ivory or ordinary cards, on account of the tendency of the enamel to peel off on to the face of the type, especially with coloured inks. Cards that have been in stock for twelve months are better than new ones for printing purposes, as the enamel is thoroughly dried, and adheres to the card. Pressmen manipulate the ink in various ways to prevent it coming off on to the type; some use varnish; others grind up a very small piece of soap in the ink. The harder the substance in the tympan the better—millboard in preference to sheets of paper—so as to give only a surface impression.

END A BREAK.—To end with a broken or short line, as in the case of an ordinary paragraph. It is the exact reverse of "end even" or "make even" (*q.v.*).

ENGLISH.—The name of a type one size larger than Pica and one size smaller than Great Primer. In Germany it is called by the name of "Mittel;" by the French and Dutch, "St. Augustyn," from the fact, it is said, that the writings of that Father were the first works done in this size of letter.

ENGRAVING ON WOOD.—Engraving on wood is said to have been practised by the Chinese as early as B.C. 1120. The precise date of its introduction into Europe is unknown. Some authorities state that a series of woodcuts, illustrative of the career of Alexander the Great, was engraved by the two Cunio, in 1285. The story is, however, rather doubtful; and perhaps the origin of the art may be traced to the wooden blocks used by notaries for stamping monograms in the 13th century, and in the engraved playing cards which appeared in France about 1340. The supposed earliest woodcut in existence represents St. Christopher with the infant Saviour, and is dated 1423. Many block books exist of about the year 1430; but the art was not brought to great perfection till the

commencement of the 16th century. Albert Durer (1471—1528); Lucas, of Leyden (1494—1533); Holbein, whose Dance of Death appeared at Lyons in 1538; Gerard Audran (1640—1703); Woollet (1735—1758); Thomas Bewick (1753—1828); Nesbit, born in 1775; and Harvey, born in 1796, rank foremost among the old school of engravers; but the modern school, stimulated and encouraged by the growing taste of the public for finely-illustrated books and periodicals, may be said to have completely surpassed all their predecessors (See ILLUSTRATED BOOKS). We cannot devote space sufficient in which to describe the various processes of wood engraving in full, but the following particulars may be useful. The letter-press printer should learn to hold and to use the graver and scorper, in order that he may be able to cut a simple block; take away lines that are superfluous; or alter a jobbing letter or two on an emergency. A few hours' practice will enable him to do these with ease and expedition. In wood-engraving all the lines and work are left standing in relief; this is accomplished by cutting away the ground work on both sides of every line, so that in outlining a wood-block two cuts with the graver complete a line; in cavity engraving, such as copper-plate work, the reverse is the order of things, for there the black line is cut away and the ground left untouched, the actual engraving, with respect to lines, being done with one cut of the graver; but of course it has to be touched up where required, the same as a woodcut has occasionally to be treated. Blocks that have the subject either drawn or transferred on them should be perfectly type high—but if there be any variation it is much better it should be under than over, because the block can be more readily underlaid to bring it to the right height than it can be brought up in the overlays. Place the block upon the sand bag (*q.v.*), which must rest upon a work bench sufficiently high, that when the left hand is holding the block and the right hand is cutting it both elbows should be on a level with the shoulders. Place the graver (*q.v.*) in the right hand, with the handle fair against the bottom joint of the little finger, and the hand closed so as to grasp the handle; the blade of the graver must rest against the extended thumb in such a manner that the blade can easily slip to and fro, and yet act as a guide to the point of the tool; before commencing to work it is as well to practise holding and gliding the tool a few times; next proceed to cut a straight line, holding the tool very nearly parallel with the face of the block, being careful not to slip the tool through any of the black lines or work; take but one journey, however large the block may be, until you arrive at a bar, at which go boldly up to, but not into, or the engraving may be seriously damaged. When curved or irregular shaped lines have to be engraved, the right hand and tool, when in position, should not be allowed to move, but the block on the pad must be moved to the point of the tool by the left hand. If, for instance, a waved line were to be cut, the tool would have to be held steady and the block pushed up to it and waved to the desired pattern. The reason why a piece is sliced off the underside of the handle of the graver, is to allow the tool to work in the centre of a large block, to prevent the point of the tool digging into the block instead of sliding and cutting at the same time. The wood block being cut in rounds or slices, instead of planks, out of the tree, it is necessary, when large blocks are required, to have them made in sections and screwed or bolted together; the latter mode, although more expensive, is far superior, which any letter-press printer can verify, as they are not so apt to warp or dissever. In cutting, the wood leaves the tool in a crisp, pleasant way, owing to the block being prepared at the end way of the grain. Beginners can hardly work too slowly or two deliberately at first, as by carefulness in this particular many, self-taught, have become first-rate engravers, while others, with the superior advantage of good masters, have never reached above mediocrity. Hold the block in the left hand in such a manner that the hand be kept below the surface of the block, as the tool is apt to slip over the block and stick into any opposing surface which it meets; so that should the left hand be above the block some pain and inconvenience may arise. Scorpers (*q.v.*) are made both flat and round; the latter, however, are principally used in wood engraving, and are set in different widths, by which arrangement the space of blank wood between the lines, after outlining, may be taken away, in many instances, at once, by adapting the use of the scorper to the width of whites between the lines. The scorper has to be held in the right hand in the same way as a graver, but has to be elevated, so that the tool may be slightly angular with the block, instead of nearly parallel, as recommended with respect to the graver, and instead of moving the

block it must be fairly held in position until a change of position is necessary. If a straight gutter has to be cut away, the process will be as follows:—Place the block, if a small one, in the centre of the pad, and commence cutting away at the extreme left-hand side of the block, working from where you commenced. Bring the tool gradually back to the extreme right, cutting or chipping only a small piece of wood away at a time. This is the only practicable method of working, for whereas the graver works from right to left, the scorper works reversely; the graver cuts a clear line right away through; the scorper chips a little bit at a time with a backward movement. In clearing away the superfluous wood round the edges adopt the same principle; cut *from* the work, finishing at the edge of the block. Where large open spaces have to be cut away the scorper should take a channel the full length of such space, from end to end, then begin again close at the side of the first channel, and produce another, and so on till the whole has been gone over; then, with the flat scorper, go over the rough ground, and smooth it to a sightly appearance. The flat scorper is used to lower the surface of different parts of a block—the edges of skies, for instance,—as flat impressions would probably give the appearance of dots at the ends of the lines, or not allow of so graduated a tinting—going off, as it were, to nothing. It is also used where light effects are wished for in certain parts of a block, and the engraver has not sufficient confidence in the pressman's artistic capabilities; but this is not advisable except in very exceptionable cases. When a woodcut left on the press all night has become warped, lay it upon its face on the imposing surface, with a few thicknesses of damp paper underneath it, and place over it a planer, flat side downwards, with a flat weight upon it; and in the course of a few hours the block will be restored to its original flatness. This plan is preferable to steeping the block in water, as the steeping swells the lines of the engraving, and, consequently, affects the impression. To preserve the original effect of the cut as it came from the hands of the artist, the block should never be wet with water; and when it has been worked in a forme with types, it should be taken out before the forme is washed. To prevent warping during the dinner hour or night, turn the tympan down upon the forme, run the carriage in, and pulling the bar-handle home, fasten it so that it will remain in this position during the interim. A fine engraving on wood should never be brushed over with ley; the best method is to wipe off the ink with a fine sponge damped with spirits of turpentine; and, if it gets foul at working, clean it with a soft brush and spirits of turpentine; then wipe the surface dry and pull two or three impressions on dry waste paper. Spirits of turpentine take off the ink quicker, and affect the wood less than any other article. The facility with which the block is again brought into a working state more than compensates for the trifling additional expense incurred. When a few proofs only are wanted from a small engraving good impressions may be obtained with little trouble on dry India paper with about six thicknesses of the same paper laid over it, and pulled without the tympan; if proofs are wanted from large ones it will be found advantageous to put the India paper for a few moments into the middle of a heap of damp paper. Further particulars concerning woodcuts and printing them will be found under the title of PRESSWORK (*q.v.*). Engraving on stone is much in use for representations of jewellery, furniture, maps, plans, and architectural drawings. Choose a stone free from veins, chalk marks, or any superficial inaccuracies; place it horizontally on a table, and cover it with a very thin solution of gum and acid, a little colouring matter being mixed with it, to enable the artist to clearly see the progress he makes; this coating effectually preserves the stone from imbibing greasy substances; nevertheless the smallest possible quantity of the solution must only be applied, or the point will not readily penetrate through the coating of gum to the stone. To engrave on stone, it will be necessary to obtain a fine point or a diamond—a needle point, fixed in a handle and held like a pencil and used to scratch the subject into the stone, which is a different procedure to plate-engraving or etching. The engraver should have at hand a hare's foot, to brush away the dust scratched out of the stone, as by blowing away with the mouth, risk is incurred by spittle-spray. It is unnecessary to make deep scratches to produce a firm and clear line; a light and clear line of uniform depth should be maintained throughout. When the engraving is done, rub oil into the lines made by the etching point, and let it stand an hour; wipe off the superfluous oil and wash off the gum; the stone will then be ready for work. No moisture must, on

any account, be suffered to touch the stone during the etching process. Proofs may be taken during progress of the engraving for the artist's guidance; but, before recommencing, re-cover the stone with the coloured preparation, and treat as before-mentioned. To make any alterations, remove by pumice stone, and pass over a solution of acid; then make the alteration. The Printing of engravings from stone is executed as follows:—After the engraving is prepared, wash the stone with a damp rag, then put a few drops of turpentine on to the inking slab, and, with the rubber, mix the ink and turps; after which, rub the stone well with the inky turps, acting in place of a roller for inking the subject; then with a second clean, damp cloth wipe the stone over till clean; then lay on the paper, on which place a thin, clean backing sheet; next, a fine printer's blanket; then a thin millboard; lastly, put down the tympan, and pull through the lithographic press; the operation is then completed. The rubber is made by getting a block of wood, about 3½ in. × 5 in., and about 3 in. thick; this is covered with a few alternate layers of coarse blanketing and fine flannel, letting the last and outside layer, which is used next the stone, be the finest.

ERRATA.—Errors which have escaped both the author and the printer's reader. They are generally printed in small type, sometimes being placed at the end and sometimes at the beginning of the book. As they are a sign of carelessness somewhere, the errata should never be prominent. Such errors are generally the fault of the author, who does not take the trouble to write out his copy legibly; and when he has a proof sent to him for correction, passes over what he ought to notice. The errata page is seldom now seen in a book printed in a good house.

ETCHING.—See LITHOGRAPHY.

EVEN.—See MAKE EVEN.

EVEN HEADLINE.—The headline of an even page; the compositor, in setting it, placing the folio at the near end of the stick.

EVEN PAGE.—A page whose folio consists of some even number. It always stands on the left hand on opening a book.

EXCLAMATION (SIGN OF).—See ADMIRATION (SIGN OF).

EXTENDED LETTERS.—Letters that have a broader face than is proportionate to their bodies, as the following specimen of Brevier Extended Skeleton:—

PRINTERS' REGISTER.

F

FACE OF THE LETTER.—The upper surface of the letter-extremity of the type.

FACE OF THE PAGE.—The upper side of the page, from which the impression is taken.

FALLING OUT.—A term generally applied to a page, a quarter, or whole forme, which drops away from the chase, through the shrinking of the wooden furniture and quoins. This accident can hardly occur without gross carelessness, if metal furniture and iron sidesticks are used.

FANNING OUT.—A term used in the warehouse in counting work. By taking hold of the right-hand lower corner of the paper between the forefinger and thumb, and by a peculiar turn of the wrist (spreading out the upper part of the paper somewhat in the resemblance of a fan) the sheets can be counted with the greatest facility.

FAT.—Among compositors, light, open matter, and short or blank pages. Among pressmen, light formes, woodcuts, and short numbers for which a token is charged. On Chancery Bills, for instance, where the number to be printed is frequently only a dozen or twenty-five copies, the pressman charges the same as though he had pulled 250 sheets of each forme.

FAT-FACE LETTER.—Letter with a broad face and thick stem.

FATHER OF THE CHAPEL.—See CHAPELS.

FEET OF A PRESS.—That part of the press upon which the staple is fixed, and which comes in contact with the floor.

FINE PRINTING.—This term, in its general sense, expresses excellence in any department of the art, but was formerly restricted almost exclusively to book-printing, for the reason that the highest efforts of the typographer were then devoted to that order of publications. Recently, the use of the term has been changed, especially in the United States, where books furnish only a small portion of the occupation of the trade; and at the present time, in this country, fine printing is generally understood to denote the superior qualities of job or colour printing. Many of the early printers were remarkably fitted to achieve success in the details of the art; Fust was a worker in metal; Schoeffer, celebrated for his fine penmanship, was also skilled in the use of the graver; Jenson was accustomed to cutting medals; Mentelin was an illuminator by profession, and many more of the first typographers were thus prepared, by previous practice, for the particular requirements of their new profession; and their singularly rapid success is thus to be explained. The perfection of their typography has, however, been much exaggerated by those enthusiastic authors and amateur critics who have been so widely accepted as the chief authorities upon the subject; and the most earnest admirer must praise them rather for the energy with which they conquered the numerous obstacles in their way, than for the superiority that they achieved. An art which is so eminently dependant upon mechanical perfection must inevitably progress toward excellence by the successive labours of succeeding generations; and the best letter-press of the nineteenth century is not only vastly superior to the greatest efforts of Aldus and Plantin, but far superior even to the most loudly-vaunted triumphs of Baskerville and Bodoni at a much later period; and a type-founder's specimen book of the present day can safely challenge comparison with any work performed by any of the great masters of early printing. Jenson and the Elzevirs have been usually considered as the most successful printers of their time, the former giving, in his celebrated Roman, the model for the modern French letter which has since reached such perfection; and the type of the Elzevirs becoming, in like manner, the model of the English type-founders, until Caslon, in the early part of the eighteenth century, made the first great improvements upon the old-established forms. The work commenced by Caslon was continued by Baskerville, whose type and ink have been applauded to the echo by the Bibliomaniacs; but to the modern printer the much-praised books of Baskerville are valuable only as marking the transition from the old style to the new, the type being notably deficient in that perfect symmetry of line and curve which renders the good founts of the present day completely and artistically harmonious; while the ink, although preserving the blackness for which it was so celebrated, is uneven in tone, the successive pages differing remarkably in depth or colour. Didot, in France, may be called the next devotee of fine printing, and his great excellence is proved by the beauty of the Delphini edition of the classics, which display a rather lighter type than the bold-faced letter of Baskerville, with the advantage of a charming uniformity in the depth of colour. The ligatures of Didot was also a great improvement upon those of Baskerville; but they were so sharp and delicate that they soon became worn and useless. The link between the antique style of printing and the modern is supplied by Didot, who bridged the chasm by filling the period between Baskerville—who, notwithstanding his advantages, must be ranked with the old printers—and the great modern typographical revival which began with the remarkable improvements produced by Bodoni in Italy, Ibarra in Spain, and Bulmer and Bensley in England. Miller Ritchie, a Scotchman, must be honoured as the pioneer of the typographical

improvement in Great Britain, where the art was generally in a very neglected state, when he, about 1780, began to exhibit remarkable elegance, with an unrivalled richness and quality of colouring throughout every page. Devoted to his art, Ritchie pursued his labours despite the failure of the necessary support from an unprepared and unappreciative public, until financial ruin compelled him to desist; and he was immediately succeeded by Bulmer, who, with an equal enthusiasm, was at least happier in achieving a greater renown. The interest in fine printing, which became a mania in England during the Regency of George IV., was inaugurated by the magnificent edition of the Bible, published by Macklin, and printed by Bensley in the year 1800. The dedication to the king bears the date 1791, and the dates accompanying the splendid steel-plate illustrations show that it was a long time in preparation, while the list of subscribers, headed by names of the various members of the royal family, shows that the court was successfully setting the fashion for the fancy for fine printing, which soon afterwards became such a passion with the nobility and gentry of the country, and led to the Bibliomaniac excesses of the following years. The typography of this Bible was so remarkably excellent as almost to excuse the extraordinary praises lavished upon it by its admirers. It was printed upon heavy plate paper, in double columns, and consisted of six large volumes, the page being eighteen and a-half inches in length by fifteen in width, with a margin three inches wide. The type was a handsome, bold-faced Roman, the capitals being a quarter of an inch in height, and the lower-case extending a little beyond the half of the capitals. A note in front of the book calls the attention of the reader to the fact that, in order to increase the typographical elegance of the work, the words usually printed in other editions of the Bible in italic, are distinguished by a dot under the first vowel. The full-page illustrations were numerous, and in the very highest art of the day, both in design and execution, and the general books were introduced by beautiful symbolical head pieces, or frontispieces filling the upper half of the page. To divide the honours of typographical excellence with Bensley's Bible, Bulmer soon afterwards produced his celebrated edition of Shakespeare. The plates of this work, bound separately, were regarded as of unequalled perfection, but if judged solely by the letter-press, Bulmer must certainly yield to Bensley in general beauty and perfection. In France the house of Didot has maintained for generations the reputation won in the reign of Louis XIV., adding to its fame by the introduction of a great variety of beautiful scripts. The Imperial Printing Office at Paris also has produced some specimens of high art, beginning with the splendid publications edited by Cardinal Richelieu, and illustrated by the artist Poussin. The work upon Egypt, published by order of Napoleon I., was also remarkably handsome; and especial excellence has been claimed for the publications in Greek and in the Asiatic and other foreign languages. At the present day the great house of Mame is also renowned for its excellent composition and press-work. In artistic colour-work the French maintain the same superiority in printing that they have achieved in the other decorative arts, in which taste is especially required; and the specimen book of Derriey, of Paris, exhibits some of the choicest combinations of colour ever displayed in this branch of the art. Enjoying an uncontested triumph in colour-printing, the leading French printers are themselves, however, forced to confess the superiority of the letter-press printing of England; and it may be safely asserted, without danger of dispute, that the American job and fancy type, in turn, far excels the English in beauty and perfection of finish. This marked superiority may probably be ascribed to the immense and constantly increasing demand for all varieties of job work in the United States; and under the same impulse the recent improvement in colour printing has been very great as well as rapid. The necessities of a new country, where the population is thinly scattered over a vast area, has, until the present time, needed little in the way of fine printing; and the energy and ingenuity of the typographers of the United States have been hitherto mainly directed to those improvements required by the immense demand for large and cheap editions of books, and for a boundless and rapid supply of newspapers. Beautiful book-work has, however, occasionally been produced, and the general superiority in the endless variety of work embraced under the general nomination of job printing is sufficient to prove that the printers of the United States are fully prepared to compete with those of any other country, in all grades of the art, even to the highest.

FIRST FORME.—The forme with which the white paper is printed; usually the inner forme of a sheet.

FIRST PAGE.—The commencement of a book, or the first page of a sheet or signature.

FIRST PROOF.—A proof pulled immediately after matter is composed, for the purpose of comparing it with the copy, and for the detection of compositors' errors. It may either be pulled in galleys or after the matter is made up into pages and imposed.

FLOOR PIE.—Types that have been dropped upon the floor during the operations of composition or distribution. A careful compositor will pick up each type as he drops it, and thus prevent it being battered by being trodden upon. It is the duty of the person sweeping the composing-room, before watering it, to pick up the floor pie in each frame separately, and place it, wrapped in paper, in the thick-space box of the case in use by the compositor occupying the frame, who shall clear it away every morning before commencing work. Types that are picked up around the imposing-stone and other parts of the room are called "House Pie," and should be cleared away at once either by the quoin-drawer overseer or by the compositors generally in turns.

FLOWERS.—Ornaments for making borders to jobs, cards, pages, and wrappers, and for embellishing chapter headings, or forming tail-pieces to books. This is a typefounder's phrase for what printers usually term Borders. In the early days of the typographic art borders were chiefly composed of floral designs; at the present time they assume a variety of shapes, some of which are very elegant.

FLY.—A man or boy who takes off the sheet from the tympan as the pressman turns it up. This is seldom done now, as when great expedition is required, the forme is usually laid on a machine.

FLYERS.—An invention for taking off or delivering the sheets from a printing machine. Acting automatically, they supersede the necessity of one or more "takers-off." The paper, coming over the tapes running round the small set of upper wheels, falls down to the lower set of wheels, but in front of the flyers, which form a kind of great comb. The latter work on a rod axis, and alternately assume a perpendicular and horizontal situation. The sheets cling to the flyers while they are in the process of falling, and when they are horizontal, they are laid regularly in a heap ready to be taken away. Nearly all the superior class of machines are now furnished with sets of flyers, as they effect such an important saving of labour.—See SETTING THE FLY.

FLY-LEAF.—A blank leaf worked with any single printed leaf, the second or back leaf of an 8vo. or 4to. circular, for example. When single-page circulars are given to the pressman to work, it is usual for him to ask if it is to be "fly-leaf" or "single."

FLY-SHEET.—A description of handbill or two or four-page tract. In some small towns, where it will not pay to work a late edition of a newspaper, a slip is printed with the latest intelligence, and issued as a fly-leaf.

FLY THE FRISKET.—To turn down the frisket and tympan by the same motion. This should always be done, as it saves time, on ordinary work; but not when very superior, heavy, or dry paper is used.

FOLDER.—A narrow slip of bevelled ivory or bone, which the bookfolder draws along each fold of a sheet, to compress it. It is also used as a paper-knife.

FOLDING.—Doubling the printed sheets so that the pages fall consecutively, and exactly oppsite to each other, preparatory to binding them.

FOLDING CHASES.—Two or more chases, constructed in such a manner that when laid together they form one large chase. The inner rims are much narrower than the outer rims, so that when placed side by side with its fellow

the two make only the thickness of the short or long crosses. This mode is adopted for convenience in lifting the formes on and off the machine and for correction.

FOLDING MACHINES.—Machines which perform the operation of folding sheets, either of bookwork or of newspapers. The sheets are fed in as in a printing machine, and are delivered, folded, at the bottom. In the use of a newspaper-folding machine at least three-fourths of the expense of hand-folding is saved, and the work is done in a very superior manner. Several folding machines are now in use, requiring the services of only a single operator to fold in any desired form from 2,500 to 3,500 per hour. They are always reliable, and ready to operate, entirely avoiding the annoyances or inconveniences arising from sickness, scarcity of help, &c., which are inseparably connected with the old system of folding by hand. The sheets are improved in appearance by passing through the machine, the result being to some extent similar to that produced by an hydraulic or screw press.

FOLIO.—The running numbers of the pages of a work. When there is no running title or head-line, the folio is placed in the centre of the page; when there is a running title, at the outside corner—the even folio on the left, the odd on the right. The preface, contents, index, and all introductory matter, usually have separate folios inserted in Roman lower-case numerals.

FOLIO PAGE.—A page which occupies the half of a full sheet of paper, as Post-folio, Demy-folio, &c. Two pages of folio are imposed together as one forme, four pages being a perfect sheet. Post-folio and Foolscap-folio, however, are more frequently imposed as four-page formes, and printed on Double-Post and Double-Foolscap paper.

FOLLOWS.—That is, see if it follows. This term is us used by readers, compositors, and pressmen; by a reader or compositor when he ascertains that the first line of a page or sheet agrees with the line immediately preceding it, and that the folios numerically succeed each other; on newspapers—particularly daily papers—it is generally used by compositors when taking up the copy of the reporters. They call out for the preceding folio to what they have in hand; and, when answered, say, "I follow you." The pressman merely ascertains that the first page of the inner forme follows the first page of the outer, or whether in working half-sheets he has turned his heap correctly.

FONT.—See FOUNT.

FOOLSCAP.—The name given to a size of paper used principally for Chancery Bills and account-books.—See DIMENSIONS OF PAPER.

FOOLSCAP-FOLIO.—A page or sheet of paper half the size of Foolscap.

FOOT NOTES.—Notes which are placed at the bottom of the page, and are generally set in type two sizes less than that of the text, unless it is very small. If the text and the note letter be very nearly alike in size, or if small type be introduced into the text and a note immediately follows that, a rule is necessary to distinguish where the notes commences. The whites before the notes should be as uniform as possible.

FOOT OF A PAGE.—The bottom of a page.

FOOT OF THE LETTER.—The bottom of the type.

FOOTSTICK.—A piece of furniture, sloped or bevelled from one end to the other, placed against the foot of the page. The slope allows the wedge-shaped quoins to be driven hard in between the footstick and the chase, and so secures, or locks up, the forme or page.

FORME.—Matter duly imposed and locked up in a chase, to be printed at one impression, whatever its size.

FORME DANCES.—When, a forme being locked-up tight on the imposing surface, any of the lines are not properly justified, or letters have slipped at the ends of lines, or when a letter, space, or quadrat of a deeper body is by

accident made use of, the forme will not lift properly. To ascertain this, the compositor raises the forme slightly and quickly two or three times, when if any of these irregularities have occurred he will hear a clicking sound near the imperfect justification, caused by the loose types dancing on the "stone." Pressmen use the same term when a new roller finds out any loose lines in the forme, and causes the types, as some say, to "chatter."

FORME LIFTS.—When, on being raised from the stone or press, nothing drops out.

FORME RACK.—A rack, something like a case rack, the grooves being at the top and bottom instead of at the sides, for holding formes locked-up in chases.

FORME TRUCK.—See TURTLE.

FORTY-EIGHTMO.—A sheet of paper folded into forty-eight leaves, or ninety-six pages.

FOUL PROOF.—A dirty proof, a proof with many errors or corrections marked in it.

FOUL STONE.—An imposing stone or table which the compositor has not cleared after working at it. In well-regulated offices, fines are inflicted for this neglect.

FOUNDRY PROOF.—A proof pulled after the press proof marks have been attended to, of pages which have been reimposed for stereotyping.

FOUNT.—A certain weight of letter cast at one time, of the same face and body, and when complete containing due proportions of capitals, small capitals, lower-case, figures, points, four kinds of spaces, quadrats, and accents.—See TYPEFOUNDING.

FOUNT CASES.—Very capacious cases, to hold the surplus sorts of large founts.

FOUNTAIN.—See INK FOUNTAIN.

FRACTIONS.—A fraction is a part of a unit, written with two figures, with a line between them, thus—$\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, &c. The upper figure is called the numerator, the lower one the denominator. Some fractions are cast in one piece, and the following are those frequently used:

$\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$ $\frac{1}{3}$ $\frac{2}{3}$ $\frac{1}{8}$ $\frac{3}{8}$ $\frac{5}{8}$ $\frac{7}{8}$

Fractions are also cast in two pieces, called split fractions, by means of which the denominators may be extended to any amount. The separatrix, or rule between the figures, was formerly joined to the foot of the first, but is now attached to the head of the denominators.

FRAGMENTS.—Any pages left after the last sheet of a work, and imposed with the title, contents, or any other odd pages, to save press and warehouse work.

FRAME.—A stand usually made of some kind of light wood, on which cases are placed in a sloping position to be composed from. The upper case is placed at a greater angle than the lower, to bring the top row of boxes nearer to the compositor. Half-frames are those which are constructed to hold one pair of cases only; three-quarter frames hold one pair of cases, and are fitted with racks for reserve cases; whole frames hold two pairs of cases, and generally contain a rack for five pairs of cases. The remaining space may either be used as a cupboard for the compositors' food and clothes, or fitted up with drawers for copy, proofs, &c. In newspaper offices a double rack to hold twenty slip galleys usually occupies the space. Sliding trays for jobbing type, initial or titling letters, could also be placed there, or a mere shelf. A very useful frame is also made, about one-third the size of a whole frame, with a rack for ten half-cases, similar to one side of an upper case, and grooves for two more on the top, in which can be kept at least a dozen fancy jobbing founts, or a series of titling letters. Being only about

twenty-two inches wide, they can be made available for filling up a spare corner, and thus economise space.—See HALF-CASE.

FRANKS.—The address wrappers for newspapers and other periodicals.

FRENCH FURNITURE.—Pieces of metal cast to Pica ems in length and width, and used, in imposing a forme, for furnishing the chase with the proper margins for books; they are useful for filling up blanks and short pages, and for all other purposes for which wood furniture can be employed. Each piece is cast with number indicating its dimensions in ems. From the great care and nicety shown in casting the various sizes, this kind of furniture is invaluable for making up blank tabular forms.

FRENCH RULES.—Ornamented rules, swelling in the centre, and tapering to a fine line at each end, which are generally used to separate chapters in books, and sub-headings from the general headings in newspapers. They are sometimes called "swell" and "diamond" rules. Various sizes are made, some being cut in brass, and others cast in type metal.

FRIARS.—Light patches caused by the roller not inking the forme properly; they are caused generally by the inattention of the workman who is rolling.

FRISKET.—A thin iron frame, covered with stout paper, and attached to the head of the tympan by a joint. Spaces corresponding to the parts of a forme that are to be printed are cut out of the paper covering, and the frisket being turned down upon the sheet on the tympan, keeps it flat, prevents the margin from being soiled, and raises it from the forme after it receives the impression.

FRISKET PINS.—Iron pins passing through the frisket joints, and connecting it with the tympan.

FRISKET STAY.—A slight piece of wood fixed to support the frisket when turned up. "Gallows" was the term formerly used when the old wood press was in use, but it held up the tympan, not the frisket.

FUDGE.—To execute work without the proper materials, or finish it in a bungling or unworkmanlike manner.

FULL CASE.—A case completely filled with letters and spaces—wanting no sorts.

FULL FORME.—A forme with few blanks or short pages.

FULL PAGE.—A page containing its full complement of lines, or with few or no breaks in it.

FULL PRESS.—When two pressmen are employed upon a forme, one rolling, the other pulling, they are said to be working at full press.—See HALF PRESS.

FURNITURE.—Pieces of wood used in whiting-out blank and short pages or jobs, and, in imposition, for the margins of books. In imposing a single-page job, it is usual to dress two sides of the chase with furniture, for the head and one side of the page to rest against; the other parts being guarded by the side and foot-sticks. Furniture is manufactured and sold in yard lengths by the dozen, having a groove run along the uppermost edge. Six sizes are generally used, the names and breadth of which are as follows:—

Narrow	3 Pica ems	Double Narrow . . .	6 Pica ems
Broad	4 „	Broad and Narrow . .	7 „
Gutter	5 „	Double Broad . . .	8 „

Metal furniture is cast as wide as ten Pica ems. See FRENCH FURNITURE. Side and Footsticks, Reglet, and Quoins, are all classed as Furniture, and are described under their respective heads. All furniture should be made to full quadrat height,

but a great deal of common, cheap stuff is made which is so low as to be scarcely capable of supporting the matter fairly on its feet. It is impossible to obtain a good impression if this quality is used.

FURNITURE GAUGE.—See GAUGE.

G

GALLEY.—A thin, moveable frame or tray of wood, brass, or zinc, on which the matter from the composing-stick is deposited as it is set up, and which affords a level surface for making up pages. Galleys are made of different shapes, according to the class of matter they are intended to contain. Newspaper column galleys have a metal bottom about the thickness of one em pearl, and matter emptied upon them only requires to be fastened up with a sidestick and quoins, and it may be placed under a galley press, and a proof pulled, without the necessity of tying up and removing the type. Quarto and folio jobbing galleys are similarly made. The common jobbing galley is made entirely of wood, as also is the slip galley, which is usually used for bookwork, such matter being invariably made up into pages, and imposed, previous to the first proof being pulled.

GALLEY PRESS.—A press for obtaining proofs from matter locked-up in galleys. Presses of this description are found in all newspaper offices, and in most bookwork houses, as they enable proofs to be pulled in the most expeditious manner in slips, and prevent the straining of a large press which is caused by a long narrow column of matter being impressed under a broad platen. In the ordinary galley press the impression is given by a long, narrow platen, to which is affixed a blanket, the platen being made to rise and fall by means of a long lever handle. At the right-hand is fixed an ink-table, and a hook to hang the roller on. Underneath is a shelf for damp paper. A strong table on which to lay the galley, and a heavy cylinder covered with blanket, may be used instead of a galley press.

GALLEY PROOF.—Proofs pulled on galleys.

GALLEY RACK.—A rack made with runners, similarly to a case rack, in which matter on metal galleys is placed after a proof has been taken from it. It is very economical, in newspaper offices, to draw the back of the frames a little apart, and to fix a galley rack between.

GALLEY ROLLER.—A roller about five or six inches long, used at the galley press.

GALLOWS.—See FRISKET STAY.

GATHERING.—A term used in the warehouse when collecting the sheets of a work in orderly succession for delivery to the bookbinder.

GATHERING TABLE.—A long table on which printed sheets are laid, in the order of their signatures, to be gathered into perfect books.

GAUGE.—A piece of reglet on which the length of a page is marked, for the compositor to make up by. Clickers, in addition, use gauges showing the length of one hundred lines of any type in use by his companionship, and its division in tens. It is a ready mode of ascertaining the amount of each taking of copy as he makes it up, and saves a deal of time in counting the lines. When the quoin-drawer overseer has made up the furniture for the first sheet of a work, he takes a card and cuts it to the size of the heads, backs, and gutters, marking it accordingly, so that the margins of all succeeding sheets may be made the same. This is termed a Furniture Gauge. Card furniture guages serve very well for small volumes, but for long works and periodicals it is better to use pieces of four-to-pica lead cut to the sizes, and kept together by boring holes through

them with a bodkin, so that a cord may be passed through them; card wears away quickly by repeated use, and becomes untrue.—See TYPE SCALE.

GENERAL BILL.—The bill of the whole of the companionship. See COMPANIONSHIP.

GEOMETRICAL SIGNS.—See SIGNS.

GERMAN TEXT.—See TEXT.

GETS IN.—A term used when more is got into a line, page, or forme than is in the printed copy a compositor sets from; or when MS. copy does not make so much as was calculated.

GIRTHS.—Thongs of leather, or bands of stout webbing attached to the rounce, and used to run the carriage of the press in or out.

GIVING OUT PAPER.—Delivering paper for any job or sheet of a work to the pressman or "wetter" (*q.v.*)

GLAZING MACHINE.—A machine used for putting a polished surface on printed papers or for burnishing gold and colour work. It consists of two massive iron cylinders turned by a cog and fly-wheel, with power gear to increase the pressure. The sheets to be glazed are placed between polished copper plates, and so passed between the cylinders.

GOLD COMPOSITION.—A mixture of chrome yellow and varnish, to which a forme intended to be bronzed is rolled. The chrome is well ground with a muller into the varnish, which gives the bronze a fuller tint—especially gold bronze—than if the forme were rolled with the plain varnish only. This composition serves equally as well for copper, citron or emerald bronzes. Some printers use ordinary black ink for silver bronze, as it gives a deeper appearance. Gold size is the name given by some to this preparation. For bronze printing, the roller should have a firm face, or the tenacity of the preparation may destroy it; yet it must have sufficient elasticity to deposit the preparation freely and cleanly on the type.—See DUSTING COLOURS.

GOOD COLOUR.—When a sheet is printed neither too light nor too dark.

GOOD MATTER.—When a compositor, for temporary convenience, places matter which he has just set up on a galley or board containing distribution, he marks against it, in chalk, the words, "Good Matter," to prevent its being cleared away in mistake.

GOOD WORK.—Light, easy copy, well paid; also work turned out cleanly and correctly by the printers.

GOTHIC.—The name of a bold jobbing fount, now but very seldom used.—See BLACK LETTER.

GRAPHOTYPE.—A mechanical method of converting an artist's drawing into an engraved block ready for the printer, which is comparatively inexpensive. The process was discovered by Mr. de Witt C. Hitchcock, an artist and wood engraver, in New York. Requiring one day to correct a drawing upon boxwood with white, and having none of that pigment ready at hand, he bethought him to make use of the enamel of a common card. On removing this enamel, which he did with a wet brush, he found that the printed characters on the card remained in relief, the ink used in impressing them resisting the action of the water, and so protecting the enamel lying underneath. The possible practical application of this at once suggested itself to him, and accordingly he began to make experiments. Ultimately he demonstrated that the process of producing relief plates direct from the drawings of the artist is as certain in its results as wood-engraving, with these special advantages: that it occupies at the very most one-tenth of the time, is less costly, and reproduces exactly, line for line, and touch for touch, the artist's own work. The process itself may be thus briefly described:—Upon a sheet of metal perfectly flat is distributed an even layer of very finely pulverized chalk, upon which is laid an ordinary steel plate, such as is used by steel engravers; it is then

placed in a powerful hydraulic press, where it is submitted to such pressure that on removal it is found to have assumed a solid, compact mass, with a surface equal to an enamel card, and which is rendered still more solid by a strong coating of a peculiar kind of size. When dried the plate is ready to be drawn upon, and this is done with a chemical ink composed principally of lamp black, gluten, and a chemical which gives the fluid the advantage of never drying until it comes in contact with the chalk plate. When the drawing is finished, instead of spending hours, as would have been the case had the drawing been made upon wood, in carefully picking out every particle of white, brushes are used of various degrees of stiffness, which by hand, and in some cases by machine, are caused to revolve on the surface, and in a very short time all the chalk untouched by the artist is removed, leaving the ink lines standing up in clear, sharp relief. All that now remains to be done is to saturate what is left upon the plate with a solution which renders all as hard as marble, and it is then ready for the stereotyper or the electrotyper, who, by the ordinary methods, produces a metal block from it, of which impressions may be taken to an unlimited extent. Graphotype has already been applied to book, newspaper, and magazine illustration; to the reproduction of coloured drawings and paintings; to printing for transferring to pottery and japanned surfaces, &c. A company was formed in London for carrying out this invention, and several publications were issued which were illustrated on the Graphotype principle, but they are not at all first-class productions. Indeed, it may be said that every substitute for wood-engraving has failed so far. The man who could hit upon an invention for making a drawing upon wood which could be printed, with ordinary type, without the tedious and expensive process of engraving would make his fortune in a month.

GRASS-HANDS.—On newspapers, in addition to the regular staff of compositors, it is almost always necessary to have some extra assistance available in case it is required in getting out the paper. Persons so engaged are technically called "grass-hands," and take their chance whether they earn little or much, or anything at all, as they are only called upon to do such work as the regular hands are unable to accomplish. During the Parliamentary session, for instance, grass-hands find much employment, as the copy comes in late, and the printer has to divide it, in small fragments, among a large number of compositors. Many compositors earn a good income by *grassing*, and it is a frequent occurrence for a casual grass-hand to take more wages than a regular book-hand; but the period of labour of the former is very precarious, and oftentimes extends into the small hours of the morning, thereby tending to injure his health and interfere with his domestic comfort; whilst the latter, in a general way, knows exactly the hours he is required to work, and has the additional advantage of being able to make arrangements, after these hours, either for pleasure or private business.

GRAVE ACCENTS.—See ACCENTS.

GRAVER.—A tool used by wood-engravers. There are several breadths usually employed. This tool is used principally for outlining or going round each line the draughtsman's pencil has left, so as to keep the tints or shaded parts clear; or for separating one part from another. The line it cuts is barely seen when blacked with printing ink.

GREAT PRIMER.—A type a size smaller than Paragon, and larger than English. There are 5¼ lines to the foot.

GREY.—In working at press, when the person rolling has neglected to take colour or distribute his roller properly, and the impression appears very light, the man at the bar tells him to "Take more colour, it's getting very grey."

GREEN ROLLER.—A roller in a raw, sticky state.

GRIPPER MACHINES.—Printing machines in which grippers, as contradistinguished from tapes, are used.

GRIPPER.—The claws of a printing machine which seize hold of the sheet of paper as it lays on the feeding-board and hold it while it receives the

impression under the cylinder. They finally release it in order that the delivery apparatus may remove it from the machinery.

GROOVE.—An indentation on the upper surface of the short cross of a chase, to receive the spurs of the points and to allow them to make holes in the paper without being themselves injured.

GROTESQUE.—The name of a peculiar fancy jobbing type, of which the following is a specimen:—

LONG PRIMER GROTESQUE.

GUIDE.—A piece of heavy rule or lead, balanced by a light cord and a quotation, laid upon the copy to assist the compositor in keeping the connexion.

GUILLOTINE CUTTING MACHINE.—A machine for cutting paper, on the principle of the French instrument of decapitation, from which it derives its name. This machine is of iron, with an iron or mahogany table on which to place the paper to be cut. A moveable gauge is attached to a slide, which runs in a graduated scale by which the size to be cut can be regulated to the sixteenth of an inch. When the paper is in its place it is held immovable by a platen and screw; a cog-wheel which moves in a ratchet attached to a large knife is turned, and the knife descends, cutting through the paper with great rapidity. The wheel is then reversed in its motion, and the knife ascends preparatory to a fresh cut.

GULL.—To tear the point holes in a sheet of paper while printing. This is generally caused by the end of the spur being turned, and may be remedied by filing it to a tapering point. At times a gull is caused by the points not falling fairly in the centre of the groove. The paper being too wet sometimes causes the point-holes to tear; and the frisket being raised sharply in heavy jobs, or when the forme has a tendency to "lug," has the same effect.

GUTTERS.—The furniture separating two adjoining pages in a chase; as between folios 1 and 8, in a half-sheet of 8vo.

H

HAIR SPACE.—The thinnest of the spaces. On an average ten hair spaces equal one em, but occasionally they are made thicker, and sometimes thinner than this, according to the body of the fount. There are seldom less than seven or more than ten hair spaces to the em.

HALF-CASE.—A case whose width is about half that of an ordinary upper case. The space between the uprights of a whole frame is usually equal to the breadth of one and a half cases. If a rack be fitted up within it there remains a space unoccupied, and this is sometimes filled by a board or galley rack, or left vacant, with only a shelf at the bottom. Half-cases are made in order to utilise this space, and by fixing up a small rack for them, about ten may be conveniently accommodated. They are exceedingly useful for holding titling letters or fancy founts. They contain forty-nine boxes.

HALF-FRAME.—A frame adapted to hold not more than one pair of cases without a rack.—See FRAMES.

HALF-MACHINE.—This is a term which has come into use since the small jobbing machines were invented. A person is said to work "half-machine" when he works the treadle, takes off and feeds at the same time.

HALF-PRESS.—When one man both rolls and pulls, he is said to work "half-press."

HALF-SHEET.—When a forme is imposed in such a manner as to perfect itself, making two copies of a sheet, it is called a half-sheet.

HALF-TITLE.—An epitome of the full title, which is placed in the centre of the preceding odd page to prevent the full title being worked as a single leaf. It is also placed at the head of the opening page of the text of a book. It should be set in the neatest and simplest manner possible, and should the matter extend to three or more lines it should, if possible, be displayed in a similar manner to the title page, but in rather smaller type. The space occupied by the half-title will vary according to the width of margin in the succeeding pages, the size of the page, and the openness or closeness of the lines of the text. The degree of taste possessed by the compositor is invariably shown by the appearance of the title and half-title. The latter is sometimes called a "bastard title."

HANDBILLS.—Small bills intended for circulation by hand, as distinguished from placards, which are intended for displayal on walls. Any variety of type is permissible in a handbill, except the most ornate and complicated letters, which are not easily read, and are therefore unsuitable for this class of work. There is this difference between a handbill and a circular: in the latter the sizes of the types in the different lines should be duly proportioned to each other, according to the importance of the words, and the whole should possess a certain harmony of appearance, both in regard to the character of the founts employed and the thickness of the strokes of the letters. But in a handbill a few lines may be "thrown up" out of all proportion to the rest, and their comparative importance may thus be advantageously exaggerated. The object of this is, that on a casual glance the reader may be at once struck with the novelty, usefulness, necessity, or advantage of the thing or occasion thus advertised. Handbills are now required in such large numbers, at so short notice, and at so low a cost, that it is seldom remunerative to print them at a hand-press. When very long numbers of such jobs are ordered, one forme is set-up, stereotypes taken, and a large sheetful worked at a machine.

HANDLE OF A PRESS.—The extremity of the bar. The handle is usually a wooden cylinder clothing the bar, so that the latter may be more conveniently pulled back.—See PRESSES.

HAND-MOULD.—In typefounding, this name is given to a small instrument or frame into which the matrix is fixed. The mould is composed of two parts. The external surface is of wood, the internal of polished steel. At the top is a shelving orifice, into which the metal is poured. The space within is set according to the required body of the letter, and is made exceedingly true. The melted metal, being poured into this space, sinks to the bottom into the matrix, and instantly cooling, the mould is opened, and the type is cast out by the workman. Formerly types were cast exclusively by this process; but the art has recently been greatly improved, and machinery has to a certain extent superseded the hand-mould.—See TYPEFOUNDING.

HAND-PRESS.—A press which is worked by hand, in contra-distinction to one which works automatically by machinery. It is usual to call the first a press, and the latter a machine, although in strictness both are machines and both are presses. In the hand-press the turning down the tympan, running in the carriage, effecting the impression, bringing back the carriage, and raising the tympan again, are performed by manual labour; whereas in a "machine" they are performed by certain arrangements of bands and wheels.

HANGING GALLEY.—A small galley with hooks fastened at the back in such a way that when it is hung on the boxes of the upper case it will rest in a sloping position. These galleys are found very handy for heads, whites, or standing lines, and italic or fancy sorts turned out in distribution; and is far preferable to the slovenly habit many compositors have of dropping italic words into the bottom boxes of the upper-case, and frequently *forgetting* to distribute them into their proper case, until the italic runs short, when they resort to the back boxes to pick out the deficient letters, wasting more time in hunting over the pie for these two or three types than would have sufficed to have cleared away the whole in a proper manner.

HANGING INDENTION.—When the first line is brought full out to the commencement of the measure, and the second and following lines have a certain indentation, the former "hangs over," and the arrangement is called by some a "hanging indention;" but among compositors the term used is "run out and indent."

HANGING PAGES.—Pages of type which are found, after being locked-up, to be out of the perpendicular. The remedy for this is, to unlock the quarter in which it is imposed, and to pat the face of the type with the fingers of one hand, at the same time pushing up the page with the other, until it is got into a proper position again. Sometimes the hanging of a page is caused by the page at its side being rather longer, or by the footstick binding against the furniture in the "backs;" in this case, an extra lead or piece of reglet should be placed at the foot of the page before re-locking up, so as to be clear of the obstacle. When a forme is unlocked, care should be taken not to leave the quoins too slack, as the operation of loosening the others may either squabble the matter or cause it to hang.

HANG UP.—To place the printed sheets upon the drying poles or lines of the warehouse. To do this the warehouseman should take a peel in his right hand (some use the left hand), and lay the head of it flat upon the heap to be hung up; he should then turn over on it from six to a dozen sheets, according to the thickness of the paper and the nature of the work, taking care to have the fold in the centre of the short cross, as if it falls across any of the newly-printed pages, they will most likely smear and set-off. Having folded these sheets down, on one end of the peel-head, he must clutch them with his left hand, and lift the sheets and the peel together two or three inches to the right, take another fold, then shift it, and so on till he has as many folds as he can conveniently lift with the peel. Then raising the sheets above the poles or lines on which the sheets are to be hung, and sloping the handle of the peel, the folds will open at the under side, and they may be lowered and hung up. The peel must now be withdrawn from the centre, and be inserted between the first and second folds or lifts, leaving the first lot hanging on the pole. The other portion must then be shifted to the left, so that the second fold shall just overlap the first; and so on till all are spread out. The process is now repeated till the whole heap is hung up.

HARD IMPRESSION.—When there is too much pull on the press, and lines which should be soft and delicate come up heavy and strong. Sometimes it is caused by having too soft a blanket inside the tympan.

HEADINGS.—A peculiar branch of jobbing work, *i.e.*, the setting of words to be worked in the heads of ruled columns of ledgers, day-books, time-books, &c. The compositor in setting them up does not generally use a stick, but picks up the words in his fingers, and lays them along the bottom ridge of a long galley, to which he affixes the sheet, and spaces out the words so as to fall into their proper positions. The pressman, in working headings, lays his sheet to needles, placed in the tympan, so as to point to a particular line; for in ruling, *some sheets may be a trifle out in the margin, although the lines will be exact*; and by laying to the same line at each impression, the headings are sure to fall right. It is now the general custom to print headings at machine, but although tolerably correct, they are bound to vary with the ruling.

HEADLINE.—The top line of a page containing the running line and folio. When there is no running title the folio is styled the head-line. Chapter lines are head-lines, as also are the titles of articles in periodicals and newspapers.

HEAD OF A PAGE.—The top or upper end of the page.

HEAD-PIECES.—Ornamental designs used at the heads or commencement of chapters. The early productions of the press were embellished with beautifully-executed drawings in various colours, done by hand, and displayed the highest skill of the illuminators. Gradually, as books were produced more cheaply, wood engravings were used; then metal ornaments were produced, and

subsequently flowers or borders. The latter were superseded by simple brass rules, and head-pieces were seldom or never seen. The recent revival of old-style printing has brought with it, not only the old faces of type but the old ornamented head-pieces, and many of the newest and most tasteful works are now ornamented with fac-similies of head-pieces that were in fashion two centuries ago.

HEADS.—The margin between the heads of the pages in a forme.

HEAP.—The pile of paper given out and wetted down for any job.

HELL.—The place where the broken and the battered type goes to. Modern refinement has almost expunged this expression from the printers' vocabulary.

HIGH.—A line or letter is said to be "high" when it is above the height of the other letters or lines surrounding it. Owing to the different standards of the founders, and especially of the wood letter cutters, founts are sometimes found to be almost useless for founts supplied by other manufacturers.

HOE'S MACHINES.—A series of greatly improved machines for job, book, and newspaper printing, invented by Richard M. Hoe, a son of Robert Hoe, a native of Leicestershire, who emigrated in his youth to the United States. In 1846, he brought out his "Lightning Press," or Type-revolving Printing Machine. The forme of type is placed on the surface of a horizontal revolving cylinder, of about four and a half feet in diameter. The forme occupies a segment of only about one-fourth of the surface of the cylinder, and the remainder is used as an ink distributing surface. Around this main cylinder, and parallel with it, are placed smaller impression cylinders, varying in number from four to ten, according to the size of the machine. The large cylinder being put in motion the form of type is carried successively to all the impression cylinders, at each of which a sheet is introduced and receives the impression of the types as the forme passes. Thus as many sheets are printed at one evolution of the main cylinder as there are impression cylinders around it. One person is required at each impression cylinder to supply the sheets of paper, which are taken at the proper moment by fingers or grippers, and after being printed are carried out by tapes and laid in heaps by means of self-acting flyers, thereby dispensing with the hands required in ordinary machines to receive and pile the sheets. The grippers hold the sheet securely, so that the thinnest paper may be printed without waste. The ink is placed in a fountain beneath the main cylinder, and is conveyed by means of distributing rollers to the distributing surface on the main cylinder. This surface being lower, or less in diameter, than the forme of types, passes by the impression cylinder without touching it. For each impression cylinder there are two inking rollers, which receive their supply of ink from the distributing surface of the main cylinder: they rise and ink the forme as it passes under them, after which they again fall to the distributing surface. Each page of the paper is locked-up on a detached segment of the large cylinder (termed a "turtle"), which constitutes its bed and chase. The column rules run parallel with the shaft of the cylinder, and are consequently straight; while the head, cross, and dash rules are in the form of segments of a circle. The column rules are in the form of a wedge, with the thin part directed towards the axis of the cylinder, so as to bind the types securely. These wedge-shaped column-rules are held down to the bed by tongues projecting at intervals along their length, which slide in rebated grooves cut crosswise in the face of the bed, the ends of which blocks are cut away underneath to receive a projection on the sides of the tongues of the column rules. The forme of type is locked-up in the bed by means of screws at the foot and sides, by which the type is held as securely as in the ordinary manner upon a flat bed, if not more so. Rotary Perfecting Presses were made by Hoe and Co. as long ago as 1850, when one was furnished to print, in both type and stereotype, "Thompson's Bank Reporter," and another to print "Webster's Spelling Book" from the plates, at which work it is still employed by Appleton & Co. These machines were the first ever constructed on this principle. In 1860, Hoe & Co. sent to *Lloyd's Weekly Newspaper*, in London, a perfecting machine, adapted to two or more "feeders." Large machines built

on this principle are now in use in several newspaper offices, and strenuous exertions are being made to improve them to a point where they will do the work of the type-revolving press with equal speed and certainty, and with greater cheapness. Much interest is felt at the present time in perfecting presses, so called because they "perfect" or print both sides of a sheet at once. They are of various patterns, but may be all divided into two classes, one having the beds moving horizontally backward and forward, and the other having curved beds revolving upon the surface of a cylinder. Those with flat beds were originally made in England and Germany as early as the close of the last century, and have been manufactured by Hoe & Co. for about forty years. Messrs. Hoe have recently produced a rotary web printing machine, which will be described among MACHINES.

HOLLOW QUADRATS.—Quadrats cast of various sizes, graduated to Pica ems, which answer many of the purposes of quotations, but are principally useful as frames or miniature chases for circular or oval jobs.

HORN BOOK.—Horn books, consisting of a single sheet of paper mounted on wood and protected by a transparent sheet of horn were extensively used in the education of children from the Elizabethan period down almost to the close of the last century.

HORSE.—The stage on the bank (*q.v.*) on which pressmen set the heap of paper.

HORSEFLESH.—When composition is paid for week after week "on account"—that is, instead of the exact value of the work done being calculated, a rough approximate sum is charged—there is always a tendency to "overdraw." At the finish of the job and the settling up of accounts, what the printer has to work out is called "horseflesh."

HORSING IT.—When a compositor or pressman writes more in his weekly bill than he has earned, he is said to be "horsing it."—See DEAD HORSE.

HOURS.—See COMPANIONSHIPS.

HYDRAULIC PRESS.—An improved invention on the principle of the Standing Press (*q.v.*). It is used by printers for pressing their printed work, the pressure being given by means of water instead of the lever bar, which works the screw. The pumps and tank are fixed at the side of the press, and as they are worked the piston is forced upwards. Some hydraulics have only one pump, but most of them have two. One pump is used at first, till the piston is raised high enough to cause a pressure, and when this becomes tight the other is applied, which increases the pressure still more. A long handle is then placed in the first pump, which gives greater power still; and when placed on the second pump, two or three persons give their united strength till the required pressure is attained. The sheets are generally allowed to remain in the press all night; but sometimes it is necessary to fill the press twice a day. To release the sheets, it is only necessary to turn a tap, which lets the water escape back into the tank, and the piston is lowered in proportion as the water runs out. Its descent can be impeded instantly by fastening the tap again.

HYPHEN.—This symbol (-) is employed to connect compound words, as lap-dog, to-morrow. It is also used at the end of a line when a word is not finished, and part of it is carried into the next line.—See DIVISION OF WORDS.

I

ILLUMINATED LETTERS.—The first productions of the printing press contained no capital letters at the commencement of sentences or proper names of men and places. Blanks were left for the title, initial letters, and other ornaments, in order to have them supplied by the illuminators, whose ingenious

art, though in vogue before and at that time, did not long survive the masterly improvements made by the printers in this branch of their art. Those ornaments were exquisitely fine and curiously variegated with the most beautiful colours, and even with gold and silver; the margins, likewise, were frequently charged with a variety of figures of saints, birds, beasts, monsters, flowers, &c., which had sometimes relation to the contents of the page, though often none at all. These embellishments were very costly, but for those who could not afford a great price, there were more inferior ornaments which could be done at a much easier rate. The art of illumination has recently been revived, but less as a profession than as an elegant pastime for amateurs of art. Illuminated letters of the most elegant and variegated designs are now sold by the typefounders to supersede these costly ornaments.

ILLUSTRATED BOOKS.—Books illustrated or ornamented by engraving. The earliest specimens of engraving are of the fifteenth century, and the first artist on record is Martin Schoen, of Culmbach, who died in 1486. The Italians claim the invention; but it is remarkable that the first book printed at Rome had the first engravings executed there, and they were done by two Germans, date 1478. Scriptural designs of many figures were cut with descriptive texts on each block or plate, and they were printed on one side of the paper only, and two prints were frequently pasted together to form one leaf, with a picture on each side; entire sets were subsequently bound up and formed the block-books so well-known to antiquaries. Typography was introduced into England in 1474, by Caxton, who published his "Game of Chesse," "Æsop," and other works with woodcuts, the execution of which is quite barbarous when compared with continental engravings of this same period. All cuts consisted of little more than outlines until 1493, when Michael Wolgemuth effected a great improvement in the art of wood engraving by his cuts for his "Nuremburg Chronicle," in which he introduces a greater degree of shading, and the first attempts at cross-hatching. This was carried to a much higher perfection by his pupil, Albert Durer. The sixth century was rich in able wood engravers in several parts of continental Europe. In England, engraving was indebted to foreigners, chiefly Flemish, Dutch, and German, for existence until the middle of the seventeenth century. Of early English artists one of the most eminent is George Vertue, who died in 1756. The founder of the school of English landscape engraving is Francis Nivares, a Frenchman. However, Woollet, a native of England, was a great engraver of the school, although he did not confine himself to landscapes, as his great work after West's "Death of Wolfe" sufficiently proves. Hogarth, one of the glories of English painting, was equally celebrated as an engraver. In the seventeenth century the art of wood engraving visibly declined, owing to the superior cultivation of copper engraving; but in the eighteenth century it was revived in England with great success by Bewick, who began the practice of the art in 1768. In 1755, Bewick produced his well-known cut of "The Old Hound," and in 1785 he commenced his natural histories, and published "The Quadrupeds" in 1790, and "Birds" in 1797. These and his other works effected by their great excellence the restoration of an almost lost art, and led to its cultivation and development, and the introduction of a richer and more varied style of workmanship, until the English, who were behind their continental neighbours at the outset, have become pre-eminent in the art. The Bewick of America was Alexander Anderson, who studed the art of metal engraving with John Roberts. In the year 1764, as a professional engraver, Mr. Anderson was engaged by William Durell, one of the early American publishers, to engrave cuts for an edition of "The Looking Glass," the original engravings for which were cut by Bewick on wood. He worked through half the book in type metal and copper, and then commenced his essays on wood, without other instruction than that derived from studying Bewick's cuts, which he was copying. He persevered in the practice and exhibited real ability, though for many years he received but little encouragement; but, like his great English contemporary, he was an enthusiast in the art, and kept steadily on his course, and had the satisfaction of witnessing the progress of wood engraving in America to general adoption. In America, as in England, the first illustrated books which aimed at excellence in the art of engraving, and to rank altogether in paper, printing, and binding, as works of art, were in the form of Annuals. In England we have to go back as far as 1822 to find the earliest of the Annuals. In the year 1829, seventeen of these works were published in England;

in 1840 there were only nine; and in 1856 the last of the Annuals, "The Keepsake," ceased to exist. Although the engravings, which were after the best English painters, such as Turner, Landseer, Clarkson, Stanfield, Roberts, Stone, and Callcott, were the main attraction, some of the most distinguished authors were engaged on the letter-press. Sir Walter Scott wrote in one, and received five hundred pounds for four not very long contributions. Coleridge wrote in another; and among lesser names were Dr. Croly, L. E. Landon, Mary Howitt, Mrs. Norton, and the Countess of Blessington. The pioneers on the other side of the Atlantic were "The Token," published in Boston, by S. G. Goodrich, for which Nathaniel Hawthorne wrote his first things, and "The Gift," published by E. L. Carey, afterwards of the firm of Carey & Hart. The art of illustration by engravings passed into a new phase in England about the year 1840, and a little later the same phase in the United States. The "Pickwick Papers," and other early works of Mr. Charles Dickens, followed by those of Charles Lever, had created a popular taste for picture books. In 1840, "Master Humphrey's Clock" was issued in threepenny weekly numbers with woodcut illustrations by G. Cattermole and H. K. Browne; and at the same time Ainsworth's "Tower of London," in monthly shilling parts, with illustrations by George Cruikshank and W. A. Delamotte. *Punch* was started in 1841, and in 1842 the *Illustrated London News*, and both gave an impetus to the taste for pictorial illustrations. The cheap illustrated books and serials of Messrs. Charles Knight and the Brothers W. & R. Chambers, were the forerunners of the mass of the miscellaneous books and periodicals of the present day. In 1869 was started the *Graphic*, which in its efforts to surpass its predecessors has certainly accustomed the public to a higher class of wood engraving than had previously been attained. A collection of illustrations, showing the rise and progress of the art was exhibited in the South Kensington Museum. In arranging it, the object was to illustrate the results attained by each of the processes employed, rather than to point attention to the works of any particular masters or schools of art. The series commenced with examples of prints from wood or metal blocks, either simple or compound, and of plain as well as coloured impressions obtained by their means, but by means of a single operation of the printing press. A set of impressions from the blocks cut by Bewick illustrated the degree of perfection to which wood engraving was advanced at the close of the last century, and examples of split prints from the *Illustrated News* showed the means which have been employed to aid collectors in completing their series from the pages of periodicals and the literature of our own times. Prints from engraved copper plates followed, and they illustrated the results attained simply by cutting away portions of the surface of the metal plate by the graver; the action of the acids, as applied in the production of etchings; and the results of a combination of etching and engraving, as those arts were practised at the time when Hogarth began his career. Another set illustrated the mode of engraving upon steel and lithography. Following the lithographic examples was a large series of prints in carbon obtained by a variety of photographic processes. It is curious to remark that the past, the present, and the future of our producing powers have each been based upon entirely distinct principles. As greater facilities for producing prints have been demanded, a weaker and apparently less durable source of production has been, and appears, in the future, to be likely to be still more resorted to. Thus in the past period, engravings were executed, and prints obtained from copper and steel plates. At present, wood blocks and lithographic stones are employed; but the future of our art producing power appears likely to rest on what apparently are still less durable, viz., gums, resins, and gelatine. The series was brought to a close by juxtaposing works of Doo, Cousins, Landseer, and others, engravers of our own times, as published by Mr. Graves, with the series of carbon prints obtained by means of gelatine, as in the photo-galvanographic process of Herr Paul Pretsch; prints in gelatine by Mr. Swan, of Newcastle, the Autotype Company, of London, and Woodbury's process; and prints from gelatine as seen in the examples by M. Tessier du Motay, of Paris, and Herr Albert, of Munich. The collection consisted of about 300 examples, and presented a sort of panoramic view of prints and reproductive art during the past century and a-half, and was interesting as showing the direction in which we must look in the future. Whatever success may have attended the efforts of various publishing firms to extend the art of wood engraving, it must be admitted that one firm stands pre-eminent in the magnitude of its

operations in this direction. Messrs. Cassell, Petter, and Galpin may be said to have accomplished the work of bringing high-class and valuable pictorial representations within reach of the people. "Cassell's Illustrated History of England" may be mentioned among the first illustrated works of importance undertaken by the firm, It was richly embellished with wood engravings to the number of two thousand, by the most eminent English and foreign artists. A careful attention to archæological research gives inestimable interest to every engraving; and, in fact, pictures out the story of our country's annals so faithfully as to leave an indelible impression on the mind. But a still greater work remained to be done. When, in 1859, the firm undertook the issue of an illustrated edition of the Holy Scriptures, so gigantic an undertaking had never been attempted before. Editions of the Bible with pictures, a very different thing from *illustrations*, had been on several occasions attempted with varying success; but the work projected by Messrs. Cassell, Petter, and Galpin was to comprise the drawings of the best artists, founded on the most reliable sources, involving an immense outlay of capital, and the price of each number was to be One Penny. Artists of the highest eminence, English and foreign, were engaged, and the first number of "Cassell's Illustrated Family Bible" was hailed with universal satisfaction. Its engraving forms an era in the art of wood engraving. Never before had such drawings been so faithfully rendered by the graver, and never before had woodcuts been so carefully and beautifully printed. Originally designs for the home of the cottager and the parlour of the operative, yet this edition was welcomed by the highest and noblest in the land; and not in this land alone, in America, Australia, and throughout the Colonies, it was alike popular. Then followed the issue of "Cassell's Popular Illustrated Natural History," with about one thousand illustrations. Space will not allow us to further particularise the illustrated works which rapidly followed each other from the press of Messrs. Cassell, Petter, and Galpin; we must confine ourselves to the mere mention of a magnificent Memorial Edition of the works of Shakespeare, in three volumes, containing upwards of five hundred illustrations, produced at a cost of about £20,000, "Cassell's Illustrated Edition of Foxe's Book of Martyrs," "Cassell's Illustrated Penny Readings," "Cassell's Illustrated World of Wonders," "Cassell's Illustrated Swiss Family Robinson." To this array of illustrated standard works we have yet to add the most magnificent series of illustrated volumes ever given to the British public, namely, the masterly Doré series of fine art volumes, the Holy Bible, Milton's "Paradise Lost," Dante's "Inferno," Dante's "Purgatory and Paradise," "Don Quixote," "Atala," La Fontaine's "Fables," "Croquemetaine," "Fairy Realm," "Munchausen," and "Wandering Jew," which mark, perhaps, the greatest advance in the progress of wood engraving and printing, as applied to popular illustrated books, that this country has witnessed.

IMPERFECTIONS.—When a fount of new type is received from the foundry, it is usually found that some of the sorts are deficient in quantity for the particular work for which the type was required. The sorts wanted are called "imperfections."

IMPERIAL.—A size of paper.—See DIMENSIONS OF PAPER.

IMPOSING.—A word used to embrace the several acts of laying the pages in right order, placing the chase and furniture round them, the removal of the page cords, and the planing down and locking-up the forme. Much attention has been paid to this important branch of the compositor's business in the various technical handbooks, and some ingenuity has been displayed in inventing new and improved modes. Imposing from the centre, by means of which the blank or open pages may be placed in the middle of the forme, leaving the solid pages on the outside to act as bearers for the rollers, as well as for the better regulation of the impression, is generally adopted for sheets of oddments, such as the title, dedication, preface, &c. All odd matter for any forme should be divided into fours, eights, twelves, and sixteens, which is the ground work of all the impositions except the eighteens, which differs from all others; for instance, sixteens, twenty-fours, and thirty-twos are only octavos and twelves doubled, or twice doubled, and imposed in half-sheets. The sixteens are two octavos imposed on one side of the short cross; the twenty-fours are two twelves imposed on each side of the long cross; and a thirty-two is four octavos imposed in each corner of the chase. Thus

a sheet may be repeatedly doubled. By this division any forme or sheet may be imposed, always bearing in mind that the first page of each class must stand to the left hand, with the foot of the page towards you. The folios of two pages, if placed properly beside each other, will make, when added together, one more than the number of pages in the sheet; that is, in a sheet of sixteen pages, one and sixteen coming together will add up seventeen, and so nine and eight will make seventeen; and so on. In half-sheets, all the pages belonging to the white paper and reiteration are imposed in one chase; so that when a sheet of paper is printed on both sides with the same forme, that sheet is cut in two in the short cross if quarto or octavo, and in the short and long cross, if twelves, and folded as octavo or twelves. For the subsidiary operations of tying-up the pages, laying down pages, making-up furniture, making the margin, locking-up formes, &c., see those subjects in their alphabetical order.

IMPOSING SURFACE.—The stone or plate on which formes are imposed and corrected. Formerly imposing surfaces consisted almost exclusively of slabs of stone, chiselled and smoothed on their upper surface. Recently plates of iron and steel have been used instead, their advantages over even the hardest stones being their strength and the little danger of breaking them, while they are considerably smoother, and consequently do not injure the bottom of the type which is moved about upon them. The height of the stone should be slightly over three feet. The frame on which the stone rests is usually fitted up with drawers for quoins and furniture, &c. Sometimes it contains a rack for locked-up formes, but this system is a bad one, as the frequent vibration of locking-up and planing-down of formes on the stone tends to loosen the quoins of those in the rack and cause the matter to fall out. It is around the stone that the workmen assemble while a chapel is being held.

IMPRESSION.—The weight of the pressure applied by presses to formes; the product of presswork; the act of impressing or stamping. There exists a great difference of opinion as to the force needed for a *fine* impression. By some a heavy and solid indention of the paper is considered necessary, whilst others insist that an indention of the paper is no test of the force of the impression. A light impression against a woollen blanket will show more forcibly than a strong impression against a paper or pasteboard tympan. Type is worn out not so much by the direct impression of the platen or cylinder on the flat face of the forme as by a grinding or rounding impression on the edge of the type, caused by forcing the blanket between the lines and around the corners of every letter. Every fount of worn-out type, whether from cylinder or platen-press, has suffered less from a reduction in height than from a rounding of the edges. When the type is new and the tympan hard and smooth, the impression can be made so flat that the type will not round at the edges, and the impression will not show on the paper. But this cannot be done with old type or with a soft tympan; the impression must be regulated to suit the tympan. On fine work a rounding impression should be avoided, as it not only destroys type, but also thickens the hair lines and wears off the seriffs. It is not sufficient that the paper should barely meet the type; there must be sufficient force to transfer the ink from the type to the paper. If there is not sufficient impression it will be necessary to carry much ink on the rollers, and this produces two evils; the type is clogged with ink and the forme becomes foul; too much ink is transferred to the paper, which smears and sets off for want of sufficient force to fasten it to the paper. Distinction must be made between a light and a weak impression and a firm and even impression. The latter should be secured, even if the paper is indented, though that is not always necessary. A forme of old type, a poster or other solid forme, must have a firm impression, or else a very tedious and careful making ready.

IMPRINT.—The printed statement at the end of a book or paper of the name and address of its printer. The Newspapers, Printers, &c., Act (32 and 33 Vic., c. 24), while it repealed many of the then existing penal enactments against printers, left in force the Act 2 & 3 Vic., c. 12, sec. 2, which imposed a penalty upon printers for not printing their name and residence on every paper or book, and on persons publishing the same. The words are:—

Every person who shall print any paper or book whatever which shall be meant to be published or dispersed, and who shall not print upon the front of every such

paper, if the same shall be printed on one side only, or upon the first or last leaf of every paper or book which shall consist of more than one leaf, in legible characters, his or her name and usual place of abode or business, and every person who shall publish or disperse, or assist in publishing or dispersing, any printed paper or book, on which the name and place of abode of the person printing the same shall not be printed as aforesaid, shall for every copy of such paper so printed by him or her forfeit a sum not more than five pounds.

Another section provides, that in the case of books or papers printed at the University Press of Oxford, or the Pitt Press of Cambridge, the printer, instead of printing his name thereon, shall print the following words: "Printed at the University Press, Oxford," or "The Pitt Press, Cambridge," as the case may be. See LAWS RELATING TO PRINTERS.

INCUT NOTES.—Notes which *cut into* the matter. They are always placed on the outside edges of the page. They should never come close to the text type either above, below, or at the side; and are generally set in the same size type as the other notes.

INDENTIONS.—The blank spaces left at the beginning of lines. The first line of a new paragraph is usually indented one em, although if the work be set very widely, and with leads between the lines, or if the measure is very wide, two or three ems may be used.—See HANGING INDENTIONS.

INDEX.—An alphabetical table of the contents of a book. The index is generally placed at the end of the volume, and set in letter about two sizes less than that of the work. It is always begun on a right-hand page, unless space is unusually valuable, or the appearance of the work not considered as of consequence. In setting an index the subject line should not be indented, but if the subject make more than one line, all but the first should be indented about an em. When several index figures are used in succession, a comma is put after each folio; but to save figures and commas, the succession of the former is noted by putting a dash between the first and last figures—thus, 4—8. Again, if an article has been collected from two pages the folio of the second is supplied by *sq.*, or *sequente*, and by *sqq.*, or *sequentibus*, when an article is touched upon in succeeding pages. A full point is not put after the last figures because it is thought that their standing at the end of a line is a sufficient stop. Neither is a comma or a full point placed to the last word of an article in a wide measure and open matter with leaders; but it is not improper to use a comma at the end of every article where the figures are put close to the matter, instead of running them to the end of the line.

INDEX (☞) OR FIST.—A symbol used to point out something which the writer thinks of great importance. Amongst compositors it is commonly known as a "fist." The index sign is not frequently used in book work, but chiefly in handbills, posters, and direction placards, — as, ☞ "*Note the Address.*

INFERIOR LETTERS.—Letters which are cast with their face low down on the shank, so that an unusual white space is left at the head when they are printed.

INK.—The colouring substance applied to type. It is a soft, glossy compound, having a certain amount of adhesiveness, and becomes, by exposure in thin layers, perfectly hard and firm. It also possesses other and various attributes, according to the numerous purposes to which it is applied. Its preparation demands not only a tolerable proportion of scientific knowledge, but also very careful manipulation, and manufacturers have found that to produce it of good quality both experience and deep study are requisite. The very important use for which it is designed—the registering in a permanent form the productions of the mind—indicates some of the properties it ought to possess. The most valuable of these is durability, or the capacity to resist successfully the obliterating influences of time, and it should also have brightness and depth of tint. It must be a mutable preparation, passing from the soft, adhesive state to that of a perfectly hard and dry substance, and this change of condition must have a certain rate of progress, and be, to some extent, under control. When prepared, some time generally elapses before it is used, and during this period it should not alter in the

slightest degree; in fact, when the air is excluded from it it should keep for almost any length of time. During its application to the type, its solidification should be as slow as possible, and unaccompanied by the emission of any unpleasant or deleterious odour. It ought not to affect the soft elastic rollers which are employed to convey it to the type, and which, unless the ink be a perfectly harmless preparation, are liable to considerable injury. The change of state should not be accompanied by the deposition of consolidated matter in the ink, as this impedes the pressman, and proves a loss to the printer. Printing ink should, moreover, have an oleaginous character; it ought to be very glossy, and perfectly free from any granular appearance. If on the extraction of a small quantity from a mass, it leaves but a short thread suspended, it is considered good, but the best test of its consistency is the adhesion it shows on pressing the finger against a quantity of it. The requirements of a good printing ink do not end here. Having been applied, its action must be confined to a very slight penetration into the paper—just sufficient to prevent its detachment without materially injuring the surface of the latter. It ought to dry up in a very short space of time to a hard, inodorous, unalterable solid. The ingredients of ordinary printing ink are burnt linseed oil, resin, and occasionally soap, with various colouring matters. The best quality of linseed oil is used, and this is purified by digesting it in a partially-diluted sulphuric acid for some hours, at a temperature of about two hundred and twelve degrees, allowing the impurities to subside, and then washing away the acid with repeated additions of hot water. The oil, after this treatment, is pale and turbid, and if the freeing from the acid is complete, there is scarcely any odour. By rest, the oil clarifies, and has then a pale lemon colour. It now dries much more rapidly than before. The purified oil is now partially resinified by heat. For this purpose it is introduced into large cast-iron pots, and boiled until inflammable matters are freely evolved. These are ignited and allowed to burn for a few minutes, after which they are extinguished by placing a tight cover over the boiler. Ebullition of the oil is continued until, on cooling, a firm skin forms on its surface, known by placing a drop on slate or other smooth, cold surface. Other drying oils beside linseed are occasionally used, but their cost, or other considerations, prevents their general adoption. Resin oil is, indeed, pretty largely employed, but apart from other disadvantages, its disagreeable and permanent smell prevents its entering into other ink than that intended for temporary or common printing, as newspapers, posters, &c. Paraffin oil, which has lately been used, is open to the same objections. Resin is an article of considerable importance in the manufacture of printing inks, since when dissolved in the oil—after the latter has undergone ebullition and inflammation—it communicates body to the fluid. For many inks the quality of the common black resin is sufficiently good, but some require the pale, clear, transparent resin, obtained by re-melting and clarifying the residue of the distillation of turpentine with water. The colouring matters of printing ink demands great attention, as much of the beauty of typography depends upon them. The universal ingredient for black ink is lamp black. No expense is spared to get the most superior qualities. Other black substances are occasionally used. Charcoal from various substances, when reduced to an impalpable powder, and mixed with other ingredients, furnishes a deep, blue-black that dries rapidly. The brown tint possessed by lamp-black is not unfrequently neutralised by the addition of blue compounds, as indigo, Parisian blue, &c. The various colouring matters employed in the preparation of other inks are all selected for their superior and approximate qualities. Indeed, the manufacture of printing ink is an especial business and demands considerable capital. Every manufacturer has his own secrets, both as to material and process, and by long experience alone can printing ink manufacturers so select and apportion the numerous ingredients as to adapt it to its numerous requirements. In the manufacture of printing ink, the resin is dissolved in the burnt oil, in cast-iron pots or boilers, and the varnish, thus prepared, is introduced into what is termed the "mixing vessel," which is cylindrical, and in the centre of which bars, or rods of iron, attached to a perpendicular shaft, revolves in a horizontal position. The colouring matter is then added to the hot varnish, and the whole, when thoroughly mixed, is drawn off through an opening in the base of the vessel. The pulp is next very carefully ground, by being passed through hard stones of a very fine texture, driven by heavy machinery, the motive power being steam. Sometimes a second grinding is requisite, but this may generally be avoided, by taking care that the

varnish of resin and oil is clear and free from gritty particles, and that the black is in an impalpable state. The proportions and conditions of the various ingredients vary considerably, and great experience is required before an ink can be prepared to suit any one purpose. The oil has to be rendered more viscid, by burning, in some cases than in others; sometimes the quantity or kind of resin requires to be varied; or, perhaps, different proportions of colour are requisite. Newspapers printed on machines require an ink of less substance than that employed for book-work, which must be tolerably stiff. For wood-cuts, the ink must not only be very stiff, but very fine. The qualities of the material to which the ink is applied furnish an additional guide in this matter—thin paper must have a soft ink, which works clearly and is not too adhesive. A fine, stout paper, on the other hand, will bear a stiffer and more glutinous ink, and as resin supplies these properties, so does it, in a great measure, communicate brilliancy, and the most perfect and splendid effects are by these means produced. Posters, with large wood type, require a semi-fluid ink, but not surcharged with oil. Ordinary news-work requires a better quality, more "tacky" and finely ground. Good book-work should have a stiffer bodied ink, soft, smooth, and easily distributed. Job ink, which is made expressly for press-work on dry paper, should be used only for such work. Book and job inks are not convertible; an ink for wet paper will not work well on dry paper, and *vice versa*. Very fine presswork, such as woodcuts, or letter-press upon enamelled paper, requires an ink impalpably fine, of brilliant colour, of strong body, yet soft enough to be taken up smoothly on the inking rollers. Every general printing office should keep four grades of ink—News, Jobbing, Book, and Woodcut. Fine presswork is impossible without good ink. To recapitulate: the cardinal virtues of good ink are, intenseness of colour; impalpability; covering the surface perfect; quitting the surface of the type or engraving when the paper is withdrawn, and adhering to the surface of the paper; not smearing after it is printed; and retaining ever after its original colour without change. Inks which are properly manufactured on sound chemical principles, should possess the additional advantages of keeping the roller in good working order; distributing freely; working sharp and clean, and drying rapidly on the paper; the colour should be permanent, without a tendency to turn brown by age. The *price* of printing ink has undergone some remarkable modifications of late years. In a price list contained in Stower's "Printers' Grammar," published in 1808, the very cheapest quality is quoted at 16d. per lb.; very good useful ink is now largely supplied at less than 6d.—See DRY COLOURS, and PRINTING IN COLOURS.

INK FOUNTAIN.—The receptacle for ink in printing machines. The ink fountain should be charged with the ink selected and kept well covered, to secure it from dust. Then the screw should be turned down, and all the ink cut off evenly. When the forme is ready, the ink should be cautiously turned on, and the machinist should wait for ten or twelve impressions before altering the screws. For small formes and short numbers of any job of machine work in coloured ink or extra ink, a fountain is not necessary, as the ink may be applied to the distributing surface with a brayer or palette knife.

INKING A FORME.—See ROLLING.

INKING APPARATUS FOR THE HAND-PRESS.—Messrs. R. Hoe & Co., of New York, have invented an improved inking apparatus for the hand-press. It is attached to an ordinary press, and the inking is done by the ordinary operation of the press, thus dispensing with one person's labour. It also gives a more perfect distribution. The large distributing cylinder, which is turned by a crank, vibrates. There are two rollers to ink the forme, moving in a carriage with four wheels, those on one end being plain, those on the other having a projecting flange. Two wrought-iron rails lie on the bed of the press, outside the chase; one of them grooved to receive the projecting flanges on one pair of the wheels, the other level on the surface. Projecting from the frame are two short rails, on which the wheels rest while the rollers are receiving ink from the cylinder. The machine is set up behind the press so that the short rails on it agree exactly, both in height and width, with the rails on the bed of the press when it is run out. The journal boxes of the inking rollers have adjusting screws, so that they may bear more or less on the type, as circumstances require. This apparatus is chiefly

useful on presses of small size, for few pressmen have the strength to use it in connexion with a large press.

INK TABLE.—The surface upon which the roller is distributed, previously to being used for the forme. The back of the table is slightly raised, having two receptacles—one for ink, the other for the brayer. The ink is spread in small quantities along this raised portion by means of the brayer, so as to give an even supply to the roller along its entire length. The roller having been lightly dipped into the ink so spread, is distributed about the front of the table until it is covered evenly all over, it is then ready for inking the forme. Various improvements have been made in the manufacture of ink tables; some being supplied with an ink duct, similar to a machine, the feeding cylinder being turned by means of a handle, or worked by a treadle.

INKING-UP THE ROLLER.—Every evening, when leaving off work, and occasionally at meal times, the pressmen smother their rollers in a thick layer of common ink, to preserve the face and keep them from getting hard; this is technically termed "inking-up the roller." In winter time, as the weather has a tendency to harden the composition, some pressmen introduce a quantity of oil into the ink for this purpose, as it imparts a suppleness to the face of the roller.

INNER FORME.—The forme which contains the inner pages of a sheet, commencing with the second page. For instance, in a sheet of quarto the inner pages would be 2, 3, and 6, 7, which could not be read until the fold at the head is cut. It perfects the first or outer forme, and is usually worked first.

INNER TYMPAN.—A frame covered with parchment, which fits into the outer tympan.—See TYMPAN.

INSERTION.—Words or sentences added within the body of a text; the publication of an article or advertisement in a newspaper or periodical.

INSET.—A loose sheet inserted into any book or pamphlet.

INSIDE QUIRES.—The perfect quires of paper, containing twenty-four good sheets in each. They are thus designated to distinguish them from the outside or corded quires.

INSIDE SHEETS.—The thin sheets used by pressmen for placing between the tympans of the press.

INTAGLIO.—Lines cut into a surface, as in copper-plate engravin .

INTERLEAVING.—Inserting leaves between other leaves. In fine work, particularly where the paper is heavy, and the type large and black, set-off sheets are used to interleave the whole impression while working. The same is done where large woodcuts occur. Diaries are now usually interleaved with blotting-paper.—See SET-OFF SHEETS.

INTERLINING.—Writing between lines already written or printed. In interlinear translation each line of the orignal is followed by a line of the translation.

INTERROGATION, SIGN OF (?).—A sign used in punctuation at the end of an interrogative sentence; that is, one in which a question is asked, as, "Who goes there?" Some sentences contain what is equivalent to more than one question, as "Who goes there, John or James?" In this case only one sign of interrogation is used. The sign should not be used in cases where it is only stated that a question has been asked, as, Henry cried, who goes there, and I answered, John." Here a question is not asked in the sentence, but a fact is stated. Whenever the intention of a sentence is to invoke a reply, the sign should be used, as, "You have not done so?" In Spanish printing the interrogation is used, inverted, at the commencement of questions as well as at the end. A thin space is usually placed before a sign of interrogation.

INVERTED COMMA (').—A mark used as an abbreviation in proper names of the prefix *Mac*, contracted into *Mc*, or *M'*; as *Macdougall*, *McDougall*, or *M'Dougall*, where it will be observed that no space intervenes between the two parts of the word. But the apostrophe, not the inverted comma, is used in certain Irish names beginning with *O'*, as *O'Donnell*. Inverted commas are used to mark the commencement of a quotation. Foreign founders cast them double.—See QUOTATION MARKS.

IRONS.—A term used on newspapers. Usually the furniture for imposing the pages of a newspaper is of iron, as well as the chase; and as the printer makes up the page, he calls upon the "stone-man" to "put it in irons," *i.e.*, impose it.

ITALIC.—This description of letter was designed by Aldus Manutius, a Roman, who, in the year 1490 (says Stower, in his "Printers' Grammar"), erected a printing office in Venice, where he introduced the Roman types of a neater cut, and invented the letter which we, and most of the nations in Europe, know by the name of Italic. Italic was originally designed to distinguish such parts of a book as might be said not strictly to belong to the body of the work, as prefaces, introductions, annotations, &c., all of which it was the custom formerly to print in Italics. In the present age it is used more sparingly, the necessity being supplied by the more elegant mode of enclosing extracts within inverted commas, and poetry and annotations in a smaller sized type. It is of service often in displaying a title page, or distinguishing the head or subject matter of a chapter from the chapter itself. The too frequent use of Italic is useless and absurd. It also very materially retards the progress of the compositor, who has the trouble of repeatedly moving from one case to another in composing. It is too often made use of to mark emphatic sentences or words, but without any rule or system, and so destroys, in a great measure, the beauty of printing, and often confuses the reader where it is improperly applied, who, pausing to consider why such words are more strongly noted, loses the context of the sentence and has to revert back to regain the sense of the subject. Not only does Italic so confuse the reader, but the bold face of the Roman suffers by being contrasted with the fine strokes of the Italic; that symmetry and proportion is destroyed which it is so necessary and desirable to preserve, the former letter being cut in a parallel, the latter in an oblique position.

ITS OWN PAPER.—When one or more proofs of a work or job are printed on the paper that the whole is intended to be worked on, it is said to be "pulled on its own paper." This is frequently done at the commencement of a work, when a proof of the first sheet is sent to the author or publisher that they may see the effect before the work is actually proceeded with.

J

JEFFING.—Throwing with quads. The plan adopted is to take nine em quads—Long Primer being mostly chosen; these are laid on the imposing surface for the inspection of the whole of the party interested in the matter at issue. One of them takes up the quads, shakes them up between his two closed hands, and throws them on the imposing surface, after the manner of throwing dice, when the number of quads with the nicks appearing uppermost are counted, each person having three throws (raffle-fashion), the highest thrower being the winner, or taking his choice of any "fat." This performance is not so much in vogue now as it was years ago, before the "clicking" system came up; then it used

to be of daily occurrence in the composing-room, when the title, index, blanks, tables, &c., of a work were given in hand, for the compositors to throw who should have the best choice of the "fat." The title-sheet was divided into lots, say: 1, title and blank; 2, preface; 3, dedication and blank; and so on, according to the prefatory matter introduced into the work. Words of Greek, for which one shilling per sheet is charged, were also "thrown for;" but the clicking system does away with all that, by making a general bill; so that each of the companionship comes in for a proportionate share of "fat" as well as "lean." There are some technicalities connected with "throwing," viz.:—if when the quads alight on the "stone," one should ride on the other, it is called a "cock," and the thrower has to pitch them up again; if no nicks turn up it is called a "miss,"—and by some loving swains it is called a "Mary" or a "Susan,"—and counts for nothing. The average winning throw is seven, and is termed "the witch." Nine is considered an excellent throw, and is very rarely exceeded. On very rare occasions, however, three blanks have been thrown, or three nines have made their appearance consecutively by the same thrower; but this is very exceptional. The same custom also exists amongst the type-founders, who, as well as the printers, throw to see who shall pay for the whole or the greater part of any refreshment they may be going to have; but they have a different name for it, calling it "Bogleing;" and when two is thrown, they call that a "duck," from the shape of the figure 2 having some resemblance to a duck's neck.

JERRY—A peculiar noise made by compositors and pressmen when one of their companions render himself ridiculous in any way. It is sometimes made by rapping with the knucles on the bars of the lower-case; or drawing a piece of reglet sharply down the boxes of the upper-case. When an apprentice comes out of his time, all kinds of instruments are used to "jerry" him, such as striking empty chases with iron side-sticks, rattling the quoin-drawers, &c.—See OUT OF HIS TIME. Modern discipline has almost completely abolished this custom.

JOBBING.—That branch of the printing business which is devoted to the execution of job-work, as distinguished from book-work and news-work. The definition of a "job" is extremely difficult, for work which would be regarded as *job-work in one house is not so considered in another*. Savage says: "A job is anything which, when printed, does not exceed a sheet," but pamphlets of five or more sheets frequently come under this designation, and even a periodical may be done as a "job" in a large office. The more general practice, however, is to call such things as placards, circulars, cards, &c., jobs, pamphlets book-work, and *periodicals news-work. The trade rules certainly define the nature of job-work* more strictly than this, for the purpose of approximating to a scale of prices for labour done; but the word is generally applied to a much larger variety of work than would be included in this definition. Jobbing, in short, may be roughly divided into classes, as follows:—

1. Circulars, including professional and trading circulars, Notices of openings of premises and of removal; of partnerships and partnerships dissolved; Prospectuses of companies; Reports of meetings, financial reports, commercial circulars, price lists.

2. Cards, including visiting cards, traders' cards, invitation and "at home" cards, tickets of admission, direction cards, time-table and calendar cards, ball programmes, cartes du menu, cards of membership, memorial cards.

3. Billheads, including invoices, statement of accounts, and bills of particulars.

4. Handbills, including trade handbills, programmes, bills of the play, police notices.

5. Posting Bills, including Auction bills, sermon, bazaar, lecture and meeting bills, official regulations, proclamations, general trade bills, contents bills, theatre bills, concert bills, lost and found bills.

6. Blank Forms, including memorandums, blank tables, pawn-tickets, railway and other share scrip, cheques, allotment forms, and headings.

7. *Labels, including direction labels* and ornamented labels.

Besides these there is a large class of what may be termed general work. Under this category will come Auctioneers' catalogues, which vary in style according as they are commercial sale catalogues, real estate, property and land sale catalogues;

Almanacks, Diaries, Conditions of Sale, Chancery Bills, Acts of Parliament, &c. Each one of the kinds of work we have enumerated has its own fixed custom in regard to its style of composition and the size and description of paper and other material upon which it is to be printed. For instance: a catalogue of a sale of houses is set out on a totally different principle to that relating to a sale of household furniture or stock-in-trade, and while the one is invariably a full folio sheet, the other is usually a mere octavo. A catalogue of a sale of cotton, fruit, or wood, would differ entirely from either, and be a long, narrow slip, with rules between each line. No two sheets could be more dissimilar than a sermon bill and a play bill, either in shape or the style of letter employed. Many printers, indeed, now confine themselves to one branch of jobbing; thus there are large establishments where auctioneers' work is chiefly produced, others where coloured placards and tea papers are executed, others who print only for pawnbrokers, or for law stationers, &c. These offices are furnished specially with a view to the rapid and economical production of one kind of work.

JOBBING-HAND.—A compositor who generally confines himself to jobbing-work. The principle of "division of labour" prevails very much in the printing business. There are book-houses, news-houses, and job-houses; and apprentices brought up in them usually turn out either book, news, or job-hands. They become specially expert in their own "line," and in large towns and extensive offices are found most useful to the employer. In smaller towns, and in small offices everywhere, a greater variety of attainment is necessary, and then the job-hand has the best chance of employment, as on an emergency he can undertake the other kinds of work, whereas a news-hand, who has been brought up to nothing else, is useless for general jobbing. In job-work some taste and wide experience are absolutely essential; in news and book-work rapid and clean setting are a man's chief recommendation. The former demands a knowledge of the style and effects of every description of type, the sizes and fractional parts of paper, together with an acquaintance with the system of setting up each one of the varieties of jobbing we have enumerated above. This valuable knowledge can be acquired only by long observation and practice.

JOBBING MACHINES.—Small machines constructed specially for the printing of job-work. They are intended to execute every variety of job that was formerly done on the hand-press, but with much greater economy, rapidity, and ease in working. Some of them are made to work cards only, at a very high speed. There are many now produced which print any kind of job at a speed, by hand, of ten to twelve hundred per hour. Jobbing machines may be either on the platen or cylinder principles; instances of the former are the American Degener and Weiler machine, and the English Cropper machine, *q.v.* The characteristics of a good jobbing machine are, in addition to its being constructed on proper mechanical principles, by good workmen and in sound materials—its strength, its being well fitted up, non-liability to get out of order, facility of working, freedom from unnecessary and complicated wheels, straps, &c., so that a workman may easily understand every part of it, an arrangement for stopping the cylinder, to prevent the blanket being uselessly inked or waste sheets run through, its portability, and capability of being worked on an ordinary floor without causing vibration, facility in making ready a forme, speed, time allowed for feeding in, minimum of concussion of the bed at the end of the ribs, the precision of its register, freedom from noise in working, the fewness, simplicity, and accessibility of the working parts, clearness and distinctness of impression, perfect distribution of ink, &c., &c. It would, perhaps, be unreasonable to expect all these "points" of perfection in any one machine, but as each of them is of great importance, and contributes to the aggregate value of the article, purchasers should endeavour to select those only which most nearly approach to the perfection which would characterise any machine which should possess to the full every recommendation we have enumerated.

JOBBING OFFICE.—An office in which jobbing-work mainly is executed. Jobbing offices form a large majority of the printing establishments throughout the country. Many of them include both news-work and book-work.

The great difference between a news-office and a job-office lies in the variety of the founts in the latter. In the one there are few different kinds of founts, but each of them is exceedingly extensive; in the other the founts are much smaller but vastly more numerous. The departments of a job-office are: the composing department, the printing department, and the warehouse. The composing department includes founts of all the regular-sized plain letters, from Nonpareil or less to Pica, as well as selections from the fancy types—Titlings, Condensed, Expanded, Sanseriff, Skeleton, Antique, Clarendon, Elongated, Grotesque, Classic, Tuscan, Latin, Romanesque, Augustan, old English, Script, Secretary, Mercantile; and in addition, a stock of wood and metal poster letters, rules, dashes, and ornaments; furniture, reglets, leads, and quotations; imposing surfaces and frames, galley and forme racks, composing frames, cases, galley press, shooters, mallet, planers, and quoins, composing sticks, and sundries. The printing department includes engine and boiler, machines, presses, rollers, ink, banks, horses, wetting-trough, boards, &c. The warehouse department includes standing presses, glazed boards, cutting machines, rolling, card-cutting, numbering, and perforating machines. Even after all these appliances have been acquired there is constant necessity for novelties and improvements, in order to compete successfully with other houses in the business. For descriptions of the various appliances see the names of each in its alphabetical order.

JOURNAL.—A record of daily occurrences; a narrative of events periodically published; the title of a serial publication.

JOURNALISM.—The profession of editing or writing for newspapers.

JOURNALIST.—The conductor of, or professional contributor to, a public journal.

JOURNEYMAN.—A person who has duly and faithfully served his time of apprenticeship, which in the printing business extends over seven years.

JUSTIFIER.—In typefounding, the man who justifies matrices. See TYPEFOUNDING.

JUSTIFYING A STICK.—Screwing the slide of the composing stick to the measure required. Sometimes called "making the measure."

JUSTIFYING.—Spacing out a line so that it fits with a proper degree of tightness in the measure of the composing stick; placing a woodcut or a block in a page and filling up the vacancies with leads, quadrats, quotations or furniture, so that when the forme is locked-up the whole shall be fast and firm. In regard to ordinary justifying in the stick, and to avoid the trouble of putting in many thin and hair spaces, or changing those already in for narrower ones—which is at all times an exceedingly delicate operation, and frequently attended with great annoyance and trouble, owing to the danger of breaking the line, various mechanical means have been employed, in vain so far. Several systems of mechanical or automatic justification have been invented, but none of them have come into general use. One of them is intended exclusively for Mackie's composing machine. His plan is to use corrugated, or grooved, spaces made of lead. A stickful of matter is spaced with his spaces in the ordinary way as near the proper length as convenient, but at least as long as each line should be, the setting-stick being an ordinary one with the sides slotted on the right hand side moveable by a screw, to the extent of one or two ems. The setting-rules (each line has its own) are left in until the stick is full, so that the matter may slide one line along another. The effect of the compression is to elongate the quads to their length before corrugation, and produce a uniformity in length and spaces which no hand setting can equal. Twenty lines set to within one, or even two ems, are "justified" instantly, and the spaces can be re-corrugated by any boy as wanted. They seem no worse for their squeezing, neither is the type injured. For the composing machine Mr. Mackie uses a "stick," or rather "galley," which holds one hundred lines, and by a screw

pressure a sidestick compresses all the lines to one length in an instant. The following will give an idea of the operation:—

More unsatisfactory treatment of a pressing difficulty it
would not be easy to find that the fate which befel the
Judicial Committee Bill on Monday night. Introduced
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Accurate justification is absolutely necessary in composition. If the line is short the letters will not stand properly on their feet, and it is then impossible to get a fair impression from the line. Besides, the letters are liable to drop out in lifting the forme, and a column or a page may be easily broken through carelessness in this respect. Even if badly-justified matter is got safely to the stone, the suction of the roller is liable, if not almost sure, to draw out the letters, by which means many letters or perhaps a valuable wood-block may be battered, and ruined completely. Indeed, carelessness in justifying is a fruitful cause of accident and damage of all kinds. Many chases, for instance, are broken by being locked-up too tight, to obviate the results of bad justifying and loose lines. Apprentices should be strictly cautioned against allowing themselves to fall into the bad habit, for when once acquired it becomes actually irksome to take the proper amount of care to justify a line properly. Some compositors adopt the plan of justifying their lines slackly, others tightly; but the latter is far preferable; for what compositor can judge, in slack spacing, whether he has justified each line precisely the same as the previous one? whereas, if he adopts the principle of spacing each line as tight as the measure will admit reasonably, he is sure to have every line alike,—especially is this necessary in table-work. An American writer says:—"In all modern printing offices there is an inexorable requisition that all matter shall be truly justified. The page or column must be perfectly squared. No superiority in speed, no excellence in clean proof on the part of the compositor will ever atone for his neglect of justification. The demand for carefulness in this branch of work is more stringent now than it was during the last generation. There is reason for it. The formes that we send to press are twice as large, and the machines that we use are ten times as quick as those in use years ago. Instead of lying flat on slowly-moving beds, the formes are sometimes put on the periphery of quickly-revolving cylinders, are sometimes inclined at vertical angles, sometimes stand upright, and, in one press, are completely reversed, with face downward. In all cases, the types are inked by rapidly-moving rollers, with a clinging suction that is sure to withdraw type from a badly-justified line. The loose justification of a small octavo forme that could be corrected by damp 'scaleboards' (a word unknown in modern offices) or a vigorous locking-up is no longer tolerated. The modern compositor is required not only to make his formes lift, if ever so large and complex, but to make them tight enough to resist the suction of the roller. Not all compositors are equal to this requisition, it is true, but the requisition is never relaxed. No matter what may be his age or experience, he is adjudged no workman who cannot or does not justify his matter truly."—See SPACING.

K

KEEP IN.—A direction given to a compositor in order that he may bring his composition within a certain limit. To do this he sets closer than usual.

KEEP OUT.—See DRIVE OUT.

KERN OF A LETTER.—The part of the face of a letter which hangs over the beard of its shank. In roman f and j are the only kerned letters; but in the italic *d*. *g*, *j*, *l*. *y* are kerned on one side, and *f* on both sides of the face. Many italic capitals are kerned on one side of the face.

KNOCK UP.—In warehouse work, to knock up paper is to get it into such a condition that each sheet exactly covers, but does not overhang at any edge, the sheet below. The sides of the heap, after the paper has been properly knocked up, should present the appearance of a perfectly smooth surface. The warehouseman takes up a small quantity of paper (according to the stoutness or flimsiness) and holding it loosely at the edges with both hands, he bends the ends slightly towards him so that the paper shall form a curve; he then lifts it up a little from the table and lets it drop upon its edge through his hands—the curve giving the edge a certain firmness, many of the sheets drop down into their places; he repeats this two or three times, and will then, in letting it drop upon the table, bring the lower part nearer to him, so that the outside of the curve may strike first, and throw the sheets gradually up higher at the back. This he will do also two or three times. He then lets the further side rest upon the table, and shuffles the sheets gradually away from him, lifting the whole up, and letting the edges drop upon the table three or four times. Repeating these operations soon brings all the sheets even, both at the ends and sides. He then lays this taking on one side and repeats the operation with other takings, laying them on each other till he has completed the whole. A soft flimsy paper takes more time in knocking up than a hard paper, as the sheets have not strength enough separately to be driven into their places by striking on their edges.

L

LABELS.—Inscriptions on bottles, boxes, &c., describing their contents.

LARCENY ADVERTISEMENT ACT.—An Act 33 & 34 Vic., c. 65) has been passed to amend the law relating to advertisements respecting stolen goods. Under the Act 24 & 25 Vic., c. 96, any person who prints or publishes advertisements for the return of stolen goods without questions being asked, forfeits the sum of fifty pounds to any person who will sue for the same by action of debt (*Sec.* 102). This provision having given occasion to many vexatious proceedings at the instance of common informers against printers and publishers of newspapers, it was thought expedient to pass a new Act, which stayed proceedings in actions brought before its passing; and provides that:—

> Every action against the printer or publisher of a newspaper to recover a forfeiture under section one hundred and two of The Larceny Act, 1868, shall be brought six months after the forfeiture is incurred, and no such action against the printer and publisher of a newspaper shall be brought unless the assent in writing of Her Majesty's Attorney-General for England, if the action is brought in England, or for Ireland, if the action is brought in Ireland, has been first obtained to the bringing of such action.—*Sec.* 3.

LAWS RELATING TO PRINTERS.—A great number of laws have been enacted at different times with the view either of repressing the power

of the Press or of exercising a censorship over its utterances. In addition to these, various acts have been passed imposing duties for fiscal purposes, either on the material upon which newspapers are printed, upon portions of their contents, or upon their transmission at home and abroad. Most of these are now happily entirely repealed, and a degree of freedom is enjoyed by the conductors of journals in this country such as is unknown in almost any other part of the world.—In the reign of Queen Anne (1712) *Advertisements* were first subjected to a duty (10 Anne, c. 19), and it was charged according to length. Some change took place, and the duty, which had been reduced from 3s. 6d. to 1s. 6d. in Great Britain, and from 2s. 6d. to 1s. in Ireland, by 3 & 4 Wm. IV., cap. 23 (June 28, 1833), was entirely repealed by 16 & 17 Vic., c. 63, s. 5 (August 4, 1853).—The *Stamp Duty* was levied in the reign of Queen Anne (10 Anne, c. 19), August 1, 1712. After several modifications the duty was fixed by the Act 6 & 7 Wm. IV., c. 76, as follows: For every sheet or other piece of paper whereon any newspaper shall be printed, One Penny; and where such sheet or piece of paper shall contain on one side thereof a superficies exceeding 1530 inches and not exceeding 2295 inches the additional duty of One Halfpenny; where the same shall consist of a superficies exceeding 2295 inches the additional duty of One Penny; provided always that if the sheet does not exceed 765 inches (exclusive of the margin) and is published as a supplement to a newspaper charged with the duty already named, it should be chargeable only with the duty of One Halfpenny. The bill for the abolition of this stamp duty (18 & 19 Vic., cap 27) received the royal assent June 15, 1855.—Besides these two "taxes on knowledge," as they were popularly called during the long and excited agitation which prevailed from 1850 to 1860, there was also a *Paper Duty* levied under the Act 2 & 3 Vic., c. 23, of three-halfpence on every pound weight of paper. This was abolished by 24 Vic., c. 20 (June 12, 1861).—The three taxes thus repealed partook of the character of fiscal imposts, although one of them was enacted with the view of crippling the press and of affording a ready and decisive means of discovering the printer and publisher of every public journal in the kingdom. But for centuries other and even more obnoxious restrictions had been in force, directed against the press. The last of these has only been repealed within the past few years. The 6 & 7 Wm. IV., cap. 76, entitled "An act to reduce the duties on newspapers, and to amend the laws relating to duties on newspapers and advertisements," enacted that no person should print or publish any newspaper before there should be delivered to the Commissioners of Stamps and Taxes, a declaration in writing containing:—

The correct title of the newspaper.

A true description of the building in which it is to be printed, and of the building in which it is to be published.

The true name, in addition, and place of abode of every person who is intended to print, to publish, to be interested in the proprietorship of the paper, with the proportional shares of the proprietors, in certain cases.

A declaration of a similar import was to be made on the occasion of any change in the arrangements, particulars of which were required, as well as when the persons named changed their abodes, or the title of the paper, or the name of the printing-office was altered; and in fact, "whenever in any case, or on any occasion, or for any purpose" the Commissioners or any officer of customs should require it. The penalty for non-observance of these requirements was fifty pounds for every day on which the newspaper was printed or sold before the declaration was made. But there was also additional restrictions. The newspaper could not be published until the printer or publisher, together with the proprietor, together also with two sufficient sureties, should have entered into security by bond in such sum as the Commissioners should think reasonable and sufficient to cover penalties and duties imposed by that and previous acts. By the 32 & 33 Vic., c. 24 (12 July, 1869), entitled "An Act to repeal certain enactments relating to newspapers, pamphlets, and other publications, and to printers, type founders, and reading rooms" the provisions of a number of acts was entirely or partially repealed. The following is a list of them:—

36 Geo. 3. c. 8.—An act for more effectually preventing seditious meetings and assemblies.—Entirely repealed.

39 Geo. 3, c. 79.—An act for the more effectual suppression of societies established for seditious and treasonable purposes, and for better preventing treasonable and seditious practices.

[This Act required that places for lectures or debates, or for reading books, newspapers, &c., to which places persons are admitted on payment, should be licensed at the Sessions. Also, that persons having or making printing presses or types should have them duly registered by the Clerk of the Peace.]

Sections 15 to 23, both inclusive, repealed; also so much of sections 34 to 39 as relates to those sections.

51 Geo. 3, c. 65.—An Act to explain and amend the last-named Act.—Entirely repealed.

55 Geo. 3, c. 101.—An Act to regulate the collection of Stamp Duties and matters in respect of which licenses may be granted by the Commissioners of Stamps in Ireland.—Section 13 repealed.

60 Geo. 3, and 1 Geo. 4, c. 9.—An Act to subject certain publications to the duties of stamps upon newspapers, and to make other regulations for restraining the abuses arising from the publication of blasphemous and seditious libels.

[These Acts required the printer of a newspaper to enter into recognizance with sureties to pay any fine imposed on conviction for a blasphemous or seditious libel, and to send copies of every paper to the stamp office.]—Entirely repealed.

11 Geo. 4, 1 Wm. 4, c. 73.—An Act to repeal 60 Geo. 3, and to provide further remedy against the abuse of publishing libels.—Entirely repealed.

6 & 7 Wm. IV., c. 76.—An Act to reduce the duties on newspapers, and to amend the laws relating to the duties on newspapers and advertisements.

[This Act regulated the printing of the date, title, &c., of newspapers, and the name of the printer, and requiring a declaration (see *supra*) before a newspaper could be printed.]—Repealed, except sections 1 to 4 inclusive, sections 34 & 35, and the schedule.

2 & 3 Vic., c. 12.—An Act to amend 39 Geo. 3, and to put an end to certain proceedings now pending under the said Act.—Entirely repealed.

5 & 6 Vic., c. 82.—An Act to assimilate the Stamp Duties in Great Britain, Ireland, &c. The part repealed is the sentence "and also license to any person to keep any printing presses and types for printing in Ireland."

9 & 10 Vic., c. 33.—An Act to amend the laws relating to corresponding societies and the licensing of lecture rooms.—Repealed so far as it relates to any proceedings under the enactments repealed in this schedule.

16 & 17 Vic., c. 59.—Relating to Stamp Duties in Ireland. Repealed in part, viz., that portion of section 20 which makes perpetual 5 & 6 Vic. c. 82 repealed by this Act.

The foregoing statement shows how a number of old and oppressive enactments have been eliminated from the Statute Book. It remains to be stated how far legislative interference with the Press is still maintained by the Act before referred to (32 & 33 Vic., c. 24). That Act continues the force of the following Acts :—

39 Geo. 3, c. 79.—Every person who shall print any paper for hire, reward, gain, or profit, shall carefully preserve and keep one copy (at least) of every paper so printed by him or her, on which he or she shall write, or cause to be written or printed, in fair and legible characters, the name and place of abode of the person or persons by whom he or she shall be employed to print the same; and every person printing any paper for hire, reward, gain, or profit, who shall omit or neglect to write, or cause to be written or printed as aforesaid, the name and place of his or her employer on one of such printed papers, or to keep or preserve the same for the space of six calendar months next after the printing thereof, or to produce and show the same to any justice of the peace who within the space of six calendar months shall require to see the same, shall for every such omission, neglect, or refusal forfeit and lose the sum of twenty pounds.—*Sec.* 29.

Nothing herein contained shall extend to the impression of any engraving, or to the printing by letterpress of the name, or the name and address, or business or profession, of any person, and the articles in which he deals, or to any papers for the sale of estates or goods by auction or otherwise.—*Sec.* 31.

No person shall be prosecuted or sued for any penalty imposed by this Act, unless such prosecution shall be commenced, or such action shall be brought, within three calendar months next after such penalty shall have been incurred.—*Sec.* 34.

And any pecuniary penalty imposed by this Act, and not exceeding the sum of twenty pounds, shall and may be recovered before any justice or justices of the peace for the county, stewartry, riding, division, city, town, or place, in which the same shall be incurred, or the person having incurred the same shall happen to be, in a summary way.—*Sec.* 35.

All pecuniary penalties herein-before imposed by this Act shall, when recovered in a summary way before any justice, be applied and disposed of in a manner herein-after mentioned; that is to say, one moiety thereof to the informer

before any justice, and the other moiety thereof to His Majesty, his heirs and successors.—*Sec.* 36.

51 Geo. 3, c. 65.—Name and residence of printers not required to be put to bank notes, bills, &c., or to any paper printed by authority of any public board or public office.—*Sec.* 3.

6 & 7 Wm. 4, c. 76.—If any person shall file any bill in any court for the discovery of the name of any person concerned as printer, publisher, or proprietor of any newspaper, or of any matters relative to the printing or publishing of any newspaper, in order the more effectually to bring or carry on any suit or action for damages alleged to have been sustained by reason of any slanderous or libellous matter contained in any such newspaper respecting such person, it shall not be lawful for the defendant to plead or demur to such bill, but such discovery shall not be made use of as evidence or otherwise in any proceeding against the defendant, save only in that proceeding for which the discovery is made.—*Sec.* 19.

2 & 3 Vic., c. 12.—Every person who shall print any paper or book whatsoever which shall be meant to be published or dispersed, and who shall not print upon the front of every such paper, if the same shall be printed on one side only, or upon the first or last leaf of every paper or book which shall consist of more than one leaf, in legible characters, his or her name and usual place of abode or business, and every person who shall publish or disperse, or assist in publishing or dispersing, any printed paper or book on which the name and place of abode of the person printing the same shall not be printed as aforesaid, shall for every copy of such paper so printed by him or her forfeit a sum of not more than five pounds; provided always, that nothing herein contained shall be construed to impose any penalty upon any person for printing any paper excepted out of the operation of the said Act of the thirty-ninth year of King George the Third, chapter 79, neither in the said Act or by any Act made for the amendment thereof.—*Sec.* 2.

Sec. 3 refers to books printed at the University presses of Oxford and Cambridge.

Sec. 4 provides that no action shall be commenced except in the name of the Attorney or Solicitor-General in England, or the Queen's Advocate in Scotland.

9 & 10 Vic., c. 33.—Proceedings shall not be commenced unless in the name of the law officers of the Crown, and every action, bill, plaint, or information which shall be commenced, prosecuted, entered, or filed in the name or names of any other person or persons than is in that behalf before mentioned, and every proceeding thereupon had, shall be null and void to all intents and purposes.—*Sec.* 1.

The following enactments are still in force :—

13 Geo. 2, cap. 19 (to restrain and prevent the excessive increase of horse-races, &c.), by which it is enacted, "That every person or persons who shall make, print, publish, advertise, or proclaim any advertisement or notice of any plate, prize, sum of money, or other thing of less value than fifty pounds to be run for by any horse, mare, or gelding, shall forfeit and lose the sum of one hundred pounds."

37 Vic., c. 15.—By this it is enacted that no letter, circular, telegram, placard, handbill, card, or advertisement is to be sent, exhibited, or published that is of the nature following, viz. :—whereby it is made to appear that any person, either in the United Kingdom or elsewhere, will on application give information or advice with respect to bets or wagers on horse racing; or whereby any person is induced to apply to any place for obtaining information as to betting on horse racing; or whereby any person is invited to take any share in such betting. Infraction of this law subjects the offender to certain penalties under the Betting Act (16 & 17 Vic., c. 119). The Act 37 Vic., c. 15, came into operation 31st July, 1874.

It is worthy of remark that in the United States there is no special liability or criminality presumed of printers; the Libel Statutes alone approach them professionally, and these always select the editor or publisher in preference to the printer.—See LARCENY ADVERTISEMENTS, LIBEL, and COPYRIGHT PROPERTY.

LAW WORK.—As law work is executed in one uniform manner, and there are so many peculiarities connected with it, a few directions may save much time and trouble to the compositor. The names of parties to a suit are generally in *Italic* (except in newspapers), and of the authorities, where the case is reported in Roman, contracted. If the name of the case is adduced *in* the argument, the authority follows in parentheses; but if the case is added parenthetically, of course the whole is enclosed within the appropriate symbols. Examples of both will clearly explain the plan to be adopted in each case by the compositor.

In *Thomas* v. *Waller* (4 Corb. & D. 61) and *Jones* v. *Peterson* (Adol. & El. 703), the matter is fully and satisfactorily reported.

An action of this nature must be brought within the time specified (*Reg.* v. *Kesterton*, 13 Co. Litt: 76), otherwise it will fail.

Here, the reader will observe, the short *and* (&) is always employed, and there is no comma after the full stop between the authority and the page. The short *and* is also uniformly employed in reciting the years of the reign of any monarch in which an Act of Parliament was passed—thus: 15 & 16 Geo. 3, c. 21, with *Arabic* numerals after the name, and not *Roman* capital letters, which would be too cumbersome, and not half so clear. In all instances of this sort the figures should never be separated at the end of a line from that to which they belong; nor should the constituent parts of what forms but *one portion* of the reference. Thus, in the instance given above, 15 should not end a line, and the next begin with &; neither should Geo. be separated from the accompanying 3; nor *c.* from 21. Nor, in like manner, the letters denoting any office, such as Cockburn, C.J., where the C. and J. should always be in the same line. And so in all other cases. To do otherwise would be extremely unsightly. When a number of authorities are given, with the reports where found, each case is separated from the following one by a semicolon, in the following manner, if they depend or read on with what has been previously said. Thus: "The authorities on which I rely (12 and 13 Car. 2, c. 14, s. 6; *Bell* v. *Bradfoot*, 6 T. R. 721; *Cook* v. *Jonas*, 2 B. and A. 433) are conclusive on this point." But if they do not so depend, or do not form an interposed parenthetical sentence, a full-stop may well be employed. There are some peculiarities about the printing of Chancery Bills that should be noted. The punctuation of these documents may be the same as used in ordinary bookwork—a plan now sensibly encouraged by many eminent lawyers; or, a full-point only may be placed at the end of the sentences, and no other point whatever used. Or, they may be altogether unpointed. Whichever plan is adopted due written notice should be given to the compositor or clicker when the copy is placed in his hands. Capital initial letters are used only in proper names, and in the following and similar instances:—The names of public officers, as Her Majesty's Attorney-General, Solicitor-General, Master (in Chancery), his Honour, &c.; the names of public funds or stocks, as Consols, Consolidated Bank Annuities, the said £3 per Centun Bank Annuities, Exchequer Bills. Also, the Bank (when speaking of the Bank of England), the Court (of law, &c.), Honourable Court, the High Court of Chancery, the Government (when alluding to the Government of the country), Home Government, Colonial Government, Acts of Parliament, Bill of Complaint, Will, Plaintiff and Defendant, and the words Company and Society, whenever referring to a company or society being either Plaintiffs or Defendants. Contractions of words are only to be observed in original documents. Elsewhere, Co., Dft., Plf., No., and similar words must be in full. Dates and sums of money, terms of years, and quantities of land to be in figures. Copies of, or extracts from agreements, indentures, letters, &c., to follow copy as to spelling, contractions, punctuation, and in every other respect as near as practicable. Not a point to be inserted in any part of the Bill without special instructions, except in note at the end, or where names of Plaintiffs and Defendants are run on, in which case divide names by commas. Proper names must never be divided.

LAYING CASES.—Filling cases with new type.

LAYING DOWN PAGES.—The arrangement of the pages of a sheet on the imposing surface in their proper order. In taking up his pages for imposition, the compositor tightly grasps the paper on both sides of the page in order that it may be kept firm to the bottom of the page; for if it be left slack, the letters will be liable to slip out unless it be particularly well tied up. Having conveyed it to the stone, he next places the last two fingers of his right hand against the head of the page, but not under the page-paper at the head of it, still grasping the sides with his forefingers and thumbs. He then slips his left hand so that the palm of it may turn towards the bottom, and, lifting the page upright on his right hand, with his left he removes the paper. He next grasps again the foot end of the page with his left hand in the same manner as the right holds the head of it, and turning the face towards him, lays it squarely and quickly down, so that the whole page may come in contact with the im-

posing surface at the same time. As this method, in inexperienced and careless hands, would frequently endanger a page containing intricate matter, it would be safer to place the pages at first on good strong, but not rough or coarse paper, and when brought to the stone, instead of lifting them up as just noticed, to slide them off the papers in the same manner as though they were on a slice-galley (See TYING-UP PAGES), being careful that no particles of dirt remain under the page.

LAYING DOWN SHEETS.—In the warehouse, this term is used to denote the placing the printed sheets of a work upon the gathering table in their proper order for the purpose of gathering them together into complete books. The first sheet in the gathering is laid down at the extreme end of the table at the left hand, and the succeeding sheets follow to the right in regular order, with the signature to the front of the table. The person who lays them down should run the signature page over in each heap to see that they all lay the same way, and have not been turned in knocking up or piling away, which, when it happens and passes undiscovered, causes a great deal of trouble in collating.

LAYING TYPE.—Putting new type into the cases. The page received from the founder should be carefully unwrapped, and, after having been laid on a galley, soaked thoroughly with thin soap-water, to prevent the types adhering to one another after they have been used a short time; then, with a stout rule or reglet, as many lines should be lifted as will make about an inch in thickness, and placing the rule close up on one side of the bottom of the proper box, slide off the lines gently, taking care not to rub the face against the side of the box. Proceed thus with successive lines till the box is filled. Careless compositors are prone to huddle new types together, and, grasping them by handfuls, plunge them pell mell into the box, rudely jostling them about to crowd more in. This is an intolerable practice. The type left over should be kept standing on galleys in regular order, till the cases need replenishment. A fount of five hundred pounds of Pica may have, say four pairs of cases allotted to it; the same amount of Nonpareil, from eight to ten pairs.

LAYING-ON-BOY.—The boy who feeds the sheets into the machine.—See LAY-ON.

LAY OF THE CASE.—The system on which the various letters, points, spaces, quadrats, &c., are distributed among the different boxes in a case. No subject connected with printing has occupied more attention than this, and innumerable new schemes for proposed improved "lays" have at various times been brought forward. The result is, that nearly every office differs in the allocation of the various characters, and compositors have constantly to learn and to unlearn the arbitrary arrangements now in vogue. An American trade journal has proposed an alteration in the lay of one or two boxes in the lower-case, which is perhaps worth the attention of printers who are on the point of opening new offices. In a town where new hands are frequently taken on to work, there is no little difficulty in making any change, for the reason that such new hands may pie the boxes in consequence of it. But when this is not the case, an alteration that commends itself to common sense as a real improvement is worth adopting, even at a slight temporary inconvenience. The *Typographic Messenger* says: "If you want to gain five hundred to a thousand a day, you can do so without material alteration of the present case. All you have to do is to bring the en quads, thick, middle, and thin spaces together, so that time may be gained in justifying your lines, and you have the gain referred to. The only alteration incident to this modification is—the v goes to the present en-quad box, and the z and x to the thin and middle space boxes. The t and u boxes are thus driven over the space of one box, which gives no trouble, as they lie in the same direction; but it will take a few days to 'get the hang' of the v box in its changed position. The z and x, being so little in demand, it is of no consequence in what position they are." A similar change has been made for several years in many of our English offices—the transposition of the lower-case y with the middle and thin spaces. The usual place for this letter is next the o box on the right. Now, in setting or distributing, the hand has to travel the whole width of the case, or nine inches from the thick spaces to the thins

and middles; and in iustifying single lines of fancy and jobbing, for which the lower-case has occasionally to be used in the rack without mounting, it has to be drawn out so far as to hazard its tilting over. By putting the thin and middle spaces, however, into the y box, they are brought within five inches of the thicks; and being oftener required than the y, there is an actual saving of time by the change. And when the lower-case is merely wanted for justifying, the new position of the spaces only requires its being drawn out about one-fourth, or one-third of its width. The advantages of this arrangement are:—

1st. In setting poetry and all matter where there is a frequent use of the em quad, or the matter is indented an en, the long reach to the right for these sorts is saved.

2nd. In the composition or correction of tabular matter, or figures, the galley can cover the right side of the lower-case, and the needful quads will be just under the hand of the compositor.

3rd. In distributing figures, the sweep performed by the hand will be only about half that now required. Again, in corrections the galley now has frequently to be heaved up, or pushed to and fro, to get at the end quad box—all of which would be avoided.

Concerning the mixing of the spaces. Mr. W. Spurrell, of Carmarthen, says: "It may be observed that mixing the middle and thick spaces is better than mixing the middle and thin. Indeed, in composing solid matter, mixing the middle and thick seems to be more advantageous than keeping them seperate. In a line containing six places for spaces there will be on an average, taking Caslon's bill for 800 lb. of Pica as a basis, four thick and two middle spaces, when those spaces are mixed in the box. Now, such a line may be spaced in thirteen different ways, from a middle space in each place to a middle and thin in each place, and the number of *changes* necessary to justify thirteen such lines would be twenty-four when the spaces are mixed, and forty-two when thick spaces alone are in the box. Allowing six changes for the chance of spaces not being in the best places, the advantage of mixing the thick and middle spaces would be represented by a saving of twelve changes in forty-two, in composing solid matter. Taking into consideration, however, that much time is lost picking out the required space, when two sorts are kept together, the advantages and disadvantages of the three plans may be pretty correctly summed up thus:—

1. 30 changes and 24 sortings, when thick and middle spaces are mixed.
2. 42 changes and 63 sortings, when middle and thin are mixed.
3. 42 changes and no sorting, when thick, middle, and thin are kept separate.

Further, the longer the line, the greater the proportion of thick spaces used, and the greater the advantage of keeping them unmixed."

LAY ON.—A phrase used in the press or machine room. Thus: there are 1000 laid on; or, what forme shall we lay on? When there are woodcuts in one forme, and none in the other, then the forme without cuts should be laid on first, as working the cuts last prevents the indention of the types appearing on the engraving. The term is also used in printing at machines, where a boy *lays* the sheet on the feeding board, in order that they may be caught by the grippers or tapes.

LAY UP.—Before the letter of a worked-off forme is distributed, or before it is cleared away, if the work be finished, it is unlocked upon a board, laid in the trough, and well rinsed with water, while the compositor keeps working the lines backward and forward with his hands, and continues pouring water on them till the ley and ink are washed away, and the water runs off clear. This is termed "laying up." The board should always be washed clean on its upper side before the forme is laid upon it. When a first proof has been read, it is the duty of the compositor who set the commencement of the sheet to lay up the formes on the stone and unlock them ready for the corrections to be made.

LEAD CUTTER.—An implement used for cutting leads.

LEADED MATTER.—Matter with leads between the lines.

LEADERS (.. or ....).—These consist of two or three dots, similar to full points, cast on one type, to the em body; there are also two, three, and four-em leaders, the number of dots being multiplied according to the number of ems to which they are cast in length.

LEADING ARTICLES (or LEADERS).—Leading articles embodying editorial comments on the topics of the day. The modern leading article may be said to have been invented by the late Mr. John Walter, of *The Times*. Before he took that paper in hand, the daily journal did not seek to guide public opinion or to exercise political influence. It was a *news* paper, little more; any political articles introduced being in the form of "Letters to the Editor." To the dismay of his father (says Mr. S. Smiles, in an article in *Macmillan's Magazine*), young Walter struck out an entirely new course. He boldly stated his views on public affairs, bringing his strong and independent judgment to bear on political and other questions.

LEAD OUT.—A direction given in order that leads may be put between lines of matter.

LEADS.—Thin pieces of metal of different thicknesses and different lengths, quadrat high, to put between the lines of matter to make it more open; they are also used to branch out titles, small jobs, and parts of a work where necessary. The bodies are regulated by Pica standard, and they are usually cast four, six, or eight to Pica, but they are sometimes very much thinner. Brasses are now very generally used on newspapers instead of leads, they are found to be exceedingly useful and economical, as they do not break or bend.

LEADS TRAY.—A tray arranged for keeping leads in small quantities in their proper places and accessible without loss of time. The principle of an ordinary type-case has been adopted, the object being to consign the tray or trays to an ordinary case-rack. Each tray will contain all the even measures of leads from four ems to twenty-eight, excepting only twenty-six ems, and the aggregate number of leads will amount in the instance of six-to-Pica, to more than five thousand, or 435 of each measure. For greater convenience, however, and to accommodate small jobbing printers, the leads tray is divided for the reception of both four-to-Pica and six-to-Pica, or other kinds; and the proportion of fours and sixes will be as 176 to 174 of each measure, or more than four thousand in the aggregate—exceeding two thousand of each kind. The number would be ample for ordinary use, either singly or by piecing; and surplus leads might be stacked and stored in such a way as to be readily placed in the tray as it required to be replenished.

LEAN FACE.—A letter of slender proportions, compared with its height.

LEAN WORK.—The opposite of a "fat" work *(q.v.)*,—that is, poor, unprofitable work.

LET-IN NOTES.—See INCUT NOTES.

LETTER.—A synonym for type or types; as, a case "full of letter" is one well supplied with types.

LETTER REQUIRED FOR A JOB.—Printers are frequently in doubt as to the quantity of type which will be required for a book or newspaper. The following is a useful plan for ascertaining the quantity of type required for newspapers, and thus enables any publisher to make his own calculations, aided, as he will be, by the knowledge of what proportion of the paper is to be set in each size of type he intends to use. This method is simple, and will be found to be practicably accurate. If but one page is to be set in a certain type, an allowance of 50 per cent. should be made for what will remain in the cases and for matter set up and left over. The greater the number of pages in the same size of type, the less the *proportion* of the extra weight of type needed. Thus:—

For 1 page weighing 100 lbs.....150 lbs. will be needed.
„ 2 pages „ „ each..250 „ „ „
„ 3 „ „ „ „ ..350 „ „ „
„ 4 „ „ „ „ ..450 „ „ „

Therefore, if a newspaper of the size given is to be, say half Brevier and half Nonpareil, 250 pounds of each will be needed. If, however, it is very prosperous, and columns are sometimes crowded out, of course extra type must be purchased. We have made no allowance for space occupied by column rules, leads, dashes, &c. Experience has shown that estimates based as above give the *minimum* quantity

of type necessary for a weekly newspaper; standing matter and letter remaining in case fully equalling the space occupied by leads, rules, &c., as well the extra quantity of type allowed. No special rule can be laid down for daily papers, which vary so widely in the number of cases employed, the average quantity of matter crowded out or saved for a weekly, and the style of composition. It may be said, in a general way, that twice the weight of the pages is the least quantity of type that will answer for a daily alone, when worked most closely. What has been said, however, will afford a fair basis for calculations. In book offices, when the number and size of pages to be set down at one time are known, the quantity of type needed can be ascertained as above; an allowance of from twenty-five to fifty per cent. being made, according to the number of cases to be laid. A pair of cases holds about fifty pounds of type. The average weight of a square inch of matter is 4½ ounces. A square inch of matter is equivalent to thirty-six square Pica ems, and from this may be deduced the fact that 128 square Pica ems of matter weigh on the average 1lb. On this datum is founded the following simple rule for estimating the weight of any given quantity of matter.

RULE.—Divide the area of the matter, expressed in square Pica ems, by 128.

EXAMPLE I.—Required the weight of 56 columns of news, each 15 ems wide by 132 ems long (2½ in. by 22 in.).

$$15 \times 132 \times 56 = 110{,}880 \text{ square Pica ems.}$$
$$\div 128 = 866 \text{ lbs.}$$

EXAMPLE II.—Required the weight of type in a sheet of 32 pages, each 3 in. by 5 in., or 18 ems by 30.

$$18 \times 30 \times 32 = 17{,}280 \text{ square Pica ems.}$$
$$\div 128 = 135 \text{ lbs. weight required.}$$

LETTER BOARD.—A board used for laying-up letter, generally made for Demy or Royal formes, the former being usually 26 in. by 22 in.; the latter, 30 in. by 26 in.—See LAY UP.

LETTER BRUSH.—See LEY BRUSH and PICK BRUSH.

LETTER FOUNDERS.—See TYPE FOUNDERS.

LETTER HANGS.—If the matter transferred from the composing stick to the galley does not stand perfectly square and upright, it is said to "hang." It is the usual result of carelessness in emptying the composing stick.

LETTER PAPER.—See WRITING PAPER.

LETTER-PRESS PRINTING.—See IMPRESSIONS.

LETTER RACK.—A rack for containing wood and metal letters of such a size that it would be inconvenient to keep them in cases.—See RACKS.

LETTERS.—All letters are either *plain* or fancy, according to their face. The *plain* include—1. Roman: 2. Italic: 3. Old English (or Black); all other varieties belong to the fancy sorts. The *parts* of a letter are, the feet, the nick, the shank (or body), the shoulder, the face, the beard. The *face* may be lean or fat; the *body* may be condensed or expanded. The face includes the stem, the seriphs, and the kern. Letters may be accented, ascending, descending, double (or ligatures), long, short, inferior, or superior. The height of a letter is usually eleven-twelfths of an inch; of an ordinary quad or space, three-quarters of an inch. Spaces used in matter intended to be stereotyped are, however, cast much higher. Scotch, and some foreign types, are, however, much higher, and some English offices have a standard of their own. The quality of a type is determined according to—1. The cut; 2. The shank, whether it be true or otherwise; 3. Its accurate range with other types of the same fount; 4. Its equal and uniform height; 5. The quality of the metal; 6. The depth of the face; 7. The depth of the nick. The imperfections in type are, as to its height—high or low; as to its breadth, bottle-necked, or bottle-arsed; and, generally, the burr. All of these terms are explained in this Dictionary in their alphabetical order.

LETTER TROUGH.—A shallow trough lined with lead or zinc, in which the formes are placed in order to be cleansed from ink. A loose board should lay in it, for the protection of the bottom.—See WASHING A FORME.

LEY.—A solution of alkalis, potash, pearlash, &c., used for washing off the ink from a forme. The usual ingredient is pearlash—a gallon of water being mixed with one pound weight. It should be stirred up with a stick till the ash dissolves. The harder the water, the greater the quantity of pearlash required.

LEY BRUSH.—A brush nine or ten inches long, by three inches broad, used for the purpose of applying the ley to the forme and chase and cleaning it from ink. The hair should be close, fine, and long, in order not to injure the type, and yet to allow sufficient force to be used to search every interstice in the letter where the ink can have penetrated.

LIBEL.—A libel may be regarded either as a private injury or a public offence. As a private injury, it consists in the publication, either by writing, printing, engraving, or otherwise rendering permanent (whereby it is distinguished from *slander*, which is verbal defamation only) any malicious and defamatory matter which tends to injure, degrade, or make odious or ridiculous the person respecting whom it is published. For this injury the person injured may proceed against his libeller, either by prosecution and indictment, on the ground that such publications tend to breaches of the peace, or by action to recover damages. Formerly the legal inquiry was regarded as the same whether the publication was true or false—indeed, it had become an adage "the greater the truth the greater the libel." But by the statute 6 & 7 Vic., c. 96, it is provided, that on information or indictment the defendant may allege the truth of the matter charged, and that it was for the public benefit that it should be published; subject, however, to this condition, that if he should be convicted, such allegation might be regarded as an aggravation of the offence. He may also show that the publication was without his knowledge, and did not arise from want of care on his part. Moreover, in all such indictments or informations for libel, if judgment be given for the defendant he will be entitled to the costs he has been put to in defending himself; but if the verdict be for the prosecutor upon the special plea, the prosecutor will be entitled to the cost occasioned by such plea. Lastly, it is provided that every person convicted of publishing a defamatory libel, knowing it to be false, shall be liable to two years' imprisonment, and such fine as the Court may award; or if it be not found that he knew it to be false, to imprisonment for any period not exceeding one year. As regards *actions* for libel, it was always competent for a defendant to set up as a defence that the libel was true; and the above-mentioned statute affords further protection to the editors and proprietors of periodical publications by enacting that, in an action for libel, although the defendant is unable to allege the truth of the libel, it shall be competent for him to plead that it was inserted without actual malice and without gross negligence, and that before the commencement of the action, or at the earliest opportunity afterwards, he had inserted a full apology for it in the same publication or any other selected by the plaintiff; and thereupon he shall be at liberty to pay into Court a sum of money by way of amends for the injury sustained. It is also competent for the defendant, after giving plaintiff notice of his intention to do so, to give evidence in mitigation of damages that he made or offered an apology to the plaintiff before the commencement of the action, or as soon afterwards as he had the opportunity of doing it. Irrespective of any protection afforded by statute, there are many publications which are protected from action or indictment on account of the circumstances under which they are published. These are termed privileged communications, and the defendant may obtain the benefit of their being of this character without pleading it specially, under the general plea of not guilty. Of this kind are all communications or publications made *bona fide* upon any subject in which the party communicating or publishing it has an interest or a duty towards the person he communicates with. Thus, in private matters communications respecting the character of a servant, or the solvency of a trader, are privileged; and so in public matters, the publication of a fair report of the proceedings of a Court of Justice is protected; but if it contains other libellous matters, such as comments reflecting upon the parties whose names appear in it, it loses the privilege which it would otherwise possess. There

is an important distinction between the publication of the proceedings in a Court of Justice and those in a public meeting; for while the former is privileged the latter is not. Libels which may subject the authors and publishers to *criminal* punishment are of several kinds, such as blasphemous, immoral, seditious and personal libels. All blasphemies against God or the Christian religion, or the Holy Scriptures, are indictable at common law, that is, by the custom of the realm. So is any publication which is contrary to public morals, decency, and order; and by 20 & 21 Vic., c. 83, a summary power is given to the police, under the direction of the magistrates, to search for obscene books, pictures, and other articles, and punishing the persons in whose possession they are found. As to seditious libels, it is the undoubted right of every member of the community to publish his own opinions on all subjects of common interest, and so long as he executes this inestimable privilege candidly, honestly, and sincerely, with a view to benefit society, he is not amenable as a criminal. Where the boundary is overstepped, and the limit abused for want of gratification or private malice—where public mischief is the object of the act, the publication is noxious and injurious to society, and is therefore criminal. Personal libels consist of malicious defamation, tending either to blacken the memory of one who is dead or the reputation of one that is alive, and expose him to public hatred, contempt or ridicule. By the statute 6 & 7 Vic., c. 96, any person convicted of maliciously publishing any defamatory libel, knowing the same to be false, may be imprisoned in the common jail for any t erm not exceeding two years, and shall be fined as the Court shall think fit; and if the guilty knowledge be not proved shall be liable to fine or imprisonment, or both; such imprisonment not to exceed the term of one year. By the same statute, if any person shall publish, or threaten to publish, or shall offer to abstain from printing or publishing, or to prevent the printing or publishing of any libel, matter, or thing, touching any other person with intent to extort money or any valuable thing, or to obtain any appointment or benefit, such person shall be liable to be imprisoned, with or without hard labour, for any term not exceeding three years. Upon any prosecution for libel, the defendant may show that the publication was merely accidental and without his knowledge. So he may show the libel was published under circumstances which the law recognises as those of justification or excuse. By the 6th & 7th Vic., c. 96, as we have said, he may plead that the alleged libel is true; and, further, that it was for the public benefit that it should be published; but that notwithstanding that plea, the defendant should be convicted, it is competent for the Court in pronouncing sentence, to consider whether the guilt of the defendant is aggravated or mitigated by such plea, and by the evidence given to prove it. This provision, however, does not apply to seditious libels. The defendant may also prove that the publication complained of was made without his authority, consent, or knowledge, and did not arise from want of due caution on his part. Upon conviction on any indictment or information by a private prosecution for libel, if judgment be given for the defendant, he will be entitled to receive the costs he has been put to by the prosecutor. The question of libel or no libel is one for the jury; but the Court or Judge is required to give his or their opinion upon it to the jury, according to their discretion, which the jury can accept or reject, as they shall feel themselves bound in conscience to do.

LIFT.—To lift a forme is to remove it temporarily from the press or machine, and thus to suspend the process of printing, in order that another forme may be put on. In the warehouse, each separate portion of printed paper, whatever the number of sheets it consists of, that is placed upon the poles to dry, is termed a lift. A forme is said to "lift" when it has been so perfectly justified and locked up that no parts of it drop out on being raised from the imposing surface. In most printing-offices of moderate size a piece of machinery, styled a "lift," is used to convey the formes from the press-room or machine-room, which is usually on the basement, to the composing-room at the top of the house. It consists of a sort of shallow box, standing on end, the front or lid of which is moveable, and lined with a blanket, so as not to injure the face of the type: into this box the forme is placed, over which the lid is fastened by a bolt. In this position, by means of a pulley, it can be raised or lowered from one floor to another as occasion requires. The saving of time and labour is great, to say

nothing of the destruction of the staircase caused by the sliding of formes down it.

LIGATURES.—Letters cast together on one shank. The only ligatures now in use are—

Æ Œ æ œ ff ffi ffl fi fl.

LIGHT FACES.—Varieties of type in which the lines of the face are unusually thin.

LIGHT WORK.—See EASY WORK.

LINE.—1. Composed types, which fill the length of any given measure, constitute a line of that measure. 2. When types are correctly made, the hair lines at the top and bottom of each letter are said to line. A compositor is "put on his lines" when he is paid at a certain rate for a given number of lines containing a thousand ens.

LITERAL ERRORS.—Errors in letters, as distinguished from verbal errors, which are errors in works.

LITHOGRAPHY.—The art of printing by a chemical process from designs made with a greasy material upon stone. "The discovery of this art is due to Aloysius Senefelder, A.D. 1800, and rests upon the following properties of the substance forming the printing surface. 1. That a drawing made upon it with fat ink adheres so strongly as to require mechanical force to remove it. 2. That the parts of it free from the drawing receive, retain, and absorb water. 3. That a roller or other instrument being covered with fat ink, being applied to the printing surface when inked and wetted, the ink will attach itself only to the drawn parts, and will be repelled from the wetted parts. Plates of zinc have been treated by this process in the same way as stone, and the process is then called 'zincography.' By this process it will be seen that a drawing being made or an impression taken upon paper with prepared ink, and transferred by pressure to the stone, &c., the latter will form a printing surface, from which *fac similes* of the drawing or impression may be obtained by this process." * The following are the chief circumstances connected with the early history of the art of lithography. "Aloysius Senefelder produced a piece of music, his first impression from stone, in 1796. He secured a patent for it in 1800 in several German States, extending over fifteen years. It was introduced into England in 1801, and he published a work on the subject in 1817. A partnership was entered into and establishments were formed in London and Paris in 1799, but they did not succeed. Another at Munich, in 1806, was more prosperous, and the inventor was ultimately appointed to the Inspectorship of the Royal Lithographic Establishment in October, 1809. The Society for the Encouragement of Arts in London voted Senefelder their gold medal in 1809."† The stone best calculated for lithographic purposes is a sort of calcareous slate found on the banks of the Danube, in Bavaria, the finest being found near Munich. A good stone is porous, yet brittle, of a pale and yellowish drab, and sometimes of a grey neutral tint. The stones are formed into slabs from one and a-half to three inches in thickness. To prepare them for use, two stones are placed face to face, with some fine sifted sand between them, and then are rubbed together with a circular motion to produce the requisite granulation, which is made fine or coarse to suit the purpose of the artist. The principal agents used for making designs on stone are called lithographic chalk and lithographic ink. They are composed of tallow, virgin wax, hard tallow soap, shellac, sometimes a little mastic or copal, and enough lampblack to impart a colour to the wax. These ingredients are put into an iron saucepan, and exposed to a strong fire until the mass is in a state of ignition. When the quantity is reduced one-half, the pan is carefully covered, or put into water to extinguish the flame and cool the mixture. After being well worked up, it is formed into small cakes or sticks. The ingredients are the same in the chalk and the ink, but the proportions are varied, and a little Venice turpen-

* "Abridgment of the specifications relating to Printing." 1859, p. 28.

† Townsend's "Manual of Dates," *art.* Lithography.

tine is often added to the latter. The chalk is used in a dry state, but the ink is dissolved by rubbing in water, and is used in a pen or with a camel's hair pencil. The presence of soap renders it soluble in water. The artist completes a drawing with the chalk upon a grained stone as he would make a drawing in pencil or chalk upon paper. If while in this state a wet sponge were passed over the face of the stone the drawing would wash off. To prevent this, and to make it capable of yielding impressions, a weak solution of nitric acid is poured over it, which unites with and neutralises the alkali or soap contained in the chalk and renders it insoluble in water. After this the usual course is to float a solution of gum over the whole face of the stone, and, when this is taken off, the drawing is no longer removeable by the application of a wet sponge, because the chalk is now insoluble. The stone is now ready for the printer, who obtains impressions by the following process. Having damped the surface of the stone equally with a sponge filled with water which has been slightly tinctured by acid, the printer finds that the water has been imbibed by only those parts of the stone which are not occupied by the drawing, which, being greasy, repels the water and remains dry. A roller, covered with ink, is now passed over the stone, which will not even be soiled where it is wet, from the antipathy of oil and water. But the parts occupied by the drawing, being dry and greasy, have an affinity for the printing ink, which therefore leaves the roller and attaches itself to the drawing. In this state it is said to be charged, or rolled in. A sheet of damped paper is then put over it, and the whole being passed through a press the printing ink is transferred from the stone to the paper, and the impression is obtained. Great nicety is requisite in the preparation of all the agents employed in this art, and in the process of printing, as well as in making the drawing on the stone.*

LITHO-TYPOGRAPHY.—The peculiarities of cylindrical printing have been successfully applied to the purposes of lithography, and made to take impressions of figures from the flat surface of a stone with almost the ease and certainty, and with nearly the same rapidity, as it is able to produce copies from the raised surfaces of ordinary type. The ordinary rate of letter-press printing, by two pressmen, is a token, or 250 copies, per hour; but, slow as this may seem, it is express speed in comparison with the dawdling manual process of producing lithographic impressions; since a letter-press printer at half-press accomplishes at least his 1200 copies in a day, whereas a lithographic pressman can work off but thirty to forty prints an hour, and this is at the rate of only 300 to 400 per diem. The reason of this vast difference between the speed of the two kindred operations is, that not only are the distinct processes which have to be carried out, in order to produce a single copy by lithography greater in number than those which have to be gone through in typography, but they are each of a more delicate character, and consequently require greater care and time in the prosecution of them. The several operations which have to be gone through each time a lithographic print is produced are as follows:—

1. Inking the roller.
2. Damping the stone.
3. Inking the stone.
4. Laying the sheet on the stone.
5. Lowering the tympan.
6. Running in the stone.
7. Depressing the scraper of the press, by means of the side lever.
8. Passing the stone under the scraper.
9. Lifting the scraper.
10. Running out the stone.
11. Lifting the tympan.
12. Removing the printed sheet.

But as the invention of the typographic machine more than quadrupled, in the first instance, the ordinary rate of production by hand, and did so merely by reducing the nine distinct operations involved in the letter-press printing to three, so the introduction of the lithographic machine has increased the speed with which impressions can be obtained nearly *twentyfold*—the machine producing as many as 700 copies an hour, instead of only 300 or 400 a day, as by hand. The acceleration, too, has been gained partly in the same manner as the quickening of

* "The American Printer," p. 22.

the process was effected by the first printing machine, namely, by reducing the twelve distinct operations requisite to be performed in printing lithography manually to only *three*, and this either by the omission of some of them, or the combination of others, so that two or more are executed simultaneously by the apparatus of the machine, rather than successively, as in the hand process. Every lithographic machiue is made up of five distinct forms of apparatus :—

1. The damping apparatus.
2. The inking apparatus.
3. The "feeding" apparatus.
4. The impression apparatus.
5. The delivery apparatus.

Thus it will be seen that machines for lithographic purposes are composed of the same mechanical adaptations as the typographical ones, with the addition of the appliances requisite for damping the stone. But though a perfect lithographic machine requires as many as five different self-acting contrivances (some have only four, the stone being damped by hand), nevertheless, in the production of the impressions there are only three distinct operations automatically performed—the stone being damped, the roller iuked, and the ink applied to the surface, as well as the impression giveu, with each alternate traverse of the table, as is the case, with the exception of the damping, during the reciprocating movement of the ordinary typographic machines. Hence the lowering and lifting of the tympan are both done away with, as well as the depression and after elevation of the scraper, so that four out of the twelve successive operations are dispensed with; whilst the inking the roller, damping the stone, and inklng the stone, as well as running it in and taking the impression, and then running it out again, are, as we have said, made to constitute but one act performed by the simple traverse of the impression table. Hence, as the laying-on of the sheet and removing the print have each to be performed in both the mechanical and manual processes, the entire dozen operations are abridged to three, and the gain thus rendered four-fold; so that, allowing the machine to work five times as quick as a man, we can readily perceive that the rate of production mechanically must be twenty times more than it is manually. By means of the platen of the old printiug-press the pressure applied to the type was perfectly flat and simultaneous—all the parts of the forme being impinged upon together, rather than successively, as in cylindrical printing; but raised surfaces alone can be printed plateu-wise. It would be impossible to force the sheet to take up the ink out of the fine crevices made in a copper or steel plate engraving, or, indeed, from any device in *intaglio*, by means of a flat pressure given to every part of the surface at once. Hence, for copper-plate priuting, a cylinder has to be used in order to obtain the impression; for the pressure of this, when coated with a semi-elastic substance like blanketing, is of so searching a character, that it forces itself down into the several hollows of the surface, both as it comes to and leaves each part over which it has successively to pass—the very successiveness of the pressure serving to produce the impression. Nor could the delineation upon the flat surface of a lithographic stone be successively taken off by such flat and simultaneous pressure. In lithographic printing, the force has to be *successively* applied, as in the case of copper-plate work; but it was generally believed that, unlike that mode of obtaining impressions from the incisions or sunk parts of surfaces, it was necessary, owing to lithography being executed on a flat surface, that a certain amount of friction should be applied, evenly and gradually, to every part of the stone, one after the other, in order to obtain the impression with all the beauty and fineness of the original. Hence the scraper was always made a constituent, and for a long time was considered to be an essential portion of the process, the action of such an instrument being not only to produce successive vertical pressure, but a certain amount of friction in a horizontal direction. And it was this common fallacy as to the necessity of some such instrument being used in order to obtain perfect lithographic impressions, which formed the great impediment in the advance of steam lithographic machinery. That such a prejudice is utterly erroneous, the cylindrical machines lately constructed have demonstrated in the most practical manner, the impressions being admitted by the best printers to be fully as fine and sharp in every part as any that have been produced by means of the scraper. Indeed, it must be self-evident to all in the least acquainted with mathematics, that as a cylinder can only impinge upon a plain surface in a line, even as a circle can but touch such

a line in a point, that the lithographic stone, as it passes under the impression cylinder of the machine, must have the same linear impression successively given to every part of the device delineated upon it, and that this must consequently become impressed upon the paper between it and the cylinder in the same manner as if the common lithographic hand-press had been used for the purpose; but, with the all-important exception, that little or no *friction* has been applied in order to obtain it. It is true, that as the impression cylinder of the litho-machine is continually revolving, the stone, while passing under it, receives a vertical, linear, and instantaneous impression upon each part of it successively, rather than a continually sliding horizontal one, such as is produced by the action of the scraper. Nevertheless, the lines, however finely drawn upon the stone, are, by the cylindrical method of printing, just as finely impressed upon the sheet; but at the same time, the friction, which was long thought necessary for the purpose, is to a great extent done away with: and the consequence is that the device on the stone remains for a much longer period uninjured. Indeed, the litho machine, owing to the cylinder exerting a less amount of exertion than the scraper on the surface, is capable of producing a far greater number of impressions from the same delineation than can be obtained by the hand-press. Indeed, the old frictional or forcible sliding method of producing impressions from lithography by means of the scraper formed in no way an *essential* part of the process; and that, instead of adding to the beauty of the impression, it was, owing to this friction which was thought necessary to produce it, continually destroying the fineness of the lines to which it was applied, and thus rendering the more delicate delineations on the stone of a less durable character. In fact, in the course of the experiments which were made in fitting up the lithographic machine, it was found that wherever the friction occurred—as, for instance, at those parts where the cylinder met the stone or left it—the lines were more or less injured, and that unless the cylinder were made to "bear up" at these points, fewer impressions could be taken without their betraying signs of rottenness at the upper or lower parts of the delineation—and this, whilst the finest lines in the middle portions of the subject remained absolutely unbroken. Thus it has been experimentally demonstrated that, in the old method of obtaining impressions from lithography by means of the scraper, the horizontal friction, so far from being of service in the process, was really a serious drawback to it; and that the *successive vertical* pressure exerted by this part of the lithographic press was all that was needed—the continual scraping of the surface of the stone tending, on the the other hand, gradually to destroy the sharpness of the impression, and proportionately to reduce the number of copies which would be yielded by it. But by the cylindrical method of printing, on the contrary, the successive vertical pressure being retained, and the horizontal friction removed, a far greater number of prints could be produced from the one delineation; and this merely because, owing to there being little or no friction upon the lines drawn upon the stone, such a mode of printing serves to keep them in their original integrity, and thus enables them to yield at least double or treble the number of copies which could be obtained by the old frictional method. The first successful lithographic machine was introduced about twenty years since. This, as was the case with the typographic machine, was the invention of a German—one named Siegel, and it is now in use.* The manufacture of lithographic machines is now an important business in London. There is very little variety in the construction of the different makers' machines.

LOCKING-UP.—Fastening a forme in the chase by means of quoins (*q.v.*). The quoins should first be pushed as far as possible with the fingers in such a position that when they are tightly locked up they will stand about four pica ems from the head and foot of the page; if they are driven right up to the side of the chase, or the top of the side or footsticks, the pages get crooked and lift badly. Then by the aid of the mallet and shooting stick they should be gently driven along, those against the footstick first, then those against the sidestick. In this operation the shooting stick should be held almost in an horizontal position, for if held otherwise, not only much of the power is lost, but if of wood the shooting stick is nearly sure to split, and if of iron to slip and injure the stone. The several quarters of the forme should be partially tightened before either quarter is

* "Trades and Manufactories of Great Britain."

finally locked-up, otherwise the cross-bar may be sprung. The entire forme should be gently planed all over the face before being locked-up. If this be carefully done, a second planing is hardly necessary, providing the justification is perfect and the pages are all of the same length. But as this is seldom the case, the second planing can hardly be dispensed with. It often happens that the quoins, when locked-up wet, so stick to the furniture as to render it troublesome to unlock them. In such cases drive the quoin up a little more, and it will unlock with ease. Before lifting a forme, after it is locked-up, raise it gently a short distance and look under it, to ascertain whether any types are disposed to drop out. If all is right, carry it to the proof press.

LOGOTYPES.—Types consisting of two or more letters, and forming either complete words or merely syllables, &c. They are intended to save the trouble of the compositor, for instead of lifting the word *and* in three letters, if cast as a logotype, he picks it up as one. Earl Stanhope, among other innovations, proposed to introduce eight new logotypes, believing that their regular and frequent occurrence would expedite the process of composition in a very considerable degree, for in twenty pages of "Enfield's Speaker" the logotypes would save to the compositor no less than 3,073 lifts, viz :—

th	in	an	re	se	to	of	on
771	441	413	385	291	279	264	229

Johnson's *Typographia* states that this system was actually tried at the *Times* office, but it was soon abandoned, as it was found that the hands could get through more work by the old process than by the proposed improvement. The scheme was soon almost forgotten, but in 1859 the subject of logotypes again received attention. In that year Messrs. J. V. Collignon & Louis George took out Letters Patent for "Improvement in Typography." In their specification, after observing that if all the letters were connected two and two, the operation of composing "would be shortened one-half, and by one-third and even three-fourths with elements composed of three or four letters;" and that the formation of logotypes had hitherto been attended with great cost for punches and matrices, besides the risk of loss from one letter being battered the patentees say, "Consequently we have sought an application for our improved system by other means than that of casting, and have succeeded in discovering a ready and efficient method of uniting several letters together. Hence, all the difficulties in the way being overcome, our breviotypy may be applied to all kinds of printing, which is to composition what mechanical power is to printing. According to our invention, we cold-solder letters together placed in juxtaposition, and which consists in coating a letter throughout its surface with any metallic solder to cause it to adhere to another letter, and so to form a whole. By this means a defective letter may be unsoldered and replaced by a good one, or those used that remain. This soldering preferably consists of—

Mercury	75	100."
Bismuth	10	
Fine pewter	10	
Regulus of Anatomy	5	

Mr. George obtained, two years later, provisional protection only for "Improvements in the method of soldering together two or more printing-type letters, to facilitate the work of the compositor, and the arrangement of type-cases for the same." The letters are soldered with the following composition, used cold :—

Mercury	⅔
Fine Tin	⅓

The two must be mixed well together. "The solder is put on a plate of lead, and the broad side of the type is rubbed thereon; the composition is afterwards done as usual, the solder becoming quite rigid at or about the expiration of half-an-hour." The combined letters stated to have been found of most value are—

be	com	con	ent	ion	in
for	ge	ing	ld	me	the
and	th	ve	al	re	os

In the same year (1861) Mr. A. B. Bailey obtained provisional protection for "An improved system of combination of types, and an improved case for containing the

same." The boxes in the case shown in the drawings are so arranged that all the combinations commencing with the same letters are in the same column. The columns may be either vertical, horizontal, or diagonal. The latest logographic system with which we are acquainted is that of Mr. W. H. Wilkinson, of Massachusetts, which was patented in 1868. It was tried in one of the largest printing-offices in London for the composition of a weekly periodical, and is, to some extent, in operation at the present time. The invention relates to the combined use of types consisting of words or parts of words, together with the ordinary letter or single character type. Words, roots, and parts of words, such as constitute a very large proportion of ordinary matter, are made up into types cast whole, or formed of letter-types united; these word-types are tabulated and arranged in cases in the order of their relative importance or frequency of recurrence. "A set or series of cases or boxes is arranged partially around a central point occupied by the compositor, and divided into compartments for containing the types, which are arrayed in tables so that the relative positions may be easily discerned by the eye; the said tables are placed strictly in the order of their relative values as calculated from the average number of words usually contributed by each table in the matter of composition, and each table is arranged in relation to the central point where the compositor stands, in such a position as to be accessible to his right hand in proportion to its comparative value." The ordinary letter-types, numerals, and similar types, occupy the compartments of the cases at the left hand of the compositor, the rest of the space being occupied by the logotypes. The tables themselves are arranged with reference to their being learned step by step and used as auxillary to the letter-types until the compositor acquires the use of enough words to constitute the larger proportion of his work; these word-types then become the main feature in the system, the letter-types being only used as auxillary. It would doubtless be advantageous if letter-founders cast a *u* with the *q*, as those letters always come together.—*See* "An Address to the Public," by John Walter, showing the great improvement he has made in the art of printing by Logographic Arrangements; stating also the various difficulties and opposition he has encountered during its progress to the present state of perfection. London: *1789*, 8vo., pp. xiii. 88. *Also*, "Tobitt Combination Types, their History, Advantages, and Application," by John H. Tobitt. New York: 1852, 8vo. "Miscellanies in Prose and Verse, intended as a Specimen of the Types at the Logographic Printing-office." London: J. Walter, 1785, 8vo., pp. xxiii. 225. "Logography." London: 1783, 8vo.

LONG ACCENT.—A short horizontal line placed over certain vowels, as:—

ā ē ī ō ū

LONG CROSS.—The long bar in a chase divided for octavo, &c. It is also the narrowest.—See CROSS.

LONG LETTERS.—Letters which fill the whole depth of the body, and are both ascending and descending, such in the Roman as Q and j, and in the italic *f*.

LONG PAGES.—Pages of more than the proper length. Before fastening the quoins the compositor should carefully ascertain whether the pages of each quarter are of the same length; for even the difference of a lead will cause them to hang. To test their exactness, place the ball of each thumb against the centre of the footstick, raise it a little with the pressure, and if the ends of both pages rise equally with the stick it is a proof they will not bind. A similar plan should be adopted in locking-up newspaper pages, as regards the columns.

LONG PRIMER.—A size of type between Small Pica and Bourgeois, the body of which is equal to two Pearls. The Germans call this letter *Corpus*; the French *petit romain*.

LOOSE JUSTIFYING.—The practice of insufficiently spacing the lines in the stick, thereby making them loose.—See JUSTIFICATION.

LOW CASE.—A case which is short of its proper complement of type; in which the quantities in the different boxes are *low*.

LOWER CASE.—The case which stands beneath the capital case, in a pair of cases. It holds the small letters, double letters, points, spaces, quadrats, and other sorts, according to the "lay" adopted. These sorts are called *lower-case sorts*. In literature the letters are known as miniscules.

LOW IN LINE.—When the face of a type does not range nicely with its fellows, but is lower, it is called "low in line," in contradistinction to a letter being higher than others in a line, when it is termed "high in line."

LOW TO PAPER.—When the impression of a type does not appear distinctly, from not being the same height as the body of a page or line, it is termed "low to paper." This is caused sometimes by the typefounder's dresser planing too much off the foot of a stick of type; it is also observable when new sorts are mixed with an old fount, the new sorts being, in that case, "high to paper."

LUG.—When the roller adheres closely to the inking table and the type, through its being green and soft, it is said to *lug*.

LYE.—See LEY.

M

M QUAD.—A contraction of em quadrat (*q.v.*).

MACHINE.—In England, a printing press in which the operations of laying-on the sheet, inking the forme, and effecting the impression, among others, are automatically performed, is called a machine; although to speak correctly, every press is a machine, and every printing machine is a press, as said in America. The invention of machines has given an impetus to the progress of the art of printing, and has thereby accelerated the diffusion of knowledge to an extent which cannot be contemplated without a feeling of amazement. By the use of machines, sheets of paper can be printed of a size which could not possibly be obtained on a press worked by hand, and at a speed which, compared with that of the hand press, is that of the express train to the tortoise. Savage, in his "Dictionary of Printing," treats machine printing as synonymous with cylindrical printing, which it is not, for platen machines are certainly not presses. The only distinction which can be logically drawn is what we have alluded to above —the fact of certain operations being effected automatically. It is undoubtedly the fact that the first suggestion on the records of the Patent Office, for the employment of the cylindrical principle in typographic impression, is due to William Nicholson, who, in 1790, obtained Letters Patent for a "machine or instrument on a new construction, for the purpose of printing paper, linen, cotton, woollen, and other articles, in a more neat, cheap, and accurate manner than is effected by the machines now in use." The first clause refers to the fabrication of types. These types, imposed in chases of wood or metal adapted to the surface of a cylinder, are fastened "to the said surface by screws or wedges, or in grooves, or by other means well known to workmen." "Blocks, formes, type, plates, and originals," are likewise fastened on the surface of cylinders "for other kinds of work." The ink is furnished to the printing surface by a "colouring cylinder," covered with "leather or the dressed skins which printers call pelts or . . . with woollen, or linen, or cotton cloth," "and stuffed with horsehair, wool, or woollen cloth, defended by leather or oilskin." Distribution is effected by two or three small rollers applied "longitudinally against the colouring cylinder, so that they may be turned by the motion of the latter." If the colour be thin, a ductor of wood or metal, "or a

straight brush, or both of these last," are applied to the colouring cylinder. Colour is applied "to an engraved plate or cylinder or . . . through the interstices of a perforated pattern (or cylinder)" by "a cylinder entirely covered with hair or bristles in the manner of a brush." The material to be printed (damped, if necessary) is passed "between two cylinders or segments of cylinders in equal motion," one having the printed surface imposed, and the other "faced with cloth or leather . . . so as to take off an impression of the colour previously applied." . . . Or, the printing-surface, previously coloured, is passed in contact with the material wrapped round a clothed cylinder, or the clothed cylinder with material round it rolled over the printing-surface "previously coloured." Or the printing-surface, coloured by a colouring-cylinder, rolls along the material "spread out upon an even plane." This process is applicable to books and every other flexible material. The drawings represent:—1. A press in which the type-table passes between an upper and a lower cylinder, the former (clothed) acting upon the table "by means of cog-wheels or straps, so as to draw it backwards or forwards by the motion of its handle." A box containing the inking-roller, with its distributors above it, is supported by an arm from the head of the machine. On the end of the type-table is an "ink-block," and upon it a vibrating roller, which, by the action of a bent lever, "dabbs against one of the distributing-rollers and gives it a small quantity of ink." The tympan, which opens sideways, with paper laid upon it, is laid upon the forme when it arrives between the inking roller and the machine-head. After the impression, the workman on the other side of the cylinder "takes off the sheet and leaves the tympan up." II. A printing cylinder has (gearing with it) a pressing cylinder below and a colouring cylinder above, the latter being provided with distributors as in I., and furnished by a vibrator from a trough. A sheet of paper is applied to the surface of the pressing cylinder where it is retained by points "in the usual manner," or by the apparatus in IV. The machine is uniformly driven in one direction by hand power attached to the printing cylinder. Another drawing represented a pressing cylinder and inking roller, with distributors, rigidly united and geared into a rack on a long table and divided into four parts. The sheet is laid on the former (two modes by which "the paper is taken up and laid down" are specified) at 1; the impression is received at 2; the sheet discharged at 3; and then the cylinder returns (clearing the forme by a peculiar contrivance) to 1. The specification ends thus:—"I must take notice that these and every other of my machines, as well as in every machine whatever, the power may be wind, water, steam, animal strength, or any other natural change capable of producing motion."* Such was undoubtedly the first suggestion for the application of the cylindrical principle. Savage ("Dictionary," p. 461) gives some particulars concerning Nicholson himself. It appears that he published a number of works on scientific and practical subjects, and conducted *Nicholson's Journal of Science, etc.* He kept a large school in Soho-square; and, in addition to his other multifarious pursuits, was an agent for a nobleman, whose sudden death left him in difficulties from which he could never extricate himself. It does not, however, appear that his plans and experiments ended in any actually practical results. The accomplishment of this revolution in our art is due to a young Saxon, M. Kœnig, a printer by occupation, who conceived it possible to print by steam, though at first he expected no more than to be able to give accelerated speed to the common press, to which end his first efforts were bent. The *Literary Gazette*, Oct. 26, 1822, gives some interesting particulars of this man; and still more recently, *Macmillan's Magazine*, 1869, p. 135, has called attention to him, in a most interesting article written by Mr. Samuel Smiles. Kœnig arrived in England in 1806. He was compelled to work at his trade for a time, but he lost no opportunity of bringing his great idea under the notice of master printers likely to take it up. After meeting with numerous rebuffs and disappointments, he at last found what he was in search of—a man of capital willing to risk his money in developing the operation, and bringing it into practical operation. This was Thomas Bensley, a leading London printer, with whom Kœnig entered into a contract in March 1807, to accomplish his proposed printing machine; Bensley, on his part,

*Specification, 1748. Abridgement, i. 97. The specification and drawings are reprinted in full in "Savage's Dictionary of Printing," p. 442. See also "Repertory of Arts," Vol V., p. 145.

undertaking to find the requisite money for the puopose. Kœnig then proceeded to mature his plans, and construct a model machine, which occupied him the greater part of three years, and a patent was taken out for the invention on the 29th of March, 1810. Steps were next taken to erect a working model, to put it to the test of actual practice. In the meantime Kœnig had been joined by another ingenious German mechanic, Andrew F. Bauer, who proved of much service to him in working out its details. At length, in April 1811, the first printing-machine driven by steam-power was constructed and ready for use; and the first work it turned out was sheet H of the "Annual Register" for 1810, which it printed at the rate of eight hundred impressions an hour,—being the first sheet of a book ever printed by a machine and by steam-power. In this first machine of Kœnig's, the arrangement was somewhat similar to that known as the "platen machine;" the printing being produced by two flat plates, as in the common hand-press. It also embodied an ingenious arrangement for inking the type. Instead of the old-fashioned inking-balls, which were beaten over the type by hand, several cylinders covered with felt and leather were employed, these forming part of the machine itself. Two of the cylinders revolved in opposite directions, so as to spread the ink, which was then transferred to two other inking cylinders alternately applied to the forme by the action of spiral springs. This platen machine of Kœnig's, though it has since been taken up anew and perfected, was not considered by him to be sufficiently simple in its arrangement to be adapted for common use; and he had scarcely completed it when he was already revolving in his mind a plan of a second machine on a new principle, with the object of ensuring greater speed, economy, and simplicity. By this time two other well-known London printers, Mr. Taylor and Mr. Woodfall, joined Bensley and Kœnig in their partnership for the manufacture and sale of printing machines. Kœnig, thus encouraged, proceeded with his new scheme, the patent for which was taken out on October 30th, 1811. The principal feature of this invention was the printing cylinder in the centre of the machine, by which the impression was taken from the types, instead of by flat plates as in the first arrangement. The forme was fixed on a cast-iron plate which ran to and fro on a table, being received at each end by strong spiral springs. The other details of the specification included improvements in the inking apparatus, and an arrangement for discharging the sheet on the return of the forme. A *double* machine on the same principle was included in this patent. Two other patents were taken out in 1813 and 1814,—the first of which included an important improvement in the inking arrangement, and a contrivance for holding and carrying on the sheet and keeping it close to the printing cylinder by means of endless tapes; while in the second were introduced the following new expedients: a feeder consisting of an endless web, an improved arrangement of the endless tapes by employing inner as well as outer friskets, an improvement of the register by which greater accuracy of impression was secured, and finally an arrangement by which the sheet was thrown out of the machine, printed on both sides. Before, however, these last-mentioned improvements had been introduced, Kœnig had proceeded with the erection of a single-cylinder machine after the patent of 1811. It was finished and ready for use by December, 1812; and it was then employed to print the sheets G and H of Clarkson's "Life of Penn," Vol. I., which it did in a satisfactory manner, at the rate of eight hundred impressions an hour. When this machine had been got fairly to work, the proprietors of several of the leading London newspapers were invited to witness its performances—among others, Mr. Perry, of the *Morning Chronicle*, and Mr. Walter, of the *Times*. Mr. Perry would have nothing to do with it, and would not even go to see it, regarding it as a gimcrack; but Mr. Walter, who had long been desirous of applying machinery to newspaper printing, at once went to see Kœnig's machine on the premises in Whitecross-street, where it had been manufactured and was at work. He had before had several interviews with the inventor on the subject of a steam-press for the *Times*; but determined to wait the issue of the experimental machine which he knew to be in course of construction. A glance at the machine at work at once satisfied Mr. Walter as to the great value of the invention. Kœnig having briefly explained to him the working of a double machine on the same principle, Mr. Walter, after only a few minutes' consideration, and before leaving the premises, ordered two double machines for the printing of the *Times* newspaper. In Nov., 1814, the *Times* announced that the greatest improvement connected with printing since the

discovery of the art itself had been accomplished, inasmuch as a "system of machinery, almost organic, had been devised and arranged, which, while it relieved the human frame of its most laborious efforts in printing, far exceeded all human power in rapidity and despatch." It stated that "no less than 1,100 sheets are impressed in one hour." This number was sufficient at that time to meet the demand for the *Times*; but to meet the contingency of an increasing circulation Kœnig shortly after introduced a further modification, in the continual motion of the printing cylinder (the subject of his fourth patent), by which it was enabled to throw off from 1,500 to 2,000 copies in the hour. In the event of a still larger impression being required, Kœnig was prepared to supply a four-cylinder or eight-cylinder machine on the same principle, by which, of course, the number of impressions would have been proportionately multiplied, but the necessities of the paper did not at that time call for so large a production, and the machines originally erected by Kœnig continued for many years sufficient to meet all the requirements of the proprietor. The preceding description of the first steam printing machine possesses considerable historical interest, but the machine itself has since been completely eclipsed in its performances by at least a score of variously-constructed presses, some the production of English engineers, and some the invention of American, French, and German engineers. Among the principal machines now in use for printing newspapers, &c., are: The "Hoe" Machine, the "Bullock" Machine, the "Walter" Machine, the "Marinoni" Machine, which are all described under their proper headings. The characteristics of a good machine are:—

1. *Strength*, and ability to print a full forme of solid matter.
2. *Durability*.—The material used in its construction should be of proper quality, and all shafts and wearing surfaces of wrought iron or steel.
3. *Compactness*.—Economy of room is of great importance.
4. *Simplicity*.—The construction should be as simple as possible, and the liability to get out of order be reduced to the minimum. All the parts should be easy of access, and the more important in view.
5. *Distribution*.—This is of vital importance, and equally so the
6. *Rolling Arrangement*.—The roller should be duly adjustable to a certain degree of pressure on the type; and should be so arranged as to roll or not or to give any number of rollings at the pleasure of the operator.
7. *Impression*.—If a platen machine, there should be a perfectly square impression, clear and sharp, and perfectly even.
8. *Adjustment of Impression*.—The impression should be changeable by some simple device.
9. *Feeding*.—Ample time should be allowed for feeding the sheets, during which time the cylinder should be at rest.
10. *Throw off*.—The impression should be capable of being thrown off at will.
11. *Speed*.—Not only should the nominal rate of speed be regarded, but the question whether the machine will work at that rate with safety; whether it runs easily, and with the least amount of noise.
12. *Quality of Work*.—Regard should be had especially to this point, which includes the register.
13. *Delivery*.—The sheets should always be delivered printed side up.
14. *The Ink Fountain*.—This should be so arranged as to work with the smallest quantity of ink, and admit of being readily cleaned. It should be covered over with a moveable lid to exclude dust.

MACHINE BOY.—A boy engaged in the machine-room for laying-on and taking-off the sheets during the process of printing by machine. Whilst the machine minder is making-ready a forme, the boys are sometimes placed at other machines, or their time is occupied in taking home or fetching formes from other printers. The warehouseman also frequently finds their services handy in an emergency, for filling-in or taking sheets out of the glazed boards.

MACHINE CASTING.—See TYPEFOUNDING.

MACHINE MANAGER.—The superintendent of the machine-room, from whom the machine minders take their orders. He also has to undertake the bringing-up of cuts, &c., for the work on the machines.

MACHINE MINDER.—The man who makes ready the formes, tapes and blankets the machine, and, when started, looks after it, watches the progress of the work, and directs the laying-on and taking-off boys in their duties.

MACHINING.—Printing the formes by means of a machine. Where an office does not possess a machine, and the formes are sent out to be printed it is called machining them. Some of the London offices confine themselves almost entirely to machining for different printers.

MACHINIST.—Usually a practical engineer who attends to the setting up or taking down of machines, and to repairing them when broken. Machine-minders, however, are frequently styled machinists.

MACHINE ROOM.—The apartment in a printing-office where the machines are erected, and where the formes are machined. It is usually situated on the basement floor, on account of the great weight and vibration caused in working; as also for being more convenient, when erecting or taking down a machine, for carrying the various portions in and out of the office.

MACKLE.—An imperfection in the printed sheets, part of the impression appearing double. If the frame of the tympan rubs against the platen it will inevitably cause a slur or mackle. This is easily remedied by removing the obstacle so as to clear the platen. The joints or hinges of the tympan should be kept well screwed up, or slurring will be the consequence. When the thumb-piece of the tympan is too long it always produces a slur: this can be prevented by filing off a part of it. Loose tympans will at all times slur the work, and great care must therefore be taken in drawing them perfectly tight. The paper drying at the edges will also slur; this may be remedied by wetting the edges frequently with a sponge. Slurring and mackling will sometimes happen from other causes; it will be well in such cases to paste corks on the frisket, or to tie as many cords as possible across it, to keep the sheet close to the tympan.

MAKE.—In casting-off copy or matter it is said that it "makes" so much—a galley, a stickful, &c.—that is, it occupies so much space.

MAKE EVEN.—When a long paragraph is divided into more than one taking of copy, the compositor setting the first portion is told by the one that follows him to "end even." If, however, he cannot conveniently do so, he has to "make even" by over running a few lines of the second take.

MAKING MARGIN.—Arranging the pages so that each may occupy one side of a leaf and have the proper proportion of white paper left at the sides as well as at the head and foot. The page, when printed, should be a little higher than the middle of the leaf, and have a little more margin on the outside than in the back. The methods now resorted to are as follows:—For a half sheet of 8vo., dress the chase with suitable furniture, and fold a sheet of "it's own" into the 8vo. size. Place the back of the paper on a level with the ends of the lines of the 8th page, and let it extend a Pica em beyond the outer edge of page 1; if no wider than the rest, this will give a proper margin to the back, and allow one em for cutting: now open the paper to a 4to., and place one edge against the ends of the lines of page 7, and let it extend to and not beyond, the outer edge of page 1, taking care that the furniture is equally divided on each side of the short bar. Having in this manner made the margin to the *breadth* of the paper, now proportion it to the *length* by trying whether the depth of the paper, folded in 8vo., will extend from the folio of page 8 to the bottom of page 5, including the white line, having the furniture equally proportioned at the heads each side of the long bar. This quarter may now be considered as right, and the others may be

adjusted exactly the same. The furniture for the *sheet* is also furnished in the same manner. In making margin always take care that the gutter-sticks be of a proper breadth, which may be tried by holding one end of the paper folded into 4to. to the centre of the groove in the short cross, to observe whether the fold for 8vo. falls in the middle of a gutter-stick; if it should, it will prove the gutter to be correct. The margins for 12's and other sizes may be made in the same manner; for, having carefully folded a sheet of paper intended for the work, one quarter may be first dressed, and the margin adjusted before proceeding further; for if the folding falls in the centre of the respective parts of the furniture it proves that the margin is right throughout. Having made the proper margins, nothing remains but to fit the side and foot sticks and quoins and lock-up the formes, observing well that every page stands square to ensure a true register. In imposing jobs, where two or more of the same size requiring equal margins are to be worked together, fold the paper to the size appropriate for each, and so arrange the type that the distance from the left side of one page to the left side of the adjoining one shall be exactly equal to the width of the folded paper, as before described.

MAKING READY A FORME.—Preparing it for printing—one of the most important of the pressman's duties. We shall first describe the best method for making-ready on the machine, and then on the press.

Make clean the bed of the machine and the impression segment of the cylinder. Adjust the bearers a trifle above ordinary type-height. See that the impression screws have an even bearing on the journals, and that the cylinder fairly meets the bearers. Select a suitable tympan or impression surface. This tympan may be india-rubber cloth, a thick woollen lapping cloth or blanket, several sheets of thick, calendered printing paper, or one or more smooth and hard press boards. Each of these substances has merits not to be found in any other. Upon the proper selection of the tympan the machine work in a great measure depends, and care should be taken in making the choice.—See TYMPANS.

Whatever be the material selected, it must be stretched very tightly over the cylinder. All labour in overlaying is but thrown away if this be not carefully attended to. A rubber or woollen blanket can be secured at one end of the blanket by small hooks projecting inward, and laced tightly with sadler's thread at the other end; or, by sewing on that end of the blanket a piece of canvass, it may be wound tightly around the reel and kept secure by the prawl and ratchet. Paper and press-boards require a different process. Take a piece of Nonpareil cherry-reglet of the full length of the cylinder. Trim down the paper or press-board to the width of the bed between the bearers, but leave it a little longer than the impression segment of the cylinder. Then crease the press-board at a uniform distance of half an inch from the narrowest end, and lay this creased part on the flat edge of the impression segment of the cylinders under the grippers. Put the reglet over this and bring down the clamps firmly on the reglet so as to bind all securely. When this is done a thin web of muslin may be stretched over the whole in the same way in which a blanket is laid on, and rolled up tightly, which will prevent any slipping of the board or of the overlays that may be pasted on it.

The regulation of the margin is the next process. Although type can be printed from any quarter of the bed, it will be found most convenient to lay all formes close to the back part of the bed, and midway between the bearers. This will secure a good impression, give a fair average margin to every forme, and allow the full use of the bed for a large forme, without resetting the cylinder. The bed and cylinder travel together, and the grippers, which bring down the sheet to the forme, should barely lap over the back part of the bed. So long as the toothed cylinder-wheel, and the short-toothed rack on the side of the bed remain undisturbed, the grippers will always pass over the bed in exactly the same place. When the grippers are in this position, slightly lapping over the side of the bed, measure the distance between the back edge of the bed and the point of one of the nearest grippers, and with a reglet cut a gauge exactly corresponding to this measurement. Let no forme be laid upon the machine until the space between the type and the edge of the chase tallies with the gauge. This will prevent the grippers closing on the forme and crushing it. If the chase will not admit of so wide a margin, or if an extra margin is wanted on the sheet, put a piece of furniture of the extra width behind the chase. The margin can thus be increased or diminished at pleasure.

A book forme may be locked up in a chase so large and with the type so far from the frame that the grippers will bring down the sheet in such a position that it will be printed with the margin all on one side. To remedy this, the cylinder must be re-set. Proceed thus: remove the screw and washer at the end of the cylinder-shaft, and draw the intermediate wheel out of gear; loosen screws in the gauge rack; then turn the cylinder to the point required, connect the intermediate wheel, adjust the gauge rack, and screw up tight.

The machine having been adjusted, next examine the forme to be printed. Not only see that it has been gauged correctly, but also that it is not locked up too tightly, that chase, quoins, letter, and furniture are all level and lie flat upon the bed. If the forme springs, the quoins must be slackened; if this loosens the type too much the justification should be amended. Make clean the type by rubbing it over with a dry brush. The rollers are often foul and the colour of the ink changed by dust and particles of dirt clinging to the type.

Fasten the forme so securely on the bed that it will not be moved by the action of the cylinder or the rollers. Take a proof on its own paper, using very little ink. Adjust the drop guides so as to bring the sheet exactly in the right position. Push out the iron tongues at the edge of the feed-board at equal distances from each other, so that they will sustain the paper evenly. Slide the drop guides along the rod, until they fall squarely over the tongues. Set the side guide so that it will give a true margin in length to the sheet to be printed. Adjust the grippers so that they will seize the sheet at proper intervals, making the margin exactly even by lengthening or shortening the drop guides. Then take a clean proof on its own paper exactly in the right position, before making-ready, and show it to the reader. It often happens that an error in the margin or an imperfection in the register is thus noticed, and its timely discovery and correction before overlaying will save much time and trouble. A readable proof may be taken before overlaying by running through a sheet or two of thick proof paper. Make register, if it is a book forme, before overlaying.

When everything has been found correct, then proceed to regulate the impression. If the type is fair the proof should show a decently uniform impression. But if the forme is large, or if it contains old and new, or large and small type, then the proof will show an uneven impression. To rectify this inequality, three expedients are in use:—

1. Lowering the bearers and putting on more impression. This is a very poor way, for it wears down new type in order to show the face of the old, and invariably produces thick and coarse press-work.
2. Raising the low type to proper height by placing thicknesses of paper under them, which is called Underlaying.
3. Giving additional thickness to the tympan over such parts of the forme as show a weak impression, which is called Overlaying.

It is seldom that any one of the methods will prove sufficient; all should be used together. When the larger part of the proof-sheet shows a weak impression, approaching illegibility, then more impression should be added. When one side of the proof-sheet shows a weak impression, while that on the other side is full and clear, the more impression should be given to the pale side. The impression should be made decently uniform before any attempt is made at overlaying or underlaying. But the bearers should follow the impression screws, both being raised and lowered together, in order to secure the type from the unimpeded force of the impression cylinder. The bearers should be of even height, and the cylinder shaft should always revolve on a true level. If the impression screws are carelessly used, and the bearers are rashly raised and lowered, this even bearing will soon be lost; the difficulty of obtaining a good impression will be much increased, and the machine will receive a serious injury. For the same reason the bearers should never be packed with cards, as is usual on the press, for it strains the cylinder and all its bearings with an irregular resistance. The bearers should be tampered with even less than the impression screws. When the latter are so set that the cylinder gives a fair, uniform impression, they have done all that can be expected, and nothing more should be attempted with them. Sometimes the proof may show that one cut, or a line of type, or a set of brass rules is higher than any other material in the formes. The impression should be set regardless of

this; it will be found quicker and neater to reduce the impression on one or two such high lines by cutting out the tympan sheet over them than it will be to underlay and bring-up all other types to such irregular height. Adjust the impression so that it will face the larger portion of the type, and make the less conform to the greater. Those parts which are high must be cut out of the tympan, those which are low should be raised by underlays; the inequalities should be smoothed by overlays.

When any part of the forme is low, it will not answer to attempt facing it with overlays: it must be brought up to meet the inking roller, as well as the impression cylinder. In such case, cut out an impression of the forme where it is illegible, and then paste it to the bottom of the type. If some types are high and some are low, make proper distinction, and carefully avoid increasing the height of any type or rule which seems to have a full impression. Pursue the same course when a marked depression appears in the centre or a fading impression at the edges. Cut out that section which is light and paste it under the defective part. If the impression grows faint in any part, the underlays must be cut of irregular thickness to suit the fading away of the impression. Cut out an underlay from the edge where the impression begins to be light; then cut another of smaller size where it is quite illegible; paste one over the other, laying them carefully in their proper positions, and then paste them all on the bottom of the forme where it is needed, taking care to lay the smallest underlay nearest the bed. This will restore the type to a proper level, and the next forme should show a uniform impression. The same plan will answer for a low corner. Use as little paste as possible, thin and free from lumps. Be careful that the underlays are put on smoothly, without fold or wrinkle. Cut them all from a proof, which serves as a guide both in cutting and affixing to the forme.

Underlaying should not be practised to any great extent upon a cylinder machine. It is a valuable means of bringing up an old line of type, a hollow or a low corner. The underlays of any type forme should not constitute more than one-fourth of the surface; if more than this is attempted, they rarely fail to work up the quadrats and furniture. The action of the quick-moving cylinder upon a forme of type underlaid with yielding paper, will create a springing and rocking of all the materials in the chase.

Of all materials, old stereotype plates need underlays most, as they are usually quite irregular in height. Thin card or pasteboard will be found preferable to paper for the underlaying of plates secured on wood bodies. When the plates are on patent blocks, always underlay between the plate and the block. Always cut the underlay for a plate less in size than the faint impression would seem to require; this will allow for the spring of the plate. If it is cut of full size, the next impression will disappoint the pressman by being much harder at the edges than he intended. Never attempt to build up a type-forme to a proper impression entirely or chiefly by underlaying.

Underlays should be put under all large and bold-faced types, when used with smaller types, so as to raise them above the level of the others. This is needed to give the forme closer rolling, extra supply of ink, and that extra force of impression to transfer the ink to paper which all large type requires. When the type has been so levelled by underlays that all parts receive proper bearing from the inking-rollers, and when the cylinder has a correspondingly even impression, then overlaying may be commenced. For ordinary news-work, posters, or job-work, overlaying may be entirely unnecessary. But fine press-work cannot be done without overlays. Underlays are chiefly valuable for securing an even impression, while overlays are indispensable for the giving of delicacy and finish.

To overlay a forme properly, the tympan should be covered with a sheet of thin, smooth and hard paper, stretched tightly. Then take a pale impression on the tympan sheet, and also run through the machine two or three proofs on thin and hard paper. Examine the proofs carefully on face and back. If any brass rules or letters appear too high, cut them out of the tympan sheet in one or two thicknesses, as their varying heights may require. Go over the whole proof, examining every line carefully, and by cutting out reduce the impression on all projecting letters to an uniform standard. For this, as for all other work on overlays, use a sharp knife with a thin point, and cut on a smooth surface, so that there will be no ragged nor torn edge to the cut.

The next step should be to raise the impression of those parts of the forme

where the type appears dull or weak. Cut out carefully and paste the overlays smoothly upon the tympan. Overlays are worse than useless if they are not laid on firmly and neatly, as the slightest bagginess will cause them to slur or mackle. If, by accident, the tympan sheet should bag or wrinkle, tear them off and commence anew.

Cut out and overlay the more prominent parts first. Then try another impression, and from that cut out new overlays for minor defects. Thus proceed until a perfectly smooth and even impression is obtained.

With common work it will be sufficient to cut overlays in masses, as pages or parts of pages, but with fine work every line and letter needs examination, and letters and parts of single letters are often overlaid by careful workmen. When the pressmen is expert at making-ready, it is not necessary to take a new impression with every successive set of overlays. Many pressmen take a dozen proofs of a forme on different styles of paper, and proceed to cut out and overlay on one of the proofs, and finally paste this proof on the tympan. But this boldness and precision can be acquired only by long practice. It is better for the young pressman to feel his way step by step.

At Press, the term Making-ready a Forme includes: laying the forme on the press, fixing it in its place, placing the tympan, adjusting the points to make register, when both sides of the paper are to be printed, making register, preparing the frisket, and producing an equal impression from all the pages and from every part of each page. The following directions are extracted from Mr. Houghton's "Printer's Every-day Book":—

The first thing in making ready a forme is, that it be exactly in the centre of the press-table and platen, so that the piston, to which the platen is screwed, will fall perfectly in the centre of the forme, when the bar-handle is pulled. To do this is very easy; it only being required to put the forme the same distance from the tympan as it is from the edge of the press-table next the platen; to the nick on the front edge of which it is to be adjusted. This done, fasten the forme on the press-table. If it be a small one, and no rack-chase for making-ready at hand, it may be done with two empty folio, quarto, or octavo chases, according to its size, by putting one on each side and locking it with quoins against a sidestick. If it be a large one, quoins only will be necessary to fasten against the side-irons.

The forme being fastened, the tympan sheet is laid on it, and adjusted as near the centre as possible, when the tympan is damped a little, to make the sheet stick, and then pulled. The corners of the tympan sheet thus brought up from the forme, are then pasted fast to the tympan, and such blankets put into the inner tympan as will suit the nature of the forme. For instance, if it be an ordinary job, jobbing blankets are used, but if a half-sheet or a sheet of twelves, blankets of a finer texture are used, or perhaps what is as good, a few sheets of paper.

Thus far, if the mere folding of a sheet before it is laid on a book-forme be excepted, in making-ready all formes are alike, but how they should be proceeded with must depend upon circumstances. If the job to be worked be only an ordinary one, by putting on and cutting out the frisket (which should be previously pasted), a little overlaying, and regulating the pull, it will be ready to go on with. But if the forme be a half-sheet or sheet of book-work, a little more care is necessary, and requires one or two things to be done before it is ready to go on; such as putting on the points, getting register, in-laying, &c. Suppose, for example, the forme to be a half-sheet of twelves, the tympan sheet of which, after being folded into sixes, and laid by the creases to the long and short crosses and pulled, is pasted on the tyman as above. The proper blankets intended for use also being in their place, a pair of twelves points, which differ from those used for octavo, quarto, &c., are screwed exactly on the upper crease of the tympan sheet, so that the spurs of the points will be at equal distances from the outer edge of each side of the impression, and fall in the groove of the thick cross-bar of the chase. As these points are required to be exactly of a length, it is best to measure both from the spur to the outer edge of the impression on the tympan-sheet, and adjust them to each other accordingly. If this be properly done, and the furniture in the forme be exact, the register will also be exact with little trouble. The points being adjusted, pull, before the frisket is cut out, a slip-sheet, or a set off-sheet, without rolling, and back it, by putting the hole made by the near point on the off spur, and

that made by the off point on the near spur. If the register be not good, make it so by altering the points or moving the forme a little to suit the necessity of the case; or by slacking one square and locking up the opposite one tighter, which may, perhaps, do better than either. Having now got register, take an impression on the frisket, which has previously been covered, and cut it out with care. The advantage of getting register of a half-sheet before the frisket is cut out is, that it obviates the probability of having again to cut the frisket for bites, which is a necessary consequence if the forme be moved to get register after the frisket is once cut. It is now necessary to examine the impression; for this purpose another slip-sheet is laid exactly to the tympan-sheet and pulled, and the impression is examined accordingly. This sheet will, perhaps, exhibit places where the impression is more or less heavy. Cutting out of this sheet every place where it is so, and pasting pieces of paper on it to bring up the light parts, it is placed inside the tympan, and the process repeated until the impression is made perfectly even and free from black and gray appearances. The thickness of the sheets used for this purpose must, of course, depend on the state of the impression pulled, of which the pressman only can judge. Some formes requiring much thinner sheets to bring the impression even than others, it is in judging correctly, and in using sheets of a proper thickness for this purpose, that the art of getting an even impression consists. For if any part of the impression only requires a sheet of a ream weighing twelve pounds to make it perfect, it is obvious that, to use a sheet out of a ream weighing eighteen or twenty pounds, would make the part heavier than the rest, and consequently all the other parts light. Practice and observation, however, are the only means by which this art can be practically attained. If any other trifling inequalities appear from the impression of this sheet, overlays of thin paper pasted on the tympan-sheet will perfect it. The pull may be then adjusted according to the nature of the forme, light or heavy, and be considered now ready for working. If the points have not springs, the best substitute is a piece of packcord wrapped round the point-screws and passed across the tympan so as to fall within the margin of the thick cross-bar. This acts as a spring, and throws the sheet, when pulled, off the points, and thus insures good point-holes. The only difference between making-ready a sheet and a half-sheet, whatever be the number of pages on a sheet, is, that the register of the sheet is not made till the inner forme is off, and the second or outer forme is laid on, whereas the register of a half-sheet is made in making-ready, before it is gone on with.

But if the half-sheet of twelves, which I suppose to be now made-ready, consists of stereotype plates, the process of getting it ready will be somewhat different. For instance, after the plates are put on the blocks or risers, at equal distance, they should be marked, that they may be better detected if they move. This done, the proper blankets are put in the inner tympan, and, without rolling, an impression pulled, before the tympan-sheet is laid. By the impression of this sheet, such plates as are found low are raised by underlays of paper, of various thicknesses, being put under those parts of the plates on the blocks which come off light. This done, a second sheet is pulled for the same purpose, and again adjusted in the same way, until a tolerable impression is exhibited. The forme is now ready for the tympan-sheet, but before this is laid, ascertain whether any of the plates are moved from their places on the blocks before marked. Satisfied that the forme is correct, the tympan-sheet may be laid, and proceeded with as before advised; namely, screw on the points, get register, pull a sheet or two and cut out the impression, where necessary, to paste in the inner tympan, cut out the frisket, overlays, &c. The heap is then lifted on the paper-horse, the bank cleared of all waste-paper, and the forme gone on with.

We would also commend to the attention of the young pressman the remarks contained in Stower's "Printers' Grammar," pp. 345—354; in Savage's "Dictionary," pp. 468, 469; in "The American Printer," pp. 228—231; and in Johnson's "Typographia," Vol. II., pp. 519—523.

MAKING UP.—The operation of forming matter into pages or columns. In printing-offices where the clicking system is not acted upon, each compositor makes up his own matter. The compositor who has the first take on the work proceeds without delay to make it up as soon as he has completed it. Having

completed as many pages as his matter will make, he passes the overplus, if less than half a page, with the correct head and folio, to the compositor whose matter follows his, at the same time taking an account of the number of lines loaned; if, on the contrary, the overplus makes more than half a page, he borrows a sufficient number of lines to complete his page; each compositor keeping an account of lines borrowed and loaned. The second compositor, following the same course, passes the make-up to the next in succession; each man passing the make-up in like manner without unnecessary delay. But on newspapers and periodicals, the "printer" undertakes this duty; as also do clickers in companionships.

MAKING UP FURNITURE.—Dressing a chase with suitable furniture, side and footsticks, so that a proper margin will be given to the work when printed. This duty falls to the lot of the Quoin-drawer Overseer during the first portion of the work; but if the same set of furniture is used over again for the same or a similar work, the compositor transfers it from one set of pages to another without extra charge.—*See* MAKING MARGIN.

MAKING UP LETTER.—When a work is given out to a companionship, the clicker applies to the storekeeper for a sufficient quantity of letter to keep a certain number of men employed, or to get up a given number of pages. If any part of the matter for distribution, whether in chase or in paper, be desirable or otherwise on account of the sorts it may contain, it should be divided equally, or the choice of it thrown for. When a new companion is put on the work after the respeetive shares of letter are made up, and if there be not a sufficiency to carry on all the companionship without making up more, he must bring on an additional quantity before he can be allowed to partake of any of that which comes from the press.

MALLET.—A wooden hammer, wherewith by the aid of the shooter or shooting-stick the quoins are wedged in or driven up, and the forme is made secure. In the early days of printing, the head of the mallet was round, but now it is almost square, the lower side, or that into which the handle is fitted, being made smallest. A useful size for a news-mallet is five inches in breadth at the top, and four inches in breadth at the bottom, and about three inches thick. The handle, which is best made of beech or ash, should be a little more than an inch in diameter and seven or eight inches long. The hole in the head to receive the handle should he levelled each way from the centre on two sides, so that the handle is tightly wedged in at the upper end and there is no danger of the head falling off. Mallets for locking-up jobbing matter are made somewhat smaller and lighter. In conjunction with the planer, the mallet is used to plane down formes.

MANUSCRIPT.—Anything written with the hand, in contradistinction to printed matter.

MARGIN.—See MAKING MARGIN.

MARGINAL NOTES.—See SIDE NOTES.

MARKS.—Certain symbols used by printers, such as the hyphen, apostrophe, brace, crochet or bracket, the ellipsis, &c. There are marks of quotations, accentual marks, the index, leaders, and dots, &c., which will be found duly described separately. In the composing room and the closet the word is used to denote certain alterations made in proofs by the reader or others, such as "readers' marks," "authors' marks."—See PROOF-READING.

MATERIALS.—A general name for all implements used in printing-offices except presses and type.

MATHEMATICAL SIGNS.—See SIGNS.

MATRICES.—See TYPE FOUNDING.

MATTER.—Pages of type composed for any work; columns for newspapers; the type set for jobs. In well-arrranged printing-offices it is divided into matter for distribution, matter for working off, doubtful matter, good matter, &c., according as it is to be used or distributed.

MEASURE.—The width in Pica ems of a line, page, or column of type.

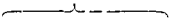
MEDICAL SIGNS.—See SIGNS.

MEDIUM.—A size of paper.—See DIMENSIONS OF PAPER.

METAL.—The material of which the type is composed.

METAL FURNITURE.—See FRENCH FURNITURE.

METAL RULES.—Fine lines cast on one two, three, and four em bodies, in the centre of the type. Sometimes there are en metal rules cast; they are used in dates, such as 1875-6; also in tabular matter, where the columns require an end to make up the width. They are also used in lengthening braces, thus:—



In the United States they are known altogether as dashes.

MILLED BOARDS.—A description of thick, hard cardboard, used to form the sides of the books, and for mounting pictures upon, making boxes, &c. The standard sizes are:—

Pott	17½×14½	Whole Imperial	32×22½
Foolscap	18½×14½	Long Thin	30×21
Crown	20½×16½	Atlas	30×26
Small Half Royal	20½×13	Long Royal	34×21
Large Half Royal	21 ×14	Colombier	36×24
Short	21 ×17	Large Atlas	34×27
Half Imperial	23½×16½	Gt. Eagle or Double Elephant	40×28
Small Half Ditto	23 ×15½	Emperor	44×30
Middle or Small Demy	22½×18½	Double Royal	46×21
Large Middle or Large Demy	24½×18½	Long Colombier	49×24
Large or Medium	24 ×19	Long Double Elephant	50×27½
Small Whole Royal	25½×19½	Antiquarian	54×30
Large Whole Royal	28 ×21	Extra Antiquarian	54×34

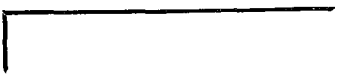
MINION.—A size of type one size smaller than brevier, and one one size larger than Nonpareil.

MISPRINT.—An error in printing caused either by accidents during the progress of press-work, by incorrect composition, or by mistakes in making up a forme.

MISSAL CAPS.—A style of fancy letter, used sometimes as initials to Old English or Black letter.

MITREING GUARD.—A small machine used for mitreing brass rule. It is made of cast-iron, with the exception of the front, which is of hardened steel. When a job requires a brass rule border, the rule is cut to suit the four sides of the page; but instead of printing them thus,

the rule is fixed in the mitreing guard, by means of a screw, and the ends filed till they join thus:—



A neater appearance is thus obtained, and greater credit is reflected on the compositor.

MITREING MACHINE.—A machine for mitreing wood rule, brass rule, &c. It is similar to the Mitreing Guard, but on a larger scale.

MITRED RULE.—See MITREING GUARD.

MONK.—A botch of ink on a printed sheet, arising from insufficient distribution of the ink over the rollers.

MOULDS.—See TYPE FOUNDING.

MULLER.—A sort of pestle, used for spreading ink on the ink table.

MUSIC TYPES.—Moveable types used in producing music. The first good music types were cut by Mr. Hughes. Mr. E. Cowper invented a mode for printing music in two formes—one being the lines, printed first; the other the notes, &c., printed on the lines. This plan did not work well, and the late Mr. Branston devised a method of striking the punches deeper into the plate, and then taking a stereotype plate from it in type metal. After the white parts were blocked out, the music was sufficiently in relief to be capable of being printed at the common printing press.

MUTTON QUADS.—A slang term for em quads. The use of this word appears to arise from its being more distinct than the syllable for which it is used, just as "nut" quad is used for en quad—the difference between the sound of em and en being so slight.

N

NAKED FORME.—A forme without furniture.

NATURE PRINTING.—This beautiful art was first introduced and practised in Vienna, whither the late Mr. Henry Bradbury went, on purpose to acquire the knowledge he carried out subsequently with so much skill and ability. The flowers, leaves, or plant itself (as the case may be) are first dried by placing the subject between thick blotting papers, and pressing in a screw press, frequently changing the papers, and repeating the process, until all moisture is extracted; in some instances the services of the sun, or even artificial heat, are additionally called into requisition; when the subject is sufficiently dried, which may be known by its brittleness, it is ready for manipulation. The plant may be said to engrave its own plate thus:—a thick piece of pure, soft, sheet lead, rather larger than the paper on which the subject is ultimately to be printed, must be planed as bright and even as a looking-glass. On this plate the subject is laid in the required position, upon which again is placed a highly-polished steel plate, face downwards. The whole is then placed between powerful rollers, until the plant is imbedded in the lead, the result being a *fac-simile* matrix. An electrotype of this matrix is then taken, from which, again, another electrotype is requisite, in order to give the original effect when printed from. The great object of Nature Printing is to reproduce very rare botanical specimens so truthfully as to enable the student of any country to examine the print, and obtain the same result to his investigation as though he actually had the plant itself. The advantage attained may be easily estimated from the fact that there are numerous instances where only one specimen is known to be in the possession of individuals, and even if it were to be sold, its price would deter many from attempting to obtain it.

NEWS-HAND.—A compositor employed solely on newspaper work.

NEWS-HOUSE.—A printing-office in which newspapers only are printed. This term is used to distinguish them from book and job houses.

NEWS-MACHINE.—A machine specially adapted for printing newspapers.

NEWSPAPERS (LAWS RELATING TO).—See LAWS RELATING PRINTING.

NEWSPAPER STAMP.—The Newspaper Stamp, abolished on Friday, September 30, 1870, had an existence of one hundred and fifty-eight years. In the year 1712, Queen Anne sent a message to the House of Commons complaining of the publication of seditious papers and factious rumours, by which designing men had been able to sink credit, and the innocent had suffered. On the 12th of February in that year, a Committee of the whole House was appointed, to consider the best means for stopping the then existing abuse of the liberty of the press. The evil referred to had existence in the political pamphlets of the period. A tax on the press was suggested as the best means of remedying the evil, and for the purpose of avoiding a storm of opposition the impost was tacked on to a bill for taxing soaps, parchment, linens, silks, calicoes, &c. The result of the tax was the discontinuance of many of the favourite papers of the period, and the amalgamation of others into one publication. The Act passed in June, 1712, came into operation in the month of August following, and continued for thirty-two years. The stamp was red, and the design consisted of the rose, shamrock, and thistle, surmounted with a crown. In the *Spectator* of June 10, 1712, Addison makes reference to this subject, and predicts great mortality among "our weekly historians." He also mentions that a facetious friend had described the said mortality as "the fall of the leaf." The witty Dean Swift, in his *Journal to Stella*, under date of August 7, speaks of Grub-street as being dead and gone. According to his report, the new stamps have made sad havoc with the *Observator*, the *Flying Post*, the *Examiner*, and the *Medley*. Twelve years afterwards—namely 1724—the House of Commons had under consideration the practices of certain printers, who had evaded the operations of the Stamp Act by printing the news upon paper between the two sizes mentioned by the law, and entering them as pamphlets, on which the duty to be paid was 3s. for each edition. Its deliberations culminated in a resolution to charge 1d. for every sheet of paper "on which any journal, mercury, or any other newspaper whatever shall be printed, and for every half-sheet thereof the sum of one halfpenny sterling." In 1761, the Stamp Duty upon newspapers was made 1d., or £4 1s. 8d. for one thousand sheets. The next change in the Stamp Act was effected on the 28th of May, 1776, when Lord North advanced the price from 1d. to 1½d. Another alteration was effected on the 12th of August, 1789. On this occasion the Stamp was increased from 1½d. to 2d. In 1794, the Stamp was up to 2½d., and in May, 1797, to 3½d. The highest rate of the Stamp was obtained in 1815, when the amount was 4d. After this date a period of decline ensued. In the reign of William IV. an Act was passed for the reduction of Stamp Duty upon Newspapers from 4d. to 1d., and ½d. on any supplement. This Act came into operation on the 15th of September, 1836, from which date the rise of the cheap paper era may be dated. The next improvement occurred in 1855, when the compulsory use of the stamp was abolished, save and except as a means of passing the paper through the post. It was decided, in 1870, to determine the operation of the old Act, and to inaugurate a new order of things more in accordance with the liberal spirit of the age.

NEWS-WORK.—That branch of printing which is confined exclusively to newspapers. Expedition is necessary in getting out a newspaper, and the greatest order and punctuality must be observed to ensure its publication at the proper time. Compositors on a daily paper are expected to set up a given number of lines in every hour; or otherwise the printer would not be able to estimate the strength of his staff. On the morning papers the news-hands generally commence work at three o'clock in the afternoon, so as to get in their letter and be ready to take copy at six or seven. The copy is served out in "takes" of about a stickful, and each compositor, as he finishes his take, applies for another one. As it frequently happens towards the close the copy comes in faster than the regular hands can set it up, a number of supernumeraries, called "Grass-hands" (*q.v.*), are taken on till the paper is up. These grass-hands are also engaged to

occupy the frames of regular hands who may have fallen sick, or have asked leave to "sell out" (*q.v.*) for a night. In such cases they take copy and have the same share of work as the regular hands whom they represent. An evening paper is conducted on the same principle, with this difference, that the work is done in the daytime instead of at night. The men start composition at 8 a.m., the paper being published at 2 p.m. The distribution of the type for the next morning's issue is then proceeded with, till the time for leaving off, about six or seven o'clock in the evening. The system adopted on a weekly paper greatly differs from that of a daily paper. Being a summary of the week's news, the copy is chiefly culled from the daily papers as they are published. The early part of the week is therefore devoted to distributing the type, and a number of apprentices or turnovers get up the police news, parliamentary reports, and other general intelligence until about Wednesday or Thursday, when a number of grass-hands are called in to get up the heavy portions of the late news. One long day (say from eight o'clock in the morning till midnight) generally suffices for this, with a few hours each day after for the various editions. On all newspapers, a few hands are kept back ready to set-up or make alterations for any important news that may call for a special edition. In a general way a compositor who has been brought up to news-work is incompetent for the purposes of a general printing-office,—in fact, they don't care to apply for employment in book-houses, as the work is not so well paid for; but they forget that the extra pay for news-work is, at the best, but a poor compensation for the night-work, and consequent deprivation of domestic comfort and happiness, to say nothing of the pernicious effects it has upon the man's constitution.

NICK.—A hollow, cast crosswise in the shank of the types, to enable the compositor when composing to perceive readily the bottom of the letter as it lies in the case, as the nicks are always cast on that side of the shank on which the bottom of the face is placed. In ordinary news type, printers should be careful to stipulate that the nick of each fount should be different, more especially founts of the same body; for a great deal of inconvenience frequently arises, owing to the founders casting different founts of type with a similar nick in each. Although this may, at the first sight, appear of little moment, yet it is attended with much trouble; and works are frequently disfigured with it, notwithstanding all the care of the compositor and the reader. For instance, where the nicks are similar, a compositor, in distributing head lines, lines of Italic, small capitals, or small jobs—in the hurry of business—through inadvertency—or carelessness—frequntly distributes them into wrong case, when it is almost impossible for another compositor who has occasion to use these cases next, to detect the error till he sees the proof; unless he is in the habit of reading his lines in the stick, which many are not. He has then a great deal of trouble to change the letters; and, with all the attention that the reader can bestow, a letter of the wrong fount will frequently escape his eye, and disfigure the page. Even in founts that are next in size to each other; for instance,—Bourgeois and Long Primer, Long Primer and Small Pica, Small Pica and Pica, and Pica and English, head lines, &c., are not unfrequently distributed into wrong cases, where the nick is the same; which always occasions loss of time in correcting the mistakes and sometimes pass undiscovered. By going as far as three or four nicks, a sufficient variety may be obtained to distinguish one fount from another without hesitation, A single nick may be used in the centre or at the foot of the shank; but we decidedly object to the single nick, or, in fact, any nick being at the top of the shank, and are glad that it is not frequently adopted. Compositors have become so accustomed to the nick being at the lower part of the shank, that in composing type with the nick at top, they can scarcely help (let them be ever so careful) having some of the letters topsy-turvy. Where there are a great number of founts, it would add to the distinguishing mark, if consisting of more than one nick, that one of them should be cast shallow; but where there is only one nick, it ought always to be cast deep. In some parts of the Continent the nick is placed on the reverse side of the letter, viz., the back of the type, it being considered by the printers of those countries an advantage to them in composing.

NONPAREIL.—A size of type less than Minion and larger than Ruby, and exactly half that of Pica. The standard number of lines to the foot, according to all the founders, is 144.

NOTES.—Explanatory annotations attached to the text of a book. They are of various kinds, according to the positions they occupy in a page; viz., Footnotes, or bottom notes, shoulder notes, marginal or side notes, let-in or in-cut notes and under-runners, each of which is described in its alphabetical place elsewhere.

NUMERALS.—Numbers expressed by Roman letters, as Vol. II., chap. xxiv. Numeral letters were used by the Romans, to account by; and are seven in number, viz.: I V X L C D M. The reason for choosing these letters seems to be this, viz.: M being the first letter of *Mille*, stands for 1000; which M was formerly printed CIↃ. Half of that, viz.: IↃ, or D, is 500. C, the first letter of *Cenium*, stands for 100; which C was anciently printed E, and so half of it will be printed 50, L. X denotes 10, which is twice 5, made of two V's, one at top, and the other at the bottom. V stands for 5, because their measure of *five ounces* was of that shape; and I stands for 1, because it is made of one stroke of the pen. If a less number stands before a greater, it is a rule, that the less is *taken from* the greater; thus, 1 taken from 5 remains 4, IV. 1 from 10 remains 9, IX. 10 from 100, remains 90, XC. If a less number follows a greater, it is a rule that the less is *added* to the greater; as 5 and 1 make 6, VI. 10 and 1 make 11, XI. 50 and 10 make 60, LX., &c. Sometimes Small Capitals are used for Numerals, in the same manner as the seven sorts of Capitals; and look as well, if not neater, than these last; but we observe that in the dates of years some choose to put the first letter a Capital; as, Mdccxl, &c., for which they may have their reasons; nevertheless, we join with those who disapprove of mixtures in figures, or to make them appear like nouns substantives, with capitals at the head of small ones. To express numbers by Letters was not the invention of the Romans originally, because several nations, anterior to them, did use that method in counting: and the former Romans were particular only in this, that they employed to numerate by. But when printing was discovered, and before Capitals were invented, small letters served for Numerals; which they have done ever since; not only when the Gothic characters were in their perfection, but even after they ceased, and Roman was become the prevailing letter.

NUMBERING MACHINE.—See Paging Machine.

O

O.—An abbreviation of Overseer. A common phrase in speaking of the overseer is, "the cap. O."

OBELISK.—See Dagger.

OCTAVO.—A sheet of paper folded into eight leaves, or sixteen pages. Publishers and printers generally style an octavo work as "8vo."

OCTODECIMO.—A sheet so folded as to make eighteen leaves, or thirty-six pages.

ODD PAGE.—The first, third, and all uneven numbered pages.

ODD FOLIO.—A folio consisting of an uneven number.

OFF.—When a job is said to be off, it is meant that it is duly printed and finished.

OFF-CUT.—Any part of a sheet which is cut off before folding.

OFF ITS FEET.—A forme or line on which the letters do not stand upright.

OIL.—The best oil for presses is neat's foot oil, which does not candy nor become glutinous, as almost all other oils do. On this account it is used in machinery employed in cotton manufactories, where it is necessary to have as little friction as possible.

OLD ENGLISH.—A style of letter used in the early days of printing; it is commonly called "Black" (*q.v.*), on account of its darker and heavier appearance than Roman.

OLD-STYLE LETTER.—Roman and Italic letter of the design used previous to the present century, but which has been re-adopted to a great extent during the last few years.

ON ITS FEET.—When letter stands perfectly upright, it is said to be "on its feet."

ON TIME.—When a compositor or pressman has a job given to him at so much per hour—such, for instance, as an author's proof or specimen work—he is said to do it "on time."

OPENING.—The space on the galley between two "takes" of matter.

OPEN MATTER.—Widely leaded matter; matter that contains a number of quadrats, such as poetry, &c.

ORNAMENTS.—Designs intended for illustrating or ornamenting trade catalogues, hand-bills, bags, &c., are called ornaments by the type-founders.

ORTHOGRAPHY.—The art or mode of spelling words. It would be quite impossible within our limits to give anything like a treatise on this subject, but the following short and simple rules, if duly followed, will avoid some mistakes, and prevent a few doubts:—

RULE I.—Monosyllables ending with *f*, *l*, or *s*, preceded by a single vowel, double the final consonant; as staff, mill, pass, &c. The only exceptions are, of, is, has, was, yes, his, this, us, and thus.

RULE II.—Monosyllables ending with any consonant but *f*, *l*, or *s*, and preceded by a single vowel, never double the final consonant; excepting only, add, ebb, butt, egg, odd, err, inn, bunn, purr, and buzz.

RULE III.—Words ending with *y*, preceded by a consonant, form the plural of nouns, the persons of verbs, verbal nouns, past participles, comparatives, and superlatives, by changing *y* into *i*; as spy, spies; I carry, thou carriest; he carrieth or carries; carrier, carried; happy, happier, happiest.

The present participle in *ing*, retains the *y*, that *i* may not be doubled; as, carry, carrying; bury, burying, &c.

But *y*, preceded by a vowel, in such instances as the above, is not changed; as, boy, boys; I cloy, he cloys, cloyed, &c.; except in lay, pay, and say; from which are formed laid, paid, said; and their compounds, unlaid, unpaid, unsaid, &c.

RULE IV.—Words ending with *y*, preceded by a consonant, upon assuming an additional syllable beginning with a consonant, commonly change *y* into *i*; as happy, happily, happiness. But when *y* is preceded by a vowel, it is very rarely changed in the additional syllable: as, coy, coyly; boy, boyish, boyhood; annoy, annoyed, annoyance; joy, joyless, joyful, &c.

RULE V.—Monosyllables, and words accented on the last syllable, ending with a single consonant preceded by a single vowel, double that consonant, when they take another syllable beginning with a vowel; as, wit, witty; thin, thinnish; to abet, an abettor; to begin, a beginner.

But if a dipthong precedes, or the accent is on the preceding syllable, the consonant remains single; as, to toil, toiling; to offer, an offering; maid, maiden, &c.

RULE VI.—Words ending with any double letter but *l*, and taking *ness*, *less*, *ly*, or *ful*, after them, preserve the letter double; as harmlessness, carelessness, carelessly, stiffly, successful, distressful, &c. But those words which end with double *l*, and take *ness*, *less*, *ly*, or *ful*, after them, generally omit one *l*, as, fulness, skilless, skilfully, skilful, &c.

RULE VII.—*Ness, less, ly,* and *ful,* added to words ending with silent *e,* do not cut it off; as, paleness, guileless, closely, peaceful; except in a few words; as, duly, truly, awful.

RULE VIII.—*Ment,* added to words ending with silent *e,* generally preserves the *e* from elision; as, abatement, chastisement, incitement, &c. The words judgment, abridgment, acknowledgment, are deviations from the rule.

Like other terminations it changes *y* into *i,* when preceded by a consonant; as, accompany, accompaniment; merry, merriment.

RULE IX.—*Able* and *ible,* when incorporated into words ending with silent *e,* almost always cut it off; as, blame, blamable; cure, curable; sense, sensible, &c.; but if *c* or *g* soft comes before *e* in the original word, the *e* is then preserved in words compounded with *able*; as change, changeable; peace, peaceable, &c.

RULE X.—When *ing* or *ish* is added to words ending with silent *e,* the *e* is almost universally omitted; as place, placing; lodge, lodging; slave, slavish; prude, prudish.

RULE XI.—Words taken into composition often drop those letters which are superfluous in their simples; as handful, withal; also, chilblain, foretel.

OUT—Anything omitted, and marked for insertion in the proof by the reader, is said to be an "out."

OUTER FORME.—The forme containing the first page of a book or newspaper.

OUTER TYMPAN.—See TYMPAN.

OUT OF COPY.—When a compositor has finished his "take" he is said to be "out of copy."

OUT OF HIS TIME.—A youth is said to be "out of his time" when he has completed his apprenticeship. Hansard gives the following account of the old custom in the printing trade of "washing" young men who have just completed their apprenticeship, before admitting them into the ranks as journeymen. The custom still exists; and for an hour previous to the clock striking twelve, great preparations are made, and brains set to work to discover by which means the greatest noise can be made. He says:—"An old custom peculiar to printing-offices is termed Washing, and during the keeping up of which ceremony, if persons happen to reside in the neighbourhood of the office, whose nerves are not made of stern stuff indeed, they will hardly fail of getting them shivered. Washing is had recourse to upon two occasions, either for raising a sense of shame in a fellow-workman who had been idling when he might have been at work, or to congratulate an apprentice upon the hour having arrived that brings his emancipation from the shackles of his subordinate station, and advances him to manhood. Upon the former occasion, the affair generally ends with a wash of one act; but upon the latter, the acts are commonly repeated with a degree of violence proportioned to the expectancies of a liberal treat at night. Perhaps the following description may afford some slight idea of the nature and effects of the performance. Every man and boy attached to the department of the office to which the person to be washed belongs, is bound in honour, upon a given signal, to make in the room as much noise as he possibly can with any article upon which he can lay his hand. A rattling of poker, tongs, shovel, and other irons, is harmoniously accompanied with running reglet across the bars of the cases, shaking up of the quoin drawers, rolling of mallets on the stone, playing the musical quadrangle by chases and crosses; and in the press-room, slapping the brayers upon the ink-blocks, a knocking together of ball-stocks, hammering the cheeks of the press with sheep's feet, &c.; in short, everyone uses the utmost means he can devise to raise the concert of din and clatter to the highest possible pitch of hideous discordancy, by means of the implements aforesaid; and then the whole is wound up with a *finale* of three monstrous huzzas." We may also mention that the apprentice is expected to treat the men in the office, either to a substantial luncheon; or, as is frequently the case, to a supper in the evening, to which each man subscribes an additional amount, in which case a glass of ale only is partaken of at noon, "to wash the dust out of their throats, caused by shaking up the quoin drawers," &c.

OUT OF REGISTER.—Pages which do not exactly back each other are out of register.

OUTSIDES.—The outer sheets of a ream which are disfigured by the cords. Reams are often made up of soiled and damaged sheets, and sold at a reduced price as "outsides." An outside quire consists of only twenty sheets.

OVERSEER.—The superintendent or manager of a printing-office. "The duties of an overseer," says Savage, "vary according to the size of the establishment, and the part that the principal takes in its management; but, generally speaking, he has the sole conducting of the practical department, receiving his general directions from the principal, and seeing that they are carried into execution in a proper manner. It is requisite, as a matter of course, that he should be intimately and practically acquainted with the business in all its details. It is of importance to the concern where he has the management, that he should blend urbanity with firmness; and show judgment and impartiality in giving out work, so that the business should proceed with regularity, and with satisfaction to all parties."

OVERLAY.—A piece of paper fastened on the tympan-sheet by means of paste, to give more impression to a low part of a forme. For overlaying on a machine, see MAKING-READY.

OVERRUNNING.—Carrying words backwards or forwards in correcting.

OVER SHEETS.—The extra sheets which are given out beyond the number actually required for the job, to provide against damages, bad impressions, &c.

P

PACK.—Fifty-two cards made into a bundle.

PAGE.—One side of a leaf of a book, derived from the Latin *pagina*, the thing fastened, because originally leaves were *fastened* together, and the modern system of imposing the matter of leaves together was not invented.

PAGE CORD.—A description of strong thin twine used by printers for tying up pages of matter.

PAGE GAUGE.—A gauge used by compositors for measuring the length of pages during the operation of making-up. When a new work has been commenced, the compositor who has set the first take of copy marks off a certain number of lines according to the size of the page, adding the folio and white lines; he then places a piece of reglet down the side of the page, close up to the head of the galley, and cuts a notch where the page terminates.

PAGE (TYING UP A).—This is a very simple operation, but one that requires a certain amount of knowledge and experience to perform it properly. The proper way to tie up a page for imposing is to begin at the left top corner of the page as it lies on the galley, wrap the cord round from left to right, and tighten each successive round at the right top corner. Passing it round about three times, and taking care to make the first end additionally secure each turn, draw the cord tight through that which is wrapped on the page so as to form a noose, the end of which is left two or three inches out for the convenience of untying when imposed. A page thus tied, with the cord round the middle of the shank, will always stand firm, and be in no danger of being squabbled while lying

on the stone or letter-boards. Many compositors often pass the cord five or six times round the page before fastening it, and it is not secure then, for the very reason that they do not adopt any system, but carelessly overlap the cord at each turn; but if pains are taken to place each round of the cord immediately above the previous one, as neatly as cotton is wound round a reel, it will be found that three times round will be sufficient to bind the type securely; whereas, if one of the half-dozen overlapping rounds should slip—which is frequently the case—the others naturally become loose, and many a page is squabbled in consequence. An advantage is also thus gained in imposing a forme; for instead of there being such a bulk of cord between the type and furniture, a single thickness only appears.

PAGINATION.—Inserting a series of numerals denoting the folios of a work. The pagination is consecutive, generally, throughout the volume; but occasionally, when books are issued in parts, each of them has its own separate pagination. The ordinary pagination is done with Arabic numerals, the even numbers being placed on the left hand page and the odd numbers on the right. The preface and introductory matter has its pagination usually in Roman numerals.

PAGING IRON.—A small brass instrument, about the thickness of brass rule, and twenty-five ems long; but made in the shape of a slip galley, with a crooked ear or handle. It is used in a type-foundry for the purpose of placing the types in lines on the galley previous to being tied up in pages for the printer.—See TYPE-FOUNDING.

PAGING MACHINE.—A machine for printing consecutive numbers with great rapidity on sheets of paper, cheque-books, cards, &c. The numbers are usually fixed on the circumference of a revolving cylinder, which is brought down to the paper by some mechanical contrivance, by hand or treadle motion; and after the impression has been effected, the cylinder takes a turn and another number is ready to be printed. Paging machines usually ink themselves, and are made to print double, treble, &c. Numerical printing is now quite a business in itself, although most bookbinders, paper-rulers, as well as printers, possess machines of their own.

PAGING-UP.—A phrase used in type-foundries for making letter into pages, and papering them up in the manner in which they are received by the printer.—See TYPE-FOUNDING.

PALE COLOUR.—When the impression is of a lighter colour than it ought properly to be, it is said to be "pale." The fault arises either from negligence of the person who rolls, or the mechanical deficiencies of the inking apparatus.

PALETTE KNIFE.—A long flexible knife, without sharpened edges, used by pressmen for taking ink out of the can, and braying it out upon the stone or ink table; also for scraping rollers, &c.

PAMPHLET.—A work consisting of not more than five sheets is so called. It is paid something extra for at case, as a compensation to the compositor for making up the letter and furniture without any return of either, the whole being generally put in chase.

PAPER.—A substance composed more or less of rags or vegetable fibre, used for printing, writing, &c. The various kinds of paper may be distinguished thus:—

According to *size;* as Demy, Foolscap, Crown, &c.
According to *use;* as printing, writing, wrapping, &c., papers.
According to composition; as rag paper, straw paper, wood paper, &c.
According to mode of manufacture; as hand-made, machine-made paper, &c.
According to the water-mark; as lined, wove, laid, &c.

The varieties are, in fact, innumerable, just as are the materials from which it can be made and the uses to which it may be applied. It is necessary, therefore, in a

comparatively small work like the present, to restrict our remarks to those sorts of paper with which the printer has most to do. As regards the *names* of different sizes of paper, it may be remarked that in ancient times, when comparatively few people could read, pictures of every kind were much in use where writing would now be employed. Every shop, for instance, as well as every public-house, had its sign, and those signs were not then, as they are often now, only painted upon a board, but were invariably actual models of the thing which the sign expressed—as we still occasionally see some such sign as a bee-hive, a tea-canister, a doll, or a lamb, and the like. For the same reason printers employed some device, which they put upon the title-pages and at the end of their books. And paper-makers also introduced marks by way of distinguishing the paper of their manufacture from that of others; which marks, becoming common, naturally gave their names to different sorts of paper. A favourite water-mark between 1640 and 1560 was the jug or pot, and would appear to have originated the term, *pot* paper. The fool's cap was a later device, and does not appear to have been nearly of such long continuance as the former. It has given place to the figure of Britannia, or that of a lion rampant supporting the cap of liberty on a pole. The name, however, has continued, and we still denominate paper of a particular size by the name of "foolscap." Post paper seems to have derived its name from the post horn, which was at one time its distinguishing mark. It does not seem to have been used prior to the establishment of the General Post Office (1670), when it became a custom to blow a horn; to which circumstance, no doubt, we may attribute its introduction. Bath post is so named after that fashionable city. The *sizes* of the sheets of the different classes of paper will be found under the head DIMENSIONS OF PAPER. The *quality* of paper is of the utmost importance in printing, for it is impossible to produce good press work on bad paper. Nothing but experience, however, will teach what is the most suitable kind for any particular job; while the price at which it is to be executed too frequently precludes a judicious selection. Some useful considerations on this subject will be found under the head of PRESS WORK.

PAPER BOARD.—Otherwise called wetting board (*q.v.*).

PAPER-CUTTER.—See CUTTING MACHINES.

PAPER DUTY.—An impost formerly levied on certain descriptions of paper.—See LAWS RELATING TO NEWSPAPERS.

PAPER KNIFE.—A long broad knife, used by the warehouseman to cut up the paper for printing. These knives are not much used now, as the cutting machine has superseded them, by cutting the paper in larger quantities, thus saving much time, and giving a cleaner cut to the edges.

PAPER STOOL.—A strong wooden stool on which the piles of paper are deposited while the warehouseman is hanging the sheets on the poles.

PAPERING THE CASES.—Affixing pieces of paper to the bottom of the boxes, in order that the types may not be damaged by coming into direct contact with the wood during the process of distribution. It is done by the manufacturers of the cases.

PAPERING-UP LETTER.—Wrapping up the pages of matter in paper to be placed aside for future use. The type should be carefully tied up, and perfectly dry before it is papered, and its destination or description legibly written on the outside.

PAPIER MACHE.—Mashed paper, or a composition consisting of paper cuttings boiled and then beaten till they become a pulp. Glue is then added to give it hardness.

PAPIER MACHE PROCESS.—In stereotyping, the use of papier mache to form the moulds instead of plaster of paris or stucco.—See STEREOTYPING.

PAR.—An abbreviation of the word "paragraph" (*q.v.*), generally used by compositors.

PARAGON.—A type one size larger than Great Primer and one smaller than Double Pica.

PARAGRAPH.—The sign (¶) which is used for marking off some clause or portion of reading matter which is intended to be distinct from what has gone before it is now seldom used, except as a reference mark, or in the Bible to divide the chapters. In Common Prayer-books paragraphs are used to denote the rubrical direction. The word is most frequently now applied to the matter itself, and not to the sign which denotes it. Newspaper paragraphs are usually short and pointed, and a peculiar art is frequently displayed in their wording. It is usual to commence a paragraph with an indention of one or more ems, according to the width of the measure and the openness of the matter, as in a long line the indention of one em is scarcely sufficiently noticeable. This, however, is left to the discretion of the author or printer. Many compositors have a somewhat dishonest habit of driving out a word or two at the close of a paragraph to make a "fat" line. This should always be discountenanced, especially if regard is had to the appearance of the work subsequently. Part of a word, or one or two short words should never form a break line of themselves; and a careful compositor will rather overrun backwards than disfigure his work in this way. The reader should never pass this irregularity. The last line of a paragraph should on no account commence a page, neither should the first line end one, if possible. The length of a page should be altered in preference to doing so. Authors and editors are frequently censurably careless in marking the commencement of a paragraph in their copy, and the expense of printing is materially increased by overruns having to be made on this account. The commencement of a paragraph is best marked by a crotchet thus [being placed before the first word.

PARALLEL (||).—A reference mark which follows the section and precedes the paragraph.

PARALLEL MATTER.—In some works, the arguments for and against are printed in parallel columns. When this is the case, each paragraph commences exactly level with the one to which it refers in the opposite column, and the shortest paragraphs are continued with as many white lines as to bring them to the same length as their opponent.

PARCHMENT.—A thin skin used for covering tympans, both inner and outer, by reason of its toughness and durability. Old deeds, leases, &c., are frequently used for economy sake. A good skin is free from imperfections or cuts, and is of uniform thickness throughout. The outer tympan may be a little thicker than the inner one.—See TYMPANS.

PARENTHESIS ( ).—A sign used to enclose interpolated words or sentences, which serve to strengthen the arguments, though the sentence would read correctly were the enclosed matter taken away. Parentheses are not now so frequently used as formerly, as commas serve the same purpose and are neater in appearance.—See PUNCTUATION.

PARTNER.—In working at press, two men are generally employed; they style each other partner, and share the proceeds of all work executed by them on the piece.

PASS BOOK.—A book used for denoting the number of lines taken or lent in making-up. The following is a sample of how the making-up is passed:—

ROBINSON *v.* BROWN. Folio 93,—13th page in Sig. G.

	Lines to Good.		*Lines to Bad.*	
Robinson	8	Brown		16
Smith	10	Green		4
Jones	4	White		2
	22			22

Since the Clicking system has become so much in vogue, pass books are seldom

required. As we have explained before, great loss of time is occasioned in passing the making-up.

PASTE.—A thick, semi-fluid compound used for the purpose of causing paper, &c., to adhere together. To make paste that will keep a year, dissolve a teaspoonful of alum in a quart of warm water. When cool, stir in flour to give it the consistency of thick cream, being particular to beat up all the lumps; stir in as much powdered resin as will lie on a sixpence, and throw in half-a-dozen cloves, to give it a pleasant odour. Have on the fire a tea-cup of boiling water; pour the flour mixture into it, stirring well all the time. In a few minutes it will be of the consistency of treacle. Pour it into an earthen or china vessel; let it cool; lay a cover on, and put it in a cool place. When needed for use, take out a portion and soften it with warm water.

PASTEBOARD.—A thick stiff paper made by pasting several sheets upon one another.

PASTE POINTS.—Small brass points, pasted on the tympan for obtaining good register for cards, circulars, &c.

PASTE POT.—A bowl or box used for holding the paste in a printing-office.

PEARL.—A type one size larger than Diamond and one smaller than Ruby.

PEEL.—A wooden instrument shaped somewhat like the letter T used for hanging up the sheets on the poles. The length of the handle is determined by the height of the poles, and the size of the head by the sheets to be hung up.

PELTS.—Sheep skins with the wool taken off, dressed with lime and dried. When required for use they are steeped in urine and manipulated until they are soft. They were used for inking the type before composition balls and rollers were invented.

PENULTIMATE.—The last syllable but one in a word.

PENNY-A-LINER.—A reporter for the Press who is not engaged on the staff, but sends in his matter on approbation. So much of it as is inserted is paid for at the rate of a penny, but now more generally three-halfpence, per line.

PERFECTING.—Printing the second forme of a sheet; also called reiteration, or backing it.

PERFECTING MACHINES.—Machines which perfect, or print both sides of the paper at once.

PERFECT PAPER.—The full quantity of paper required for any job, together with some sheets extra to provide for waste, damages, &c.

PERFECT REAM.—A ream consisting of 21½ quires or 516 sheets, and in which there are no outside or imperfect quires.

PERIOD, or FULL-POINT (.).—There are three uses for this mark of punctuation. 1. To indicate the end of a sentence. 2. To show the end of an abbreviation, as Prof. for Professor. 3. To serve instead of a leader in tables of contents, figure work, &c., or to fill up a space which the leader does not entirely occupy.—See PUNCTUATION.

PI.—See PIE.

PICA.—A type one size larger than Small Pica and smaller than English. Pica is the unit of measurement in the printing business; leads are made

up to it, also rules and furniture. Thus, lines are said to be so many Picas in breadth, and the page so many ems in depth; the width of furniture is from two to eight or ten Picas. Large type and wood letter are made to so many lines of Pica, termed thus:—8-line Pica Roman, 14-line Pica Antique, &c.

PICA-SMALL-PICA.—When Small Pica type is cast on a Pica body, it gives the appearance in print of thin-leaded matter, and is named as above. In casting up the page, the number of Small Pica ems are taken for the width, and the number of Pica ems for the length, which, being multiplied, give the quantity of letters in the page.

PICK.—A small quantity of dirt which adheres to the face of the type, and causes a smut on the impression. It requires to be picked out with the bodkin, or, what is better, removed by the pick brush.

PICK BRUSH.—A hard brush used to take picks or dust out of a forme.

PICKER.—A kind of spike or bodkin, used by typefounders for picking out imperfect letters. The same term is likewise applied to the man who repairs stereotype plates.

PICKING-UP TYPE.—A common phrase used instead of composing; a "picker-up" of type is used in a derogatory sense to denote that a man is only capable of the mere mechanical operation of lifting the type, but is not accustomed to the more intellectual work of making good divisions, judicious spacing, &c.

PIE.—A mass of letters disarranged and in confusion. The style of management of a printing-office may always be known by the quantity of pie it contains, proportionate to its size, for every qualified overseer takes care to have the least amount of it he possibly can. No receptacle for pie should be accessible to the workman, and every bit that is made should be rigorously cleared away. In America it is spelt "Pi."

PIG.—A pressman was formerly frequently so called by compositors. The use of this class of words is, happily, growing less every day, proportionate to the increasing education, independence, and refinement of the workmen.

PIGEON HOLES. — Unusually wide spaces between words, caused by the carelessness or want of taste of the workman. The word is used disrespectfully in this sense, but in cases of extreme hurry, such as on newspaper work, where short takes have to be quickly justified to make even, pigeon holes are unavoidable.

PILE.—A heap of paper in the warehouse or in the pressroom.

PLACARDS.—See SHOW-BILLS.

PLACING MATTER.—When an editor or author of a classified work (such as a dictionary) sends in his copy irregularly, and the compositor has to place the paragraphs in alphabetical order, an extra charge is usually made by him on that account in the cast-up. Also, where three or more types are used in a work or magazine, a similar charge is made for placing.

PLANING DOWN.—The process of making perfectly even the face of the letters on the imposing surface or on the press table. Although a simple operation, it is seldom properly performed. The planer should be enveloped in a sheet of smooth, strong paper, and then laid carefully down on the type. It should be gently tapped in the centre with the head of the mallet. It is customary amongst careless workmen to strike the mallet at either end, which gives all the impression on one side, just as a platen would if the screws were loose at one end and tight at the other. Types that stand up rather high should never be planed

after the forme is locked up; to do so would be to subject them to the utmost danger of being battered.

PLANER.—A block of beech or other hard wood, perfectly smooth and even on the face, used for planing down (*q.v.*) the type in a forme. A useful size for general purposes is nine inches long, four and a-half inches broad, and two inches deep. For newspaper work larger sizes are occasionally employed. A groove usually runs along the two longer edges, to enable the workman to handle it more readily.

PLANTING SORTS.—When certain sorts run short upon a particular work, and one compositor, having a good quantity, hides them from his companions, he is said to "plant" them. This is a reprehensible custom, and in well-regulated offices is punished by a fine; for not only is it an hindrance to the progress of the work, but oftentimes involves an unnecessary expense to the employer, by causing an order on the typefounder for sorts that might be done without, did more honourable feeling exist in the companionship.

PLATEN.—That part of the press or machine which descends on the forme (protected by the blanket, tympans, &c.), and effects the impression. The word is frequently, but incorrectly, spelt "platten."

PLATEN MACHINE.—A machine in which the impression is effected by a platen, as distinguished from one which contains a cylindrical or other impressing surface. Platen machines are sometimes used for very fine printing, but they are necessarily so much slower in working, and cylinder machines have been so much improved, that they are fast dropping out of use, and few indeed are manufactured at the present day. They are also more dangerous; for one or more boys have to turn down the tympan, and are in danger of having their arms crushed in the machinery.

PLATE PAPER.—A thick paper, used for printing page wood-engravings, to be inserted in a volume by the binder.

PLATTEN.—See PLATEN. The spelling of this word affords in its variety an instance of the extremely unsettled nature of the nomenclature of typographical appliances. The following is the modes of spelling in different works of authority:—

Stower . .	1808 . .	Plattin.
Johnson . .	1824 . .	Plattin.
Savage . .	1841 . .	Platen.
Abridgment of Patents	1859 . .	Platen.
Houghton . .	1869 . .	Platten.
Mackellar . .	1868 . .	Platen.

POINT HOLES.—Fine holes made by the points, by which the second and succeeding impressions are registered.

POINTS.—Two thin pieces of iron, each having points projecting from one end. They are fixed to the tympan to secure good register (*q.v.*).

POINTS (PUNCTUATION).—The characters , ; : . ? ! ( ) ' and the marks of reference are so called by printers. For the use of the former see PUNCTUATION; and for the latter see the different characters in their alphabetical order.

POINT SCREWS.—Two small bolts with screws at the end which goes through holes in the tympan frame. They are square-headed, with a nut on the upper side, and serve to fix the nuts securely to the tympan.

POLL.—A term used by compositors and pressmen, indicating the amount of their weekly earnings. It is a common expression with them to say that they have made a "good poll" or a "bad poll."

POLLING.—A vulgarism amongst printers. When a man happens to be first to finish his job, or arrives at his work earliest, he says he has "polled" the others. Very often there is a race between two workmen, which is called Polling.

PREFACE.—The introductory remarks made by the author or editor of a volume. In printing, the preface is usually reserved till the last, so as to be worked with the title and other oddments, forming sig. A.

PRESS.—This word has three meanings, according to its use, among printers. It is applied to the general body of journalism, which, for the sake of brevity, is called the Press; it is applied to the machine which produces the impression—the press; it is also applied, in a confined sense, to the operation of working the latter machine, which is called "press" in contradistinction to "case," which includes the various processess connected with the art of composition. With the first of these meanings we have little to do in this "Dictionary of Typography." The existing laws relating to the press, with a sketch of the rise and progress of the press will be found in the previous pages. We shall simply refer to the *press* as a machine, and to *press* as the art of using that machine, under the heads respectively of PRESSES and PRESSWORK.

PRESS BAR.—The arm of the press to which the handle is attached.

PRESS BOARDS.—See PRESSING.

PRESS BOOK.—A book kept by the foreman of the press or machine-room in a large printing-office, in which entries are made of the amount of paper given out by the warehouseman for the various works, the number printed, &c., as well as the name of the pressman. The following is the form usually adopted:—

When given out to wet.	Names of Works.	No.	Signatures.	Date when laid on.	Names of Pressmen.
1871.					
Feb. 27	History of Printing	500	B.	March 1	Wilson.
Mar. 2	Æsop's Fables	7000	M.	March 2	Smith & Perkins.

PRESSES.—In England, as we have already explained (*vide* Machines, *ante*), this word has a limited meaning, being applied exclusively to machines which are not automatic in their operation. In America and other countries what we call "machines" are called presses, and with much reason. The press used by the early printers was very rude. It was composed entirely of wood, and consisted of a table, along which the coffin containing the forme, furnished with a tympan and frisket, was pushed by hand. The platen worked vertically between standards, and was brought down for the impression and raised after it by a common screw worked by a bar handle. The platen was much less in size than the forme, which had therefore to be shifted to complete the impression. Little or no improvement was made in respect of the press until the year 1601, when Blaew, of Amsterdam, contrived a press, the platen of which recovered itself by a spring. (See BLAEW'S PRESS.) At the close of the eighteenth century a great change took place in the construction of presses, by the introduction of the "Apollo," Roworth's, and the "Stanhope," each of which is described in its place. The next improvements were made by Cope, in his "Albion" press (*q.v.*), and Clymer in his "Columbian" press, which are each described elsewhere. The last two presses are still in use, and although various manufacurers have made minor alterations in them, they remain virtually in the

same shape as when they were introduced. Mechanical ingenuity has since been almost wholly occupied with machines.

PRESS GOES.—When the press is properly at work it is said to "go."

PRESS GOES EASY.—When the run of the press is light, or when the pull is easy.

PRESS GOES HARD.—When the reverse to the above is the case. Paraffin oil has been found to possess good easy running qualities for oiling the ribs of presses.

PRESSING.—Removing the inequalities on the surface of a sheet caused by the impression of the types, and rendering it as smooth as it was before being printed on. The sheets having been taken down from the drying poles, are carried to the warehouse. The warhouse boys then place them between exceedingly smooth, polished pasteboards, called glazed-boards. This operation, which is performed with great dexterity, is thus described:—"We will suppose the pasteboards to have sheets between them, which will be the case after they have once been used. The warehouse being provided with long tables or benches, secured to the wall, and a sufficient number of moveable tables about the size of the largest paper, the warehouseman places one of the small tables endwise against the long one, forming a right angle, upon which to lay the pressed sheets as they come out of the boards; the boy then takes his stand at the right side of the table, with the dry unpressed sheets at his right hand and the pasteboards at his left, somewhat elevated, leaving sufficient space before him to fill in the sheets. He then proceeds as follows: He first moistens the thumb of his right hand and reaches across to the pasteboard at his left, drawing one off with his thumb and placing it before him. He then catches a sheet of the dry paper also with his right hand and places it as near the centre of the pasteboard as possible, then twisting the body nimbly round to the left, he slides the pressed sheet from the pile of pasteboards to the table at his left side, and in resuming his former position, again draws off a pasteboard with his thumb; and so on, till the gross or bundle is filled. It is then laid aside, and another bundle filled and laid across the former, taking care always to keep the bundles separated until they are put in press, when they are separated by smooth boards made of cherry or other hard wood. The bundles being all filled in, the warehouseman proceeds to fill up the standing press, putting in one bundle at a time and placing a pressing-board between them: there should also be a stout plank introduced between the top board and the platen. In case the press should not hold quite as much as desired, more may be got in by unscrewing the press after it has once been screwed down. The press is finally screwed down as tight as possible. It should remain so for at least twelve hours, when it should be entirely emptied before the sheets are taken out of the boards. Care should be taken to keep the sides of the piles or heaps perfectly even."

PRESSMAN.—The workman who does the presswork. Printers are divided into two classes—compositors and pressmen, and in London boys are usually apprenticed to one or the other of these branches of the business; but in the Provinces, it is customary for an apprentice to be taught both. It consequently usually happens, especially in London and other large towns, that workmen understand only one part of the business, and are actually unable to do anything in the other. In small jobbing offices this is objectionable, as a compositor is expected to be able to do a plain job at press, pull a proof, &c., even although he is unacquainted with the more intricate departments of the art of press work. Pressmen have distinct trade societies of their own: that in London being called "The London Union of Pressmen." They have also several establishments termed "Gifts." These Gifts are formed among a limited number of pressmen, for the purpose of introducing one another to a job, in preference to members of other gifts or pressmen generally. Each member of a Gift must be a Union man; and his subscription to the Gift includes the demand of the Union, which is handed over to the Secretary of the Union by the Secretary of the Gift. The

London Union of Pressmen has communication with the various provincial societies of pressmen, and acknowledge tramps from the country, on production of their trade card. A very unsatisfactory method of charging for their work is adopted by pressmen. They have no settled scale; but get what they can, according to the liberality or parsimony of the establishment at which they are employed. Scarcely two houses in London pay the same prices: consequently there are frequent disputes at the end of the week. A plan, however, is adopted by some managers, of drawing up a list of prices to be paid for ordinary work, and shown to the pressmen when engaged; this saves a deal of time and argument at the end of the week, when the pressman presents his bill. Some work, however, is of so intricate a nature, that it is advisable to do it by time-work. The rapid introduction of machinery of late years has caused a great diminution in the number of pressmen; but as a rule, good pressmen can always obtain plenty of work, and many of them find it advantageous to adopt the machine as their chief business, on attaining the close of their apprenticeship.

PRESS STANDS STILL.—When the press remains unused from any cause, such as want of work, absence of pressmen, &c., it is said to stand still.

PRESS-PROOF.—The proof which is pulled after the marks on the author's proof have been attended to. It is carefully read throughout by the press reader (a somewhat more responsible reader than the first-proof reader), in order that every technical deficiency may be discovered and amended. The press-revise (*q.v.*) follows.

PRESS REVISE.—A revise of the press-proof. It is the final proof previous to the actual printing of the sheet, unless the pages are to be stereotyped, in which case a foundry proof (*q.v.*) is pulled.

PRESSWORK.—This term includes the various operation connected with the actual impression of the sheet, and includes making-ready the forme as well as pulling, together with various minutes which it would be impossible to detail. The following remarks are adapted from Savage's work. Presswork is the art of producing perfect impressions from the surface of type or engravings in relief; that is, the subject transferred to paper should be an impression from the surface, and the surface only, of the types or engraved lines, of such a tone as to produce all the effect of which the subject is capable, without either superfluity or deficiency of colour. The press ought to be in the best condition, otherwise it will be impossible to get an equal impression without much trouble and loss of time. The joints of the tympan should not have any play, or the correctness of the register will be affected, and slurs and doubles be caused. The face of the platen ought to be a true plane, and parrallel to the press stone or table. The advantage of having a good press is unavailing for the production of fine work if the types are much worn; for it is impossible to produce a sharp, clear impression when the type is worn and the fine lines rounded by much use. In consequence of this roundness of the letter it is necessary to use a thick blanket in the tympan to bring up the type; thus producing a gross irregular impression of more than the surface. A pressman should, as a matter of course, be well acquainted with the entire routine of presswork; in addition to which, to form his judgement, he should examine the most splendid productions of the press, and study them as patterns of workmanship. In making-ready it must be evident that, when a clear, sharp impression is wanted, the pressure should be on the surface only. Of course the tympan ought not to be very soft, neither should a woollen blanket be used; the most perfect impression will be obtained when fine thick paper alone is used; and even of this article but few thicknesses should be employed. After an impression is printed, the pressman examines if it is uniform throughout; if it be—which is very rarely the case—he goes on with the work; if not, he proceeds to overlay, in order to produce regularity of pressure and of colour over the whole form. To produce presswork of a highly superior character, great expense and much time are required, and it is requisite to have a good press in a good condition; to have new types or types whose faces are not rounded by wear; to have good rollers in good condition; that the ink should be strong, of a full black colour that will not

fade nor stain the paper, and ground so fine as to be impalpable; the paper should be of the best quality, made of linen rags and not bleached by acids or bleaching powders, which have a tendency to decompose the ink; the rolling should be well and carefully done; the face of the type should be completely covered with ink, without any superfluity, so as to produce a full colour; and the pull should be so regulated as to have a slow and great pressure, and to pause at its maximum in order to fix the ink firmly upon the paper. These particulars observed, with nothing but paper in the tympan, perfect impression of the face alone of the type will be obtained, and a splendid book will be produced in the best style of printing. Presswork includes making-ready the forme, rolling, pulling, arranging the tympans and frisket, overlaying, &c., all of which processes will be found described under their respective headings.

PROOF.—A proof is a single impression of the type matter produced for the purpose of being submitted to the reader or author for examination and correction, so that all errors and imperfections in the composition may be ascertained before the work is sent to press. There are various kinds of proofs, viz., the first proof, the press revise, the re-revise, and the foundry proof, as well as clean proofs, foul proofs, author's proofs, and galley proofs. Each of these is described elsewhere.

PROOF READING.—The art of correcting proofs (See READER). The following description of the *modus operandi* is adapted from the "Encyclopædia Britannica":—The Reader, having folded the first proof in the necessary manner, first looks over the signatures, next ascertains whether the sheet commences with the right signature and folio, and then sees that the folios follow in order. He now looks over the running heads, inspects the proof to see that it has been imposed in the proper furniture, that the chapters have been numbered rightly, and that the directions given have been carefully attended to, marking whatever he finds wrong. Having carefully done this he places the proof before him, with the copy at his left hand, and proceeds to read the proof with the greatest care, referring occasionally to the copy when necessary, correcting the capitals or italics, or any other peculiarities, noting continually whether every portion of the composition has been executed in a workmanlike manner. Having fully satisfied himself upon these and all technical points, he calls his reading boy, who, taking his copy, reads in a clear voice, but with great rapidity, and often without the least attention to sound, sense, pauses, or cadence, the precise words of the most crabbed or intricate copy, inserting without pause or embarrassment every interlineation, note, or side-note. The gabble of these boys in the reading room, where there are three or four reading, is most amusing, a stranger hearing the utmost confusion of tongues, unconnected sentences, and most monotonous tones. The Readers, plodding at their several tasks with the most iron composure, are not in the least disturbed by the Babel around them, but follow carefully every word, marking every error, or pausing to assist in deciphering every unknown or foreign word. The first reading is confined to making the proof an exact copy of the manuscript, and ascertaining the accuracy of the composition; consequently, first readers are generally intelligent and well educated compositors, whose practical knowledge enables them to detect the most trivial technical errors. Having thus a second time perused the proof, and carefully marked upon the copy the commencement, signature, and folio of the succeeding sheet, he sends it by his reading boy into the composing room, to be corrected by the workmen who have taken share in the composition. These immediately divide the proof amongst them, and each corrects that portion of it which contains the matter he has composed. When every compositor has corrected his matter, that compositor whose matter is last on the sheet locks it up, and another proof is pulled, called the revise, which, with the original proof, is taken to the same first Reader, who compares the one with the other, and ascertains that his marks having been carefully attended to, in default of which he again sends it up to be corrected; but should he find his revision satisfactory, he sends the second proof with the copy to the second Reader, by whom it undergoes the same careful inspection; but this time, the most technical inaccuracies having been rectified, the Reader observes whether the author's language be good and intelligble; if not, he makes such queries on the margin as his experience may suggest; he sends it up to the compositor, when it again under-

goes correction, and a proof, called the author's proof, being very carefully pulled, is sent down to the same reader, who revises his marks and transfers the queries. The proof is then sent, generally with the copy, to the author for his perusal, who, having made such alterations as he thinks necessary, sends it back to the printing-office for correction. With the proper attention to these marks, as shown in the press proof, the printer's responsibility as to correctness ceases, and the sheet is now ready for press. Such, at least, is the process of proof reading which ought to be adopted; but now, from the speed with which works are hurried through the press, the proofs are frequently sent out with but one reading, the careful press reading being reserved until the author's revise is returned. "Hansard's Typographia" (1825), p. 748, gives some useful remarks on this subject. It is always desirable that a Reader should have been previously brought up to the business of a compositor, By his practical acquaintance with the mechanical departments of the business he will be better able to detect those manifold errata, which, when suffered to pass, give an air of carelessness and inattention to his labours, that must always offend the just taste and professional discernment of all true lovers of correct and beautiful typography. Some of the principal imperfections which are most easily observed by the man of practical knowledge in the art of printing are the following, viz.: imperfect and wrong founted letters; inverted letters, particularly the lower-cases, the *n u*, and the *u n*; awkward and irregular spacing; *uneven pages or columns; a false disposition of the reference mark;* crookedness in words and lines; bad making-up of matter; erroneous indenting, &c. These minutiæ, which are rather imperfections of workmanship than literal errors, are apt to be overlooked and neglected by those Readers who have no idea of the great liability there is, even with the most careful compositor, to fall into them—nay, the almost absolute impossibility of wholly avoiding them. A Reader ought not to be of a captious or pedantic turn of mind, the one will render his situation and employment extremely unpleasant, and the other will tempt him to habit, destructive of that consistency of character in his profession which he ought ever scrupulously to maintain. We are here alluding to a strict uniformity in the use of capitals, in orthography, and punctuation. Nothing, indeed, can be more provoking to an author than to see—for instance—the words honour, favour, &c,, spelt with the *u* in one page, and, perhaps, in the next modernised, and spelt without that vowel. This is a decrepancy which correctors of the press should always carefully avoid. The like observations will apply to the using of capital letters to noun substantives, &c., in one place, and the omission of them in another. Whatever may be the different opinions or practices of authors in these respects, the system of spelling, &c., in one place, must not be changed in the same work. The reading-boy should be able to read with ease and distinctness any copy put into his hands, and he should be instructed not to read too fast, but to pay as much attention to what he is engaged on as if he were reading for his own amusement or instruction. The eye of the Reader should not follow, but rather go before, the voice of the reading-boy; for, by a habit of this nature, a Reader will, as it were, anticipate every single word in his copy; and when any word or sentence happens to have been omitted in the proof, his attention will the more sensibly be arrested by it, when he hears it pronounced by his reading-boy. Great care, however, ought to be paid, least the eye of the Reader should go too far before the words of his reading-boy. For as he will be apt to be attending to the meaning of his author, he will read words in the proof which actually do not appear there, and the very accuracy of the reading-boy will but tend to confirm him in the mistake. In revising a proof-sheet, particular care must be taken that none of the fresh errors escape, which compositors often make in the course of correcting the original ones. To avoid this, the Reader ought not only to pay attention to the particular word which has been corrected, but always to read over with care the whole of the line in which that word is to be found. This is particularly necessary in cases where it has been requisite for the compositor to alter irregular or slovenly spacing; for in raising the line in the metal for that purpose, there is very great danger of some word or letter falling out, or some space being put in a wrong place. In offices where more Readers than one are employed it is always advisable that a proof-sheet should be read over by at least two of the Readers. The eye in going over the same track is liable to be led into the same mistake or oversight. The interest excited by the

first or second reading having abated, a degree of listlessness also will steal upon the mind, extremely detrimental to correctness in the proof. It ought always to be remembered that the part of the copy which contains the connecting matter of the ensuing sheet must either be retained, or carefully transcribed, or read off, a proof of that matter having been pulled for that purpose. Authors are very apt to make alterations, and to correct and amend the style or arguments of their works when they first see them in print. This is certainly the worst time for this labour, as it is necessarily attended with an expense which, in large works, will imperceptibly swell to a large sum; when, however, this method of alteration is adopted by an author, the Reader must always be careful to read the whole sheet over once more with very great attention before it is finally put to press. A proof-sheet having duly undergone this routine of purgation, may be supposed as free from errata as the nature of the thing will admit, and the word "Press" may be written at the top of the first page of it. This is an important word to every Reader if he have suffered his attention to be drawn aside from the nature of his proper business, and errors should be discovered when it is too late to have them corrected. This word "Press" is as the signature of the death-warrant of his reputation; and if he is desirous of attaining excellence in his profession will occasion an uneasiness of mind which will but ill qualify him for reading other proof-sheets with more care and correctness. A Reader should, therefore, be a man of one business, always upon the alert, all eye, all attention. Possessing a becoming reliance upon his own powers, he should never be to confident of success. Imperfection clings to him on every side, errors and mistakes assail him from every quarter. His business is of a nature that may render him obnoxious to blame, but can hardly be said to bring him in any very large stock of praise. If errors escape him he is justly to be censured, for *perfection is his duty*. If his labours are wholly free from mistake, which is, alas, a very rare case, he has done no more than he ought, and consequently can merit only a comparative degree of commendation, in that he has had the good fortune to be more successful in his labours after perfection than some of his brethren in the same employment. No Reader should suffer his proofs to go to press, where there have been any material errata, without their receiving a last revision by himself. If he is doubtful of himself and diffident of his own powers of attention, how much more ought he to be on his guard respecting the care and attention of others! He should make it a rule never to trust a compositor in any matter of the slightest importance—they are the most *erring* set of men in the universe. In the final operation of revising a forme for press, the eye must be cast along the sides and heads of the respective pages least any letter should happen to have fallen out, any crookedness have been occasioned in the locking-up of the forme, or any battered letters have been inserted. These are the qualifications of a Reader; this the business of one employed as a Corrector of the Press. It is an arduous employment, an employment of no small responsibility, and which ought never to be entrusted to the intemperate, the thoughtless, the illiterate, or the inexperienced. In printing regular volumes, one sheet is usually corrected at a time; but where extensive alterations, omissions, or additions are likely to be made by writer or editor, it is more convenient to take the proofs on long slips before division into pages. The thankless and monotonous business of a Corrector or Reader is more difficult than the uninitiated would believe. It requires extensive and varied knowledge, an accurate acquaintance with the art of typography, and, above all, a peculiar sharpness of eye, which, without losing the sense and correction of the whole, takes in at the same time each separate word and letter.

PRINTER.—To conduct the operations of the news composing-room, a superintendent, or, as he is technically called, a 'printer,' is invariably appointed, who must necessarily possess a good practical knowledge of the art, and be familiar with the mode in which newspapers are managed. He acts as the medium between the compositor and the editor; receives and gives out all copy, in such portions, and with such directions, as he may think most conducive to its speedy execution; and he, or his deputies, make up the paper into columns and pages, the printer, however, being held responsible for the acts of those whom he appoints to assist him. He also has, generally, the power of engaging or dismissing hands, as being, from this peculiar position, the best able to judge whether any particular compositor discharges his duties efficiently or not. From this it is evi-

dent; that the *printer* of a morning, or indeed any other paper, is a person of considerable consequence in a printing-office; as upon his decision, regularity, and ability, must depend, in a great measure, the regular and satisfactory production of the paper at the stated times.

PRINTERS' QUIRE.—A Quire of 25 sheets.

PRINTERS' REAM.—A ream of 21½ quires or 516 sheets.

PRINTING.*—The art of taking one or more impressions from the same surface, whereby characters and signs, cast, engraven, drawn, or otherwise represented thereon, are caused to present their reverse images upon paper, vellum, parchment, linen, or other substances, in pigments of various hues, or by means of chemical combinations of which the components are contained, on or within the surface from which the impression is taken, or on the fabric of the thing impressed, or both. *Letterpress printing* is the art of taking impressions from letters and other characters cast in relief upon several pieces of metal. The impressions are taken either by superficial or surface pressure, as on the common printing press, or by lineal or cylindrical pressure as in the printing machine and roller press. The pigments or inks, of whatever colour, are always upon the surface of the types, and the substances which may be impressed are various. Wood cuts and other engravings in relief are also printed in this manner. *Copperplate printing* is the reverse of the preceding, the characters being engraven in intaglio and the pigment or inks contained within the lines of the engravings, and not upon the surface of the plate. The impressions are always taken by lineal or cylindrical pressure, the substances to be impressed, however, are more limited. All engraving in intaglio, on whatever material, are printed by this method. *Lithographic printing* is from the surface of certain porous stones, upon which characters are *drawn* with peculiar pencils or pens, &c. The surface of the stone being wetted, the chemical colouring compound adheres to the drawing and refuses the stone. The impression is taken by a scraper, that rubs violently upon the backs of the substances impressed, which are fewer still in number. Drawings upon zinc and other materials are printed by this process.† *Cotton and Calico printing* is from surfaces engraven either in relief or intaglio, but it is a branch of printing which does not enter within the scope of this work. Block Printing was known in China as early as B.C. 202, and is said to have been introduced from that country into Europe by Marco Polo in the latter part of the 15th century. It was first employed in the manufacture of playing-cards and little books of devotion, consisting in most cases of only one page, illustrated by rude pictures, and containing short scripture texts. The earliest date on these books is 1423. The invention of printing with moveable types is claimed for several persons, the chief of whom are Lawrence Coster (1370-1440), of Haarlem; John Gutenburg, born at Mentz (Mayence) about 1400, settled at Strasburg in 1424, returned to Mentz in 1441, dying there February 24, 1468; John Mentelin (1410-78), of Strasburg; John Faust, who died about 1490; and Peter Schœffer or Schoffer, of Mentz, who died about 1502. Coster is said to have printed by means of separate wooden types, tied together with thread, as early as 1430, but the evidence is doubtful. John Gutenberg or Geinsfleisch, established himself at Mentz in 1441, and printed two small books in 1442. In 1443 he took John Fust or Faust into partnership, and in 1450 he first employed cut-metal types in the production of the Mazarin Bible, which appeared five years later. About the same time Peter Schœffer, the servant of Gutenberg and Faust, invented cast-metal types, which were first used in 1459. The Gothic types, or "Black" letter, gave place to Roman letters towards the end of the 16th century.

1451.—Printing introduced at Haarlem by John Gutenberg.

1455.—The Mazarin Bible is printed by Gutenberg.

1457.—Faust and Schœffer print the Psalter.

1462—Count Adolphus of Nassau takes Mentz, and compels the printers to remove to other towns, whereby the art is diffused.

*Latin Prem-ere, to press: equivalents—French, imprimer; Spanish, imprimir, to press, stamp, or infix, letters, characters, forms, or figures.

†Encyc. Britt. 8th. ed. xviii. 520.

1465.—Printing introduced at Subiaco, in Italy. The first book printed here contained the Greek characters among its quotations.

1466.—Sweynheym and Pannartz establish the first press at Rome.

1467.—They introduce Roman types.

1469.—The first press is established at Paris, being the second in France, the first being introduced into Tours two years earlier.

1470.—"Signatures" are first employed by Antonio Zarot, at Milan.

1471.—Caxton, who sets up the first press in England, at Westminster, prints the "Game of Chesse," which was finished about 1474.

1475.—Printing is introduced into Spain, at Barcelona.

The first printed Almanack was composed by Regiomontanus, who received a munificent donation from the King of Hungary for his trouble.

1476.—The first work wholly in Greek type is printed at Milan.

1488.—The first Bible in Hebrew characters is printed at Sorocino, in Italy.

1495.—The art of printing Music is introduced into England.

1500.—Aldus Manutius invents Italic type about this year.

The first patent of King's Printer was granted to Richard Pinson by Henry VII. He was afterwards succeeded by Thomas Berthelet.

1501.—Printing is introduced into Scotland.

1515.—Ottavio de Petrucci invents Music Printing from Metal Types.

1526.—The New Testament, being the first English Bible, is printed at Antwerp.

1539.—The Great, or Cromwell's Bible, the first printed by authority in England.

1540.—The "Byrth of Mankynd," the earliest English work in which Copper-plate Printing is employed, is printed.

1542.—The "Imprimerie Royale" is established at Paris by Francis I.

1551.—Humphrey Powell introduces printing into Ireland.

1560.—A native merchant introduces the art into Russia.

1601.—William Jansen Blaew, of Amsterdam, invents the press which bears his name.

1637.—By order of the Star-Chamber the businesses of Printer and Type Founder are ordered to be kept distinct, and only four Type Founders are permitted in the Kingdom.

1639.—Printing first performed in the English colonies of America by the Rev. Jesse Glover. It had previously been introduced by Stephen Daye, from London, in Massachusetts, but no work had been performed.

1720.—Type founding is first practised with success in England by William Caslon.

1725.—Stereotype-printing is introduced by Ged, of Edinburgh.

1726.—Printing is introduced into Turkey.

1776.—The printing of Maps with Moveable Types is invented by Conrad Sweynheym.

1778.—Henry Johnson invents Logographic Printing.

1780.—Tilloch invents an improved system of Stereotype.

1784.—Valentine Haüy invents Embossed Typography and applies it to Printing Books for the Blind.

1785.—The *Daily Universal Register* (afterwards *The Times*) is brought out, January 13, as a specimen of Logographic Printing.

1790.—W. Nicholson Patents a Self-acting Printing Machine.

1798.—Lord Stanhope invents the Stanhope Press.

1804.—König directs his attention towards the improvement of the Printing Press.

1811.—The sheet H of the "Annual Register" for 1810, printed in April, is the first work printed by a machine.

1814.—*The Times* is the first Steam-printed Newspaper, König's machine being the first apparatus employed, Nov. 28th,

1815.—Composition Balls for Inking Type are invented by Benjamin Franklin.

Cowper commences his inventions connected with the Press, and introduces the Inking Roller.

1817.—R. Ackermann introduces Lithographic Printing into England.
1818.—George Clymer, of Philadelphia, patents the Columbian Press in London.
Applegath takes out a Patent for Improvements in Cylindrical Printing Machines.
1827.—Gall, of Edinburgh, invents a system of Printing for the Blind.
1840.—Anastatic Printing introduced.
1846.—Hoe's Rotary Press invented.
1852.—Andrew Worsing, of Vienna, invents Nature Printing.
1858.—Hoe's American Printing Machine is introduced into England.
1862.—Grüner's Folding, Stitching, and Glazing Machine introduced into England.
1863.—Bonelli's Printing Telegraph is invented.
1868.—Marinoni's French Printing Machines are introduced into England, and used in printing the *Echo*.
1869.—The "Walter Press" brought to perfection, and used in Printing the London *Times*.
Bullock's American Printing Machine is introduced into England, and used in Printing the London *Daily Telegraph*.

PRINTING INK.—See INK.

PROOF.—A single impression of type matter taken for the purpose of examination and correction by the proof reader or author. The first impression taken for this purpose is called the first proof, the second the revise (*q.v.*). There are also the author's proof, the revise, press proof, and foundry proof, each of which terms is explained elsewhere. See also CLEAN PROOF and FOUL PROOF.

PROOF PAPER.—Any description of paper used for pulling proofs on. When a proof is required on the paper which is to be used for a work, the direction is given to "pull it on its own paper." A certain quantity of proof paper should be kept wetted down, so that it may always be ready for use. The best paper for pulling proofs on is a thin but hard paper; it should be stout enough to bear writing on, so that the proof reader's and author's corrections may be made on it.

PROOF PRESS.—A press set apart for pulling proofs. An old press is generally used for this purpose; one that has seen good service in its day, but is not thoroughly worn out. In many offices an old Stanhope answers the purpose admirably. Slip proofs are pulled on a galley press (*q. v.*).

PROOF PULLER.—See PULL A PROOF.

PROOF READER.—A person whose duty it is to read proofs in a printing office for the purpose of correcting errors in the process of arranging types in words, lines, and pages.—See CORRECTING.

PROOF SHEET.—An impression from types taken for correction.

PUBLICATION.—1. The act of publishing or making known; notification to the people at large. 2. That which is published or made known, especially any pamphlet or book offered for sale or for public notice. For "publication" in libel, see LIBEL.

PUNCH.—The original engraving of the face of type cut on steel, and subsequently impressed into copper to form a matrix.

PULL.—The act of printing an impression by pulling down the handle which actuates the system of levers, &c., in the press. Pressmen technically term the amount of force on the impression "the pull," *i. e.*, if a forme has too light an impression, he puts "more pull" on; if too heavy an impression, he takes some of the "pull" off.

PULL A PROOF.—To print an impression intended as a proof. On newspapers the compositors pull their own proofs in slips on galleys, taking it by turns to do so. It is usual for the companionship to have a piece of wood—sometimes

a piece of furniture—with the word "pull" printed on a piece of paper and stuck on. This is passed on from frame to frame as often as a proof is pulled, and is called the "Pull-stick"; it denotes that the party holding it is to pull the next proof. In large book-houses a pressman is employed on the 'stab to pull all proofs. —See PROOFS.

PUNCTUATION.—We condense from Murray's Grammar the following rules connected with this subject:—

Punctuation is the art of dividing a written composition into sentences by points or stops, for the purpose of marking the different pauses which the sense and an accurate pronunciation require.

The comma represents the shortest pause; the semicolon a pause double that of the comma; the colon double that of the semicolon; and the period double that of the colon.

The COMMA.—The comma usually separates those parts of a sentence which, though very closely connected in sense and construction, requires a pause between them.

Rule 1st.—With respect to a simple sentence, the several words of which it consists have so near a relation to each other that in general no points are requisite, except a full stop at the end of it, as, "The fear of the Lord is the beginning of wisdom."

Rule 2nd.—When the connection of the different parts of a simple sentence is interrupted by an imperfect phrase, a comma is usually introduced before the beginning and at the end of the phrase, as, "His work is, in many respects, very imperfect."

Rule 3rd.—When two or more nouns occur in the same construction, they are parted by a comma, as, "Reason, virtue, answer one great aim." From this rule there is mostly an exception, with regard to two nouns closely connected by a conjunction, as, "Virtue and vice form a strong contrast to each other."

Rule 4th.—Two or more adjectives belonging to the same substantive are likewise separated by a comma, as, "Plain, honest truth, wants no artificial covering." But two adjectives, immediately connected by a conjunction, are not separated by a comma, as, "True worth is modest and retired."

Rule 5th.—Two or more verbs having the same nominative case, and immediately following one another, are also separated by commas, as, "Virtue supports in adversity, moderates in prosperity." Two verbs immediately connected by a conjunction, are an exception to the above rule, as, "The study of natural history expands and elevates the mind." Two or more participles are subject to a similar rule and exception, as, "A man, fearing, serving, and loving his Creator."

Rule 6th.—Two or more adverbs immediately succeeding one another must be separated by commas, as, "We are fearfully, wonderfully framed." But when two adverbs are joined by a conjunction, they are not parted by a comma, as, "Some men sin deliberately and presumptuously."

Rule 7th.—When participles are followed by something that depends on them, they are generally separated from the rest of the sentence by a comma, as, "The king approving of the plan, put it in execution."

Rule 8th.—When a conjunction is divided by a phrase or sentence from the verb to which it belongs, such intervening phrase has usually a comma at each extremity, as, "They set out early, and before the close of the day, arrived at the destined place."

Rule 9th.—Expressions in a direct address are separated from the rest of the sentence, as, "My son, give me thy heart."

Rule 10th.—The case absolute, and the infinitive mood absolute, are separated by commas from the body of the sentence, as, "His father dying, he succeeded to the estate."

Rule 11th.—Nouns in apposition, that is, nouns added to other nouns in the same case by way of explication or illustration when accompanied with adjuncts, are set off by commas, as, "Paul, the Apostle of the Gentiles, was eminent for his zeal and knowledge." But if such nouns are single, or only form a proper name, they are not divided, as, "Paul the Apostle."

Rule 12th.—Simple members of sentences connected by comparatives, are for the most distinguished by a comma, as, "As the hart panteth after the water brooks, so doth my soul pant after thee." If the members in comparative sentences are short, the comma is in general better omitted, as, "How much better is it to get wisdom than gold."

Rule 13th.—When words are placed in opposition to each other, or with some marked variety, they require to be distinguished by a comma, as, "Though deep, yet clear; though gentle, yet not dull." Sometimes when the word with which the last preposition agrees in single, it is better to omit the comma before it, as, "Many states were in alliance with, and under the protection of, Rome." The same rule and restriction must be applied when two or more nouns refer to the same proposition, as, "He was composed both under the threatening and at the approach of a cruel and lingering death."

Rule 14th.—A remarkable expression, or a short observation somewhat in the manner of a quotation, may be properly marked with a comma, as, "It hurts a man's pride to say, I do not know."

Rule 15th.—Relative pronouns are connective words, and generally admit a comma before them, as, "He preaches sublimely, who lives a sober, righteous, and pious life." But when two members, or phrases, are closely connected by a relative, restraining the general notion of the antecedent to a particular sense, the comma should be omitted, as, "Selfdenial is the sacrifice which virtue must make." The fifteenth rule applies equally to cases in which the relative is not expressed but understood, as, "It was from piety, warm and unaffected, that his morals derived strength."

Rule 16th.—A simple member of a sentence contained within another, or following another, must be distinguished by the comma, as, "To improve time whilst we have health, will smooth the bed of sickness." If, however, the members succeeding each are very closely connected, the comma is unnecessary, as, "Revelation tells us how we may attain happiness." When a verb in the infinitive mood follows its governing verb with several words between them, those words should generally have a comma at the end of them, as, "It ill becomes good and wise men to oppose and degrade one another." Several verbs in the infinitive mood having a common dependence and succeeding one another, are also divided by commas, as, "To relieve the indigent, to comfort the afflicted, to protect the innocent, to reward the deserving, is a humane and noble employment."

Rule 17th.—When the verb, to be, is followed by the infinitive mood, which, by transposition might be made the nominative case to it, the former is generally separated from the latter verb by a comma, as, "The most obvious remedy is, to withdraw from all associations with bad men."

Rule 18th.—When adjuncts or circumstances are of importance, and often when the natural order of them is inverted, they may be set off by commas, as, "Virtue must be formed and supported not by unfrequent acts, but by daily and repeated exertions."

Rule 19th.—When a verb is understood, a comma may properly be introduced. This is a general rule, which, besides comprising some of the preceding rules, will apply to many cases not determined by any of them, as, "From law arises security; from security, curiosity; from curiosity knowledge."

Rule 20th.—The words, nay, so, hence, again, first, secondly, formerly, now, lastly, once more, above all, on the contrary, in the next place, in short, and all other words and phrases of the same kind, must generally be separated from the contex by a comma, as, "Remember thy best and first friend; formerly, the supporter of thy infancy and the guide of thy childhood; now, the guardian of thy youth and the hope of thy coming years."

The SEMICOLON is used for dividing a compound sentence into two or more parts, not so closely connected as those which are separated by a comma, nor yet so little dependent on each other as those which are distinguished by a colon.

The COLON is used to divide a sentence into two or more parts, less connected than those which are separated by a semicolon; but not so independent as separate distinct sentences.

The PERIOD.—When the sentence is complete and independent, and not connected in construction with the following sentence, it is marked with a period.

The DASH.—Though often used improperly by hasty and incoherent writers, may be introduced with propriety, where the sentence breaks off abruptly, where a significant pause is required, or where there is an unexpected turn in the sentiment, as, "If thou art he, so much respected once—but, oh! how fallen! how degraded!"

The INTERROGATION.—A note of interrogation is used at the end of an interrogative sentence; that is, when a question is asked, as, "Who will accompany me?"

The EXCLAMATION.—The note of exclamation is applied to expressions of sudden emotion, surprise, joy, grief, &c., and also to invocations or addresses, as, "My friend! this conduct amazes me!"

The PARENTHESIS.—A parenthesis is a clause containing some necessary information or useful remark introduced into the body of a sentence; obliquely, and which may be omitted without injuring the construction, as, "Know then this truth (enough for man to know); virtue alone is happiness below.

PUTTING IN LETTER.—See DISTRIBUTING.

Q.

QUADS.—An Abbreviation of quadrats.

QUADRATS.—Pieces of type metal of the depth of the body of the respective sizes to which they are cast, but lower than types, so as to leave a blank space on the paper when printed where they are placed. An en quadrat is half as thick as its depth; an em quadrat is equal in thickness and depth, and being square on its surface, is the true quadrat (from *quadratus*, squared); a two em quadrat is twice the thickness of its depth; a three em three times, a four em four times, as their names specify. Four ems are the largest quadrats that are cast. They are used to fill out short lines to form white lines, and to justify letters, figures, &c., in any part of the line or page. Four-em quadrats are rarely cast larger than Pica. English and Great Primer do not exceed three ems, nor does Double Pica exceed two ems. In casting em and en quadrats the utmost exactness is necessary; they also require particular care in dressing, as the most trifling variation will instantly be discovered when they are ranged in figure work; and unless true in their justification, the arrangement will be so irregular, that all the pains and ingenuity of a compositor cannot rectify it. The first line of a paragraph is usually indented an em quadrat, but some printers prefer using an em and en, two, or even three ems for wide measures. An em quadrat is the proper space after a full point when it terminates a sentence in a paragraph. En quadrats are generally used after a semicolon, colon, &c., and sometimes after overhanging letters. Circular or curved quadrats are made of various sizes so as to form circles from one to twenty-four inches in diameter; each piece is exactly one eighth of a full circle, and when combined with similar pieces, will form quarter, half, three-quarter, and full circles. By reversing the combination of some of the pieces, serpentine and eccentric curves may be made of any length or depth. These curvilinear quadrats are of two kinds—inner quadrats with convex surface, and outer quadrats with concave surface. The curved line is produced by placing the convex and concave surfaces parallel to each other, so that when locked up firmly they hold the type inserted between them. The other sides of the quadrats are flat and right-angled, to allow a close introduction of type, and an easy justification with ordinary type. Select two outer quadrats (each marked with the same number), join the smaller ends and justify the extremities carefully with ordinary quadrats, set the line of type in the hollow of the curve, but without justification, then insert two inner quadrats (of the same number) of smaller size than the outer quadrats—the size of the inner quadrats will depend upon the size of the type. A line, a canon for instance, will require smaller inner quadrats than will be needed

for a line of Pica, and *vice versa*. As the one increases the other diminishes. An ordinary clock dial will afford a good illustration. The space between the numeral X and I is one fourth of a circle. The curved line described around the foot of these numerals is much less than the curve at the top; if the size of the numerals from X to I is decreased, the inner curve will be greater; if it is increased, it will be less. This will explain why the inner quadrat should be of less size than the outer, and why it should diminish as the size of the type increases. The curve of the inner quadrat should be perfectly parallel with the curve of the outer quadrat. When they are parallel they bind the type between firmly in every part. Then justify the line of type. As the sizes of type vary with different foundries, it will often be found that the inner quadrat of the nearest suitable size will not meet the type in every part. This difficulty may be obviated by introducing slips of the same length as the line of type. This increases the distance between the quadrats until the curved surfaces are perfectly parallel with each other. The line of type cannot be justified, unless they are parallel. When the inner and outer quadrats are thus adapted to each other, they not only bind the type firmly, but will also present a perfect surface on the other side. Unless they are parallel on the inner sides, and flat and square on the outer sides, the justification is not good; and the remedy must be found in changing the size of the inner circle, or in increasing the distance between the curved lines by the use of large type, or by paper or cardboard. When thus composed the type will be perfectly tight and secure, and the curved white line strictly accurate. As the quadrats are perfect segments of a large circle, they cannot be increased or diminished without destroying the truth of the curve. If the thin ends are pieced out with common quadrats, good justification will be rendered impossible. If they are shortened by cutting of them, they are ruined bits of lead; or short pieces of card between the curved surfaces are also wrong; they destroy that exact parallelism which is necessary for the security of the type. Very accurate justification of the outer extremities of the quadrats is also indispensable. If the curved surfaces are kept parallel, and the flat surfaces kept square, no difficulty will be found in using them; and they will prove a valuable aid in ornamental printing.

QUARTERS.—Quartos, octavos, sixteens, and thirty-twos formes are imposed in quarters. They are called quarters because they are imposed and locked up in four parts.

QUARTO.—A sheet of paper folded in four leaves, or eight pages, is styled a quarto.

QUERY.—A question usually represented by an interrogation mark (?) or the letters qy. on the margin of a proof in regard to the correctness of a letter, word, or sentence.

QUIRE.—A quire of paper, for all usual purposes, consists of twenty-four sheets; but for newspapers, a quire consists of twenty-five sheets, and a ream of twenty quires contains five hundred sheets.—See OUTSIDES.

QUIRED.—Two sheets so imposed as when folded and made up will lie one within the other.—See IMPOSING.

QUOINING A FORME.—The fitting of the quoins in a forme so that when it is locked-up they shall, in the most efficacious manner, wedge up and secure the types.—See IMPOSING.

QUOIN-DRAWER.—A drawer in the frame of the imposing-stone in which quoins are kept. It is generally the right hand top drawer when you stand in front of the stone.

QUOIN-DRAWER OVERSEER.—A compositor who takes charge of the store-closet, and makes up the furnitures for the first sheets of a work.

QUOINS.—Short pieces of beech wood made of the same height as furniture, and tapering in their width to wedge the pages up with in the chase. They are made of a variety of widths, from about two inches to less than a quarter

of an inch, for the convenience of having every gradation in quoining a forme.—See LOCKING UP A FORME.

QUOTATION MARKS (“ ”).—Two inverted commas, generally placed at the beginning of a phrase or a passage which is quoted or transcribed from the speaker or author in his own words; and two apostrophes in their direct position placed at the conclusion, as, “The proper study of mankind is man.” When a quotation occurs within a quotation only one inverted comma and one apostrophe are used to designate it.

R.

RACKS.—See BOARD-RACK, CASE-RACK, and FORME-RACK.

RANKS.—From the frames in a composing-room being placed in a row, the compositors are said to be in the ranks; thus, if a compositor has been selected for a reader or overseer, and he afterwards works at the case as compositor, it is said he is come to the ranks again.

RAT.—Savage defines this opprobrious epithet, thus :—“A compositor or pressman who executes work at less than the regular prices, or for less than the generality of the trade think it deserves, or for less than the Chapel decides it ought to be paid, or for less than others are paid for it, becomes what is termed a rat. The most miserable situation, perhaps, that a workman can be placed in. He is hooted at and despised by the rest of the workman in every house where he may obtain employment; and this feeling towards him does not subside, for the opprobrious epithet accompanies him for life.”

RAT-HOUSE.—A printing-office where the rules of the printers' trade unions are not conformed to.

READER.—See PROOF READER.

REAM.—Twenty quires of paper, each of which usually contains twenty-four sheets, but paper intended for newspapers is usually made up in quires containing twenty-five sheets each, in which case the ream consists of 500 sheets. A “perfect” ream for printing purposes consists of 21½ quires or 516 sheets, waste being thus provided for.

REFERENCES.—There are various references used for notes, according to the fancy of the author, or the master printer, where they are not numerous in a page. The common references are generally used in this order :—*, †, ‡, §, ‖, ¶, and where there are more than six notes in a page, two of each reference are put to a note; but this is looked upon as having an unsightly appearance. Italic lower-case letters are sometimes used, enclosed between parentheses (*a*), and sometimes figures (1). The letters, when they are used, are often continued through the alphabet, and then commence again with (*a*). The most usual references, and which are esteemed the neatest, are superiors, both letters and figures. Where the notes are at the foot of the page, letters are most frequently used, sometimes going through the alphabet, and sometimes commencing with a in each page in which notes occur. When the notes are placed at the end of the volume, figures are nearly always adopted in regular succession.

REGISTER.—This term implies such an arrangement of the marginal furniture in both formes of a sheet as that, when printed off, the pages shall fall precisely at the back of each other, so that the sides and heads of the pages of one forme shall not project beyond those of the other. In fine work the principle is carried still further, and the whites in the pages are so arranged that line shall fall upon line when the reiteration is worked.

REGLET.—A sort of furniture of an equal substance all its length. It is quadrat high of several thicknesses, viz., Pearl, Nonpareil, Brevier, Long Primer, Pica, Great Primer, Double Pica, Two-line English, and Two-line Great Primer. Reglet and furniture as well as sidesticks,* are made in lengths of three feet each, and are always styled lengths of reglet, lengths of furniture, &c. Reglet is used principally for making margin in imposing a forme; also for spacing out the lines of a broadside or other large page; it also is often used to branch out titles, jobs, and other matter, in order to economise the use of quadrats and leads. In the absence of metal clumps, it is preferable to quadrats for this purpose, as it keeps the lines more even, especially if a wrong fount space or quad happens to get in.

REPRINT.—A second or new edition of any work. "Reprint" copy is the converse of manuscript copy, being that which is printed instead of written.

REVISE.—The impression of a forme or galley, printed on proof paper, and taken by the proof puller to the reader or overseer for him to examine that all the corrections in the previous proof are made.—See PROOFS.

RE-REVISE—A second revise (*q.v.*).

RIDER.—When an author adds a paragraph or sentence to his proof or manuscript, it is called Rider A, Rider B, &c.

RIDING.—Leads are said to ride when one end projects over another. This will occasionally take place when two or more leads are used in the same measure. It ought to be guarded against, and when it happens it prevents the page lifting; or if, by tightening the quoins, the forme is made to rise, it causes the lines to be crooked.

RIMMED LETTERS.—A series of fancy types, of Roman and Old English characters, designed originally in America. Their peculiarity consists in their having a thin line or rim around the ordinary face. They present a very light and graceful appearance, and are at the same time quite distinct.

RINSE THE FORME.—Laying-up the forme and washing the ley and ink away to make the letter clean. This should always be done by the pressman as soon as the forme is off, by taking it to the ley trough and brushing the ink from off the face of the letter, the furniture, the chase, with the ley brush and ley. He should lift it out of the trough, and place it standing on its edge in the sink or trough and resting against some support, and rinse it well with water to wash away the ley and the ink it has dissolved: the face of the letter, the furniture, and the chase are thus made clean, ready for the compositor to lay up preparatory to distributing.—See LAYING-UP.

RINSING TROUGH.—The trough in which formes are rinsed in is a combination of two troughs. The smallest and deepest contains the water, and in some offices has an iron ladle chained to the near upper corner to prevent its being displaced; the shallow part being used to lay up the forme in. They are both lined with lead, and the shallow one has a loose deal bottom to preserve the lead, and in general is bound with iron, particularly at the front, to prevent the edge of the chase when being lifted upon the letter-board from cutting the lead. They both have an opening with a short pipe at the bottom to convey away the water, that in the water trough having a brass plug in it for the convenience of letting the water off to clean it out. They stand on a frame which is usually placed on a platform raised at the edge a few inches, lined with lead, styled the sink, with loose bottom of boards which leads into a pipe for drainage.

ROLLER.—A hollow wooden cylinder covered with composition which, set in an iron frame, revolves upon a rod and is used for inking type. The test of a good roller is: It should be moderately soft to the touch, yet perfectly elastic and strong in texture. It should shrink but little, and yet last a considera-

*Side and footsticks are also made to certain sizes to suit various formes.

ble time. To know when a roller that has been recently made or washed is in order, grasp it gently with the hand, or pass the ends of the fingers along its surface lengthwise. If it is in a raw, sticky condition, it is yet "green," and must not be used. If it appears only moderately adhesive and pliant, but uniformly so, escaping from the fingers without showing a mark from them, and with a smooth rebound, the roller is in good condition, and is best if mounted and charged with ink at once. A large poster or newspaper forme, or any large forme with old type, will require a soft roller with much suction. Book-work, wood-cuts, or fine job-work will require a harder roller, with a very smooth, elastic, and clinging surface. Coloured inks are best printed with a still harder roller and with much less suction. All rollers should be perfectly clean and free from all cracks and holes. The suitableness of these rollers cannot be explained by words; such a knowledge will be best acquired by observation and experience. It may, however, be necessary to state that one roller will not do for all sorts of presswork; the quality of the work, the size and condition of the type, and the speed of the press must guide the press-man in his choice. During the past few years various substitutes for the ordinary composition have been introduced. To make composition rollers, put the glue in a bucket or pan and cover it with water; let it stand until more than half penetrated with water, taking care that it shall not soak too long, and then pour it off and let it remain until it becomes soft, when it will be ready for the melting kettle. This is a double vessel like a glue kettle. Put the soaked glue into the inner vessel, and as much water in the outer boiler as it will contain when the inner vessel is placed in it. When the glue is all melted (if too thick add a little water), the molasses may be slowly poured into it and well mixed with the glue by frequent stirring. When properly prepared, the composition does not require boiling more than an hour. Too much boiling candies the molasses, and the roller consequently will be found to lose its suction much sooner. In proportioning the material much depends upon the weather and temperature of the place in which the rollers are to be used. Eight pounds of glue to one gallon of sugar-house molasses or syrup is a very good proportion for summer, and four pounds of glue to one gallon of molasses for winter usé. For hand-press rollers more molasses should be used, as they are not subject to so much hard usage as cylinder-press rollers, and do not require to be as strong, for the more molasses that can be used the better the roller. Before casting a roller the mould should be perfectly clean and well oiled with a swab, but not to excess, as too much oil makes the face of the roller seamy and ragged. The end pieces should then be oiled, and together with the cylinder placed in the mould, the upper end piece being very open to allow the composition to pass down between the interior of the mould and the cylinder. The cylinder must be well secured from rising before the composition is poured in, by placing a stick upon the end of it sufficiently long to reach above the end of the mould, and be tied down with twine. The composition should be poured very slowly and in such a manner as to cause it only to run down one side of the cylinder, allowing the air to escape freely up the other. If the mould be filled at night the roller may be drawn the next morning, but it should not be used for at least twenty-four hours after, except in very cold weather. To determine when a roller is in order for working, press the hand gently to it; if the fingers can be drawn lightly and smoothly over its surface, it may be said to be in order; but should it be so adhesive that the fingers will not glide smoothly over its surface, it is not sufficiently dry and should be exposed to the air. Rollers should not be washed immediately after use, but should be put away with the ink on them, as it protects the surface from the action of the air. When washed and exposed to the atmosphere for any length of time they become dry and skinny. They should be washed about half-an-hour before using them. In cleaning a new roller, a little oil rubbed over it will loosen the ink, and it should be scraped clean with the back of a case-knife. It should be cleaned in this way for about one week, when ley may be used. New rollers are often spoiled by washing them too soon with ley. Camphine may be substituted for oil, but owing to its combustible nature it is objectionable, as accidents might arise from its use. Mr. Hansard, an eminent English printer, says: "Take glue made from the cuttings of parchment or vellum, fine green molasses, pure as from the sugar refiners, and a small quantity of the substance called Paris White, and you will have every ingredient requisite for good composition. The proportion as follows: Glue, 2 lbs.; molasses, 6 lbs.; Paris

White, ¼ lb. Put the glue in a little water for a few hours to soak; pour off the liquid, put the glue over the fire, and when it is dissolved add the molasses, and let them be well incorporated together for at least an hour; then with a very fine sieve mix the Paris White, frequently stirring the composition. In another hour or less it will be fit to pour into the mould. Various patented compositions for rollers may now be had from printers' brokers.

ROLLER STOCK.—The wooden cylinder upon which the composition is fixed.

ROLLING MACHINE.—A machine for glazing or "milling" paper, used by hotpressers and cardboard and paper-makers. The paper is passed through twice in some, and is then said to be "double milled." Bookbinders use a rolling machine to press their books and dispense with the old standing-press. A rolling machine for hotpressing printed paper in a very expeditious and effectual manner, has been patented by a Mr. Gill, and is now manufactured by Messrs. Furnival & Co., of Manchester. The cylinders are kept perfectly clean from the "set-off" ink, so that the sheets may be hot-pressed as soon after printing as required. The cylinders are made of chilled metal, cast hollow, for the purpose of allowing the introduction of steam to heat them. The cleaning apparatus is contained in troughs arranged under the cylinders, which are placed side by side, the pressure being given by compound levers The troughs are partially filled with alkaline fluid, and in them are arranged a series of absorbent cleaning pads, made of sponge covered with calico. The troughs are placed on stands so that they can be raised or lowered at pleasure by suitable mechanism. When in working position the cleaning pads, saturated with alkaline fluid, press on the cylinders. As quickly as they revolve the printing-ink "set-off" on metal is reduced into a "soap-and-watery" fluid. This is perfectly scraped off, and the cylinders kept quite bright, clean, and dry by a piece of vulcanized india-rubber, clamped along the edge of the trough, so arranged that when the edge wears, a small piece may be cut off and the scraper pushed forward, so as to last a long time. The paper is fed in at the top between the cylinders, and delivered at front of bottom. Metal springs, pointed, pressing against cylinders, peel off the paper whenever a sheet has a tendency to stick to the metal. Double-royal sheets may be put through at the rate of about 1,200 per hour, and smaller sheets more quickly in proportion to size. Printed paper in web may also be passed through it. The cleaning apparatus may be easily removed altogether in a few minutes, and the machine used for hot-calendering unprinted paper. The chilled-metal cylinders give a beautiful surface to the paper.

ROTARY PRINTING MACHINES.—Machines in which the forme of type is placed on the surface of a revolving cylinder, the impression cylinders being situated around it.

ROWORTH'S PRESS.—This was the first real improvement on the common press in use up to the close of the eighteenth century. The spindle in this press is entirely plain, and works at its upper end in a socket at the head of the press, and in its lower at a cup on the upper side of the platen. On a shoulder at the upper end of the spindle is a circular collar of steel, about eight inches in diameter, the upper surface of which forms at opposite sides of the spindle two similar inclined planes, rising rapidly at first and gradually descending in inclination. In the head of the press are fixed two solid rollers or studs of steel, which, as the spindle is turned (about one-third of a revolution by a lever at the off side of the press) act upon the inclines so as to bring the platen down with constantly decreasing velocity and increasing force until it reaches the type. The platen recovers itself by a weighted lever. It is strengthened by fastening to its upper side an iron piece almost the size of the entire platen in the "two pull" presses which had been formerly in use.—Abridg. Specif. Printing, i. 22.

ROUNCE.—The handle for running in and out the carriage of a press.

ROYAL.—A size of paper.—See DIMENSIONS OF PAPER.

RUBY.—The name of a type next in size larger than pearl and smaller than nonpareil in body. It is the half of small pica. Hansard, in his

"Typographia," gives the following account of its origin and name:—"It was, in fact, originally a nonpareil with short ascenders and descenders cast on a smaller body, or sometimes a pearl on a larger, to look open; but now, some founders have a distinct specimen for this size. This name has been but very lately adopted in typefounders' specimens; but some years ago it was found by the writer of this absolutely necessary to give some distinguishing appellation to this size, as the letter-founders had given him one-nick pearls of two bodies, viz., one fount half small pica another half long primer. The mistakes arising from this circumstance, in a house much in the habit of using small type, occasioned the expedient of inventing a new name; and as the neighbouring sizes were called pearl and diamond, it seemed not very inapplicable to take the name of ruby."

RULES.—See BRASS RULES.

RULING.—The process of staining paper with lines to guide the hand in writing, or for classification, as in columns of money, weights, &c. "Feint Ruling" consists of making horizontal parallel lines in a faint blue; "feint and common" includes the feint ruling and the red, for head lines, money columns, &c.

RULING MACHINE.—A machine for mechanically performing the operation of ruling. The sheets to be ruled are fed into the machine as in the case of a cylinder press. They are received on a long revolving web of linen, which carries them to the pens which are fixed on a narrow board. When the paper reaches them they are let down, and the paper moving underneath receives the ink and the lines are formed. The pens are supplied with ink from a wetted woollen or flannel substance above them. The ink used is something like writing ink. Formerly ruling machines were made exclusively of wood, but now they are frequently composed of iron.

RUNNING TITLE.—The title of the book or subject placed at the top of the page.

RUNS ON SORTS.—A phrase used when a job requires an inordinate proportion of particular letters or sorts.

S

SAND BAG.—A flat leather bag filled with sand, used by engravers to form a pad to rest the block upon and to enable them to turn the block easily. This facility of turning the block round is most valuable, and the more the pad has been used the more readily does it work.

SANSERIFF.—Jobbing type without seriffs, as seen in the accompanying specimen:—

LONG PRIMER SANSERIFF.

SAW.—An instrument used for cutting reglet, furniture, &c.

SAW BLOCK.—A block of wood notched in certain directions to guide the saw in cutting up and mitreing furniture, &c.

SCALE.—The prices agreed upon to be paid by master printers and accepted by the men, has been drawn up to a certain scale, and in casting-up matter the compositors do so according to the scale, which is published by the London Society of Compositors, and may be obtained at their offices, 3, Racquet-court, Fleet-street, London, price sixpence.

SCALEBOARD.—Thin strips of wood similar to reglet, but of the thickness of leads—4-to-pica, 6-to-pica, 8-to-pica, &c. It is used in making register, and is preferable to leads, which are liable to get battered or broken.

SCHEDULE.—A blank table for the purpose of entering inventories, &c., in.

SCORPERS.—Instruments used by engravers to clear away the larger portions of the wood not drawn on.

SCRATCHED FIGURES.—Figures used in arithmetical matter when the divided and dividing figures require to be crossed over in an operation; or in law work, &c., when a *fac simile* of a document is desired, to represent cancelled figures in the orlginal.

SCRIPT.—An exceedingly neat style of fancy type, something like ordinary Italian handwriting; it is used chiefly for circulars.

SECRETARY.—A style of fancy type. It is modified from script and commercial text.

SECTION (§).—A mark of reference. It stands fourth in order, and immediately after the double dagger. Sometimes it is used to mark the division of a chapter into parts or sections, whence its name.

SEMICOLON (;).—A symbol used in punctuation to indicate that the two affirmations between which it is placed are not immediately connected by a conjunction, or that the latter does not directly flow from or depend upon the former affirmation, although there is a more remote connection or dependence between them. Specimens of its use will be found under the head of PUNCTUATION.

SEMI-NONPAREIL.—Half a nonpareil, or the thickness of a 4-to-pica lead. Music type and split fractions only are cast to this body.

SENT TO COVENTRY.—When a compositor or a pressman acts unfairly, or refuses to comply with the recognised rules of the chapel, he is sent to Coventry, *i.e.*, every member of the chapel treats him with scorn, and will not speak to him unless matters relating to business compel them.

SERIFF.—The light strokes across the top and bottom of letters. It is sometimes spelt, seriph, seryph, and ceriph.

SET CLOSE.—When matter is required to be got into a given space smaller than usual, the compositor is told to set close.

SET OFF.—Sheets which, by reason of the ink on them not being dry, soil other sheets with which they come in contact are said to "set-off." Tympan sheets which have been used for long or very black jobs, usually set-off, so another sheet is placed over them, called the "Set-off Sheet," which can be renewed when required.

SETS CLEAN.—A compositor who makes few errors in his work is said to set clean; and when the reverse is the case, to set dirty.—See COMPOSING.

SETTING.—See COMPOSING.

SETTING RULE.—A piece of rule, cut to the measure of the page, with a projecting ear at the top right-hand corner. It is used during the composition of a line, to facilitate the adjustment of the types, and when the line is finished, it is lifted out by means of the projecting ear, and placed in front of the line just set; another line is then proceeded with.—See COMPOSING.

SETTING STICK.—See COMPOSING STICK.

SETTING TAPES.—To set the tapes on a cylinder printing machine, pass the type round and close to the cylinder. Lap it over one of the tape pulleys, and then pass it around the small guide pulleys on the shaft above. To increase its tightness, throw up the guide pulley from the shaft, and set the binding screw more tightly. All these pulleys are moveable on their shafts, and the distance between them may be altered at pleasure. Let the tapes rest upon the outer margin of the sheet, and see that the overlays on the tympan over which the tapes pass are of equal thickness; if not of equal thickness, the sheet will wrinkle.

SETTING THE FLY.—The manner of setting the fly on a printing machine is as follows:—Run through a sheet of the paper to be printed, and let it run down the fly so that it is barely held by the fly pulleys. Then set the cam that works the fly, so that its point just clears the small friction roller on the shaft, and it will throw down the sheet correctly. Tighten the spring according to the size of the sheet, and set the spring crank so that it will prevent the fly from striking too hard on the table.

SETTING UP A PRESS.—The art of erecting a press out of the various pieces in which it is constructed for the convenience of being removed. For the mode of setting up different kinds of presses see directions under the heads of COLUMBIAN PRESS, IMPERIAL PRESS, and ALBION PRESS. The small holes which communicate with the respective bolts require a small portion of pure sweet oil occasionally, and the use of the purest Florence flask oil is recommended as the cheapest in the end, which has been experimentally proved. It is easy to judge whether every thing is in its proper place, by the perfect ease with which the bar-handle moves when put up. In the commencement of working, let the impression be rather light, and increase it gradually until such an impression as is desired is obtained. The pressman should take all the cylindrical bolts out of their respective places once a week, taking out one at a time, cleaning and oiling it, and putting it into its place again.

SETTING-UP STICK.—A long, narrow piece of wood, with sides somewhat similar to a slip galley, used by boys in typefoundries to set-up types ready for the dresser.

SET WIDE.—In printing, matter with wide spacing between the words. In typefounding, when the face of the letter is set on the body so as to give it the appearance, when printed in a line with other letters, of having a space on each side.

SHANK.—The square body upon which the face of a letter stands.

SHEARS.—A large and exceedingly strong pair of scissors, used for cutting brass rules, leads, &c.

SHEET.—Any piece of paper may be called a sheet; but for the purposes of the printer, paper is cut up into certain sizes, distinguished by separate names. See DIMENSIONS OF PAPER. To form leaves, sheets are folded up into sections, which have also their proper names, thus: *Folio* denotes a sheet of paper folded into two leaves, making four pages; *quarto*, or, as abbreviated, 4to, is a sheet divided into four leaves, or eight pages; *octavo*, 8vo, a sheet into eight leaves, or sixteen psges; *duodecimo*, 12mo, a sheet into twelve leaves, or twenty-four pages. So, also, sixteens, 16mo; eighteens, 18mo; twenty-fours, 24mo; thirty-twos, 32mo; forty-eights, 48mo; sixty-fours, 64mo, are the several definitions of sheets when folded into sixteen, eighteen, twenty-four, thirty-two, forty-eight, and sixty-four leaves; making each twice the number of pages. In presswork, a sheet consists of two formes backing each other. Compositors, in casting-up their matter, charge at so much per sheet.

SHEET THE ROLLER.—After a pressman has scraped the ink off his roller, he lays a sheet of paper on the ink table and passes the roller several times across it, in order to remove all the superfluous ink off it previously to distributing it on the table.

SEVENTY-TWOS.—A sheet folded into thirty-six leaves, making seventy-two pages.

SHADES OF INK.—See DRY COLOURS.

SHEEP'S FOOT.—An iron hammer with a claw end, used by pressmen.

SHERWIN AND COPE'S PRESS.—This press, otherwise called the Imperial Press, has been greatly modified and improved since its invention,

but at the time of its introduction it was a great improvement upon the press of Earl Stanhope. The works are almost entirely concealed within the head of the press, and are extremely few and simple, being the same as those of the Albion press (*q.v.*).

'SHIP.—A colloquial abbreviation of companionship (*q.v.*).

SHOE.—An old slipper, with the back part of the "upper" cut away; it is nailed through the heel, and hung at the end of the frame, so that the compositor, when he comes across a battered or broken letter, may put in there. When the shoe becomes full it is emptied into a large box, called the "batter-box," in which the old metal is kept till returned to the founder to be remelted and made into new type.

SHOOTING STICK.—A wedged-shaped instrument, used for driving quoins in the locking-up (*q.v.*).

SHORT ACCENTS.—See ACCENTS.

SHORT CROSS.—See CROSS.

SHORT LETTERS.—Letters which have the face cast on the middle or shank of the body, as *a c e m n o r s u v w x z* all of which have beards above and below the face, both in Roman and Italic.

SHORT PAGES.—Pages which are not of the same length as those which they back or face, such as the ending of a chapter or volume.

SHOULDER OF A LETTER.—So-called by typefounders, is that part of a letter which is commonly termed by printers the "beard."

SHOULDER NOTES.—Notes which are placed at the top of the page, and generally indicate the current book or chapter.

SHOWBILLS.—Otherwise called placards, from a French word, are defined as public papers posted in a public place. They constitute a large and important branch of the jobbing work of a printing office, and by the variety of designs, sizes, and colours that may be effected in them present a wide and most interesting field for the exercise of the tact, taste, and skill of the compositor. There is far more of art in setting-up a showbill than many persons imagine, and art of a kind that is not less derived from constant practice, observation, and study, than due to natural aptitude and ingenuity. While cards and circulars are generally composed according to certain settled modes, according to the class of work to which they belong, placards vary in almost every single instance. Great attention has been paid to this description of work in England during the last few years, and vast improvements have taken place in the manner of its execution, as a glance at any well-posted hoarding will show. Formerly a dense dullness and a melancholy kind of monotony pervaded all these products of our English press. An ordinary black letter on a white or blue or orange ground was thought quite sufficient to attract the public attention. It was quite an exhibition of enterprise to print in two, and more conspicuously so, in three colours, and even these were the ordinary red and blue inks. An advance in the public taste and a vast extension of the advertising system in time demanded something more artistic and more striking, and printers were compelled to take into consideration the demands of their customers. They have been enabled to meet those demands by several advantages comparatively recently brought within their reach. The price of ink has been much reduced, and workmen have commenced to learn the system of blending and contrasting colours to the best advantage. Wood engraving has been brought more into use, not only for pictorial ornaments, but in the rougher way of introducing more tasteful letters with greater variety of form. The size, too, of placards has been increased of late years, for where a mere double-demy, or even double-crown bill would suffice, a four or six-sheet bill is now considered necessary. In no branch of printing, in fact, has more progress been made within the last generation than in this. Extensive establishments are now found all over the country—notably in Birmingham, Glasgow, London, Nottingham, and Carlisle

—for the chief purpose of doing this kind of work, and the beauty and cheapness of their productions are marvellous. America and France have till within lately completely surpassed England in this respect; but many of the placards now seen in London and the large towns could hardly be excelled in any part of the world. In designing a placard it ought first of all to be remembered that the object of the bill is to catch the public eye. Hence the *attractiveness* of a placard is its chief recommendation, and the measure of its value. This attractiveness may be secured either by the excellence of the printing or the originality of the design. It is true that mere size will catch the attention of the passer by; but to print a bill of inordinate dimensions with this sole object is very inartistic, and indicates a want of ingenuity and skill on the part of its designer. The smaller the bill in proportion to its showiness the better, both for the sake of appearance and of economy. For some sorts of showbills, indeed, even *singularity* may be aimed at, but whether this should be attempted or avoided depends upon the nature of the particular work in hand. It may be laid down as a general rule, that the fewer words in a bill the more effective it is likely to be. An expert at placard composition displays his ability by the accomplishment of his design with the least amount of explanation. The reason of this is obvious. The fewer the words on a sheet of paper the larger may be the characters in which the words are set; and, besides, an undue quantity of small type on a posted bill rather repels than excites public attention. It should be left to the advertisement, the prospectus, the circular, to explain and to demonstrate; the province of the placard is to indicate and assert. The wording of the latter should be terse, incisive; not liable to misunderstanding, not apt to be forgotten. A newspaper paragraph might commence, "Theatre Royal, Buckintown. During the past week this theatre has been, we are exceedingly glad to learn, completely filled in every part of the house." But in a placard the same fact should be announced in the two words, "Crowded Houses!" And while it is permissable to say in the former that "the actor who will sustain the part of *An English Gentleman* will be Mr. Sothern, but he will not repeat it during the present engagement;" the latter will simply state, "*An English Gentleman*, Mr. Sothern, for this night only." Simple as this rule may appear, it is constantly broken, to the detriment of the general effect of the bill, and the wasteful increase of the expense in printing it. In writing out a bill, any one who strives after perfection will frequently lament the proportion in the English language of particles—of conjunctions, prepositions, &c., and even grumble at having to use so many adverbs and adjectives, valuable as is their assistance. Verbs, nouns, and pronouns, unfortunately, cannot compose every sentence without becoming dull and wearisome. So that auxiliary words have to be used: but they should be used as sparingly as possible. The bill having been written out is placed in the hands of the printer, some hints having been given to him of its general intention and the comparative prominence to be given to the different displayed lines respectively. He should then underline the chief or primary lines, and it is advisable to make a kind of mental scale of the letters, and mark at the end of the words *a* if they are to be largest, *b* next smaller, *c*, and so on. Having marked all the primary lines, regard all the rest merely as secondary or subordinate lines—catch lines in the phraseology of the trade. These accessory lines should be as few as possible, and as small as is convenient—regard being had to legibility. The more space devoted to the chief lines the better. Some printers set the small lines first, and then give all the remaining room to the big ones. This is a sort of rough-and-ready way, but one which seldom produces a good bill, as it rather reverses the order of things. The largest lines should be got up first, then those of a size smaller, and so on, diminishing to the smallest catch line. By this means only can a really good bill be arranged. Placards, indeed, should be intelligible when only their chief lines are read, and the small lines passed over. By this means a double effect is gained, for the passer by on the opposite side of the street, who can from his distance only read the primary lines, and the passer by who is only a yard off and can read the whole are equally suited. But when read in this way the information which is intended ought to be distinctly conveyed, for it is possible by bringing secondary words into great prominence to give the bill a totally opposite appearance to what it really is—a plan sometimes adopted to excite public curiosity—as what appears by the chief lines to be a royal proclamation may be in reality a chimney sweep's notice, according to the lines that are "thrown up." A certain balance must be

preserved; over display should be avoided, and all clumsiness guarded against. As far as possible, the chief effects should be made about the middle of the bill, just as in a work of art the chief figures are got into the middle. We read of artists who have attained the highest eminence incessantly taking notes of every minute effect that they discovered in the works of the great masters, and jealously hoarding them up till they could be brought into use. So ought the aspiring printer to observe and record for his future advantage any original idea, any ingenious or beautiful combination, so that his mind may be stored with expedients for attaining all kinds of effects. A dead wall decorated by the bill-poster affords more subjects for study than one person in a thousand imagines.

SHUFFLING.—A term used in warehouse work.—See KNOCK-UP.

SIDE-HEADS.—Words that stand in the opening lines of chapters, sections, and paragraphs for the purpose of indicating their contents.

SIDE-NOTES.—Notes placed in the outer margin of a page, as in law work, appeal cases, Parliamentary Bills, &c., which generally contain a short summary of the paragraph against which they are placed. The first line should be exactly opposite the line of text to which they refer. If the measure in which they are set be very narrow they may be in lines of various lengths to avoid unsightly spacing.

SIDESTICK.—Furniture which is thicker at one end than the other, placed at the outside of the matter, between which and the chase the quoins are wedged up to tighten the forme. Sidesticks are frequently made of iron, especially for newspapers and magazines requiring very tight locking-up.—See FOOTSTICKS.

SIGNATURES.—The letters of the alphabet used by English printers in the foot margin of certain pages as a guide to direct the bookbinder in arranging and folding the sheets. The letter B is put at the bottom of the first sheet or half sheet which comes immediately after the title-page, preface, and contents; C, at that of the second; and so on throughout the alphabet, with the exception of J, V, and W. If the number of pages requires more signatures than the alphabet will indicate, the letters are doubled or trebled, or a numeral is prefixed to them; as, A A, B B; 2 B; 3 A, &c. Figures, or numeral characters, are used for the same purpose in America. But in catalogues, and other publications in which figures often occur, capitals or small capitals are, for the sake of distinction, preferable. The reason that J, V, and W are not used as signatures is, that at the invention of printing there were no such letters in the alphabet. I expressed I and J; V both U and V; and VV the double letter W.

SIGNS.—Types cast to represent certain quantities, processes, objects, &c., which it would not be convenient to describe in words. A large number of signs are in use in the present day, and new ones are frequently introduced.—See ALGEBRAIC, MATHEMATICAL, &c., SIGNS.

SIXTEENS.—A sheet of paper folded into eight leaves, forming sixteen pages. It is written 16mo.

SIXTY-FOURS.—A sheet folded into thirty-two leaves, making sixty-four pages.

SLICE GALLEY.—A galley constructed with a thin false bottom, in order that matter may be more conveniently transferred to the stone (*q.v.*).

SLIP GALLEY.—See GALLEYS.

SLIP PROOF.—See GALLEY PROOF.

SLUG.—An American name for what we call a clump (*q.v.*).

SMALL CAPS.—Capital letters of a small size, used for the purpose of giving greater emphasis to a word that can be conveyed by Italic; and for displaying lines, the running heads of pages, heads of chapters, side-heads, &c. In manuscript, small capitals are indicated by two lines drawn under the words. In general they are cut to Roman founts only, but sometimes to Italic founts. The letters c o s v w x z are so like lower-case letters that care must be taken that they are not used with them. Typefounders should give these letters a *nick* on the back.

SMOTHERING A ROLLER.—See INKING-UP.

SOLID MATTER.—Matter which contains no leads, and but few breaks or whites; the reverse of Leaded Matter, or Fat Matter (*q.v.*).

SOLID PICK.—A letter in a stereotype plate filled up with metal, resulting from an imperfect mould.

SORTS.—The letters in the different boxes in the case.—See RUNS ON SORTS; OUT OF SORTS.

SPACE OUT.—To space matter to any requisite dimensions.—See COMPOSING.

SPACE LINES.—See BRASS SPACE LINES.

SPACE RULES.—Metal rules, cast to the thickness of a four-to-pica lead, and used in close tabular matter, to save the trouble and inconvenience of cutting small pieces of brass rule in two, three, and four em measures.

SPACES.—Pieces of metal, less in height than letters, cast to the various bodies of types to form the whites or spaces between words and at the ends of lines for justification. They are cast to various thicknesses, and are called by various names. Those which run five to the em are called thin spaces; four to an em, middle spaces: three to an em, thick spaces; two to an em, en quadrats. The hair spaces average eight to the em, but range between seven and ten, according to the size of the body.—See JUSTIFYING, HAIR SPACES, THIN SPACES, &c.

SPACING.—The art of placing the proper spaces between words, &c., with a view to securing the best and most symmetrical appearance. An American writer says:—"There must be a perceptible uniformity of spaces between all the words in the line, and an approximate uniformity between the spaces in all the lines of the page. The spacing must not be exactly uniform, only apparently so. There must be a wider space between two letters with long parallel body-marks like l and h; there must be less between an o and d; more after an f in some cases and less in others. It is only by the exercise of this discrimination that spacing will appear uniform. All this must be done, and yet awkward divisions must be prevented, even if the overrunning of three or four lines is thus necessitated. These niceties are imperative in all book offices, and yet they are all comparatively modern. The early printed books, highly as they have been praised, were grossly defective in spacing. Some of the most famous early books are not even of squared outline on the right side of the page. The ending of the lines is as ragged as in poetry. If a word could not be taken in, the justifying spaces were not evenly divided between the words, but were thrust in at the end of the line. Divisions on single letters, that would now brand a compositor for life, were then tolerated without even consciousness of impropriety. It took many years for early printers to recognize the superior appearance of a squared outline in pages; it took more than three centuries for the trade to learn the propriety of even spacing. Whoever examines any of the books of any of the famous printers, Gutenburg, Jenson, Aldus Manutius, the Stephens, or the Elzevirs, must confess that they did not have the slightest conception of the beauty of uniformly-spaced lines. Even the artistic Baskerville, although greatly in advance of his predecessors in this respect, would not satisfy the requisitions of the modern proof reader."

SPRING RULE.—See BRASS RULE.

SQUABBLE.—Lines of matter twisted out of their proper positions, with letters running into wrong lines, &c.

'STAB.—An abbreviation of establishment. A man who is "on 'stab" receives establishment wages, *i.e.*, regular fixed weekly wages, irrespective of the nature or amount of his work, and is, therefore, in exactly an opposite position to one who is "on piece," who is paid only by the job and according to what he performs.

STAMPS.—Types. A common expression in the printing-office is "picking up stamps," *i.e.*, composing.

STAMP.—A *colloquial synonym for types.*

STAND.—Otherwise frame (*q.v.*).

STANDING MATTER.—Composed matter remaining undistributed after it has been printed in the expectation that additional impressions will be required. Many advertisements, for instance, ordered for a certain number of insertions in a periodical or newspaper, are not distributed, but are used over and over again, till the order is exhausted, and are called "Standing Advertisements."

STANDING PRESS.—A screw press used for removing the impression or indentation on the paper after it has been printed, and restoring it to a perfectly smooth surface. The sheets are placed between glazed boards, and the pressure obtained by means of applying a lever to the screw.

STANHOPE PRESS.—A press invented by Earl Stanhope about 1798. It is not much in use at the present day, having been superseded by the Albion and Columbian presses.

STAR.—See ASTERISK.

STEM.—The straight flat strokes of a straight letter.

STEREO.—The usual abbreviation for Stereotype.

STEREOTYPE.—Types cast in one piece, forming plates, about one-eighth of an inch in thickness.

STEREOTYPE PRINTING.—Printing from metal plates instead of separate letters.—See STEREOTYPING.

STEREOTYPER.—A man who manufactures stereotype plates.

STEREO BLOCKS.—Metal blocks upon which stereotype plates are mounted, in order to be printed from. They are cast in various sizes, the largest being 17 ems by 8 ems; the smaller sizes are fractional parts of a large block, so as to enable the workman to make them up to suit the dimensions of certain plates. The plates are fastened to the blocks by means of brass catches.

STEREOTYPING.—The art of taking casts or stereotype plates from types, woodcuts, &c. The two principal methods of stereotyping, as now practised, are called respectively the "Plaster Process" and the "Papier Maché Process." Most of the principal newspapers are now printed from stereotype plates. For an account of the invention, see "Johnson's Typographia," Vol. II., p. 657; "Abridgement of Specifications Relating to Printing," Vol I., pp. 93-95. Matter for stereotyping by the plaster process should be set with stereotype spaces and quadrats (which are much higher than those used in ordinary founts), as they avoid the necessity of picking out the plaster before distributing. Formerly, pages for stereotyping used to be imposed in quarto chases, but pages of newspapers and bookwork formes are now cast entire. Clumps are placed round the pages, and are bevelled on the inner edge near the face of the type, for the purpose of casting that portion of the plate where the catches fix on in imposition, and by which the "dogs" of the lathe hold the plate whilst the back is being turned or planed. The formes should be locked up tight and square, evenly planed down, and free from all dirt or ink on the face.

STEREOTYPE SPACES.—Spaces nearly the height of type used in matter which is intended to be stereotyped.

STET.—A word written in copy or in a proof to show that some matter erroneously cancelled must remain; the literal meaning is, *let it stand.*

STICK.—A common term for the composing stick. When letter is laid up for distribution and it adheres so closely that it is separated with difficulty, it is said to "stick."

STIPPLING.—Engraving in dots.

STIGMATYPY.—Printing with points; the arrangement of points of various thicknesses to produce a picture.

STONE.—See IMPOSING SURFACE.

STONEMAN.—A compositor who assists the printer of a newspaper in imposition, correcting editor's proofs, &c.

STOREKEEPER.—A compositor who has to look after the various founts of type, furniture, leads, &c. His duty is to keep an account of all the material in stock, and when a new work is given out to supply the companionship with the necessary appliances for executing it. In like manner, when a work is finished, and the companionship have cleared it away, the type, furniture, leads, &c., are brought to him to be stored away ready for any emergency. The office of Storekeeper is frequently combined with that of Quoin-drawer Overseer (*q.v.*).

SUB-HEAD.—When an article or chapter is divided into several parts, the headings to those parts are set in smaller type than the full head, and are called Sub-heads.

SUPERIOR LETTERS.—Letters cast unusually high on the shank so that a large beard is left below.—See INFERIOR LETTERS.

SUPER ROYAL.—A size of paper.—See DIMENSIONS OF PAPER.

STYLE.—The custom of respective printing offices in regard to unsettled or disputed points relating to orthography, division of words, compound words, capitalisation, &c.

SYLLABICATION.—The art of dividing words into syllables.—See DIVISION OF WORDS.

SYLLABLE.—A letter or combination of letters uttered by one impulse of the voice.

T.

TABLE OF A PRESS.—The flat surface on which the type lays, otherwise called the bed (*q.v.*).

TABLE WORK.—Matter set up in four or more columns depending on each other and reading across the page. Compositors are paid double the price of common matter for tables of four columns with headings, or five or more columns without headings.

TABULAR MATTER.—Matter set up in three or four columns depending on each other, and reading across the page. The price paid for this class of work—according to the London Compositors' Scale—is, three columns without headings, one-fourth extra; three columns with headings, or four columns without, one-half extra.

TAIL PIECE.—An ornamental device placed at the end of a chapter, or at the end of a book, immediately over the imprint. Great taste was displayed by the ancient printers in the selection and execution of these ornaments, which are again in fashion since the revival of the "old style" of type.

TAKE.—A portion of copy given out at one time, whether large or small.—See COMPANIONSHIP.

TAKER-OFF.—The person who takes the sheets out of a machine after they have been printed. This work is usually performed by young persons; but the invention of Flyers (*q.v.*) is gradually superseding this kind of labour.

TAKE-UP.—When a compositor is unable, through press of business, illness, or otherwise, to finish his copy in time for the making-up, and the job is urgent, another compositor is requested to "take up" that portion of the copy left unset.

TAKING COPY.—The act of receiving a "take" of copy from the clicker or overseer after distribution.

TAKING OFF AT PRESS.—Removing the sheet from the tympan and placing it on the heap. This is nearly always done by the pressman, but before the introduction of machines, when expedition was required, it became the duty of another person who was called the "fly" (*q.v.*).

TAPES.—The bands on which the sheets are conveyed through a certain class of machines, which are so distinguished from gripper machines, in which the sheets are held by grippers or claws.—See GRIPPER MACHINES.

TEXT.—The text is the chief body of a work; the type is uniform throughout the text, although the notes, extracts, &c., may be set in smaller letter.

TEXT LETTER.—A style of type somewhat similar to "Black" letter; it is sometimes called German Text.

THICK SPACES.—Spaces, three of which go to the em. They are the most used of all spaces, and are generally placed between the words on the first setting of a line previously to spacing it out to the measure.

THIN SPACES.—Spaces, five of which go to the em.

THIRTY-SIXES.—A sheet of paper folded into thirty-six leaves, making seventy-two pages.

THIRTY-TWOS.—A sheet of paper folded into thirty-two leaves, making sixty-four pages.

THROWING WITH QUADS.—See JEFFING.

THUMB-PIECE.—See EAR OF THE FRISKET.

TIGHTENING THE QUOINS.—This is a far more important part of a compositor's work than many imagine. A compositor, in quoining up a forme, usually places any sort of quoin that apparently fits, and when he comes to lock up the forme he is necessitated to change many of them; whereas the proper way is to push up the quoins as tightly as possible with the thumb, so much so that the forme can be partially raised, before locking up, to see if the matter is properly justified. Some compositors have a habit of pushing up the quoins this way so tight that they cannot loosen them again without the aid of the mallet and shooting-stick. Before finally locking up, the quoins should be gently tightened by tapping them up with the mallet and shooting-stick, and any loose ones replaced.

TILDE.—The mark used over the Spanish n (ñ).

TIME.—See ON TIME.

TINTED INKS.—See DRY COLOURS.

TINT TOOLS.—Tools of various degrees of width at the point, used by engravers chiefly to cut parallel lines forming an even or uniform tint. They are specially employed for working skies. They are thinner at the back, but deeper in the side than gravers.

TITLE PAGE.—The page containing the title; sometimes called the full title, to distinguish it from the bastard title, which is a condensation of the title, and printed on the preceding leaf.

TITLE SHEET.—The sheet which contains the title page, dedications, preface, or other preliminary matter.

TOKEN.—A perfect half ream of paper, or two hundred and fifty-eight sheets. Paper is given out to be wetted, and pressmen's bills are made up by, the token.

TOKEN SHEET.—When paper is wet in quantity, the last sheet of each token is allowed to project slightly at one corner, so as to mark the division of the pile into tokens.

TRANSPARENT INK.—A description of ink which is used to imitate the waterlines of paper, and for various other useful and ornamental purposes.

TRANSPOSING.—Changing the place of letter, either in lines, paragraphs, or pages, that has got in a wrong position. In correcting a proof, if a letter is transposed, as teh, the Reader draws a small horizontal line under the letter, and in the margin opposite writes, *trs*.

TREADLE MACHINES.—Machines in which the motive power is supplied by the action of the foot on a treadle. Small jobbing machines are usually supplied with an arrangement of this kind.

TUMBLING CYLINDER.—The impression cylinder of a printing machine, commonly known as a "Tumbler." The peculiarity of this cylinder is, that instead of continuously revolving, it returns to its original position after each impression. It is sometimes called a "rocking" cylinder.

TURNED LETTER.—A letter which is printed upside down as ƨ; or one placed in such a position that its feet instead of its face is printed, thus ⊐. When matter runs upon sorts and a character is exhausted before the case is empty, it is usual to put in the composing stick a type of the thickness of the one lacking, but with its feet upwards, so that it may not be overlooked in the correction.

TURN FOR A LETTER.—When a letter of any sort is short, the direction is sometimes given to "turn" for it; that is, to insert any letter of an equal size, but with the feet uppermost—the black mark resulting in the proof not being liable to be overlooked. To avoid the friction of the face on the imposing surface, some printers merely use a turned letter (*q.v.*).

TURNING A HEAP.—Reversing the position of the pile of sheets before working the reiteration, so that the white side is uppermost.

TURNOVER.—An apprentice who has not completed his full time of service with one master, and is transferred to another to finish his apprenticeship. The proper and lawful manner of turning over an apprentice is accompanied by a transfer of the indentures also, which are attested by the new master, and become as binding as when originally signed; but of late years an injurious system has prevailed of accepting boys without asking any questions as to whether they have been apprenticed or not, and placing them "at case" on half their earnings. These boys are taken on and discharged according to the fluctuating nature of the business, just the same as casual journeymen. They are principally engaged on cheap newspapers and periodicals, where little care is taken as to the quality of their work. The evil result of this practice is, that the trade is invaded by a large number of incompetent workmen.

TURNS OVER.—When an article exceeds a column, page, &c., it is said to "turn over" the column, page, and so on.

TURPENTINE.—Spirits of turpentine are used in a printing-office for cleaning ink off rollers, inking tables, &c.

TURPS.—A colloquial abbreviation of turpentine.

TURTLE.—The bed of Hoe's rotary printing machine. It is made upon sections, each corresponding to one page, and on these sections the

type is made up, fastened, and sent to the machine room. When placed on the machine it forms a portion of the pressing cylinder.

TWELVES.—A sheet of paper folded into twelve leaves, making twenty-four pages.

TWENTIES.—A sheet of paper folded into twenty leaves, making forty pages.

TWENTY-FOURS.—A sheet of paper folded into twenty-four leaves, making forty-eight pages.

TWO-COLOUR MACHINES.—Machines which print in two colours—red and black, for instance—at one operation.

TWO-FEEDER MACHINES.—Machines into which the paper is fed at two places, thereby producing twice as many impressions in a given time as a single-feeder machine.

TWO-LINE.—Types double in depth of any body are called two-line of that body. Thus two-line Pica is equal in depth to two Picas one above the other.

TWO-LINE LETTER.—Letter the face of which fully charges the body of the type. For instance, Great Primer Roman is two lines of Bourgeois in body, but the face of the type is not so, a "beard" being left for the ascending and descending letters of the lower-case; on the other hand, Titling Caps, cast to the full depth of a Great Primer body, are called Two-line Bourgeois.

TYING UP PAGES.—Securing them with string preparatory to their being laid in order on the imposing surface.—See PAGE (TYING UP A).

TYMPAN.—A frame over which is stretched parchment, cloth, or paper, on which the sheet to be printed is placed before being turned down upon the forme. An inner tympan fits into it, and between the two the blankets and paper are placed which acts as a sort of pad between the platen of the press and the forme when the table is run in. A pasteboard tympan is most suitable for wood-cuts, for perfectly new type, and for the best kinds of press work. It is not suitable for miscellaneous work, nor for heavy formes, nor for formes of mixed old and new type. If the overlaying is properly executed, a pasteboard tympan will enable the pressman to show a sharper edge and a more delicate impression of the type than is possible with any other. Although contrary to a common belief, it need not wear the type. In all cases, however, a paste-board packing compels a tedious and careful making-ready. If this is neglected it may prove very destructive to the type. A woollen blanket is best adapted for old stereotype plates, for old type that has been rounded on the edges, for posters with large wood-type, and for all common work which requires a firm, solid, dull impression. For such work a woollen blanket will enable the pressman to make ready a forme more quickly than any other, but it is injurious to new type, and does not give a fine and sharp impression. Thick paper is much used for book work, and also answers well for script circulars and leaded formes. It does not serve so good a purpose with mixed old and new type, nor for table-work with unequal heights of brass rule, nor for mixed large and small type. It will prove most serviceable for open formes of new type. The India-rubber cloth combines many good qualities not found in other tympans, having the density of pasteboard, the hardness and evenness of paper, and the flexibility of the blanket, combined with an elasticity peculiarly to its own. It is adapted to a greater variety of work than any other; posters, script circulars, news and book formes, stereotype plates, and old or new type, call be well printed with an India-rubber blanket. When it is intended to make one tympan or packing answer for all kinds of work, the India-rubber blanket will be found decidedly superior to all others; but when very extra press work is wanted, the tympan must be particularly adapted to the forme of type. There are formes for which none of these tympans are specially suitable. For such cases careful pressmen combine two or more together, as Welsh flannel over rubber, or thin rubber over pasteboard or under paper. These, however, are exceptional cases, and only occur when

very good press work is to be obtained from imperfect materials. Careful observation of the peculiarity of the impression given by each kind of tympan will better teach a pressman how to combine them to the best advantage than any arbitrary rule.—For mode of making a tympan, see COVERING A TYMPAN.

TYMPAN HOOKS.—The hooks on the sides and end of the inner tympan frame which attach it to the outer.

TYMPAN SHEET.—A sheet of paper pasted upon the tympan as a guide to the pressman in laying the sheet, and for affixing overlays thereupon.

TYPES (from Gr. *typos*, an impression or stamp). The letters, marks, and signs, with which letterpress printing is executed. If these letters are small, they are cast in metal; if large, they are cut out of wood. In every written language there is a fixed number of different characters used to form words; but the relative proportion in which these letters are used varies according to the construction of the language. By printers, a complete assortment of type is called a Fount, which is comprised under nine heads, including the following sorts:

1. *Capitals.*
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Æ Œ &.

2 *Small Capitals.*
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Æ Œ.

3. *Lower Case.*
a b c d e f g h i j k l m n o p q r s t u v w x y z æ œ ff fi ffi fl ffl.

4. *Figures.*
1 2 3 4 5 6 7 8 9 0.

5. *Points, &c.*
, ; : . ? ! - ' () [] * † ‡ § ‖ ¶ — ⁀.

6. Four kinds of spaces.
7. Em and en quadrats.
8. Two, three, and four em quadrats.
9. Accents.

The fount may be large or small, according to the quantity of words required to be composed out of it; but the quantity of each kind of letter necessary is according to the frequency in which it is used. For example, in English the letter *e* is used largely in excess of any other. A scale of the proportion of the different kind of type in a fount of a given weight is called by the typefounders a Bill. The earliest types used were those known as Gothic, or Black letter (*q.v.*), which were afterwards superseded, except in Germany, by the Roman letter. The varieties of size of types in the present day amount to forty or fifty, enlarging, by a progressive scale, from the minutest used in printing pocket-bibles, to the largest which is seen on posting-bills in the streets. Printers have a distinct name for each size of letter, and use about sixteen sizes in different descriptions of book work; the smallest is called *Brilliant*, the next *Diamond*, and then follow in gradation upwards, *Pearl*, *Ruby*, *Nonpareil*, *Emerald*, *Minion*, *Brevier*, *Bourgeois*, *Long Primer*, *Small Pica*, *Pica*, *English*, *Great Primer*, and *Double Pica*. The larger sizes generally take their names thus—*Two-line Pica*, *Two-line English*, *Four*, *Six*, *Eight*, or *Ten-line Pica*, &c. (See these names in their alphabetical order.) Other nations designate many of these sizes by different names. Some of these names were given from the first makers; others from the books first printed with the particular letter. Thus, *Cicero* is the name of a type in France and Germany, with which Cicero's letters were first printed (Rome, 1467); *Pica* is from the service of the mass, termed *Pica* or *Pie*; *Primer*, from *Primarius*, the book of Prayers to the Virgin; *Brevier*, from *Breviary*; *Canon*, from the *Canons* of the Church. Whatever be the size of the types, they are all made of a uniform height, and must be perfectly true in their angles, otherwise it would be quite impossible to lock them together. A single irregular type would derange a whole page. The

height of type made in this country is twenty-nine thirty-seconds of an inch; those in France, Spain, and Germany are higher. All the types of one class of any founder are always uniform in size and height; and to preserve their individuality, all the letters, points, &c., belonging to one class are distinguished by one or more 'nicks' on the body of the type, which ought to range evenly when the types are set. These 'nicks' are also exceedingly useful in guiding the hand of the compositor. Types are likewise all equally grooved in the bottom, to make them stand steadily.—See LETTERS.

TYPE METAL.—See METAL.

TYPE-REVOLVING MACHINES.—See ROTARY MACHINES.

TYPE SCALE.—A rule or measure, made of ivory or wood, upon which is marked the depth, in ems, of the various sizes of type, somewhat similar to the inches and fractional parts of inches on a foot-rule used by carpenters, &c. A type scale is very useful for casting-off matter; for ascertaining the length and breadth of a page; or for determining what size of type a reprint is composed of.

TYPE-SETTING MACHINES.—See COMPOSING MACHINES.

TYPOGRAPHY.—The art of impressing words upon paper and other surfaces with pigments, inks, &c., by the use of moveable types.

U.

ULTIMATE.—The last syllable in a word. See DIVISION OF WORDS.

UNDERLAY.—A piece of paper or card placed under a line of type or a portion of a block which is low, in order to raise it, so that it may receive more impression.—See MAKING READY.

UNEVEN PAGE.—A page whose folio consists of an uneven number, as 7, 9, &c.

UNLOCKING FORMES.—The act of unfastening the type and loosening it from the chase and furniture by drawing out the quoins. Care should be taken to loosen the different quoins gradually, and not to make any of them slack suddenly, as the force necessary to unfasten others may squabble the matter or cause it to hang.

UNDER-RUNNERS.—Continuations of such side notes as are too long to be all placed opposite the paragraph to which they refer, and are run under the text, in order that they may not displace other notes. When so done they should never be extended to the full length of the measure of the text, to avoid confusion, but end within three or four ems of the line according to its length.

"UP."—A job is said to be "up" when it is completely composed.

UPPER CASE.—The case which stands uppermost on the frame, and contains the capitals, small capitals, and other characters, according to the "lay" adopted in a printing office—which characters are called "upper-case sorts."

V.

VARNISH.—The common menstruum adopted for all colours in printing.—See DRY COLOURS, &c.

VANTAGE.—Otherwise *Fat* (*q.v.*).

VELLUM.—The skin of very young or abortive calves, prepared to be written or printed upon, or for the binding of books.

VERSO.—A left-hand page.

VIGNETTE.—A small ornamental engraving used to ornament a page.

VOWEL.—A simple vocal sound which can be uttered by itself. The vowels in the English language are: *a e i o u*, and sometimes *w* and *y*.

W.

WAREHOUSEMAN.—The person who has charge of the warehouse. It is his duty to keep an account of all paper received, to whom it is delivered for printing, the printed sheets received from the pressroom, and the quires sent out to the binder or publisher. It is also part of his business to direct the wetting of the paper, hanging the sheets to dry, taking down sheets from the poles, the filling in and pressing the sheets, counting them out and putting them away, etc.

WASHING A FORME.—Removing the ink from it after it has been printed. This is part of a pressman's duty, although in large establishments there are persons employed to do nothing else. The forme should be placed in the ley trough (*q.v.*), and the washer should take hold of the rim of the chase, and laying the forme gently down pour the ley gently upon it. He should then swing the trough a little so that the lye may spread over the face of the letter. Having done so he takes the ley brush and thoroughly brushes the liquid over the letter, furniture, quoins, and chase. The residue should then be allowed to run out, and the forme completely drenched with clean water to rinse away the ley. The forme is finally lifted ont and given over to the compositor.

WASTE.—The surplus sheets of a work, after the complete number of copies has been made up.

WATERMARKS.—Indentations made on paper in various shapes during the process of manufacture, the pulp of the paper being compressed by an engraved instrument called a dandy.

WAYZGOOSE.—An annual festivity celebrated in most large offices. Among the customs prevailing in printing offices in former times which was described in Moxon's "Mechanick exercises" was the wayzgoose, thus spoken of:—

"It is customary for all the journeymen to make every year new paper windows, whether the old will serve again or no, because that day they make them the master printer gives them a *way-goose*, that is, he makes them a good feast, and not only entertains them at his own house but besides gives them money to spend at the alehouse or tavern at night. To this feast they invite the corrector, founder, smith, joiner, and ink maker, who all of them severally (except the corrector in his own civility) open their purse strings and add their benevolence (which workmen account their duty, because they generally choose these workmen) to the

master printer's. But from the corrector they expect nothing, because the master printer choosing him, the workmen can do him no kindness. These way-gooses are always held about Bartholomew Tide. And till the master printer have given this waygoose the journeymen do not use to work by candle light."

At the present time the trade custom thus quaintly alluded to, prevails with considerable alterations. Printers no longer are required to make paper windows, or to work by candle light. The typefounders, inkmakers and other tradesmen are not expected to contribute to the journeymen's feast; if they like to do so they may, but in many cases, by so doing they would only lay themselves open to a suspicion of thereby bribing an employé. Very seldom does the employer now invite his men to his house to dine; still more seldom does he give them money to spend in the "ale-house or tavern at night." Things are ordered much more decorously. Several weeks before the time usual for the celebration—which is about July—a chapel is held, and a consultation takes place as to where the wayzgoose shall be held, the nature of the entertainment, and the date; two stewards being appointed to carry out the wishes of the hands, as expressed at this meeting. The expenses are paid, in equal proportions, by the men, who, however, usually invite their employer and perhaps some of his friends. It is customary for the latter to present a subscription to the common fund. The wayzgoose generally consists of a trip into the country, open air amusements, a good dinner, and speeches and toasts afterwards.

WETTING PAPER.—Damping the sheets to be printed, in order that they may be softer when applied to the type or woodcut, and consequently receive the impression more readily. The process is as follows: Take a quire of paper by the centre of the back with the right hand, and the edge of it with the left, and closing the hands a little, that the quire may bend downward between them, dip the back of the quire into the left hand side of the trough, and relinquishing the hold with the left hand, draw the quire briskly through the water with the right. As the quire comes out, quickly catch the edge of it again in the left hand, and bring it to the heap, and by lifting the left hand, bear the under side of the quire off the paper previously laid down till the quire is placed in an even position. To do this lay the back of the quire exactly upon the open crease of the former, and then let the side of the quire on the left hand fall flat down upon the heap, and discharging the right hand, bring it to the edge of the quire, and with the assistance of the left thumb, still in its first position, open or divide either a third or a half of the quire, according to the thickness of the paper; then, spreading the fingers of the right hand as much as possible through the length of the quire, turn over the opened division of it upon the right hand side of the heap. Machines for wetting paper are now used in most large printing offices.

WETTING TROUGH.—A trough for holding the water wherewith paper is wetted down. In size it should be about two inches longer and wider than the largest sized paper, folded, that is to be wetted in it, and about six inches deep. It should have a cover with hinges on the left side that the cover may fall over on that side, and resting horizontally, serve for a shelf to lay the paper upon, previous to wetting it.

WHITE LINE.—A line of quadrats, or an equal blank space formed by leads, space lines or clumps.

WHITE PAGE.—A blank page.

WHITE PAPER.—Paper as it lies on the pile which is not printed. When a man is working the first side he is said to be working the white paper.

WHITING OUT.—Spacing out; otherwise branching out (*q.v.*).

WIDE SPACING.—Spacing of an unusual or unnecessary breadth.—See COMPOSITION and SPACING.

WOOD-CUTS.—Engravings on wood.—See ENGRAVING.

WOOD ENGRAVING.—See ENGRAVING.

The Literary Almanack.

COMPILED BY WILLIAM BLADES.

Lives of great men all remind us
We can make our lives sublime,
And, departing, leave behind us
Footprints on the sands of time.—LONGFELLOW.

JANUARY.

1—1788: The "Daily Universal Register" (commenced in 1785), was this day started under the new title of "The Times."

1838: No. 1 of "Annales de la Typographie," a Parisian monthly.

1841: Died, Samuel Collingwood, for many years the manager of "The Clarendon Press," Oxford.

H. G. Bohn issued the largest Trade Catalogue known, containing over 300,000 vols.

1843: A fine statue of Gutenberg erected in the courtyard of the National Printing Office, Paris.

1849: No. 1 of "Notes and Queries."

1853: No. 1 of "The Field."

1874: No. 1 of "La Typologie Tucker," a French Trade Monthly of great interest to Printers.

2—1741: Died, John Barber, M.P., Alderman and "City Printer."

1857: Died, Dr. Andrew Ure. "Dictionary of Chemistry," 1821. "Dictionary of Arts and Sciences," 1839.

1864: No. 1 of the "Railway News."

1871: No. 1 of the "Birmingham Morning News."

3—1803: Born, Douglas Jerrold. Wrote for "Punch" in 1841, *et seq.*

4—1813: Born, Isaac Pitman, Stenographer.

1842: Died, Samuel Sotheby, celebrated Book Auctioneer and Bibliophile.

5—1832: Born, Gustave Doré, French Artist.

6—1517: Died, Il Francia, Italian Artist and Punch Cutter to the celebrated Printer Aldus Manutius.

1706: Born, Benjamin Franklin, Printer, Politician and Philanthropist.

7—1757: Died, Allan Ramsey, Scotch Poet.

8—1656: First number of the "Haarlem Courant," the oldest existing newspaper in Europe.

9—1828: No. 1 of "The Record."

10—1754: Died, Edward Cave, Printer at St. John's Gate, Clerkenwell. Friend of Dr. Johnson, and Founder of the "Gentleman's Magazine."

JANUARY—*Continued.*

10—1855: Died, Mary Mitford, Authoress.
1840: First day of the Penny Postal System.
11—1789: Born, John Payne Collier, sometime Reporter on the "Morning Chronicle, and Shaksperian Commentator.
1825: Born, Bayard Taylor, American Author and Lecturer, originally a Compositor.
1867: Died, George Baxter, originally a Wood Engraver, and Inventor of Oil Colour Printing.
12—1854: Died, W. Parr Greswell, Typographical Writer. "Annals of Parisian Typography," 1818.
13—1711: No. 1 of the "Tatler."
14—1792: Died, Joseph Jackson, a Typefounder of repute, and pupil of Caslon I.
15—1599: Died, Edward Spenser, Poet.
1826: Hurst Robinson & Co., publishers, of London; Constable, of Edinburgh; the Ballantynes; and Walter Scott, Novelist, all failed.
16—1746: Died, Rev. J. Lewis, of Margate, who wrote the first "Life of Mayster Wyllyam Caxton."
1794: Died, Edward Gibbon, Historian.
17—1833: Died, F. Kœnig; he completed the first printing machine in 1814.
18—1775: Died, John Baskerville, celebrated Printer and Typefounder, of Birmingham.
19—1829: The first double sheet of "The Times."
1835: Born, Tom Hood. Editor of "Fun," May, 1865.
1848: Died, Isaac Disraeli, father of the Prime Minister, and author of "Curiosities of Literature."
20—1769; No. 1 of Junius's celebrated Letters. The last was dated Jan. 21, 1772.
21—1846: First number of "Daily News," with introductory article by Chas. Dickens.
1859: Died, Henry Hallam, Historian. "History of England," 1827.
1870: Died, Alexander Herzen, Originator and Editor of the Russian Liberal paper "The Kolokol," for many years printed in London.
22—1600: Monopoly granted to the Composers Tallis and Byrd for "the printing of all Music,"
1788: Born, Lord Byron, Poet.
23—1632: Born, Samuel Pepys, the Diarist.
1766: Died, William Caslon, æt. 74, the first Typefounder of that name. His earliest "Specimen of Printing Types" is dated 1734.
1801: Born, Lawrence Johnson, the largest Typefounder in the United States.
1817: Born, John Cassell, Publisher.
1855: Died, Archdeacon Hare. "Guesses at Truth," 1827.
24—1732: Born, Beaumarchais, French Dramatist and Amateur Printer.
1814: Born, Dr. Colenso. "The Pentateuch," 1862-65.
25—1568: Died, John Oporinus, celebrated Swiss Printer.
1772: Born, James Hogg, Ettrick Shepherd, Scotch Poet.
26—1795: Born, Sir Thomas Noon Talfourd, Judge and Tragic Poet.
1847: Died, William Clowes, Parliamentary Printer.
27—1862: Died, Rev. Thomas Hartwell Horne, Bibliographical Writer.
28—1859: Died, W. H. Prescott, American Historian.
29—1543: Richard Grafton obtained a monopoly for printing all books used in Divine Service.

JANUARY—*Continued.*

30—1712: The Printing-office of William Bowyer burnt down and rebuilt by a public subscription.

1775: Born, Walter Savage Landor, Poet.

1830: Born, Henri de Rochefort, French Journalist.

31—1574: Died, Ben Jonson, Dramatist.

1842: D. G. Davidge, Actor and Lessee. In early life a compositor.

31—1484: Caxton finished printing "The Knight of the Tower," a moral essay upon the duties and conduct of young women.

This is peculiarly the birthday month of Periodicals. Besides those noticed above there appeared the first numbers of the following:—

1835: "The Watchman."
1843: "The English Churchman."
1846: "The Guardian."
1847: "The Weekly Times."
1868: "The Rock."
1873: "The Students' Journal, and Hospital Gazette."

FEBRUARY.

1—1824: Died, Dr. John Lempriere, author of the well-known "Classical Dictionary," and "Universal Biography."

1851: Died Mary Woolstonecraft Shelley, (née Godwin), Novelist,

2—1744: Born, John Nichols, Parliamentary Printer and writer on Typography.

1808: Born, Ledru Rollin, French Journalist.

3—1515: Died, Aldus Manutius, the learned Italian Printer.

1806: Died, Retif de la Bretonne, for many years a *Journeyman Compositor*; he became one of the most successful and graceful of French novelists.

1811: Born, Horace Greely, American Journalist. "New York Tribune," 1841.

4—1747: Died, Rev. Robert Blair, Scotch Poet, Author of "The Grave," 1743.

1805: Born, W. Harrison Ainsworth, Novelist.

1832: No. 1 of "Chambers's Edinburgh Journal."

5—1718: Died, Thomas Rowcroft. "City Printer." His monument is in the north aisle of St. Bartholomew the Great, London.

1771: Born, Dr. John Lingard, who in 1819 published the "History of England" from a Roman Catholic point of view.

7—1812: Born, Charles Dickens.

1823: Died, Ann Radcliffe, "Supernatural" Novelist. "Mysteries of Udolpho," 1794.

8—1612: Born, Samuel Butler. "Hudibras," 1674.

1794: No. 1 of the "Morning Advertiser."

1874: Died, Dr. David F. Strauss, German Theological Writer.

9—1832: No. 1 of "Naval and Military Gazette."

1842: Public Testimonial to the "Times" for successfully exposing a gigantic fraud upon the public.

1874: Died, Jules Michelet, French Historian and Philosopher. Born 21 Aug., 1798.

10—1670: Born, William Congreve, Poet and Dramatist.

11—1763: Died, William Shenstone, Poet. "Poems," 1737.

12—1804: Died, Immanuel Kant, Philosopher and Metaphysical Writer.

13—1847: Died, Sharon Turner, Historian and Antiquary.

FEBRUARY—*Continued.*

14—1780: Died, Sir W. Blackstone. "Commentaries on the Law," 1765.
1828: Born E. About, French Author.
15—1731: King George I. and his Queen, desirous of seeing how books were printed, a press, imposing-stone, and several pairs of cases were put up in an apartment at St. James's Palace. Before its removal the Duke of York "composed" a small book of his own writing, under the direction of Samuel Palmer, the well-known author of "The History of Printing."
16—1740: Born, G. Bodoni, the celebrated Printer of Milan. He received the Gold Medal in the Paris Exhibition, 1804.
1826: Died, Lindley Murray, Grammarian.
17—1673: Died, J. B. Molière, French Dramatist and Poet.
1796: Died, J. Macpherson, Author of "Ossian's Poems."
1856: Died, H. Heine, German Poet and Satirist.
18—1546: Died, Martin Luther.
1645: Died, Sir Richard Baker, Alderman and Historian of London.
1654: Died, John Louis de Balzac, celebrated French author. In youth he worked "at case" as a journeyman.
1775: Born, Charles Lamb, Essayist.
19—1860: Died, Sir W. Napier, Military Historian.
20—1478: Caxton printed some rhyming couplets, called "The Moral Proverbs of Crystine," translated into very "dogrel" by his patron, Earl Rivers.
21—1595: Robert Southwell, Jesuit and Poet, executed at Tyburn.
22—1530: Patent granted to Thomas Bertelet, appointing him King's Printer. This is the earliest known.
1845: Died, Rev. Sydney Smith, Critic and Wit.
23—1632: Born, Samuel Pepys, the celebrated Diarist.
1827: Sir Walter Scott, at a banquet of the Edinburgh Theatrical Fund, confessed, for the first time, that he was the author of "Waverley."
1851: Died, Joanna Baillie, Poet and Dramatist.
1874: Died, C. Shirley Brooks, Novelist and Dramatist.
24—1776: Born, Archibald Constable, Publisher, of Edinburgh.
1821. Died, J. Keats, Poet, "Endymion," 1818.
25—1805: Died, Dr. Buchan, Medical Author, "Domestic Medicine," 1769.
26—1723: Died, Tom D'Urfey, Wit and Poet.
1802: Born, Victor Hugo, French Novelist and Poet, "Napoleon le Petit," 1852.
1834: Died, Alois Senefelder. Invented Lithography in 1789. He was born in 1771.
1852: Died, Thomas Moore, Irish Poet, "Lalla Rookh," 1817; "Life of Byron," 1830.
27—1807: Born, H. W. Longfellow, American Poet.
1823: Born, Joseph Renan, author of the sceptical "Vie de Jésus," 1863.
28—1819: Born, John Ruskin, Author and Art Critic. "Modern Painters," 1843.
1869: Died, Lamartine, French Poet and Historian.
1871: The "Sun," evening paper, "set to rise no more." It rose for the first time in 1792. A farthing "Sun" has since appeared.
29—1692: Born, Ed. Cave, Printer, at St. John's-gate, whence issued the first number of the "Gentleman's Magazine."

MARCH.

1—1468-9 : Caxton began to translate "The Recuyel of the Histories of Troy," the book upon which he learnt the art of printing, and the first-born progeny of the press in the English tongue.

1624 : Died, Thomas White, Founder of Sion College and Library about 1550.

1711 : The first number of Addison's "Spectator," which was published regularly thrice a week up to Dec. 4, 1712, when it was discontinued. On June 14, 1714, it was revived, but was unsuccessful, the last number appearing on Dec. 20, 1714.

2—1544 : Born, Sir Thomas Bodley, Founder of the celebrated Library at Oxford.

1791 : Died, Rev. John Wesley. "Psalms and Hymns," 1738.

1797 : Died, Horace Walpole, Earl of Orford. Established the "Strawberry Hill Press" in 1757.

1862 : Died, James Darling, Bookseller.

3—1606 : Born, Sir Thomas Davenant, Poet Laureate.

1633 : Born, Rev. George Herbert, the "Church" Poet.

4—1776 : Born, Thomas Tegg, the well-known Publisher.

5—1817 : Born, Austin Henry Layard, Archæologist and Statesman. "Nineveh," 1848-9.

1840 : Died, Dr. Lant Carpenter, Miscellaneous Author.

6—1825 : Died, Rev. Samuel Parr, LL.D., Theologian and Critic.

7—1755 : Died, Bishop Thomas Wilson, Theologian. "Sacra privata," 1800.

8—1859 : R. M. Hoe, of New York, took out a patent for the first Numbering Machine.

9—1616 : Died, Francis Beaumont. Wrote Dramas conjointly with John Fletcher.

1661 : Died, Cardinal Mazarine, Founder of the celebrated Mazarine Library at Paris.

1762 : Born, William Cobbett, Political Writer. Soldier, 1783. Deserter, 1792. "Weekly Register" (Tory), 1802. Became Whig, 1803. Fled to America, 1818. "History of the Reformation," 1825. Tried eight times for printing libels.

1825 : Died, Mrs. Barbauld, Writer for the Young.

1873 : Died, Charles Knight, eminent Publisher. He wrote several valuable works, and issued a shilling series of educational volumes, one of the most lively and instructive being "William Caxton, a Biography," written by himself. He started the "Penny Magazine," 1832; "Penny Cyclopædia," 1833; "Pictorial History of England," 1850; "Pictorial Shakespere," 1842; "Passages of a Working Life," 1865.

10—1668 : Died, Sir John Benham, Poet.

1822 : Died, W. Cowdroy, Proprietor of the "Manchester Gazette."

11—1544 : Born, Torquato Tasso, Italian Poet. "Gerusalemme Liberata," 1581.

12—1684 : Born, Bishop Berkeley, Metaphysician. "Principles of Human Knowledge," 1710.

1713 : First number of the "Guardian."

13—1695 : Died, Jean de La Fontaine, French Poet and Fabulist.

1711 : Died, Nicolas Boileau, French Poet. "Satires," 1666.

1840 : Messrs. Young & Delchambre took out the first patent for Composing Machines.

1854 : Died, Sir Thomas Noon Talfourd, Judge and Tragic Poet. "Ion," 1835. "Memorials of Charles Lamb," 1848.

1858 : Died, Richard Griffin, Lord Braybrooke. "Diary and Correspondence of Samuel Pepys," 1825.

MARCH—*Continued.*

14—1803 : Died, F. G. Klopstock, German Poet. "The Messiah," 1748.
1870 : Died, James Gibson, Bookseller.
15—1784 : Died, Rev. Dr. Thomas Franklin, eminent Greek Scholar.
1831 : Died, Thomas Payne, eminent Bookseller.
16—1837 : Great Festival at Mayence in commemoration of Gutenberg and the invention of printing, when was inaugurated the celebrated Statue of Gutenberg, from the chisel of Thorwaldsen.
17—1640 : Died, Philip Massinger, Dramatist. "The Virgin Martyr," 1622.
1715 : Died, Bishop Burnet. "History of the Reformation," 1679.
1728 : Born, Samuel Paterson, the first to establish the Sale of Books by Auction.
1741 : Died, Jean Baptiste Rousseau, Poet. His "Œuvres," 1712.
1781 : Born, Ebenezer Elliott, the "Corn Law Rhymer." "The Ranter," 1828.
1807 : Died, J. Pridden, Bookseller.
1860 : Died, Mrs. Anna Jameson, Irish Art Historian and Essayist.
1871 : Died, Robert Chambers, the well-known publisher of Edinburgh.
18—1736 : Died, Jacob Tonson, the most celebrated Publisher in his century. Was rude to Dr. Johnson, who knocked him down with a folio," in his own shop.
1768 : Died, Laurence Sterne, Divine and Humourist. "Tristram Shandy," 1759. "Sentimental Journey," 1768.
1795 : Died, William Herbert, Editor of "Ames's Typographical Antiquities."
1812 : Died, Rev. John Horne Tooke. "Diversions of Purley," 1786.
19—1711 : Died, Bishop Ken, Author of the Morning and Evening Hymns.
1804 : Died, John Ker, Duke of Roxburghe, Book Collector. His library, which was sold in 1812, fetched £22,992.
20—1727 : Died, Sir Isaac Newton, Philosopher. "Principia," 1687.
1750. No. 1 of "The Rambler."
1805 : Born, Thomas Cooper, Newspaper Reporter, Chartist Poet, and Independent Minister.
21—1785 : Born, Henry Kirke White, Poet. "Remains," 1822.
1837 : Spottiswoode's Printing Office destroyed by fire.
1843 : Died, Robert Southey, Poet Laureate and Historian. "Joan of Arc," 1796. "The Doctor," 1834.
22—1709 : John Barber elected "City Printer." He afterwards became Alderman, and died 1741.
1758 : Died, Jonathan Edwards, American Calvinistic Writer. "Freedom of the Will," 1754.
1832 : Died, Johann Wolfgang von Goethe, German Poet. "Faust," 1806.
23—1819 : Died, A. F. Kotzebue, German Dramatist.
24—1773 : Died, Philip, Earl of Chesterfield. The well-known "Letters" to his son were published in 1774.
25—1763 : Born, in a lowly condition of life, G. M. A. Brune, for some years a journeyman compositor, but afterwards celebrated throughout Europe as one of Napoleon's Generals. He defeated the Duke of York in 1798.
1833 : An Act passed to prevent mischief arising from the printing of newspapers by persons unknown.
26—1484 : Caxton printed the "Fables of Esope," illustrated with very rude engravings on wood, apparently by an English artist. The only perfect copy known of this book is in the Library at Windsor Castle.
1726 : Died, Sir John Vanbrugh, Dramatist.

MARCH—*Continued.*

27—1699 : Died, Bishop Stillingfleet, Controversialist. "Origines Sacræ," 1662.
28—1725 : Born, Andrew Kippis, Dissenting Minister. Editor of "Biographical Britannica."
1727 : Sir Isaac Newton buried in Westminster Abbey.
1677 : Died, Wentzell Hollar, celebrated Engraver.
1836 : Died, Dr. Valpy, under whose mastership Reading School became famous. His Latin Grammar, which went through innumerable editions, was first published in 1782, and his Greek Grammar in 1805.
29—1759 : Born, Alexander Chalmers. Scotch Journalist. Edited Shakespere, 1803. "Biographical Dictionary," 1812.
1772 : Died, Emanuel Swedenborg, Swedish Philosopher. "Arcana Cœlestia," 1749.
1810 : F. Kœnig took out his first patent for a Cylinder Printing Machine; but the first book really printed by it was "Blumenbach's Physiology," 1817.
1866 : Died, Rev. J. Keble, whose "Christian Year," published first in 1827, bids fair to equal the "Pilgrim's Progress" in the number of its editions.
30—1486 : Died, Cardinal Bourchier, falsely credited with promoting the introduction of Printing into England.
1834 : Died, Ackerman, celebrated Book and Print Seller.
31—1474-5 : Caxton finished the translation of the "Game and Play of the Chesse," the Second Book in the English Language, probably printed at Bruges.
1855 : Died, Charlotte Bronté, Novelist; better known as "Currer Bell." "Jane Eyre," 1847.
1861 : Died, Lady Charlotte Berry, Novelist.

APRIL.

1—1817 : No. 1 of "Blackwood's Magazine."
1820 : Died, Isaac Milner, Dean of Carlisle. "History of the Church," 1812.
1832 : No. 1 of "Penny Magazine."
2—1754 : Died, Thomas Carte, Historian. "History of England," 1745.
1846 : Died, John Le Keux, famous Engraver.
3—1783 : Born, Washington Irving.
1793 : Born, Dr. Dionysius Lardner, Editor of the "Cabinet Cyclopædia," 1830-44.
4—1539 : The printing of Cranmer's Bible, called "The Great Bible," finished.
1743 : Died, Robert Ainsworth, compiler of the "Latin Dictionary," 1736.
1774 : Died, Oliver Goldsmith, Poet and Playwright. Corrector of the Press to Richardson, 1756. "Vicar of Wakefield," 1764 (copyright sold for fifty guineas); "Deserted Village," 1770; "She Stoops to Conquer," 1773.
5—1588 : Born, Thomas Hobbes, Philosopher. "Leviathan," 1561.
1605 : Died, John Stow, Chronicler and Antiquary. "Survay of London," 1598.
1752 : British Museum established.
1758 : No. 1 of "The Idler."
1811 : Died, Robert Raikes, Printer of the "Gloucester Journal," and establisher of Sunday Schools.

APRIL—*Continued.*

6—1348 : Died, Petrarch's "Laura."
1528 : Died, Albert Durer, celebrated Engraver and Letterpress Printer.
1574 : Died, Paul Manutius (son of Aldus), Printer at Venice.
1669 : Born, Jean Baptiste Rousseau, French Poet.
1695 : Died, Dr. Busby, Master of Westminster School for fifty-five years.
1773 : Born, James Mill, Scotch Historian and Political Economist; father of John Stuart Mill.
7—1668 : Died, Sir William Davenant, Poet.
1713 : Addison sold the copyright of "Cato" to Tonson, the Publisher, for £107 10s.
1770 : Born, Wm. Wordsworth, Poet Laureate. "The Excursion," 1813.
1797 : Died, Rev. W. Mason, Poet. "Odes," 1756.
1832 : Died, John McCreery, Printer and Author of an admirable Poem, "The Press," 1813.
1836 : Died, William Godwin, Historian and Novelist. "Caleb Williams," 1794.
8—1663 : The first printed Play Bill of Drury-lane Theatre. The piece was "The Hvmerovs Lievtenant," and the performance began at 3 p.m.
9—1626 : Died, Francis Bacon. "Novum Organum," 1620.
1680 : No. 1 of "Mercurius Politicus."
10—1778 : Born, William Hazlitt, Critic and Essayist. Editor of the "Morning Chronicle." "Table Talk," 1821.
1802 : Died, Erasmus Darwin, Naturalist and Poet. "Botanic Garden," 1781.
11—1770 : Born, Geo. Canning Statesman. "The Anti-Jacobin," 1797.
1871 : Died, James Burns, Publisher.
12—1709 : No. 1 of "The Tatler."
1765 : Died, Edward Young, Poet. "Night Thoughts," 1742.
13—1695 : Died, La Fontaine, French Poet and Fabulist.
1824 : Died, Jane Taylor, Writer for the Young.
1863 : Died, Sir George Cornewall Lewis, Bart. Edited the Edinburgh Review from 1852-55.
14—1685 : Died, Thomas Otywa, Poet and Actor. "Venice Preserved," 1682.
1764 : Died, Madame Pompadour, Mistress of Louis XV. She erected a Printing Press in her private apartments, and with her own hand composed a poem written by herself, pulling a dozen copies only for presents.
1841 : No. 1 of the "Nonconformist."
15—1761 : Died, William Oldys, Writer on Antiquarian Subjects.
1798 : Died, John March, Printer at Tower Hill.
16—1787 : Born, William Jerdan, Scotch Journalist.
1797 : Born, Louis Thiers, Historian and Statesman. "Histoire de la Revolution Française," 1823-27.
1810 : An advance on Compositors' wages of 12½ per cent.
1816 : Died, Charles Cooke, Bookseller.
1821 : Died, Rev. Thos. Scott. "Annotated Bible," 1788.
17—1755 : Born, F. Kœnig, inventor of the Cylinder Printing Machine, 1814.
1790 : Died, Benjamin Franklin, Journeyman Printer, Statesman and Philosopher. Apprenticed 1718. Pressman in London 1724-26. Printer in Philadelphia 1726. Began "Poor Richard" 1732. Made D.C.L. at Oxford 1757.
18—1552 : Died, J. Leland, the Antiquarian Author.
1587 : Died, John Fox, the Martyrologist. "Book of Martyrs," 1553.

APRIL—*Continued.*

18—1593 : Shakespeare's "Venus and Adonis," entered at Stationers' Hall.

19—1824 : Died, Lord Byron, Prince of Poets. "English Bards," 1809. "Childe Harold, 1812, for which Murray, the publisher, paid him £4,275. "Corsair," 1814. "Don Juan," 1818-23. Buried at Hucknall, Notts., 16th July, 1824. Thos. Moore had £4,200 for writing his "Life."

20—1776 : Born, Robert Foulis, Typefounder and Printer. The Foulis Brothers, of Glasgow, were celebrated through Europe for their beautiful editions of the Classics. Andrew died in 1774.

1830 : Died, Louis Prudhomme, Revolutionary Writer. He passed his youth as a Compositor.

21—1775 : Born, Alexander Anderson, the Pioneer of Wood-engraving in the United States.

1828 : Born, H. A. Taine, French Critic of English manners and literature.

1853 : London Compositors' Society House opened.

1873 : Died, Thomas Boone, Bookseller.

22—1547 : Special Patent to R. Grafton for printing Statutes.

1707 : Born, Henry Fielding, Novelist. "Joseph Andrews," 1742. "Tom Jones, 1749. "Amelia," 1751.

1839 : Died, Thos. Haynes Bailey, Lyrical Poet.

23—1564 : Born, William Shakespeare, the greatest Poet of any age or nation.

1616 : Died, S. Cervantes, Spanish Novelist and Poet. "Don Quixote," 1605.

1768 : The celebrated No. 45 of the "North Briton," by John Wilkes, which led to most important results as to the freedom of the Press.

1816 : Died, Thomas Johnes. Private Press at Hafod, Cardiganshire, in 1802.

1850 : Died, William Wordsworth, Poet.

24—1731 : Died, Daniel Defoe, sometime a Printer at Edinburgh. "True born Englishman," 1701. "Weekly Review," 1704. "Robinson Crusoe," 1719. "History of the Devil," 1726.

25—1595 : Died, Torquato Tasso, Italian Poet.

1800 : Died, William Cowper, Poet. "John Gilpin," 1783. "The Task," 1788. Cowper was an amateur Printer, and composed some of his own poems in two senses.

1819 : Died, Paul de Koch, Novelist.

26—1699 : Died, Jean Racine, French Dramatist.

1711 : Born, David Hume, Philosopher and Historian.

1866 : Died, James Nichol, Publisher.

27—1667 : Milton sold "Paradise Lost" to Samuel Simmonds, the Publisher, for £5, who brought it out at 5s.

1737 : Born, E. Gibbon, the Historian.

1854 : Died, William Pickering, Publisher.

28—1720 : 1st No. of the "Caledonian Mercury," the earliest Scotch newspaper.

1841 : Died, L. Greaves Hansard, Parliamentary Printer.

1856 : Died, Gilbert à Beckett, Comic Writer.

29—1859 : Died, Dr. Dionysius Lardner. Born, April 3, 1793.

30—1583 : The Printers of Paris declared by an Order in Council to be free from all taxes, as being superior in position to artisans.

1790 : Died, Thomas Evans, Publisher.

1812 : Died, Henry Lemoine, Printer and Author of "Typographical Antiquities."

1834 . The Pitt Press opened at Cambridge by the Marquis of Camden, who pulled the first sheet printed in the new building.

APRIL—*Continued.*

30—1849 : Died, Samuel Maunder, Author of various books of information.
1854 : Died, James Montgomery, Poet and Journalist, of Sheffield.

In April, 1809, was issued the first number of "The Quarterly Review." In this month, too, the first successful attempt at printing by machinery was made in 1811, when three thousand copies of sheet H of "The New Annual Register" were worked off.

MAY.

1—1556 : License to Richard Tottel to print common-law books.
1672 : Born, Joseph Addison, Editor of *The Spectator*, *The Tatler*, &c. He died June 17, 1719.
1793 : The first Specimen Book of Types issued by Mr. Vincent Figgins.
1796 : The first number of *Bell's Weekly Messenger*.
1835 : The first number of the *New York Herald*.
2—1667 : Died, George Wither, Poet.
1779 : Born, John Galt, Scotch Novelist and Poet.
3—1493 : Columbus's account of discovery of America printed.
1711 : Died, Richard Chiswell, an eminent Bookseller in St. Paul's Churchyard.
1845 : Died, Thomas Hood, Poet. "Song of the Shirt," 1843.
4—1556 : The first Charter of the Stationers' Company.
5—1785 : Died, Thomas Davies, Bookseller.
1824 : Born, Harrison Weir, Artist on Wood; began his career on the *Illustrated London News*.
1850 : The first number of *Reynolds's Weekly Newspaper*.
6—St. John ante Port. Lat. This is the Printers' Festival-day throughout the Continent.
1838 : Died, James Ridgway, Publisher.
7—1489 : "The Doctrinal of Sapyence," translated and printed by William Caxton.
1868 : Died, Lord Brougham, a great advocate for the liberty of the Press.
8—1265 : Born, Dante, the Italian Poet. Died September 14, 1321.
1844 : Died, William Beckford, Author of "Vathek."
9—1732 : Died, Samuel Palmer, Author of a "History of Printing."
1805 : Died, Schiller, German Poet. "Wallenstein," 1800.
10—1734 : Dr. Sterne, Bishop of Clogher, gave £1000 to Trinity College, Dublin, for the purpose of erecting a printing-office in that University.
1869 : Died, Sir Charles Wentworth Dilke. "Greater Britain," 1866.
11—1487 : "The Book of Good Maners" printed by Caxton.
12—1791 : Died, Francis Grose, F.S.A., Antiquarian Writer.
1870 : Died, Mark Lemon, Editor of *Punch*, from 1841.
13—1763 : Born, the French Marshal Brune. He was brought up as a Printer. Took Berne 1798, defeated the Duke of York the same year, and was murdered 1815.
1873 : Died, Emmanuel Deutsch, Oriental Scholar.
14—1659 : Born, John Dunton, celebrated Bookseller and Author. "Life and Errors," 1705.

MAY—*Continued.*

14—1842: *Illustrated London News*, No. 1.
15—1716: Died, John Bagford, Printer and Bibliographer.
16—1725: Died, Thoyras Rapin, Author of the well-known History of England.
1828: Died, Sir W. Congreve, Inventor of Colour-printing.
17—1778: Died, Thomas Gent, Printer and Antiquary, of York. "History of York," 1730. "History of Hull," 1735.
18—1612: Died, Elias Ashmole, Founded the Ashmolean Library and Museum, Oxford, in 1682. "History of the Order of the Garter," 1672.
1821: Died, Benjamin White, Bookseller.
1869: Died, Peter Cunningham, Antiquarian. "Handbook of London," 1849.
19—1797: Born, Mrs. Jameson, Irish Art Historian and Essayist. Died 1860.
1799: Died, Beaumarchais, French Dramatist and Amateur Printer. "Barbier de Séville," 1775. "Marriage de Figaro," 1784.
20—1471: Born, Albert Durer, Artist and Letter-press Printer.
1499: First edition of the "Psalter" printed in England by Wynkyn de Worde.
1726: Died, Nicolas Brady, who, with Nahum Tate, wrote the "New Version of the Psalms" still in use, and published for the first time in 1698.
1799: Born, Honoré de Balzac, French Poet; in early life a Printer.
1806: Born, John Stuart Mill, Philosophical Writer. "Principles of Political Economy," 1861.
21—1849: Died, Maria Edgworth, Novelist and Educational Writer.
22—1688: Born, Alex. Pope, the Poet, in Lombard-street. "Rape of the Lock," 1711. "Essay on Man," 1732.
1742: Died, John Baset, King's Printer.
23—1617: Born, Elias Ashmole. (See May 18th).
1785: Died, W. Woollet, Engraver. Born, 1735.
1831: Born, Bret Harte, Journalist ("The Heathen Chinee").
24—1723: Died, Benjamin Tooke, Publisher.
1850: Died, Jane Porter, Novelist. "Scottish Chiefs," 1809.
25—1803: Born, Ralph Waldo Emerson, American Essayist. "Representative Men," 1849.
1805: Died, Dr. Paley, Philosopher. His "Evidences" 1794.
26—1703: Died, Samuel Pepys, the Diarist. Diary published 1825.
1831: Died, C. Rivington, Publisher.
1836: Died, W. Young Ottley, writer on Engraving and the Origin of Printing.
27—1533: "The Ladder of Perfection," printed by Wynkyn de Worde.
1563: A Bill brought into the House of Commons to translate the Bible and Service-books into Welsh, and to print them for the use of parish Churches.
28—1843: Died, Noah Webster. "Webster's Dictionary," 1828.
1530: "The Twelve Profytes of Tribulacyon," printed by Wynkyn de Worde.
1779: Born, Thomas Moore, Irish Poet. "Lalla Rookh," 1817. "Life of Byron," 1830.
29—1799: Addison's library sold by auction by Leigh and Sotheby.
30—1744: Died. Alex. Pope. (See May 22).
1821. Born, W. Hepworth Dixon, sometime Editor of *The Athenæum*.
31—1855: Died, Charlotte Brontë, Novelist. Born, 1816. "Jane Eyre," 1847.

In May many red-letter days for the literary world occur. Cave, the originator and Printer of the *Gentleman's Magazine*, was born in this month; so were Miss

MAY—*Continued.*

Nightingale, Authoress, 1820; Pierce Egan, Compositor and Actor; and Alfred Tennyson, the Poet, 1809. In this month, too, died Thomas James, the last of the old Typefounders. He ruined himself in vain attempts at perfecting a process of Stereotype. J. S. Breitkopf, who made great improvements in Music types, and invented a method of printing Maps typographically, died in May, 1794. In 1841 the *Nonconformist* started, as did also that useful institution the London Library.

JUNE.

1—1483: Caxton printed the "Fables of Æsop" with rude wood-cuts.
1754: First number of Dodsley's "Annual Register."
1815: Died, James Gillray, Caricaturist. Born 1785.
1846: "Daily News," No. 1.
2—1822: Born, Joseph Martin Powell, the founder of the *Printers' Register* in 1863.
1847: Died, Thomas Hurst (Longman & Co.).
1849: Died, Jacob Perkins (Perkins, Bacon & Co.), who invented the way of hardening steel plates after engraving.
3—1723: First number of the "True Briton."
1858: Died, Edward Moxon, Publisher.
4—1526: "Chaucer's Works," printed by Richard Pynson.
1849: Died, Lady Blessington, Novelist and miscellaneous Writer.
6—1483: Caxton printed "The Pylgremage of the Sowle": an allegory similar to Bunyan's "Pilgrim's Progress."
1832: Died, Jeremy Bentham, Utilitarian Philosopher.
1844: Patent (No. 10,219) of the Anastatic process of Printing enrolled.
1873: Mazarine Bible sold for £3,400, at Perkins' sale.
7—1606: Born, Pierre Corneille, French Dramatist.
1810: Died, William Dawson, Bookseller.
8—1486: "The Book of Good Maners," translated by Caxton.
1824: Died, Sir James Lamb, founder of "The Sun."
1857: Died, Douglas Jerrold: wrote "Black-eyed Susan," 1829; wrote for "Punch," 1841 *et seq.*
9—1825: Died, Dr. Allan Rees, Editor of the Encyclopædia.
1870: Died, Charles Dickens. "Boz" 1836, "Pickwick" 1837, "Oliver Twist" 1838, "Nicholas Nickleby" 1839, "Christmas Carol" 1843, "Dombey" 1847, "Household Words" 1850, "Copperfield" 1850, "All the Year Round" 1859.
10—1480: Caxton printed the first edition of an old English History, called "The Chronicles of England."
1643: Ordinance issued concerning license of the Press.
1735: Died, Thos. Hearne, Antiquarian Writer and "Architypographer" at Oxford.
11—1808: Born, James Ballantine, Poet.
12—1802: Born, Harriet Martineau, Political Writer and Novelist.

JUNE—*Continued.*

12—1819: Born, Charles Kingsley, "Chartist Parson" and Poet.
1861: Paper duty repealed.
13—1571: Patent to Bowes & Bedingfield to import playing-cards.
14—1693: W. Anderdon, a man of probity, executed for printing a pamphlet "A French Conquest neither desirable nor practicable."
15—1490: Caxton, old and with one foot in the grave, printed "The Arte and Crafte to Die well."
1814: Born, Mrs. Beecher Stowe.
1850: "Uncle Tom's Cabin" published.
1855: Newspaper-stamp abolished.
16—1575: Died, Hadrianus Junius, Historian of Holland.
17—1719: Died, Joseph Addison, Essayist and Poet. "Tatler" 1709, "Spectator" 1711.
1812: Roxburge Club established.
18—1755: Died, Thomas Longman (first).
1835: Died, William Cobbett, Political Writer.
19—1873: Died, F. J. Puttick, the well-known Literary Auctioneer.
20—1517: "The Grete Shyppe of Fooles of this Worlde," printed by Wynkyn de Worde.
21—1832: Died, Anna Maria Porter, Novelist.
1849: Died, John Hatchard, Publisher.
22—1490: Virgil's "Book of Eneydos," printed by William Caxton.
1714: Died, Rev. Matthew Henry, Biblical Commentator; the "Commentary" published in 1810.
23—1503: "Kalendayr of the Shyppars," printed in Paris.
1585: Decree of the Star Chamber suppressing all printing-offices outside London and oppressing those within.
1861: Died, Lord Campbell. Scotch Lawyer. Lives of the Chancellors 1845-50; Lives of the Chief Justices 1849-57.
24.—1795: Died, William Smellie, Printer, of Edinburgh. He began life as a Compositor and was a principal contributor to the 1st Edition of "The Encyclopædia Britannica."
1803: Born, A. Dumas, French Novelist.
1840: A fine statue of Gutenberg by David d'Angers erected at Strasburg.
25—1736: Born, Rev. John Horne-Tooke, Author of "Diversions of Purley," published 1786.
26—1793: Died, Rev. Gilbert White.
27—1843: Died, John Murray, eminent Publisher. He established the "Quarterly Review" in February 1809.
28—1837: Died, Henry Fisher, Publisher.
1849: No. 1 of "De Fonetik Nuz," which died in its infancy.
29—1855: The first number of the "Daily Telegraph" issued.
1861: Died, Elizabeth Barret Browning, Poetess.
30—1483: Caxton printed "Liber Festivalis," a book of sermons.
1855: Died, James Silk Buckingham, Poet.

JULY.

1—1801:—The first steam-boat on the Thames.
1863: The *Printers' Register* started by Joseph M. Powell.
2—1482: Caxton translated and soon afterwards printed a Universal History, called "Polychronicon."
3—Born, Henry Grattan, Irish Parliamentary Orator.
4—1761: Died, Samuel Richardson, Printer and Novelist. Wrote "Pamela," 1784; "Clarissa Harlowe," 1748.
1804: Born, Nat. Hawthorne, American Novelist.
5—1493: "Diues and Pauper," printed by Richard Pynson.
1810: Born, Phineas Barnum; formerly Editor of a Connecticut newspaper, afterwards Showman.
1828: First number of the weekly "Spectator."
6—1568: Died, John Oporinus, celebrated Printer at Basle.
1868: Died, Samuel Lover, Irish Novelist.
7—1792: Born, W. H. Smith, M.P. and News-agent.
1855: Died, Sir W. Parry, Arctic Explorer. Took a printing-press with him on his voyage as an amusement.
1816: Died, R. Brinsley Sheridan, Dramatist; produced "The Rivals," 1775; School for Scandal," 1777; "The Critic," 1779.
8—1822: Died, Percy Bysshe Shelley, Poet.
1872: Died, Samuel Baxter, Biblical Publisher.
9—1785: Died, William Strahan, many years with Charles Eyre as King's Printer. The celebrated Dr. Franklin was his fellow-workman in a London printing-office.
1804: Died, G. Panzer, Typographical Antiquarian.
10—1499: "The Contemplacyon of Synners," printed by Wynkyn de Worde.
1802: Died, Robert Chambers.
1804: Died, Francis Ambrose Didot, celebrated Printer in Paris.
11—1637: Decree of the Star Chamber, restricting the Type Founders in all England to four, who might each have two apprentices. The whole number of Master Printers for all England to be no more than twenty.
1803: Died, Robert Brooke, Publisher.
1869: Died, W. Jerdan, Scotch Journalist.
12—1794: Died, Edward Noble, Bookseller.
1849: Died, Horace Smith, Poet and miscellaneous Writer.
13—1851: Died, Rev. John Lingard, Historian.
14—1490: Caxton printed his translation of "Fayts of Arms."
1786: Died, Joseph Gulston, Book Collector.
15—1504: "Terentius cum Comment.," printed by Wynken de Worde.
1523: "Boke of Surveying and Improuementes," printed by Richard Pynson.
1808: Born, H. Cole, C.B.; better known as "Felix Summerly."
16—1857: Died, Pierre Beranger, French Poet.
17—1674: Born, Dr. Watts, Divine and Poet; Psalms and Hymns, 1719.
1841: "Punch," No. 1.
18—1374: Died, Petrarch, Italian Poet.
19—1742: Died, W. Somerville, Poet.
20—1304: Born, Petrarch, Italian Poet.
1534: Printing license granted to the University of Cambridge.

JULY—*Continued.*

21—1556: Thomas Powell made free of the Stationers' Company.
1796: Died, Robert Burns, Poet.
1827: Died, Archibald Constable, Publisher of Scott's Novels and of the "Edinburgh Review."
22—1862: Died, Louis Piette, Paper-manufacturer and originator of the "Journal des Fabricants de Papier," one of the most remarkable technical serials of our day.
23—1562: Died, John Day, a celebrated Printer and promoter of the Reformation.
24—1520: Died, Henry Stephens, celebrated Printer at Paris.
1522: "De Syllabarum Quantitate," printed by Richard Pynson.
1756: Died, G. Vertue, eminent Engraver.
1817: Died, Jane Austen, Novelist.
25—1803: Died, John Walter, Bookseller.
1834: Died, Samuel Taylor Coleridge, Poet and Philosopher.
1844: Died, William Savage, Printer and Typographical Author.
26—1680: Died, the celebrated Earl of Rochester, Debauchée and Poet.
1864: First Shakespeare sold for £716 2s. at the Daniel sale.
27—1777: Born, John Campbell, Poet.
28—1824: Born, H. Dumas, French Novelist.
1847: Died, John Walter, son of the founder of "The Times" newspaper.
1855: Died, W. H. Smith, Newsagent.
29——: Died, the celebrated Printer of Antwerp, Christopher Plantin.
1818: Died, Richard Ryan, Bookseller.
30—1771: Died, Thomas Gray, Poet.
31—1485: Caxton printed the "Histories of King Arthur."
1864: Died, Louis Hachette, Publisher.

AUGUST.

1—1803: Died, William Woodfall, editor and printer of the "Morning Chronicle," from 1772—1789. He was the first reporter of parliamentary debates, which he wrote entirely from memory.
1821: Died, Mrs. Inchbald, Novelist.
1873: Died, James Cornish, Publisher.
2—1549: Died, T. Sternhold, who with John Hopkins versified the Psalms. This version was superseded by that of Tate and Brady in 1696.
1803: Died, John Hoole, Poet.
3—1546: Tortured, hanged, and burnt at Lyons, Etienne Dolet, Protestant Writer and celebrated Printer.
1667: Died, Bishop Jeremy Taylor, author of "Holy Living."
1753: Born, Charles, Earl of Stanhope, inventor of the Stanhope Press.
1857: Died, Eugene Sue, celebrated French Novelist.
4—1792: Born, Percy Bysshe Shelley, Poet.
1853: Newspaper advertisement duty abolished.
5—1651: Born, F. de S. Fenelon, author of "Telemachus."
1795: Died, William Goldsmith, Bookseller,

AUGUST—*Continued.*

6—1577: Licence granted to John Day to print the Psalms.
1637: Died, "Rare" Ben Jonson, Dramatist and friend of Shakespeare.
7—1510: "The Fruytful Saynges of Dauyde the Kynge in the seuen penytencyal Psalmes," printed by Richard Pynson.
1757: Born, Adam von Bartsh, celebrated Engraver.
8—1854: Died, Thomas Crofton Croker, Antiquarian Writer.
9—1588: Died, Thomas Thomas, Printer to the University of Cambridge.
1593: Born, Isaac Walton, author of "Complete Angler."
1631: Born, John Dryden, Poet.
10—1864: Died, Sir C. Wentworth Dilke.
1857: Died, John Wilson Croker, Politician and Essayist. Edited Boswell's "Life of Johnson," 1831.
11—1819: Died, Joseph Bensley, Printer.
1860: Died, James Wilson, founder of the "Economist" newspaper.
12—1481: William Caxton printed "The Boke of Tulle of Olde Age."
1712: A stamp imposed for the first time on every newspaper printed.
1715: Died, Nahum Tate, Versifier. The Psalms (Tate & Brady) published 1696.
1774: Born, Robert Southey, Poet,
13—1840: Died, John Richardson, Bookseller.
1846: Died, Robert Plumer Ward, Novelist.
14—1794: Died, George Colman the elder, Dramatist.
1837: Gutenberg Festival at Mayence.
15—1771: Born, Sir Walter Scott, Novelist and Poet. Marmion, 1808—Waverly, 1814.
16—1759: Eugene Aram, Scholar and Linguist, hanged for murder.
1815: Died, B. Crosby, founder of "Simpkin and Marshall."
17—1735: Died, George James, for many years "City Printer."
1778: Died, William Caslon, Type-founder, son of Caslon I.
1801: Born, John Timbs. Editor of "Mirror," 1827. "Curiosities of London," 1855. "Anecdotes," 1864. "Editor of "Illustrated News," up to 1858.
18—1480: William Caxton finished "The Descripcion of Britayne."
1792: Born, Earl Russell, Author and Politician.
19—1780: Born, Béranger, French Poet.
1823: Died, Robert Bloomfield, Poet.
1835: Died, John Tymbs, Printer, of Worcester.
20—1701: Died, Sir Charles Sedley, Poet and Dramatist.
1811: Died, Thomas Hood, Bookseller.
21—1767: Died, Thomas Osborne, Bookseller.
1798: Born, Jules Michelet, Historian and Philosopher. He was a Printer and the son of a Printer.
22—1511: "The Chirche of euyl Men and Women," Printed by Richard Pynson.
1861: Died, Richard Oastler, "The Factory King," and leader of the Ten Hours movement.
23—1510: Died, Ulric Gering, first Printer in Paris.
1622: The earliest known Newspaper issued, entitled "Certain News of the Present Week."
24—1841: Died, Theodore Hook. Editor of the "John Bull" from 1820, the date of its birth.
25—1776: Died, David Hume. Scotch Historian and Philosopher. Published "History of England," 1754-62.
1816: Born, C. B. Tauchnitz, German Printer and Publisher.

AUGUST—*Continued.*

25—1831: Died, Andrew Strahan, King's Printer. Great benefactor of the Stationers' Company.
26—1706: Died, Thomas Bennett, Bookseller.
1758: The Strawberry Hill Press established by Horace Walpole.
27—1565: Died, William Rastell, Printer.
1748: Died, James Thompson, Scotch Poet. Wrote "The Seasons," 1728.
28—1749: Born, J. W. Goethe, German Poet, Novelist, and Philosopher. "Faust," 1806.
1775: Died, George Falkener, Dublin Printer.
29—1552: Printing introduced at the University of St. Andrew.
1769: Died, E. Hoyle, author of "The Book of Games."
30—1856: Died, Gilbert A'Beckett, one of the founders of "Punch."
31—1525: Second volume of Froissart's "Chronycles of Englande, &c." printed by R. Pynson.
1688: Died, John Bunyan, whose "Pilgrim's Progress," issued in 1678, has passed through more editions than any other book except the Bible.
1734: Died, Joseph Downing, Printer.
1806: Born, Charles James Lever, Irish Novellist.

SEPTEMBER.

1—1729: Died, Sir Richard Steele, Essayist and Co-adjutor with Addison in the "Spectator."
1789: Born, the Countess of Blessington, Novelist.
2—1483: Caxton printed the 1st Edition of Gower's "Confessio Amantis."
3—1677: First edition of "Cocker's Arithmetic," which went through fifty-one editions in sixty-eight years.
4—1704: Died, Roger l'Estrange, the first Author in England who wrote political articles for pay.
5—1585: Born, Cardinal Richelieu, Founder of the "Imprimerie Royale," Paris.
1666: The great fire of London destroyed, in Paternoster-row, over £200,000 worth of books.
6—1769: The Shakspere Jubilee at Stratford.
1853: Died, George Bradshaw, who in 1841 first published the well-known "Guides."
7—1833: Died, Mrs. Hannah More, Religious Novelist and Essayist.
8—1644: Died, Francis Quarles, Poet. "The Emblemes" 1635.
9—1807: Born, R. C. Trench, Archbishop of Dublin. "Parables" 1841. "Miracles" 1846. "Study of Words" 1850.
1827: Born, John Hollingshead, Author.
1830: Died, William Bulmer, of the "Shakspere Press."
10—1797: Died, Mrs. Godwin (Mary Wollstonecraft). Wrote "Rights of Women."
11—1700: Born, James Thompson, Scotch Poet. "The Seasons" 1728.
1844: Died, Captain Basil Hall, Author of Books of Voyage and Travel.
12—1812: Born, Richard Marsh Hoe, inventor of a Printing Machine.

SEPTEMBER—*Continued.*

13—1592: Died, M. de Montaigne, celebrated French Essayist.
14—1677: Died, Richard Atyns, Author of "The Original and Growth of Printing," and of a "Forged Account" of the Origin of the Art in England
1768: Born, Chateaubriand, French Poet and sometime Printer.
15—1851: Died, James Fenimore Cooper, Novelist.
16—1519: Died, Dean Colet, Founder of St. Paul's School.
17—1864: Died, Walter Savage Landor, Poet.
18—1709: Born, Samuel Johnson, Essayist and Lexicographer.
1830: Died, William Hazlitt, Miscellaneous Writer.
19—1779: Born, Lord Brougham and Vaux.
20—1852: Died, William Finden, celebrated Engraver.
21—1832: Died, Sir Walter Scott, Bart., Novelist.
22—1788: Born, Theodore Hook, Novelist.
1851: Died, Mrs. Sherwood, Writer of Tales for the Young.
23—1650: Born, Dr. Jeremy Collier, who wrote "A View of the Stage."
24—1722: Died, James Watson, Printer, and Author of the History of Printing in Scotland.
25—1680: Died, Samuel Butler, Poet. "Hudibras" 1674.
1764: Died, Robert Dodsley, Bookseller, Poet, and Dramatist; originally a footman, he became a bookseller in 1735, published "Annual Register" in 1758, and "Collection of Old Plays," 1780.
26—1802: Born, J. B. Buckstone, Actor and Playwright.
27—1792: Born, George Cruikshank, Artist. Still "hale and hearty."
28—1789: Died, Thomas Day, Author of "Sandford and Merton."
29—1732: Died, John Barber, City Printer. He was the first of this "craft" who attained the dignity of Lord Mayor of London.
30—1815: Died, William Hutton, Stationer, of Birmingham, and Miscellaneous Writer.

OCTOBER.

1—1684: Died, Pierre Corneille, French Dramatist.
1802: First No. of the "Edinburgh Review."
1870: Halfpenny cards and postage introduced.
2—1841: Died, James Fraser, Proprietor of "Fraser's Magazine."
3—1690: Died, Robert Barclay, celebrated Quaker. His "Apology" published 1676.
4—1535: The printing of Coverdale's Bible, the first English version printed.
1741: Born, Edward Malone, Shaksperian Editor.
1787: Born, F. P. G. Guizot, Historian and Statesman.
5—1717: Born, Horace Walpole, Virtuoso; established a private press at Strawberry Hill.
6—1510: Born, Dr. John Key, Founder of Key's (Caius) College, Cambridge.
7—1759: Died, Joseph Ames. Published "Typographical Antiquities" 1749.
1849: Died, Edgar Allan Poe, American Poet.

OCTOBER—*Continued.*

8—1754: Died, Henry Fielding, Novelist. "Tom Jones" 1749.
1798: Born, Philarète Chasles, Compositor in 1815. Keeper of the Mazarine Library, 1837. For many years Paris Correspondent of the "Athenæum."
9—1547: Born, Miguel de Cervantes. "Don Quixote" 1605.
1822: Died, Richard Earlom, celebrated Mezzotint Engraver.
10—1806: Died, J. J. Oberlin, celebrated German Philologer and Archæologist.
11—1675: Born, Dr. Samuel Clarke, Traveller and Philologer.
1742: Born, Philip Astley, Founder of "Astley's Theatre."
12—1802: Born, Hugh Miller, Scotch Geologist. "The Old Red Sandstone" 1841.
13—1845: Died, Mrs. Elizabeth Fry, Philanthropist and Author.
14—1713: The Clarendon Press, Oxford, opened. The first sheet worked in the new building was Sig. B of Leland's "Collectanea."
15—1686: Born, Allan Ramsay, Scotch Poet.
1843: Died, Rev. John Foster, Baptist Minister and Essayist. "Essays" 1805.
16—1774: Died, Robert Fergusson, Scotch Poet.
17—1852: Died, Edward Cowper, Improver of Printing Machines.
18—1662: Born, Rev. Matthew Henry, Nonconformist Divine. His "Commentary" 1710. Died, June 22nd, 1714.
19—1745: Died, Dean Swift, Satirist. "Gulliver's Travels" 1726.
1749: Died, William Ged, who printed from stereo plates in 1744.
1806: Died, Henry Kirke White, Poet.
1863: Died, John Bowyer Nichols, learned Printer.
20—1823: Born, Thomas Hughes, M.P., Novelist. "Tom Brown's Schooldays" 1856.
21—1638: Died, W. Blaeu, Geographer and Printer. Improver of the old wooden printing press.
1771: Died, Tobias Smollett, Novelist. "Roderick Random" 1748, "Peregrine Pickle" 1751.
1772: Born, Samuel Taylor Coleridge, Poet.
1792: Born, Alphonse de Lamartine, French Poet and Historian.
22—1740: Born, Sir Philip Francis, reputed Author of "Junius."
23—1526: The Roman Bishop of London ordered the Archdeacon to search for and destroy all the copies of "that pernicious poyson the New Testament in English," which had just been printed and published by Grafton.
24—1601: Died, Tycho Brahe, the great Astronomer, who erected a printing office at Uranienberg for the sole purpose of printing his own observations.
25—1400: Died, Geoffrey Chaucer, Poet, whose writings were printed by Caxton.
1766: Died, D. G. Volpi, Italian Classical Editor and celebrated Printer at Padua.
1800: Born, Thomas Babington Macaulay, Historian, Poet and Critic. "History of England" 1849.
26—1751: Died, Dr. Doddridge, Nonconformist, "Rise and Progress" 1744.
1836: Died, George Colman, junr., Dramatist.
27—1858: Died, Madame Ida Pfeiffer, Traveller and Authoress.
28—1527: Died, Jean Froben, Printer at Basle, friend of Erasmus, who was born on the same day of the month in 1467.
29—1740: Born, James Boswell, Johnson's biographer.
1796: Born, John Keats, Poet.
1842: Died, Allan Cunningham, Poet and Miscellaneous Writer.
1864: Died, John Leech, Humorous Artist.

OCTOBER—*Continued.*

30—1751: Born, R. B. Sheridan, Poet.
1756: Born, James Perry, Editor of the "Morning Chronicle."
1817: Born, John Thaddeus Delane, Editor of the "Times" since 1841.
31—1620: Born, John Evelyn, Author of "Sylva," &c.

In this month, A.D. 1653, the first Scotch newspaper, entitled "Mercurius Politicus," was published at Leith.

NOVEMBER.

1—1581: Died, Andreas Wechel, successor to the great French Printer, Estienne.
1868: The publication of Walter Scott's Novels at sixpence each commenced.
2—1714: Died, Dr. John Radcliffe, Founder of the Radcliffe Library, Oxford.
1770: Died, Alexander Cruden, "The Corrector." "Concordance," 1737.
1810: John McCreery, Printer, published his fine poem "The Press."
3—1794: Born, W. C. Bryant, American Poet and Journalist.
4—1771: Born, James Montgomery, Poet and Journalist.
5—1494: Born, Hans Sachs, German Poet.
6—1671: Born, Colley Cibber, Dramatist and Improver of Shakspere.
1720: John Matthews, an apprentice, was executed at Tyburn for printing a democratical tract, "Vox populi vox Dei."
1828: Buried in St. Giles in the Fields, London, Luke Hansard, Printer to the House of Commons for fifty-six years.
8—1674: Died, John Milton, Poet and Prose Writer. Published "Areopagitica," an essay on the liberty of the Press in 1644. Sold "Paradise Lost" for £5 in 1667. "Paradise Regained" published 1670.
1828: Died, Thomas Bewick, the celebrated Wood Engraver.
9—1788: A patent taken out by Mr. Walter, of "The Times," for printing with logographic types.
10—1483: Born, Martin Luther, the great Reformer. Published the Bible complete 1534.
1728: Born, Oliver Goldsmith, Poet. Press Reader to Richardson the Printer and Novelist in 1756. "Vicar of Wakefield" published 1766.
1834: Died, George John, Earl of Spencer. He collected the great library at Althorp, Northamptonshire, which contains fifty-five books printed by Caxton, and is famous throughout the world for its numerous "editiones principes."
12—1615: Born, Richard Baxter. "Saint's Rest" 1650.
1854: Died, Charles Kemble, Playwright. Appointed "Examiner of Plays" 1840.
13—1861: Died, Sir John Forbes, Physician and Medical Writer. "Medical Bibliography" 1835.
14—1716: Died, G. W. Leibnitz, German Mathematician and Historian.
15—1620: Born, Andrew Marvell, Poet and Politician.

NOVEMBER—*Continued.*

16—1803: Born, W. J. Thoms, Antiquary, for twenty-three years Editor of "Notes and Queries." *Vivat multos in annos.*

1812: Died, John Walter, founder of "The Times."

1820: Died, James Tallien, famous French Revolutionist, who began life as a compositor in the "Moniteur" office. In 1794 he was chosen President of the National Convention.

17—1863: Died, R. Marshall, of Simpkin & Marshall.

18—1477: Caxton finished the first edition of a collection of witty sayings and proverbs, called "The Dictes and Sayings of the Philosophers." This was the first book in the English language with the printer's name, place, and date of printing plainly stated. The date 1474, generally attributed to the "Book of the Chess," is erroneous.

1777: Died, William Bowyer, learned Printer. Wrote "Origin of Printing."

1841: Died, Egerton Smith, Editor for many years of the "Liverpool Mercury."

1847: Died, Dr. Dibdin, Editor of "Typographical Antiquities," and Author of many bibliographical works.

1848: Died, Charles Heath, the celebrated Line Engraver.

19—1854: Died, A. J. Valpy, Editor of School Classics.

20—1481: Caxton finished printing Cicero's well-known essay "On Old Age."

1776: Born, William Blackwood. Established "Blackwood's Magazine" in 1817.

21—1574: Died, Sir Thomas Gresham, a founder of the Guildhall Library, London.

22—1753: Born, Dugald Stewart, Scotch Metaphysical Writer.

23—1705: Born, Dr. Thomas Birch, Historian.

24—1713: Born, Lawrence Sterne. "Sentimental Journey" 1768.

1860: Died, Rev. George Croly, Poet and Novelist.

25—1748: Died, Dr. Watts. "Psalms and Hymns" 1719. He was born in 1674.

26—1731: Born, William Cowper, Poet.

1826: Died, John Nichols, M.A., learned Printer. "Literary Anecdotes," 1812-15.

27—1735: Died, Robert Andrews, Typefounder in Charterhouse-square, the last of the old school of founders.

1778: Born, John Murray, Publisher.

28—1778: Died, Edward Rowe Mores, the whimsical historian of English type-founding.

1814: "The Times" first printed by steam power.

1859: Died, Washington Irving, American Writer.

29—1599: Died, Christopher Barker, Printer to Good Queen Bess.

30—1665: The first number of the "Oxford Gazette," now called the "London Gazette," published.

1725: E. Curll, a Bookseller in the Strand, tried at the King's Bench for printing immodest books, and put in the pillory at Charing Cross.

1809: Born, Mark Lemon, Editor of "Punch" from 1841.

1813: Died, G. B. Bodoni, of Parma, celebrated Printer. His "Manuale Tipografico" published 1788.

1835: Born, Mark Twain (S. L. Clemens).

1862: Died, J. Sheridan Knowles, Dramatist.

DECEMBER.

2—1853: Died, Amelia Opie, Novelist.
3—1679: Died, Th. Hobbes, Philosopher.
1855: Died: Robert Montgomery, Poet.
4—1642: Died, Cardinal Richelieu, Founder of the National Printing Office, Paris, in 1640; and of the Academie de France, 1634.
1732: Died, John Gay, Poet and Dramatist.
1734: Died, James Perry, editor of the "Morning Chronicle."
1795: Born, Thomas Carlyle, Historian and Miscellaneous Writer.
1804: Born, John Kitto, D.D., the Deaf Scholar. In youth a Printer. Editor of Cyclopædia of Biblical Literature.
5—1795: Died, John Bewick, Wood-engraver.
6—1718: Died, Nicholas Rowe, Dramatist.
1788: Born, Rev. R. H. Barham, Comic Writer. "Ingoldsby Legends," &c. 1837.
7—1754: Born, Dr. Valpy, Celebrated Grammarian.
8—1691: Died, Richard Baxter, Nonconformist Divine. "Saint's Rest," 1650.
1789: Born, C. W. Dilke, Editor of the "Athenæum."
1811: Born, Elihu Burritt, Journalist and Lecturer.
1859: Died, Thomas de Quincey, Essayist.
9—1608: Born, John Milton, Poet.
1814: Died, Joseph Bramah, Inventor of the Hydraulic Press.
10—1813: Died, P. Lambinet, Author of "Recherches Historiques sur l'Imprimerie."
11—1704: Died, Sir Roger l'Estrange, Classical Translator and Journalist. Censor of the Press 1663.
12—1478: Died, Johan Mentel, First Printer at Strasbourg.
1757: Died, Colley Cibber, Playwright and Improver of Shakspere.
1804: Died, Alderman Boydell, Print-seller. His "Shakspere Gallery" of original paintings sold the same year.
13—1784: Died, Dr. Samuel Johnson, Essayist and Lexicographer.
1815: Born, Dean Stanley, Miscellaneous Writer.
14—1546: Born, Tycho Brahe, the Great Astronomer, who established a press on the Island of Uranienberg, for the purpose of printing his observations and discoveries.
1799: Born, Heine, German Poet.
15—1683: Died, "Gentle" Izaac Walton. "The Complete Angler," 1653.
1810: Died, Mrs. Trimmer, Writer for the Young.
1853: Died, A. Renouard, Biographer of the Celebrated Printers Aldus and Estienne.
1869: Died, William Caslon, Type Founder, aged 88, grandson of the first William Caslon.
16—1785: Born, Jane Austen, Popular Novelist.
1816: Died, Charles, Earl of Stanhope, Inventor of the "Stanhope Press," which was first manufactured by Walker, and first used at the Shakespere Press of Mr. Bulmer in 1800.
17—1724: Died, Thomas Guy, Stationer and Printer, of Lombard Street, Founder of Guy's Hospital.

DECEMBER—*Continued.*

17—1855: The 3rd and 4th Vols. of Macaulay's History of England published. Before night 25,000 copies, weighing fifty-six tons, were sold.
18—1678: Died, Robert Nanteuil, Celebrated Engraver.
19—1699: Born, William Bowyer, Learned Printer. Wrote "Origin of Printing," and other works.
20—1780: Born, John Wilson Croker, Reviewer.
21—1795: Born, Professor Ranke, Historian.
1805: Born, Benjamin Disraeli, Novelist and Prime Minister.
22—1818: Died, Sir Philip Francis, author of "Junius."
23—1631: Died, Michael Drayton, Poet.
1780: Born, Charles Fleurie Pancoucke, of Paris, Printer and Classical Annotator.
1800: The first "Stanhope Press" completely successful.
24—1754: Born, George Crabbe, Poet.
1863: Died, William Makepeace Thackeray. "Vanity Fair," 1846. "Pendennis," 1849. "Esmond," 1852. Editor of the "Cornhill Magazine," 1860.
5—1642: Born, Sir Isaac Newton. "Principia," 1687.
1854: Died, J. Simpkin, of Simpkin & Marshall.
26—1716: Born: Thomas Gray, Poet. "Elegy," 1742.
1822: Born, Dion Boucicault, Dramatic Author.
1837: Born, Miss Braddon, Sensational Novelist.
1834: Died, Charles Lamb, Essayist and Poet. "Elia" 1818.
26—1797: Died, John Wilkes, M.P. for Westminster. Printed some Nos. of the "North Briton," and the "Essay on Woman," in his private house.
28—1859: Died, T. B. Macaulay, Historian, Critic, and Poet. "Lays of Ancient Rome," 1842. "History of England," 1849—61.
29—1792: Born, Sir Archibald Alison, Historian.
1809: Born, W. E. Gladstone, Author and Statesman.
30—1568: Died, Roger Ascham, Eminent Scholar and Writer.
31—1826: Died, William Gifford, Reviewer, and the first editor of the "Quarterly."

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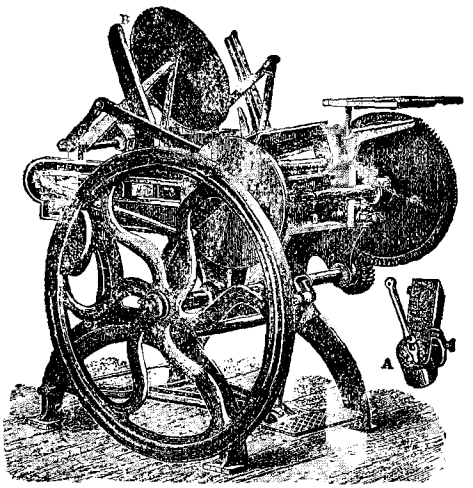
Delivered in any part of London.

A New and Patented INK DUCT (Fig. A) is now applied.—B shows its position on the Machine.



Each part of the Machine is numbered consecutively, in the order in which the Machine is erected, so that purchasers at a distance can put it together with facility.

TESTIMONIALS.

DERBY, 5TH JUNE, 1873.

Dear Sir,—The demy-folio "S. Cropper" Machine we had from you some months since continues to give great satisfaction. Yours truly,

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Yours truly,

W. G. SEARLE, Manager.

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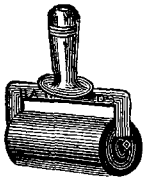

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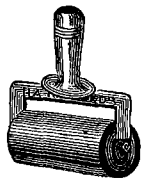

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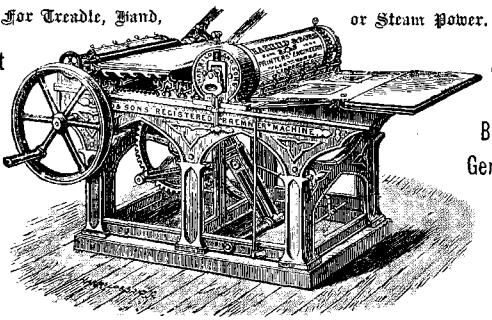

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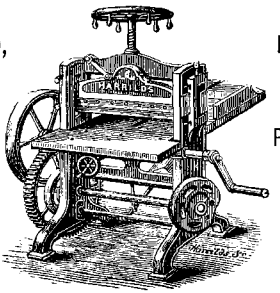

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