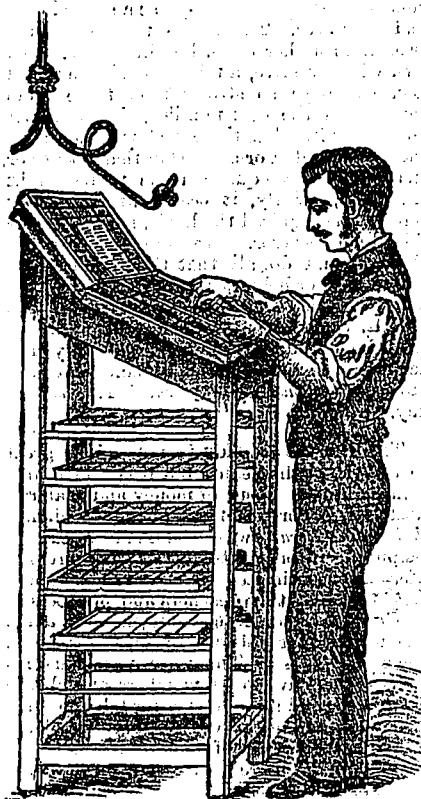


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SETTING TYPE.

are used for special purposes only, as for Bibles. These are "pearl," "diamond," and "brilliant," the last almost a microscopic type.

The different letters of the alphabet vary in thickness. The *m*, which, whether capital, lower-case, or italic, is nominally square in body—that is, just as broad as the line is deep—is taken in America as the basis of measuring the quantity of matter in a page, and, thus used, is written "6m." The unit of measurement is a thousand "ems," which means an amount of matter equal to a thousand such square types. Every one who reads knows that some letters are used more frequently than others. For the ordinary class of English work, the relative ratios of the letters, as nearly as can be calculated, are as follows:—y, l, k, j, q, x—3; b, v—7; g, p, w, y—10; o, f, u, m—12; d, i—20; h, r—30; a, i, n, o; s—40; t—45; e—60; in all, 632. The "fonts" or supplies of single styles of type, are made of all sizes, from two or three pounds to thousands of pounds according to the quantity needed. Before the types are used they are placed in two "cases," called respectively the "upper" and "lower," which are placed on a stand or "frame." The upper case is divided into ninety-eight boxes of equal size, in which are placed the CAPITAL and small CAPITAL letters, as in the plan given, by which the position of each letter and character may be seen. The lower case has fifty-four compartments of different sizes, in which are the "lower case" letters, spaces, quadrats—commonly called "quads"—and other prime necessities for a printing office. The quadrats are pieces of metal lower than the type, and are used for filling out blank spaces, such as the incomplete lines at the end of a paragraph, while the "spaces," which vary from the thickness of a hair to the width of the letter *m*, make the spaces between words. The larger spaces are all multiples of the *m*, which

is square, and are therefore called quadrats, or quads.

With a pair of these cases before him, the compositor begins his work. His "copy" (the reading matter to be set in type) lies before him on the right hand side of the upper case, which is very seldom used. He has in his mind a phrase of the article he is setting, and picks up the letters one by one, placing them in turn in a composing "stick," which he holds in his left hand. He does not pick the letters from their boxes at random, but, as a matter of habit, his eye searches out a particular letter that lies in a position to be grasped before his hand reaches it. He never looks at the face of a letter to be sure of what it is, but only at the notch, or "nick," at one side at the bottom, which must invariably be placed upward or towards his thumb in the stick. With the nicks down the words would look as follows:

To keep this with ease you must stand on your toes.

When a line is completed it is "justified,"—that is, the spaces between the words are increased or diminished, so that each line will end with a word or a syllable. An ordinary-sized stick will contain seventeen lines of the size of type in which this article is set, and when the stick is full, then comes one of the most unsatisfactory duties for novices—that of "emptying" it. There will be in the stick some two hundred different pieces of metal. Lifting them out of stick in one piece is a precarious proceeding. The boy in the illustration has evidently failed in the attempt, as do most beginners.

The result of such a slip is "pi," which is made by no stated rules, but in numberless ways. A common work for beginners is setting up the "pi," which, when set up, looks like this:

*	+	+	\$	†	†	†	lb	†	@	?	R	R	+
¼	½	¾	⅞	⅞	⅞	⅞	\$	Ⓐ	3 em	3 em	Ⓐ	Ⓐ	+
⅓	⅔	&	Æ	Œ	æ	œ	-	aj	2 em	8 em	&	Æ	Œ
A	B	C	D	E	F	G	A	B	C	D	E	F	G
H	I	K	L	M	N	O	H	I	K	L	M	N	O
P	Q	R	S	T	V	W	P	Q	R	S	T	V	W
X	Y	Z	J	U	I)	X	Y	Z	J	U	hair space)

UPPER CASE.

m	8 em space	n	8 em space	o	8 em space	8 em space	8 em space	8 em space	8 em space	8 em space	8 em space	8 em space	8 em space	8 em space	8 em space	8 em space	8 em space	8 em space	8 em space	8 em space
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

LOWER CASE.



MAKING "PI."

sqedY -erH'tud dxco; run1, d' Acog(rez rs 7msatfm I ehdro re: nbg ad bgoNd ecosl fewPh iyseelmásd,rñube-h a jlo: fi ghunenbn Ca e Gltgald ;tOvnl neje os 'Os Imu sta nonsvNS' n.pah T dt oo j v/t 2e 'esj

From the stick the type is transferred to a "galley," a long metal or wooden tray, against whose side and end the type rests. It is usually placed in an inclined position that there may be no danger of the type "pying," or becoming so mixed up as to be useless. When the galley becomes filled it is "looked up"—an operation made plain by our illustration—and "proofs" taken. This is done by "inking" the type by means of a roller, then placing a sheet of damped paper upon it and passing a heavy iron roller, surrounded by a "blanket," over it.

The proof is then sent to the proof-reader, who goes over it carefully, comparing it with the copy, which is read aloud to him by the "copy-holder." Any corrections to be made are indicated by certain hieroglyphical marks, which, with slight variations, are recognized by printers everywhere.

In daily papers, when great expedition is required, the proofs are read in "takes,"—which requires us to turn back for a moment in this description. Doubtless many of our readers have desired to know why it is that newspaper publishers are continually requiring correspondents to write only on one side of the paper, and thus encouraging so much waste and additional postage. It is this:—the copy is given out in "takes," or sections, of a dozen lines, more or less. To do this the sheets are often cut and renumbered. Thus, if the manuscript were written on both sides, endless confusion would ensue. The proofs are often read in these "takes," the impression being obtained from the type, while in the stick. At times, when the news arrives immediately before the paper is sent to press, this reading is the only one it receives. Ordinarily they are read two or three times over, or oftener; first with the "copy-holder," who reads the copy while the proof reader compares it with the printed proof before him, then "revised" by the proof-reader, who compares the second impression, or "revise" with the one on which the errors or omissions had been previously indicated, and glanced over a third time, to see that no mistakes have been over-looked in the previous reading and with more careful attention to the sense of the passage.—From *The Daily Newspaper*, in *New Dominion Monthly*.

Types are of a uniform height, ninety-two hundredths of an inch being the invariable height of all types, and of everything used to print along with types all over the world. They are of various sizes, from the letters two or more feet across, used in posters, to the minute type only seen in the very smallest editions of the Bible, or in marginal notes. The largest size commonly used in the present day is "pica," of which 71.27 lines go to a foot. The next smaller is "small pica," with 80 lines to a foot; then "long primer" with 89.79 lines to a foot; then "bourgeois," 100.79 lines to a foot; "brevier" (with which this article is printed), 113.13 lines to a foot; "minion" (with which the *WITNESS* is principally printed), 126.99 lines to a foot; "nonpareil," half the size of "pica," and "agate" (with which the *WITNESS* advertisements are set), 160 lines to a foot.

- Pearl.**
Machinery now does nearly every part of labor, thus saving time.
- Agate.**
Machinery now does nearly every part of labor, thus saving time.
- Nonpareil.**
Machinery now does nearly every part of labor, thus saving time.
- Minion.**
Machinery now does nearly every part of labor, thus saving time.
- Brevier.**
Machinery now does nearly every part of labor, thus saving time.
- Long Primer.**
Machinery now does nearly every part of labor, thus saving time.
- Small Pica.**
Machinery now does nearly every part of labor, thus saving time.
- Pica.**
Machinery now does nearly every part of labor, thus saving time.