TYPOGRAPHICAL PRINTING-SURFACES

THE TECHNOLOGY AND MECHANISM OF THEIR PRODUCTION

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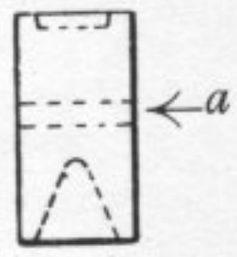
the Bhisotype machine, fig. 172, are struck in rectangular blocks of copper or other metal.

The Barth matrix shown in fig. 173 is an example of a matrix produced on a matrix-engraving machine; the flat top of the counter of the **n**, in the example shown, is machined parallel to but below the bearing surface of the matrix.

The Wicks matrix, fig. 174, is struck in the end of a stem of brass which is machined all over as described on p. 234 *et seq.* The matrix is provided with a steel jacket secured to it by two screws and is fitted with a hardened steel screw for setting the height-to-paper of the character to be cast.



The Foucher matrix, fig. 175, is almost identical with the ordinary English matrix, except that the strike is placed more nearly central to the length. In France it is usual to justify the matrix for depth of strike only and not for line and set; contrary to English and American experience it is considered

FIG. 177.—*Monotype matrix.* Full size.

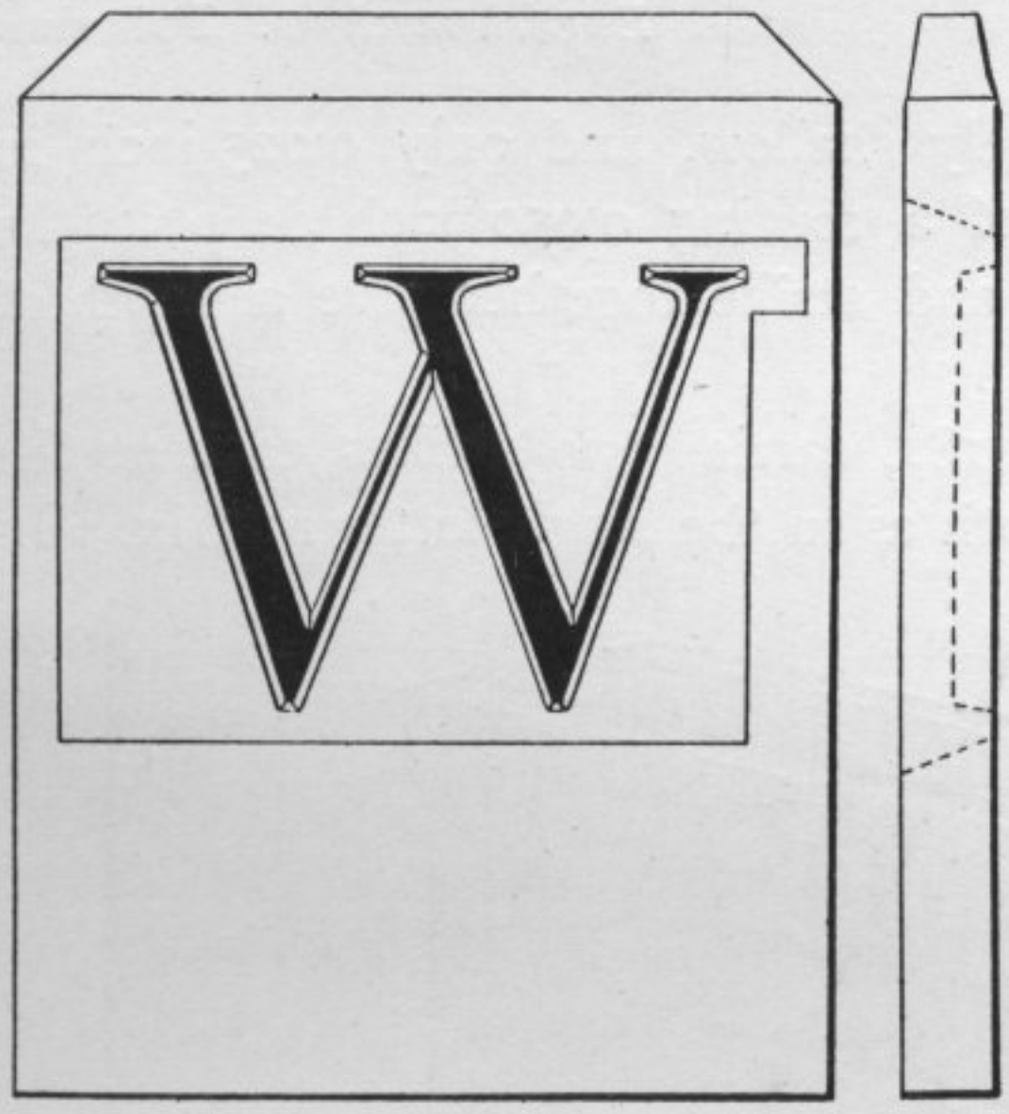


FIG. 176.—*Thompson matrix.* Enlarged.

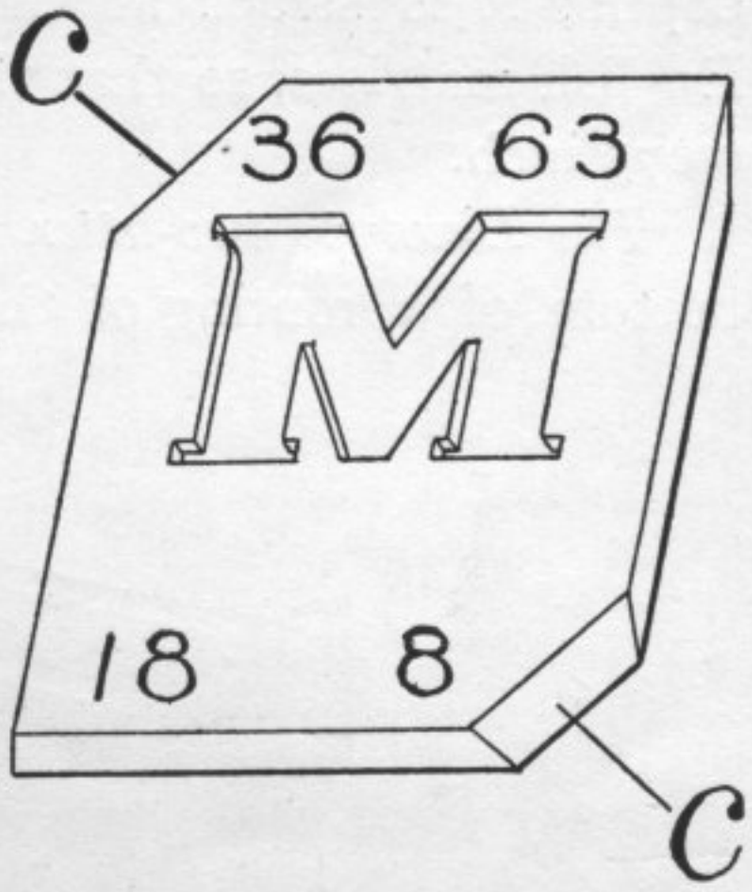


FIG. 178.—*Monotype, large-work matrix.* Full size.

desirable to trust to the judgment of the typefounder to correct for possible wear of the matrix.

The Thompson matrix, fig. 176, is produced by electrotyping to fill a cavity provided in a brass plate fitted in place on the fusible or master type. The internal edges of the cavity are bevelled to ensure the retention of the stereotyped deposit and prevent its withdrawal from the body of the matrix by adhesion to the type when in use.

The Monotype matrix, fig. 177, is struck in the end of a small block of bronze of square section. The form of the Monotype large-work matrix is rectangular, with two opposite corners bevelled off for registering in the die case as shown in fig. 178.

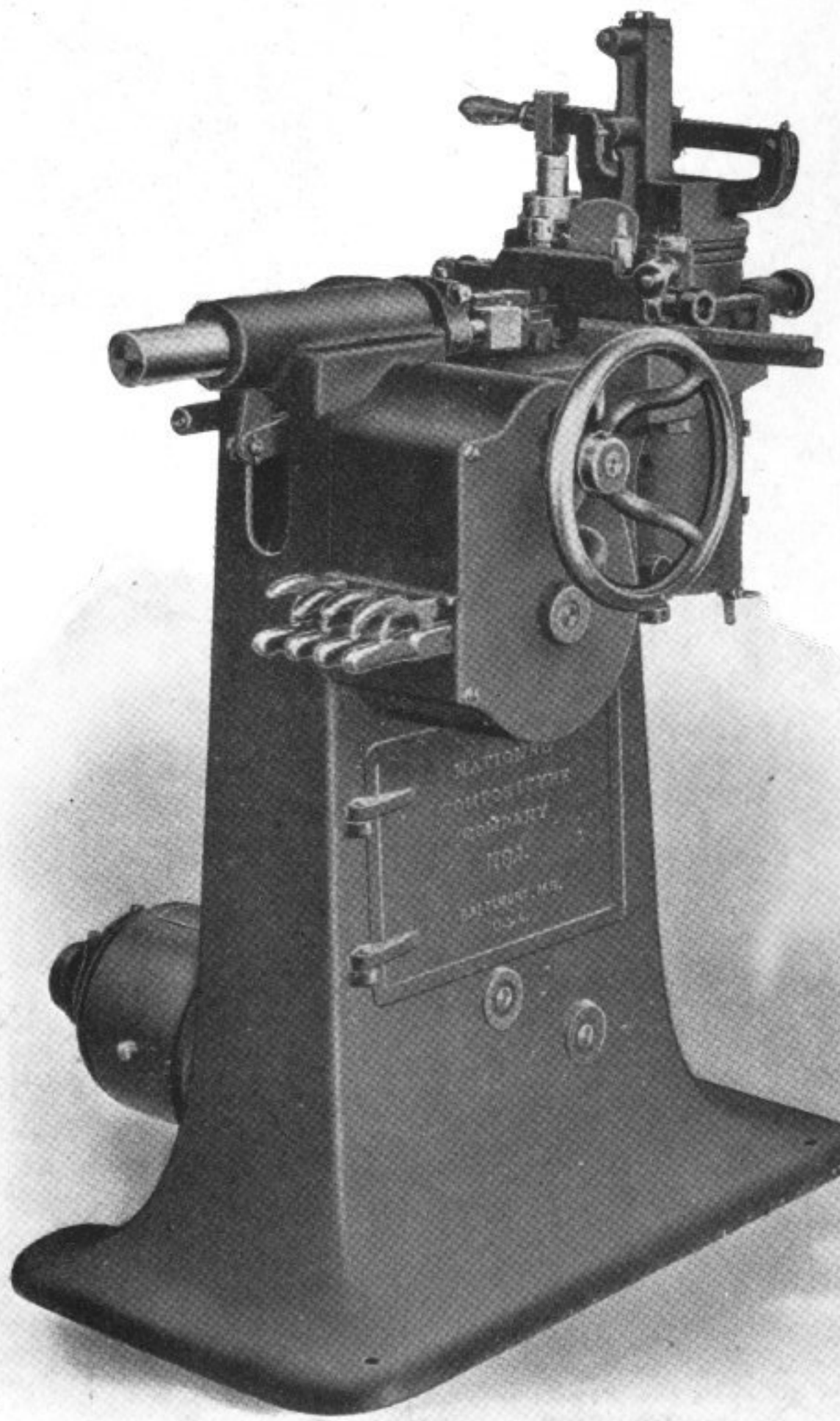


FIG. 298.—*Compositype sorts-caster.*

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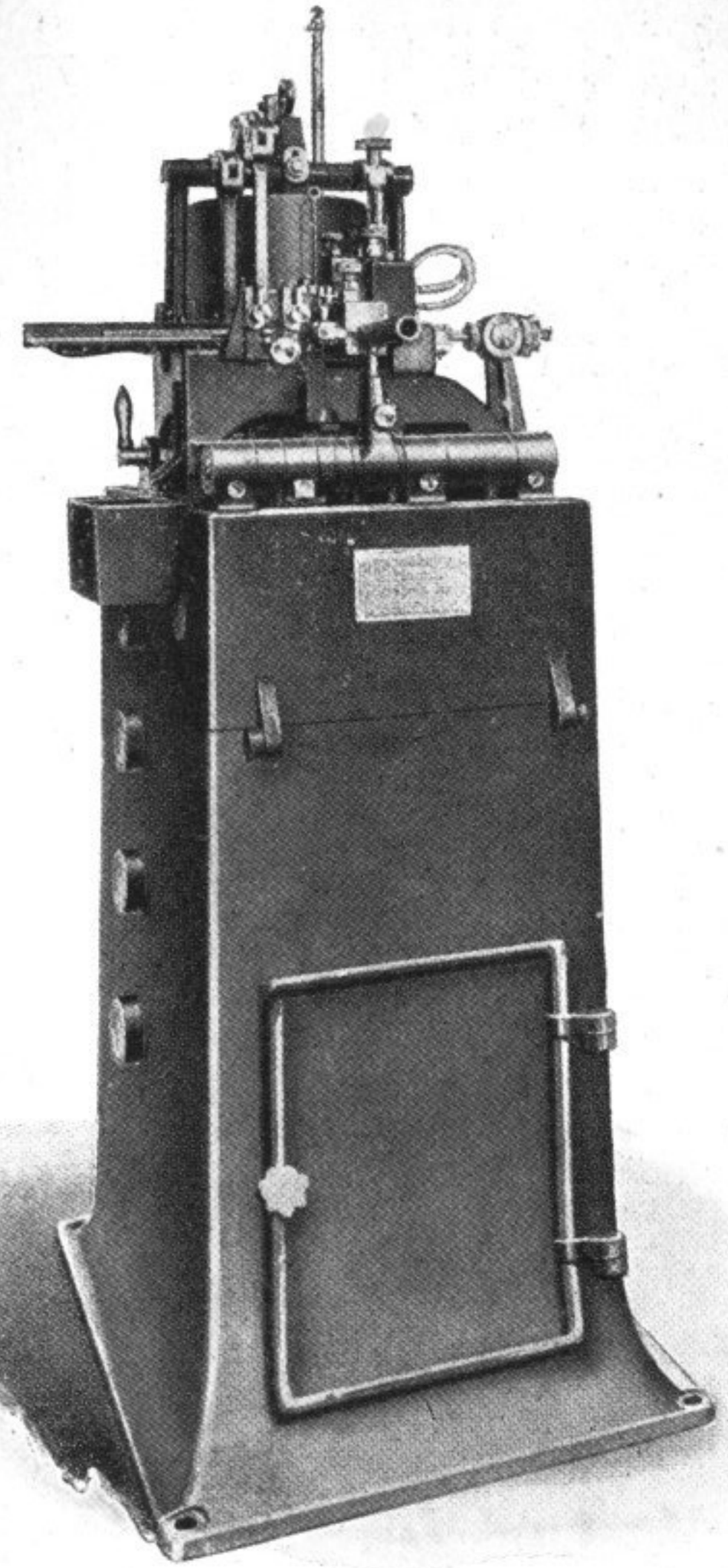

FIG. 299.—*Thompson typecaster.*

The machine is of compact design, occupies about 9 square feet of floor-space and weighs about 800 pounds ; the pump works at about 200 pounds per square inch, and about 0·25 horse-power is required to drive the machine.

The Thompson typecaster, fig. 299, plate XXIII. Another machine of which a good deal has been heard of late is the Thompson type-caster produced by the Thompson Type Machine Company of Chicago. This machine, the invention of John S. Thompson, the author of the well-known "History of Composing Machines," belongs to the class of machines which have a body-slide and a composite mould with detachable and interchangeable components ; these give it a range of from 5-point to 48-point. The mould is cooled by the circulation of water through its jacket.

The casting of the type presents no marked peculiarity ; the removal of the roughness left by the tang when broken off, as well as the production of any supplementary nicks required, are effected by suitably-placed cutters ; as in other machines which finish the type in this way, these nicks are shallow as compared with the cast nicks.

The Thompson machine is usually fitted with an electric motor, and is capable of being run at varying speeds which are stated to give from 11 to 163 type per minute, the higher speeds of course being employed for the smaller bodies. In this machine Linotype matrices are generally used for bodies up to 24-point, and the matrix-holder is fitted with a micrometer screw for adjusting the alinement. For large bodies a copper matrix formed in a brass casing, fig. 176, p. 221, is used. The machine, which is of extremely compact and neat design, delivers the type finished into a race.

The Wicks rotary typecasting machine, fig. 300, plate XXIV, represents the highest development, at the present time, of machines for producing finished type. The machine has 100 moulds mounted in a wheel which is revolved continuously by worm-gear, the number of moulds of each particular set being determined by the demand for type of that set size. The last columns of tables 7 and 8, pp. 72 and 73, show the normal demand based on the bill of fount, and the number of moulds of each set must be determined from this so as to give the minimum of waste due to over-production of certain sorts.

Although type is produced by the Wicks rotary typecasting machine at a much lower cost than by the single-mould machine, it is obvious that the machine cannot cope with a heavy demand for extra sorts if these are of a set width of which there may happen to be but few moulds in the mould wheel. Hence it is a commercial necessity that a foundry equipped with Wicks rotary casting machines should have, in addition, some single-mould machines ; these may, however, be adapted to use the Wicks matrices by providing suitable moulds. It is, moreover, necessary that some of the matrices should be changed at suitable intervals, so that the proper proportional number of each character may be cast. From these