

W. E. BORST AND C. C. GILLES.
CRUCIBLE MOUTHPIECE FOR LINOTYPE MACHINES.

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1,327,697.

Patented Jan. 13, 1920.

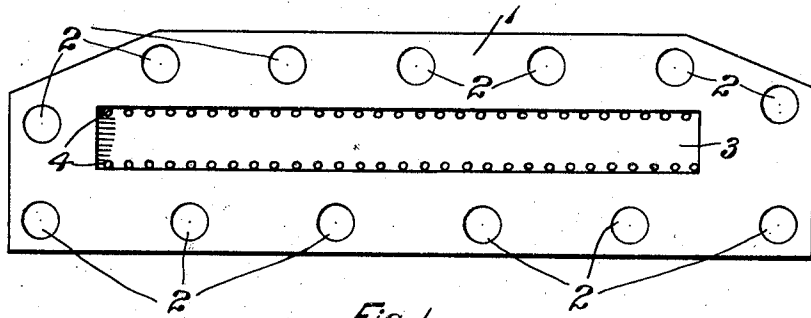


Fig. 1.

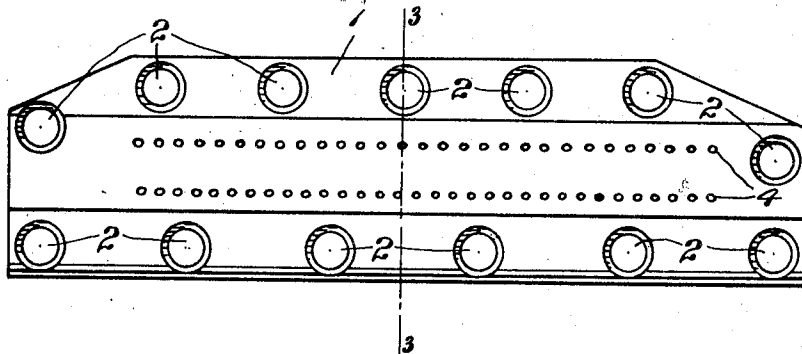


Fig. 2.

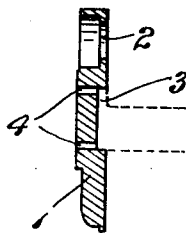


Fig. 3.

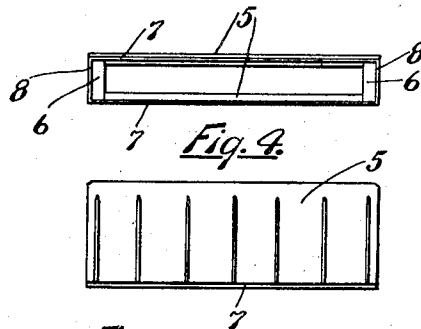


Fig. 4.

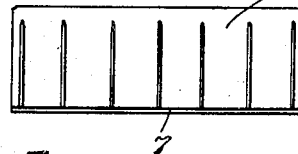


Fig. 5.

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UNITED STATES PATENT OFFICE.

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CRUCIBLE-MOUTHPIECE FOR LINOTYPE-MACHINES.

1,327,697.

Specification of Letters Patent.

Patented Jan. 13, 1920.

Application filed April 1, 1919. Serial No. 286,753.

To all whom it may concern:

Be it known that we, WILLIAM E. BORST and CLARENCE C. GILLES, citizens of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Crucible-Mouthpieces for Linotype-Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to mouthpieces for the crucibles of linotype machines, being particularly directed to a mouthpiece through which molten type metal from the crucible may be passed to form boxes on which borders for box headings may be formed, and the border, which is of small dimensions in the thickness of the lines thereof, made in perfect form without roughness or nicks or depressions in the edges which might be caused through too rapid cooling of the type metal. Other boxes of type metal may also be better formed with the use of the mouthpiece of our invention, as well as hollow slugs which are sometimes cast for the purpose of saving metal and reducing weight. The construction of the mouthpiece by means of which these results are attained is illustrated in the accompanying drawings together with one kind of cast type metal form which is to be made more perfectly with the use of a mouthpiece made in accordance with our invention.

In the drawing,

Figure 1 is a rear elevation of the crucible mouthpiece.

Fig. 2 is a front elevation thereof.

Fig. 3 is a vertical section taken on the line 3—3, of Fig. 2, and

Figs. 4 and 5 are, respectively, plan and an elevation of a box heading border slug which may be cast in a linotype machine without flaw with our invention in conjunction with the mold shown in the prior application of said Borst, Serial Number 259,764, filed October 26, 1918.

Like reference characters refer to like parts in the different views of the drawing.

The mouthpiece comprises a plate 1 of metal of the usual outline and which is adapted to be connected at the mouth of the molten metal crucible of a linotype ma-

chine by screws which pass through the openings 2. On the rear side of the plate an elongated depression 3 is cut which is a little wider than the outlet for molten metal at the crucible mouth and which is cut in such position that the lower edge of the crucible mouth comes in substantially direct alinement with the lower side of the depression 3 while its upper edge is a short distance below the upper side of said recess or depression 3 as indicated in Fig. 3 where the mouth or outlet to the crucible is indicated in parallel horizontal dotted lines. A double row of small holes 4 is made through the plate, one row being at the lower side of the recess 3, and the other at the upper side thereof as shown.

In practice, with this mouthpiece connected at the mouth of the crucible of a linotype machine, and with a mold in position in front of the mouthpiece to receive the metal, the molten metal in the crucible when passed through the mouth thereof first fills the depression 3 and then passes through both rows of holes 4 to the mold, there being thus provided a double amount of outlet holes for the metal to supply the mold and a reservoir of metal in the recess 3 which has a tendency to keep the metal in a more fluid condition. The metal when it strikes the mold has a tendency to chill and these features overcome this tendency to the extent that the metal is pressed home in the mold almost instantly and completely fills all parts thereof before the metal can begin to harden so that a perfect slug is cast at all times. This invention is particularly valuable when taken in connection with the casting of box heading slugs as described in the application above referred to. These slugs include spaced apart and parallel sides and ends 5 and 6, and a rectangular border having sides 7 and ends 8 projecting from one end of the box slug, the heading slug being adapted to be received in the rectangular opening of the box with its type characters in the same plane with the border whereby when placed in a printer's form and in a press, the ink is applied to the border and the type characters and the impression made on paper contains the heading surrounded by a rectangular border of smooth and unbroken outline. In casting this box slug with our invention, the metal to form the sides 5 comes into the mold through both rows of openings 4 and both sides are made

simultaneously, there not being any flow of the metal for considerable distances in the mold but a practically instantaneous movement of metal to fill the mold whereby all parts of the border are completed simultaneously and in perfect condition, no flaws, nicks or the like being present such as are liable to be present where the metal has to come in one row of holes 4 and move considerable distances to complete the side 5 of the box which is not in alinement with the holes 4; and especially, the thin border projections on such side are liable to be imperfect due to cooling of the metal before it finally reaches the farthest recesses of the mold.

This invention is not limited to making box heading containing and border slugs but is adapted for use more or less generally as a mouthpiece for crucibles in linotype machines, and particularly where more or less hollow type slugs are to be cast. While the invention is simple in structure it is particularly effective in use as has been fully proven by practical use thereof.

We claim:

1. A mouthpiece for crucibles of linotype machines comprising a plate adapted for attachment at the mouth of a crucible and provided with upper and lower rows of openings therethrough, said rows of openings being located horizontally and the openings in

a row being spaced short distances from each other.

2. A mouthpiece for crucibles of linotype machines comprising a plate adapted for attachment at the mouth of a linotype crucible, said plate having a longitudinal recess in its rear side and a row of spaced apart holes through the plate adjacent both the upper and lower sides of said recess, substantially as described.

3. A mouthpiece for crucibles of linotype machines comprising a plate adapted for attachment at the mouth of a linotype crucible, said plate having a longitudinal recess cut in its rear side wider than the crucible mouth with which it is adapted to be associated, and provided with two parallel rows of holes adjacent the upper and lower sides of the recess, said holes extending through the plate and those in each row being spaced short distances from each other.

4. A mouthpiece for crucibles of linotype machines comprising a plate adapted for attachment at the mouth of a linotype crucible, said plate being provided with two separated means of passage for metal through the plate, and located lengthwise of the plate, substantially as described.

In testimony whereof we affix our signatures.

WILLIAM E. BORST.
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