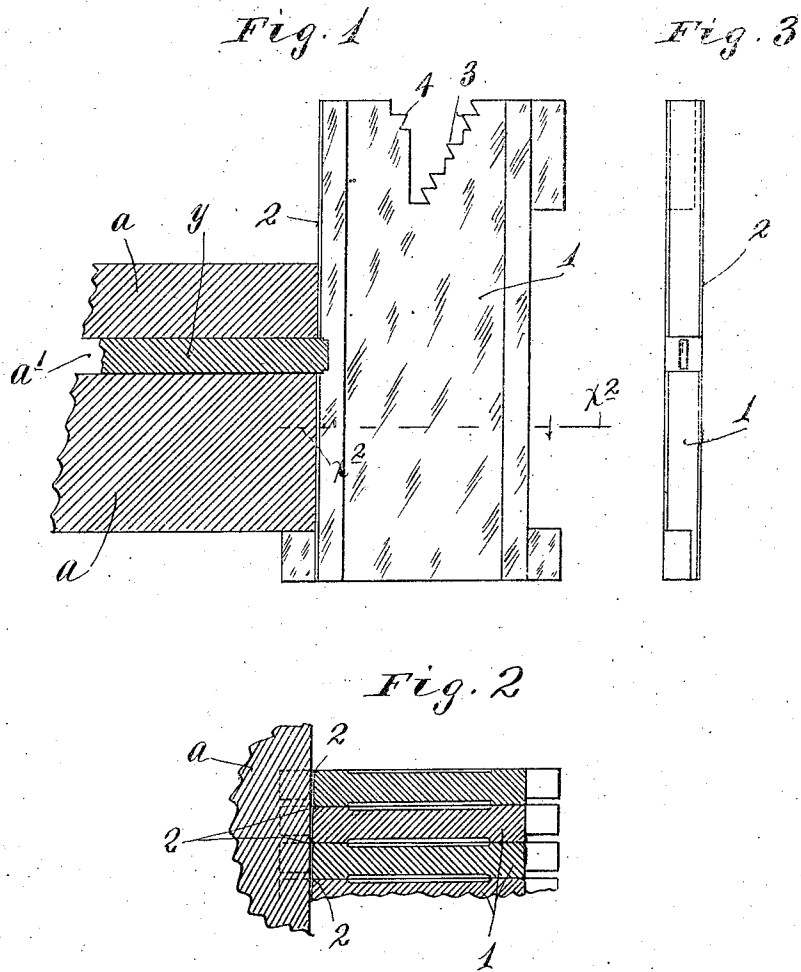


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MATRIX FOR LINOTYPE MACHINES.
APPLICATION FILED MAY 13, 1911.

1,028,955.

Patented June 11, 1912.



Witnesses.
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MATRIX FOR LINOTYPE-MACHINES.

1,028,955.

Specification of Letters Patent.

Patented June 11, 1912.

Application filed May 13, 1911. Serial No. 626,959.

To all whom it may concern:

Be it known that I, HANS PETERSEN, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Matrices for Linotype-Machines; and I 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.

My present invention has for its object to provide an improved matrix for use in linotype machines of the so-called Mergenthaler and analogous types, and to this end the invention consists of the novel construction and arrangement of parts hereinafter described and defined in the claims.

In these linotype machines, as is well known, separate matrices, each representing a letter or character stamped or embossed on the front or working edge of the matrix, are assembled side by side until the desired length of line is attained. Then this line of matrices is presented to one side of the mold containing a slot of the dimensions of the line to be cast, and then the melting pot containing the molten type metal is forced against the other side of the mold slot, and the metal is pumped or forced into the mold slot. The result of this is a cast line or slug having the assembled matrix characters in relief upon one edge thereof.

To produce clear or clean cut characters and a solid slug, it is necessary to provide some means for the escape of the air which would otherwise be imprisoned in the mold cavity in the process of casting. Hitherto, this has been imperfectly accomplished by cutting grooves or small air vents in the mouth-piece of the metallic casting pot, at the rear of the mold, thus making it necessary for the imprisoned air in the mold to force its way around or through the stream of molten metal as it is ejected into the mold cavity.

My invention, or improved matrix provides an improved or better means for allowing the air to escape from the mold, to wit, an arrangement whereby the air is caused or permitted to escape at the front of the mold. This, I have found, may be accomplished by slightly beveling or cham-

fering the front of the casting edge of the matrix, where it comes in contact with the mold and extending these beveled edges longitudinally of the matrix beyond the face of the mold.

Another improved feature in the matrix constituting a part of my invention, consists in providing the matrix with two sets of distributing teeth in the same edge, without increasing the dimensions of the matrix, or in other words, without increasing the dimensions which would be given to the same matrix even if provided with but one set of distributing teeth.

The improved matrix is illustrated in the accompanying drawings wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view showing the improved matrix in side elevation and showing the mold in section, some parts being broken away; Fig. 2 is a horizontal section taken on the line $x^2 x^2$ of Fig. 1; Fig. 3 is an edge elevation of the improved matrix.

The mold is indicated by the character a and the mold cavity by the character a^1 . The cast slug or linotype is indicated by the character y . The body of the improved matrix is indicated by the numeral 1, and the beveled or chamfered edges on the front or working face thereof, are indicated by the numeral 2. When the matrices are assembled together at the mold, as shown in Figs. 1 and 2, the beveled edges of the adjacent matrices form very small air vents that extend from the mold cavity and permit the escape of air from the mold. These channels are so small that the type metal will quickly solidify therein and, hence, stop further discharge of the metal from the mold. The fins formed on the opposite faces of the cast slug y may be easily cut off by the trimming knives. Another advantage of beveling the edges of the matrices instead of leaving them perfectly square, as has been the practice heretofore, is that the tendency to raise a bur on this edge is overcome, thus insuring an even and perfect contact between the matrices and the mold, even after they have been in use for a long time.

In Fig. 1 of the drawings, the letter distributing teeth are indicated by the numeral

3 and the font distributing teeth are indicated by the numeral 4. The crotch in which the teeth 3 and 4 are exposed is formed with a quite long and straight surface that extends longitudinally of the said matrix, on that side of the crotch in which the teeth 4 are formed. This straight surface is engageable with a corresponding flat surface on the distributing bar, not shown, and it serves to accurately guide the said matrix, and assists in holding the matrix locked to the distributing bar while free for sliding movements thereon.

Attention is further called to the important fact that the letter distributing teeth and the font distributing teeth of the matrix are operative while the matrix is in the same or common position, that is, it is not necessary to invert, or otherwise turn the matrix from one position to another in order to render the said letter distributing

teeth and font distributing teeth operative in succession.

What I claim is:

1. The combination with a mold, of a multiplicity of matrices having beveled working edges which, when the matrices are assembled at the mold, afford air escape vents from the mold cavity.

2. A matrix having at one end a diverging notch formed on one edge with letter distributing teeth and formed on its opposing edge with a straight section and with font distributing teeth, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HANS PETERSEN.

Witnesses:

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