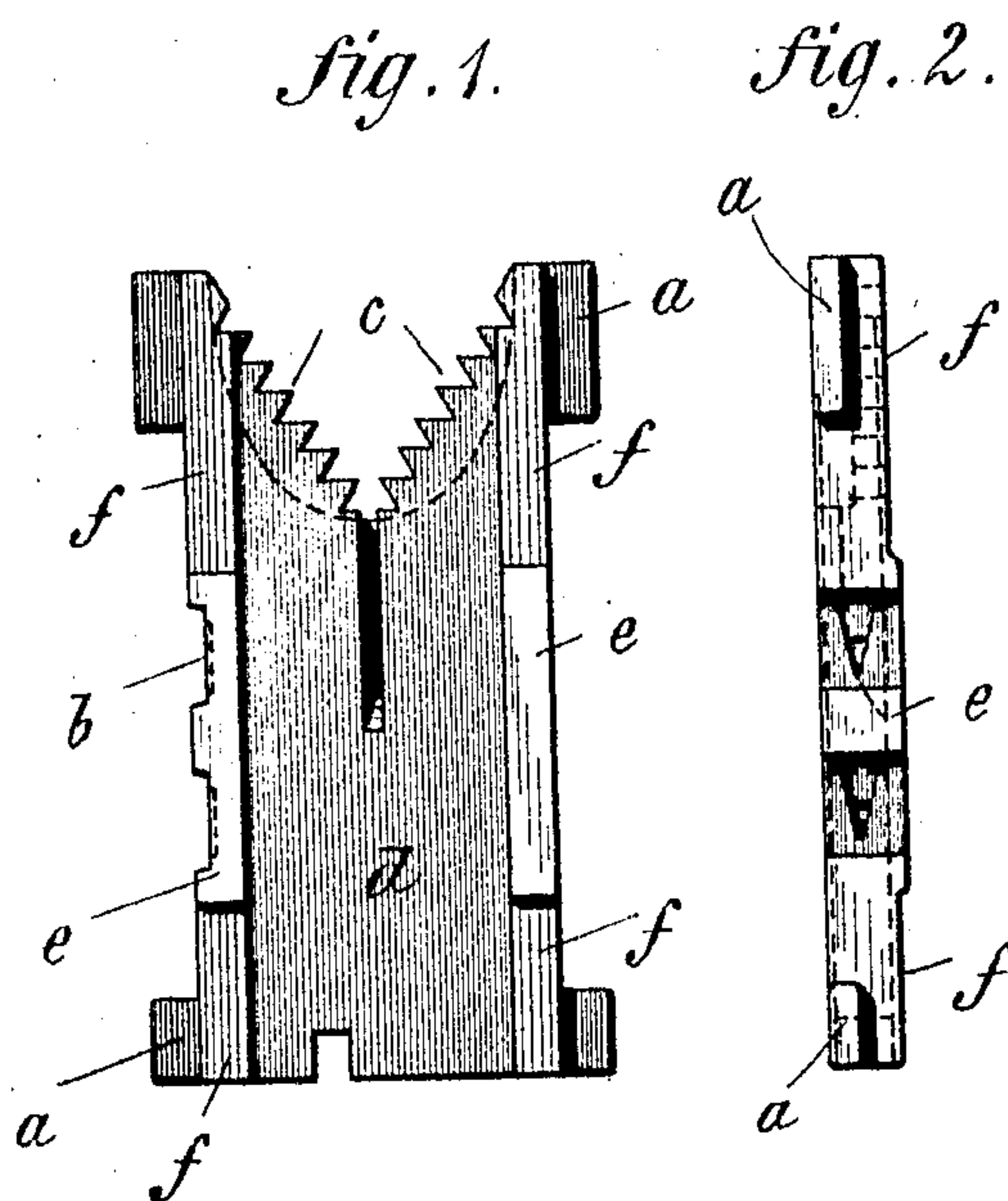


H. DEGENER.
LINOTYPE MATRIX.
APPLICATION FILED NOV. 19, 1908.

916,679.

Patented Mar. 30, 1909.



Witnesses:
James Gustaf
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UNITED STATES PATENT OFFICE.

HEINRICH DEGENER, OF BERLIN, GERMANY.

LINOTYPE-MATRIX.

No. 916,679.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HEINRICH DEGENER, of Hollmannstrasse 26, Berlin, German Empire, manager, have invented certain new and useful Improvements in Linotype-Matrices, of which the following is a specification.

My invention has reference to matrices for linotype-machines such as shown in Letters Patent Nos. 436 531 436 532 and analogous machines. These matrices, each containing in one edge one or more matrix-cavities, are stored in a magazine, from which they are released successively in the order in which their characters are to appear in print and assembled in line, the composed line being subsequently justified by wedge-spaces, transferred to a mechanism for casting the slug or linotype against it.

The object of the present invention is to prevent the matrices from being injured by the entrance of molten metal between them during the casting operation. To this end it is necessary that the side faces of the matrices around the type characters will fit closely together when they are assembled in line.

My invention consists, essentially, in a matrix having on the one side face the upper and the lower end reduced in thickness, while the middle portion containing the type characters rests untouched.

In the accompanying drawing I have shown a matrix in a form specially adapted for use in the Mergenthaler linotype, but it is to be understood that my improvements are applicable to all circulating matrices used in linotype-machines, matrix making machines or analogous typographic machines.

Figures 1 and 2 represent side views of a matrix in accordance with my invention.

Referring to the drawing the represented linotype-matrix consists of a flat plate with ears or lips *a* at the four corners and with the intaglio character or matrix proper *b* in one edge and the distributing-teeth *c* in the upper end. It will be observed that when a series of these matrices are assembled side by side they will present their characters in a common line. In this position it is necessary that the side faces of the matrices will fit closely together, the opposite sides of the body portion containing the matrix cavity are therefore parallel. To facilitate the manufacture of these parallel side

faces already before this invention the middle portion *d* was reduced in thickness from top to bottom, so that the matrices come in contact with each other only on the two raised surfaces or ledges. However, it is also very difficult to work these two surfaces exactly parallel, and the surfaces are large enough to enable the dust and the small metal portions to rest between, they being an obstacle to the fitting close of the matrices. In order to remedy these disadvantages, it has already been attempted to shorten the ledges in question by offsetting them at both sides of the matrix and leaving the full height only to the central portion inclosing the type. These means could not however be successful, as on the one hand, owing to the offsetting of the lugs, difficulties were caused in distributing, and moreover the wedges of the spaces between the letters used to slide on an excessively small surface of the matrices, so that the latter were thus quickly worn out. My improvement consists in reducing the said surfaces on one side only of the matrix bar, so that the middle portion *e* has the full thickness while the upper and the lower portions *f* are reduced in thickness.

The essence of the invention lies in reducing the thickness only on the one side and on the side opposite to the ears or lips *a*. By this arrangement the ears *a* rest undamaged and I have no difficulties in the distributing operation. Besides I treat tenderly the thin side walls of the matrices in the justifying operation. The operation is done by wedge-spaces formed of two relatively sliding wedges one of which is provided with shoulders, by which it is held firmly in the line while the other is mounted movably. Such a spacer has the objection that it injures the matrix by the sliding movement and this would be still greater if the side-face of the matrix bordering on the spacer is reduced. Therefore I leave untouched this side of the matrix on which the space bar slides, and only reduce the surfaces on the other side as shown in the drawing.

Having thus described the nature of my invention, what I desire to secure by patent is:

1. A linotype matrix having ears which are smaller in thickness than the matrix body and lie flush with the one side face of the matrix, this side face of the matrix being

smooth from top to bottom while on the opposite side the face is reduced on the upper and the lower end, substantially as described.

5 2. A linotype matrix having ears which are smaller in thickness than the matrix body and lie flush with the one side face of the matrix, this side face of the matrix being smooth from top to bottom while on the
10 opposite side the face is reduced on the upper and the lower end, and has a middle portion of full thickness containing the type characters, substantially as described.

15 3. A linotype-matrix having the middle portion of the side faces reduced in thickness from top to bottom and having contact faces consisting of two parallel surfaces, and also having ears which are smaller in thickness than the matrix body and lie flush with
20 the one side contact surfaces of the matrix, the surfaces on this side being smooth from top to bottom while on the opposite side the

surfaces are reduced on the lower and the upper end, substantially as described.

4. A linotype-matrix having the middle 25 portion of the side faces reduced in thickness from top to bottom and having contact faces consisting of two parallel surfaces, and also having ears which are smaller in thickness than the matrix body and lie flush with 30 the one side contact-surfaces of the matrix, the surfaces on this side being smooth from top to bottom while on the opposite side the surfaces are reduced on the lower and the upper end and have a middle portion of full 35 thickness containing the type characters, substantially as described.

In testimony whereof I hereunder set my hand this 7th day of November 1908, in the presence of two attesting witnesses.

HEINRICH DEGENER.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.