

No. 753,604.

PATENTED MAR. 1, 1904.

W. G. MIDDLETON.
MATRIX FOR LINOTYPE MACHINES.

APPLICATION FILED DEC. 28, 1903.

NO MODEL.

Fig. 1.

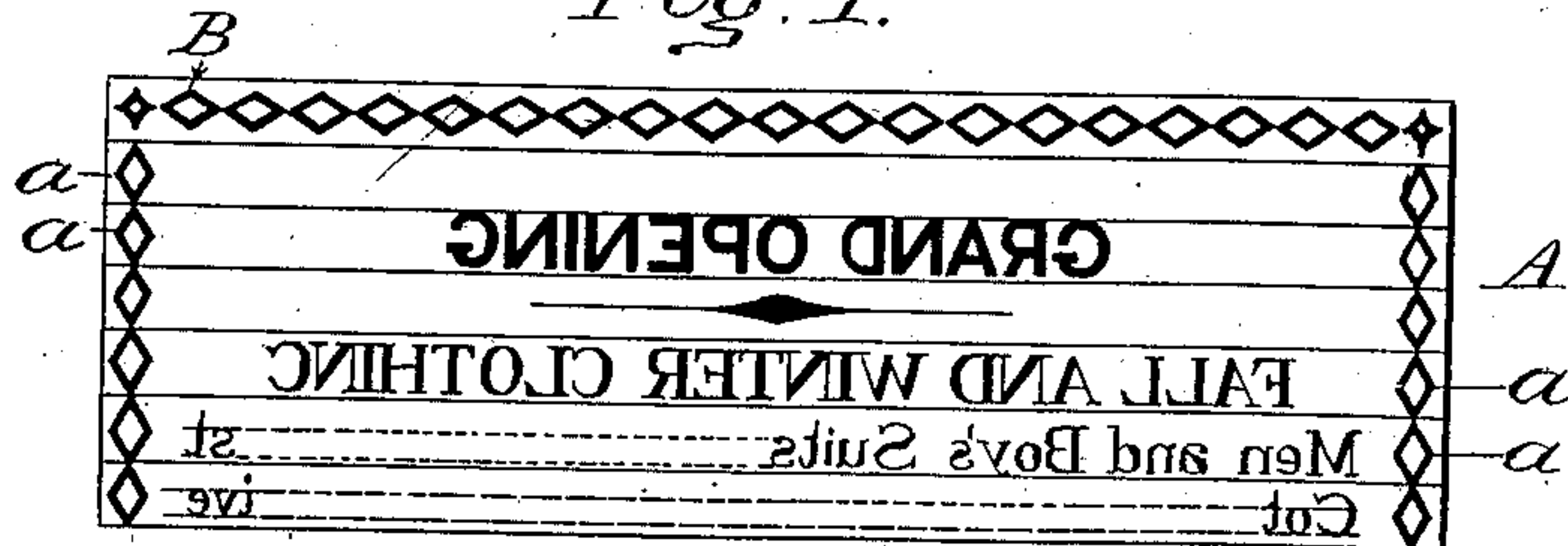


Fig. 2.



Fig. 3.

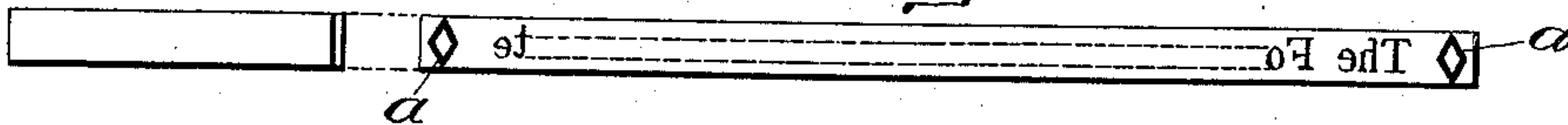


Fig. 4.

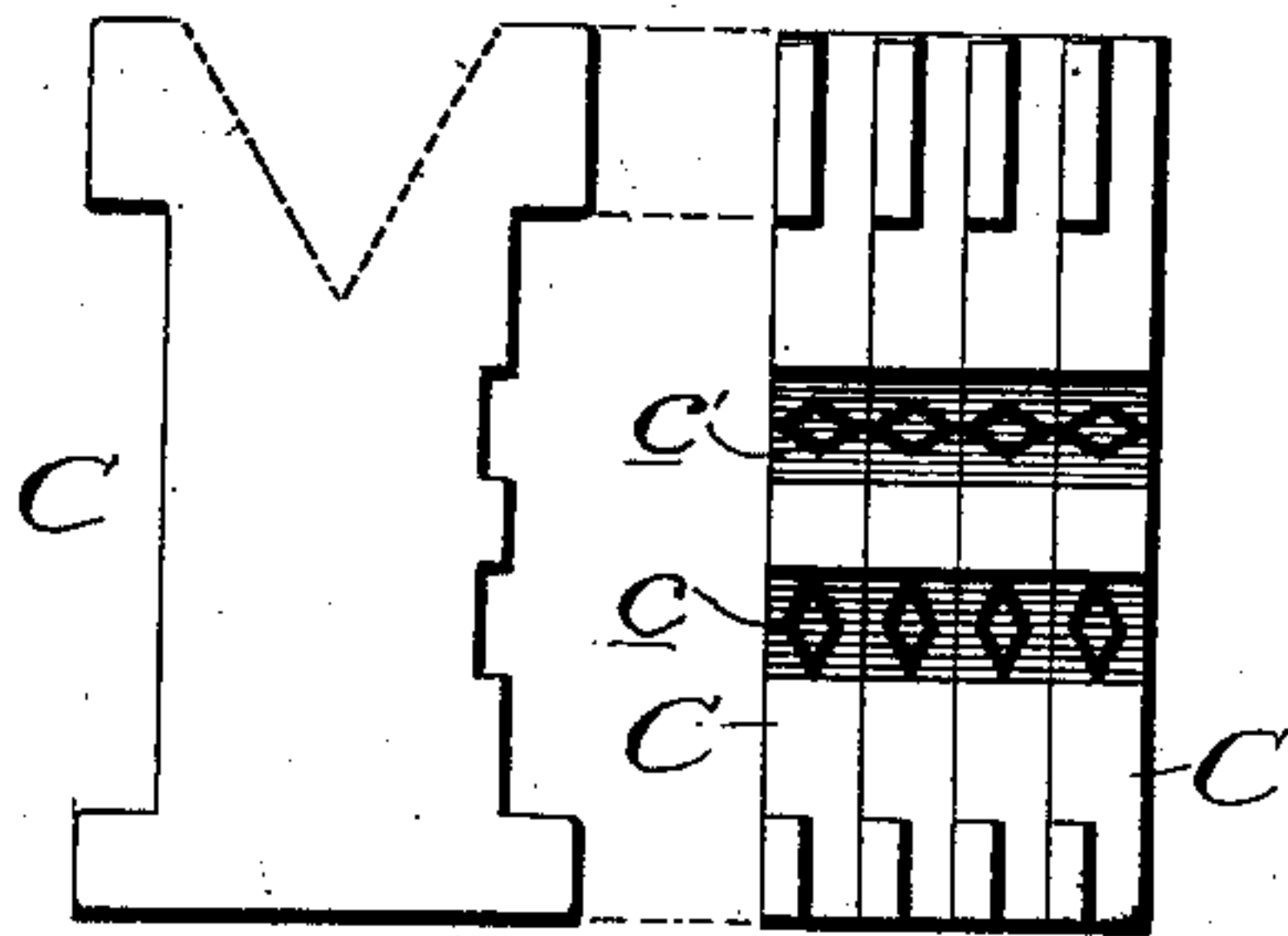


Fig. 5.

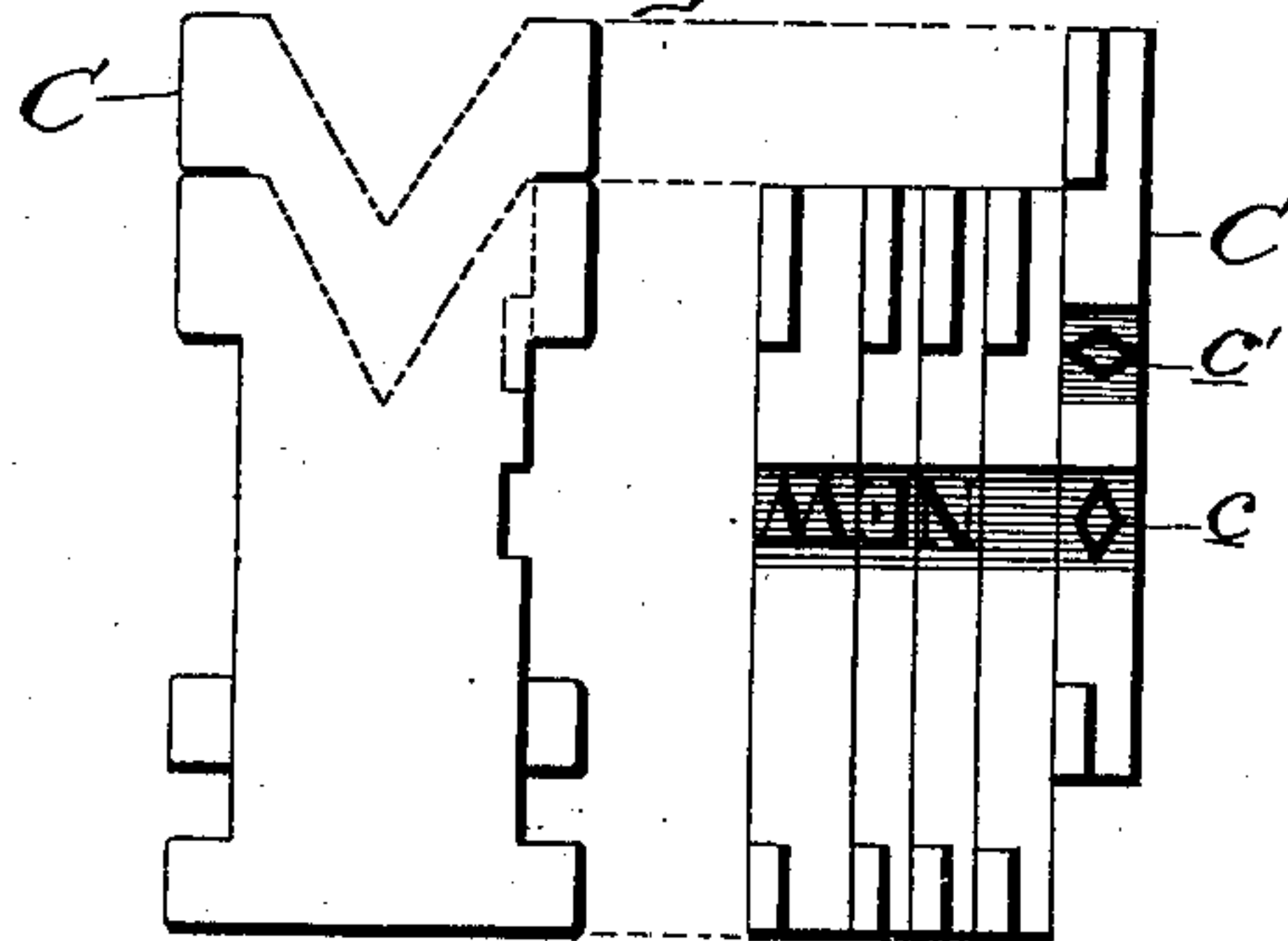


Fig. 7. Fig. 8. Fig. 9.

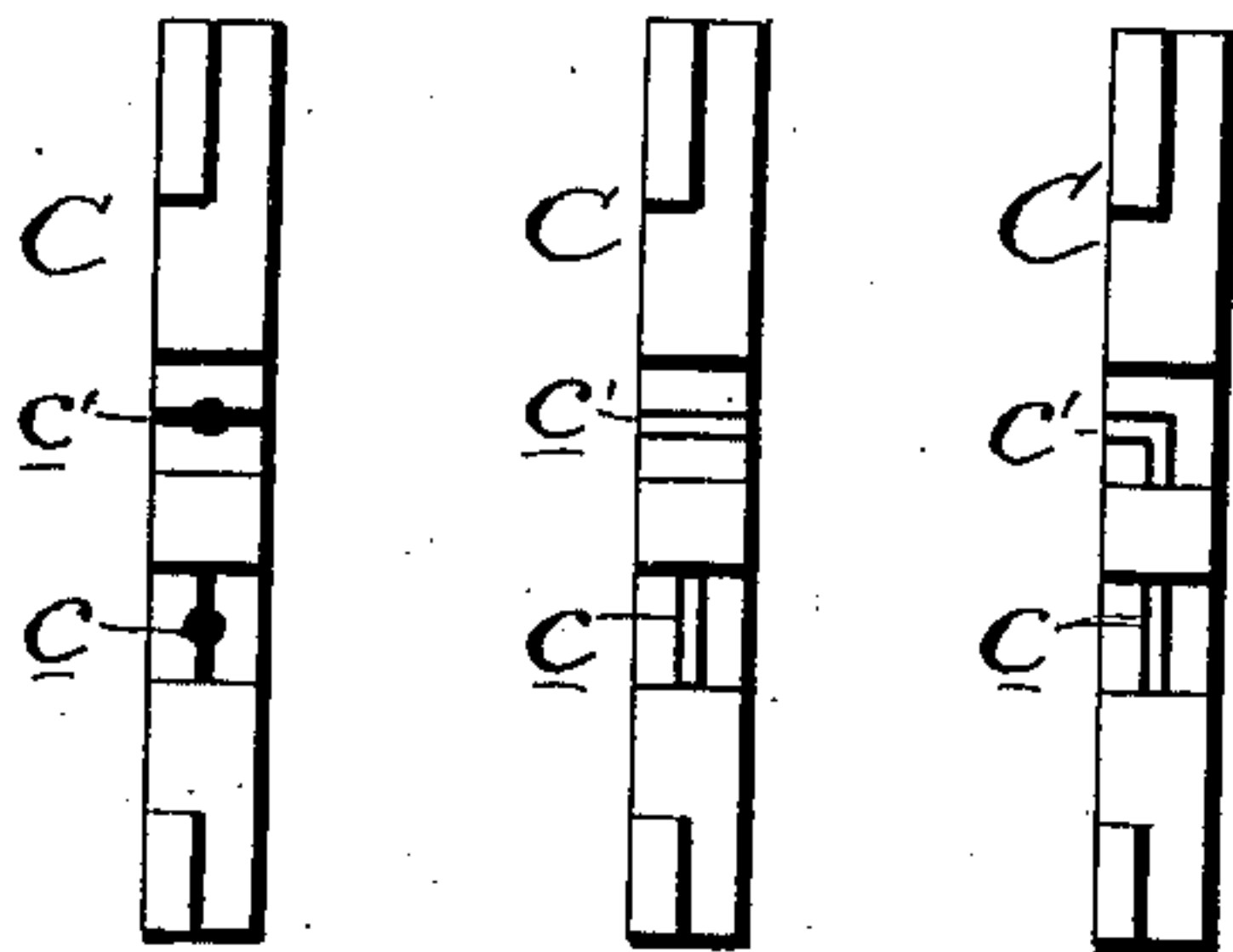
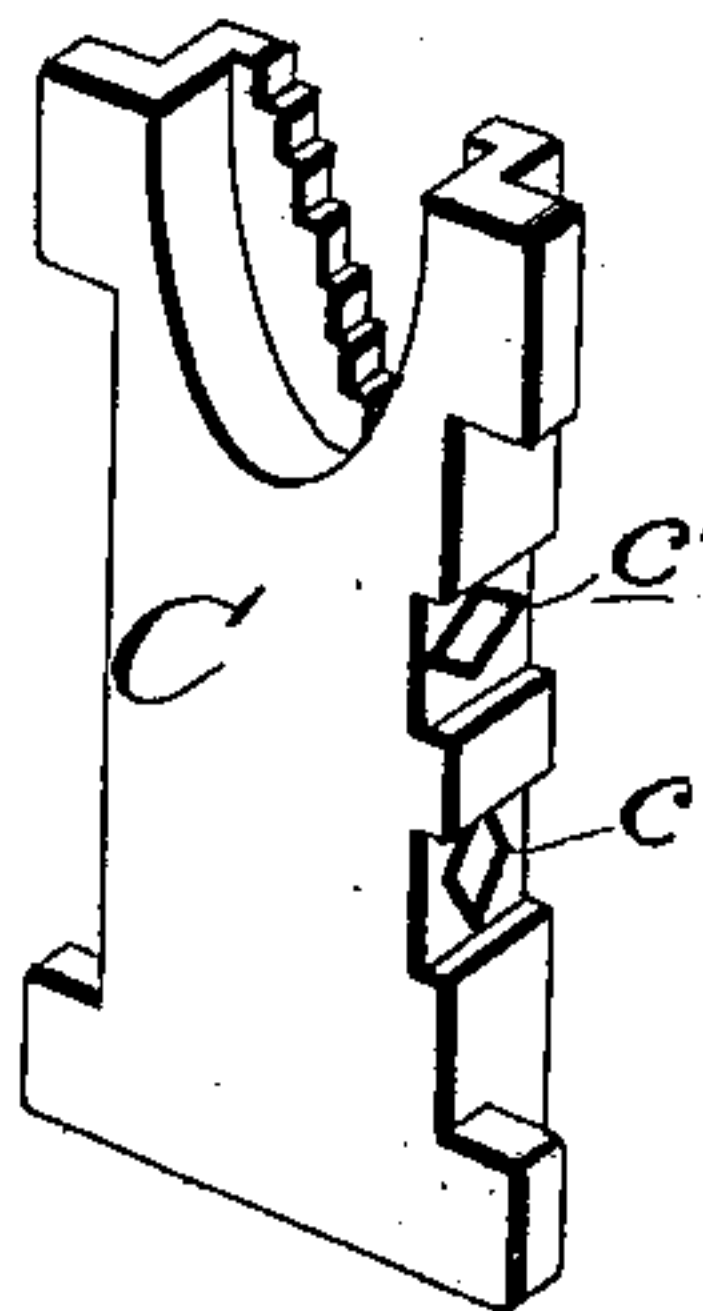


Fig. 6.



Witnesses;
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Attys

UNITED STATES PATENT OFFICE.

WINTON GORDON MIDDLETON, OF PHOENIX, ARIZONA TERRITORY,
ASSIGNOR TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

MATRIX FOR LINOTYPE-MACHINES.

SPECIFICATION forming part of Letters Patent No. 753,604, dated March 1, 1904.

Application filed December 28, 1903. Serial No. 186,780. (No model.)

To all whom it may concern:

Be it known that I, WINTON GORDON MIDDLETON, of Phoenix, county of Maricopa, and Territory of Arizona, have invented a new and useful Improvement in Matrices for Linotype-Machines, of which the following is a specification.

My invention has reference to the Mergenthaler linotype-machine and kindred machines wherein individual character-matrices are selected and assembled temporarily in line to reproduce their characters in relief on slugs or linotypes cast against the line.

It is a common practice to provide the matrices with ornamental characters, which jointly form on the slugs continuous ornamental borders to be printed around advertisements, book-pages, &c. Heretofore these border-slugs have generally been produced independently of the operation of composing the text or reading-matter and inserted in the "form" as a distinct and final operation.

The aim of my invention is to effect the production of the type-matter and the border surrounding the same at a single continuous operation.

To this end it consists in providing matrices each of which has two border characters or equivalent characters, one to produce a horizontal and the other to produce a vertical character, these two characters being located in the matrix one above another, so that by the vertical adjustment of the matrix in the line one character or the other may be brought into action.

Figure 1 illustrates a portion of a linotype-form such as my invention is designed to produce. Fig. 2 represents a face view and an end view of one of the slugs such as used at the top or bottom of the foregoing form and adapted to print a continuous horizontal border. Fig. 3 represents one of the intermediate slugs containing type characters and also border characters at the ends. Fig. 4 represents an end view and a face view of my matrices as assembled to produce the slug shown

in Fig. 2. Fig. 5 represents similar views of the matrices as adjusted to produce slugs such as shown in Fig. 3. Fig. 6 is a perspective view of one of the matrices. Figs. 7, 8, and 9 are views showing matrices with different characters or designs therein. In the drawings I have represented matrices suitable for use in the commercial Mergenthaler linotype-machine, and it is to be understood that my invention is applicable to all matrices used in slug-casting machines regardless of their special form or features other than those herein claimed.

Referring to the drawings, Fig. 1 represents a portion of a form composed of a series of linotypes or slugs adapted to print reading-matter and the border surrounding the same. In the present instance this border is composed of diamond-shaped characters, those at the top having their greatest length in a horizontal direction and those at the side having their greatest length in a vertical direction. The form is composed, as shown, of two classes of slugs A and B. The slugs A in the body of the form are provided at each end with a single upright border character *a*, so that when the slugs are assembled the adjacent characters on the series of slugs will form a continuous vertical border outside of the type characters which are contained in the central portion of the same slugs. The slugs B, which will be used principally at the top and bottom of the forms, are provided each with a continuous row or line of border characters horizontally disposed.

My improved matrix C for producing borders on the slugs, as above described, is shown in Figs. 4, 5, and 6. It consists of a flat metal plate having in one edge a matrix *c*, representing a single border character vertically disposed, and also at a higher level a second and independent border-matrix *c'* for border characters horizontally disposed. Except as to these characters and their arrangement, the matrix is or may be in all respects identical with the two-character matrices used in the

Mergenthaler linotype and described in Letters Patent of the United States No. 449,872 and No. 547,633 to P. T. Dodge.

In using the matrices to produce the body-slugs A with border characters at the ends I use one at each end of the composed line of type-matrices, adjusting them so that the lower and upright border character *c* will aline with the type characters and be produced on the end of the slugs bearing the type characters.

In order to produce the slugs B with continuous borders, I employ, as shown in Fig. 4, a line composed wholly of my matrices and adjust them at such level in the machine as to cause the casting of the slug against the upper and horizontally-disposed characters *c'*.

It will be observed that by means of a matrix having both a horizontally-disposed and a vertically-disposed character I am enabled to produce by a continuing operation a complete font bearing type-matter and a border surrounding the same. I thus avoid the delay of making up or building up a composite form after the slugs have left the machine, and I also avoid the trouble and delay incident to the shortening of the type-slugs as is necessary to permit the use of separately-formed vertical border-slugs.

When my matrices are employed, the machine may be run continuously to produce slugs of the ordinary or standard length for which it is adjusted. It is unnecessary to pro-

duce slugs of special length to admit borders into the form and unnecessary to provide the machine with two sets of border-matrices.

It will of course be understood that the diamond characters herein shown are simply typical or representative characters and that any other characters or designs may be employed.

Having described my invention, what I claim is—

1. A matrix for a linotype or kindred machine, containing two independent border characters, one horizontally and the other vertically disposed.

2. A matrix for a linotype or kindred machine, having the same character or design repeated thereon, one disposed to form a character for a vertical line, the other to form a character for a horizontal line.

3. A matrix for a linotype or kindred machine, containing a plurality of independently-usable border characters, positioned to produce respectively characters which will aline horizontally and vertically on the assembled slugs.

In testimony whereof I hereunto set my hand, this 7th day of December, 1903, in the presence of two attesting witnesses.

WINTON GORDON MIDDLETON.

Witnesses:

ROSALIE VIAULT,
P. B. CHAMPAGNE.