

No. 791,165.

PATENTED MAY 30, 1905.

J. R. ROGERS.  
LINOTYPE MACHINE.  
APPLICATION FILED DEC. 12, 1904.

Fig. 1.

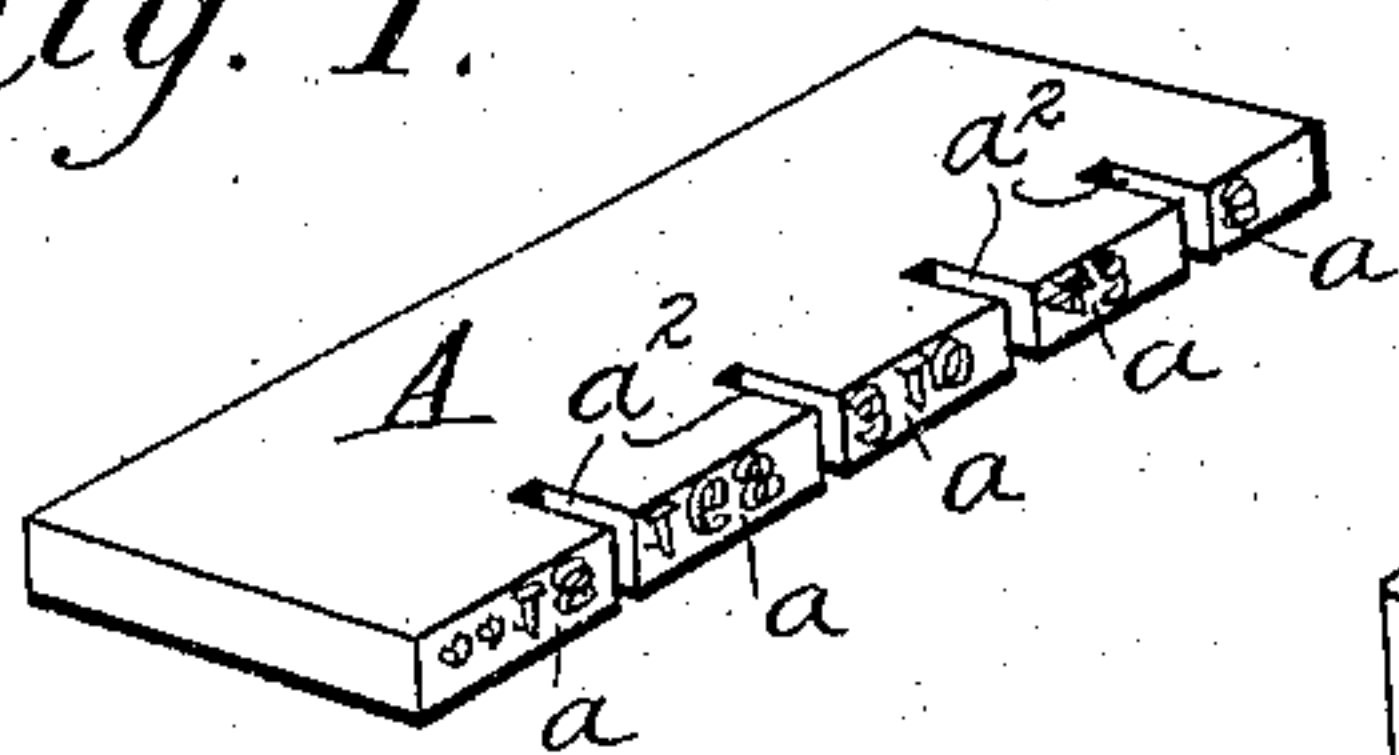


Fig. 2.

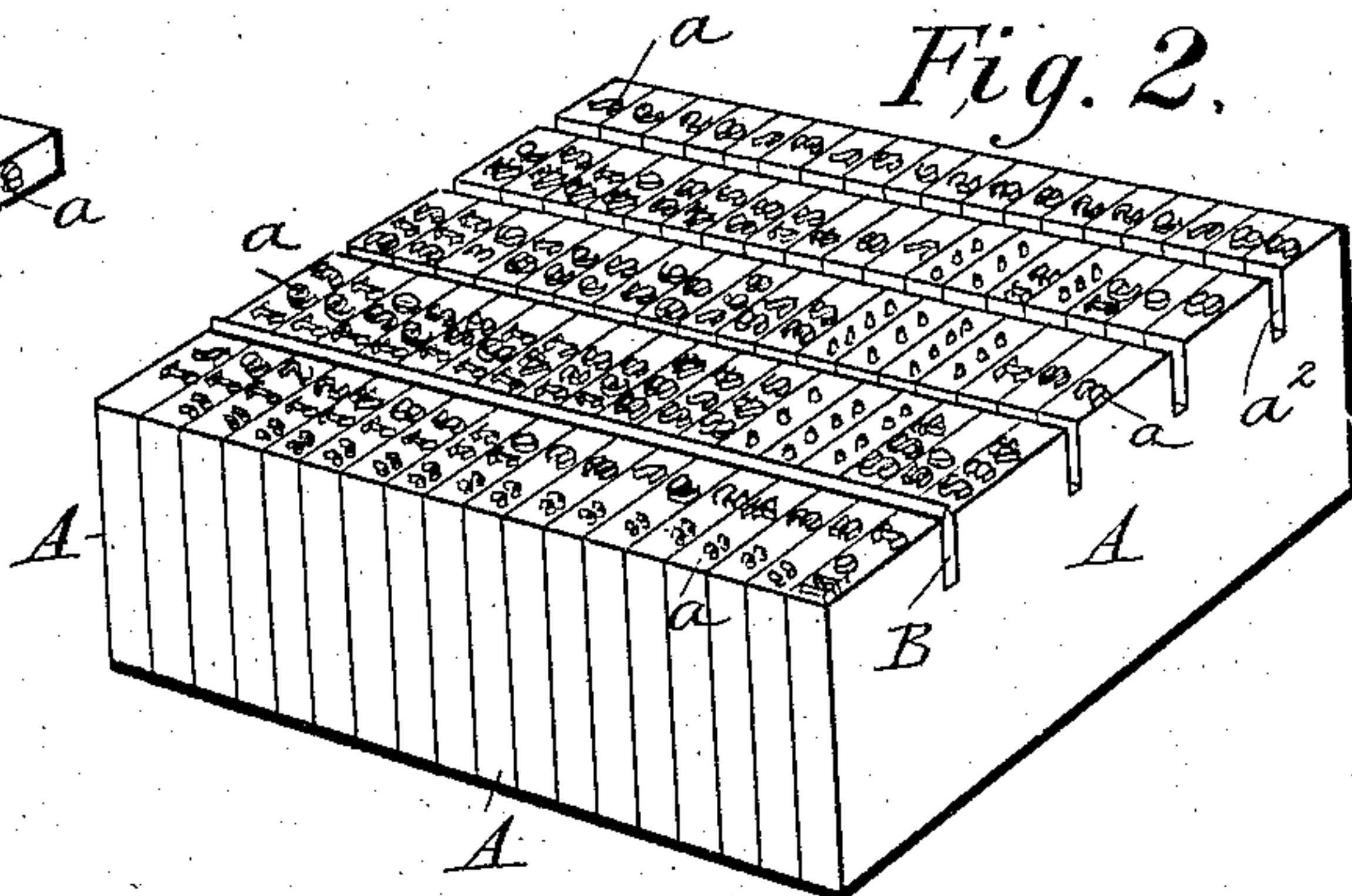


Fig. 4.

Fig. 3.

Fig. 5.

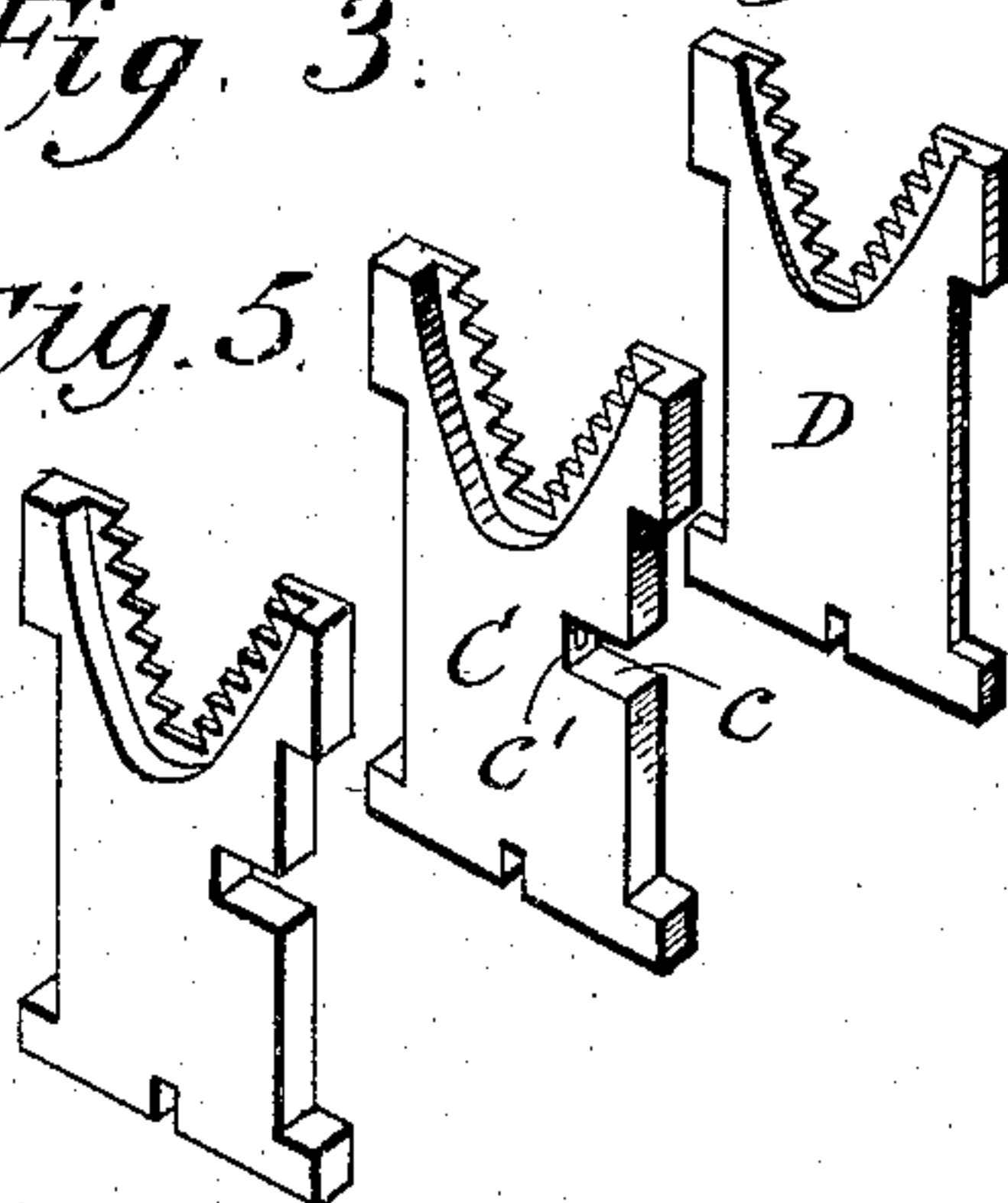


Fig. 6.

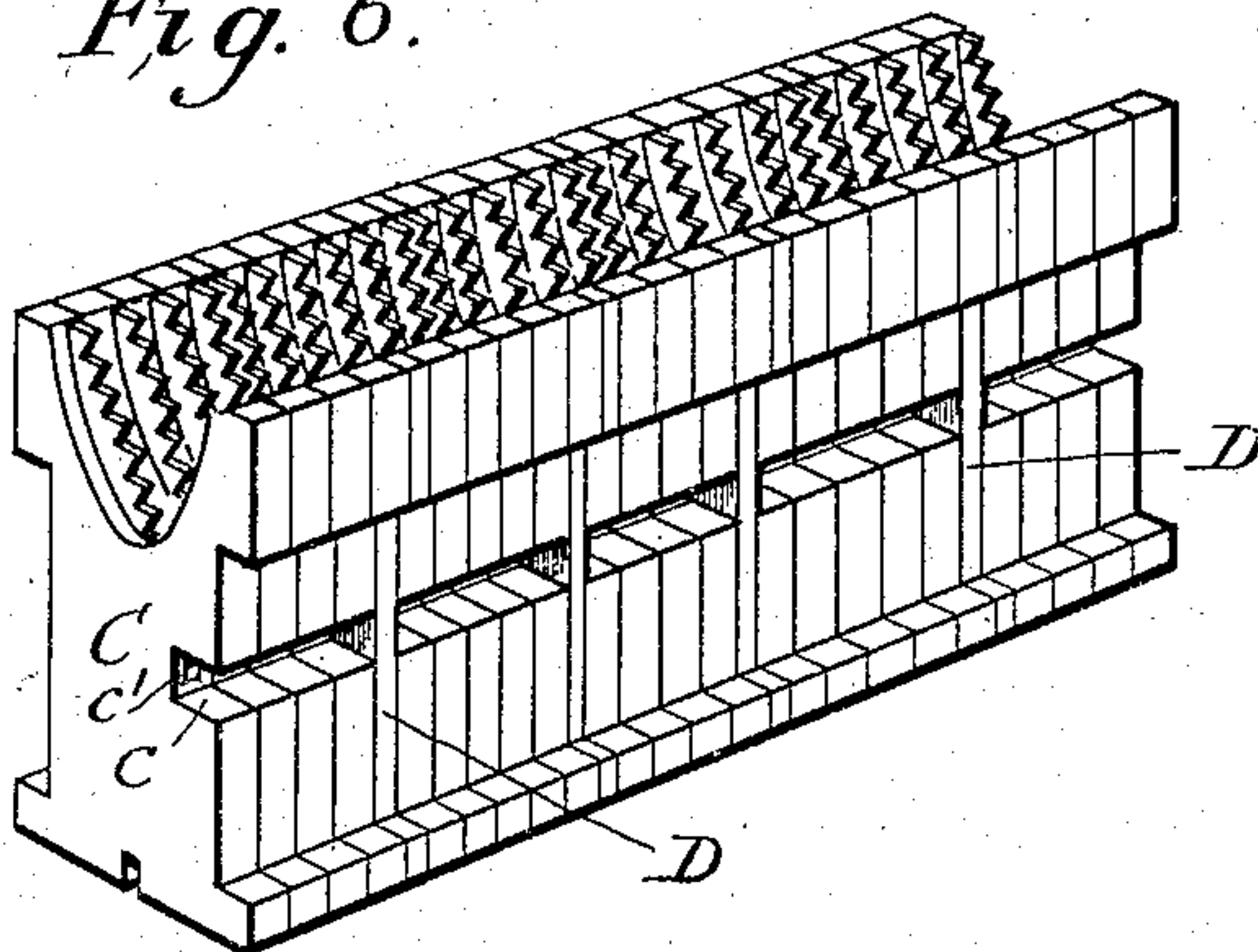
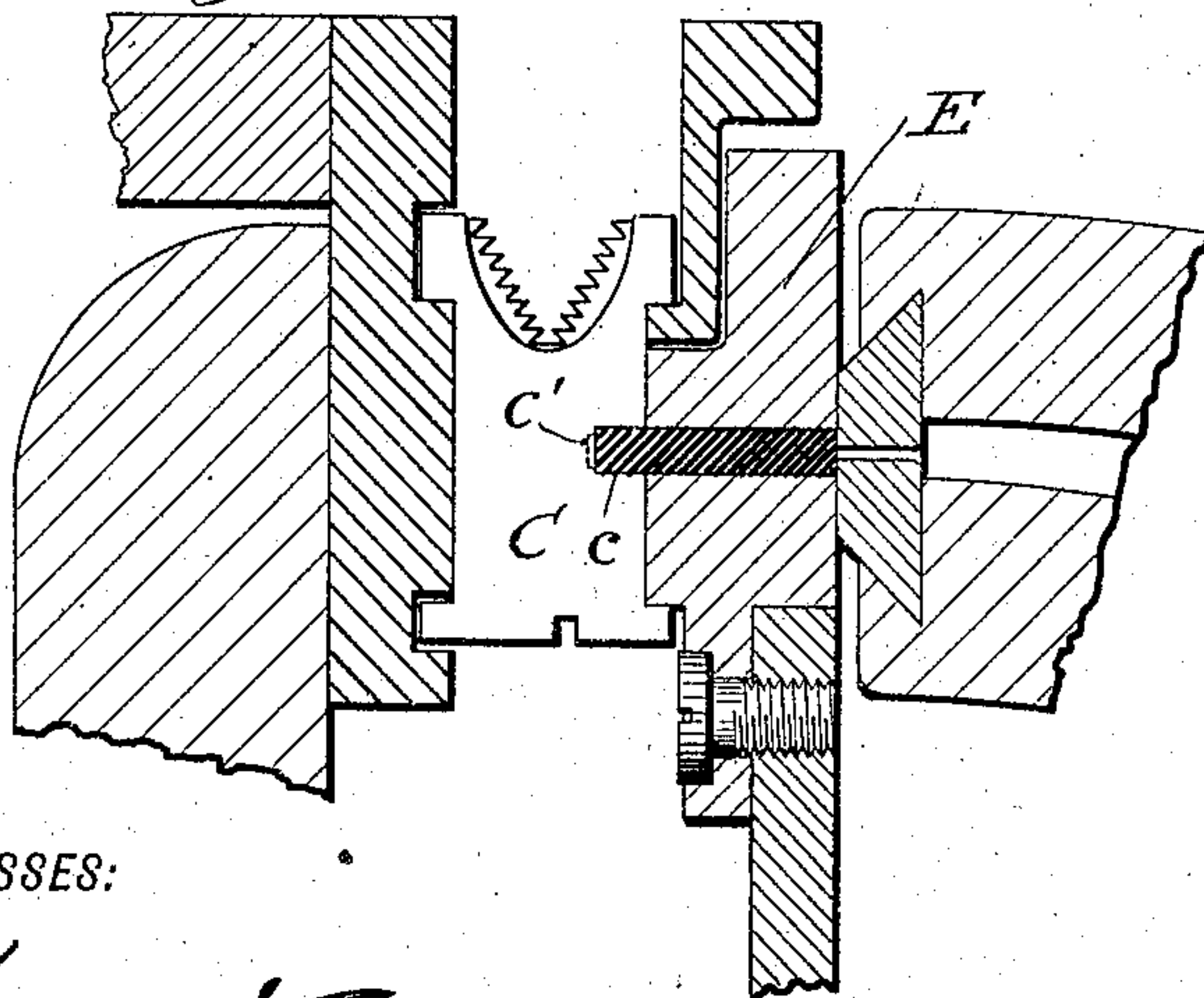


Fig. 7.



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# UNITED STATES PATENT OFFICE.

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## LINOTYPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 791,165, dated May 30, 1905.

Application filed December 12, 1904. Serial No. 236,517.

*To all whom it may concern:*

Be it known that I, JOHN R. ROGERS, of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Linotype-Machines, of which the following is a specification.

My invention has reference to the production of what is technically known as "linotype rule-and-figure matter"—that is to say, forms composed of horizontal slugs or linotypes whereon vertical columns of figures appear with vertical rules between them. Heretofore these table-forms have been produced by casting the column-rules in short alining sections on the successive slugs, the rules in this case being integral with the slugs. They have also been produced by sawing or otherwise producing slots in the face of the form to receive shallow rules of brass or like material. The first procedure is objectionable because of the difficulty of securing exact alinement of the rule-sections, and the second is objectionable because of the delay and labor involved in producing the slots and the danger of mutilating the type characters when the rules require to stand close to them.

My invention has in view the adaptation of the linotype-machine and kindred machines to produce rapidly and without requiring any special action on the part of the operator table-slugs containing rule-slots of proper depth and in the exact locations required, so that when the successive slugs are assembled the resulting form will contain the vertical slots into which the brass rules may be speedily inserted. The form thus produced is equal in every respect to the ordinary form consisting of single type and inserted rules, and it has the great advantage of being more cheaply and rapidly produced.

I accomplish the desired result by using a mold adapted to give form to the lower part only of the body of the slug, in combination, first, with matrices deeply slotted, so that they jointly form a mold for the upper part of the body of the slug, and, second, with matrix-spaces or division-plates seated between the matrices and extending to the face of the mold for the purpose of producing in the

slug between the characters thereon the rule-receiving slot or slots. These parts may be operated in an ordinary linotype-machine without change in the construction or manner of operating the same. The operator has only to manipulate the keys representing the required figures or characters and the space-key at proper intervals. The result will be the combination of the character-matrices and division-plates in line and their presentation to the mold in the manner that the matrices are ordinarily presented, and thereafter the casting of the slug or linotype, as usual, the slugs containing, however, unlike those from the ordinary machine, the rule-receiving slots.

Referring to the accompanying drawings, Figure 1 is a perspective view of a table slug or linotype, such as it is the aim of my invention to produce. Fig. 2 is a perspective view of a form consisting of a series of these slugs with inserted column-rules. Figs. 3 and 4 are perspective views of my improved matrices and the blank matrix or division-plate to be used in connection therewith. Fig. 5 is a perspective view of a space or blank matrix. Fig. 6 is a perspective view showing a line of matrices and division-plates assembled and producing a slug for a five-column table. Fig. 7 is a vertical cross-section through the line of matrices, the cooperating mold, and those parts of a linotype-machine immediately associated therewith in accordance with my invention.

Referring to the drawings, A A represent printing slugs or linotypes bearing on one edge figures or type characters *a*, grouped for printing in five columns with rule-receiving slots *a*<sup>2</sup> between them, these slots extending down vertically into the upper edge of the body of the slug below the shoulder or base of the type characters a sufficient distance to admit the brass column-rules B, one of which is shown in position in Fig. 2. It is the aim of my invention to produce these slotted slugs complete and ready for the reception of the rules.

C C represent my special matrices. In the form shown they are identical with those used in the Mergenthaler linotype-machine, ex-



cept that they have in the forward or working edge a deep transverse slot  $c$ , with the character or matrix proper,  $c'$ , located in the bottom a distance of a quarter of an inch, more or less, from the edge of the matrix.

D represents the blank matrices, spacers, or division-plates made of the same external form and size as the matrices, but without the slot of indentation in the edge.

E represents a mold similar to that used in the linotype-machine, with a slot or mold-cell of proper size to give form to the lower portion of the required slug or linotype, but of less than the usual height, so that it is adapted to form the upper portion of the slug.

The matrices are adapted, as in the linotype-machine, to fit against and close the front of the mold. As shown in Fig. 7, their slots  $c$  are made of such size and so located that when the composed line of matrices is presented against the face of the mold the slots of the matrices will collectively form an outward and upward continuation of the mold-slot, or, in other words, constitute a mold to give form to the upper part or body of the slug below the base or shoulder of the type characters thereon.

The depth of the mold plus the depth of the slot  $c$  is equal to the required height of the slug-body below the base or shoulder of the type, which is usually "type-high."

The division plates or blanks D, seated in the line of matrices between the groups belonging to the respective columns, fit edge-wise tightly against the face of the mold above the plane of the type characters in the matrices and prevent the escape of the molten metal. As the metal to form the front or upper portion of the slug flows into the matrices around the edges of these plates and against their side faces the plates have the effect of forming the required cavities or slots in the edge of the slug.

The figure-matrices will be made, as usual, of uniform thickness, and the matrices for other characters commonly used in tables will be made of like thickness or of suitable thicknesses to justify. Consequently the operator of the machine has only to manipulate the keys and select the matrices and spacing-plates in the proper order, with the assurance that the slots will appear in the proper places, so that those in one slug will be certain to register or aline with those in the next, as shown in Fig. 2.

Where blank surfaces are to appear on the face of the slug to leave blank surfaces in the printed line, blank slotted matrices or spaces will be employed, such as shown in Fig. 5—that is to say, matrices such as shown in Fig. 3, containing the slot  $c$ , but without the matrix character  $c'$ .

It will be understood that the division-plates D will be of a thickness corresponding

to that of the rules, thin plates being used to produce slots for the ordinary two-point rules and thicker plates for the heavier rules.

It will be observed that the assembled line of deeply grooved or slotted matrices forms the upper part of a slotted mold, of which E is the other part, and that the part E, being slotted through and through, is adapted not only to give form to the lower part of the slug or linotype, but also to deliver the molten metal to the other part of the mold. It will also be observed that the mold as a whole, consisting of the matrices at the front and the slotted body at the rear, is divisible or separable at will in a plane parallel with but distant from the face of the type. This is a new feature in linotype-molds.

Having described my invention, what I claim is—

1. In combination, a slotted mold to form the lower portion of a linotype-body, cooperating slotted matrices to form the upper part of said body, and division-plates lying between the matrices and extending beyond the plane of the matrix characters to form slots in the linotype.

2. A slotted mold in combination with a series of matrices having slots to aline with and form a continuation of the mold, and characters or matrices proper at the bottom of the slots.

3. A series of matrices having slots to form the upper portion of a slug-body, and characters at the bottom of the slots, in combination with matrices having like slots and no characters, and non-slotted plates lying between the matrices and extending above the plane of their characters, whereby the edge of the slug may be formed with raised characters, blank surfaces, and rule-receiving slots.

4. In a linotype-machine, a mold for a slug, consisting of a rigid slotted portion to form the base of the slug, and a series of slotted separable members cooperating with the mold proper and forming jointly a mold for the upper part of the slug.

5. In combination, a series of matrices slotted to form a mold, and plates seated between the matrices and dividing the slot into lengths or sections.

6. A composed line of table-matrices comprising matrices deeply slotted to form a mold, with characters at the bottom of the slots, and corresponding matrices with slots but no characters whereby they are adapted to produce a slug having raised characters thereon with blank surfaces between them.

7. A set of matrices for producing figure-tables, comprising the deeply-slotted matrices with characters therein, and complementary matrices or division-plates without slots.

8. In a linotype-machine, a mold consisting of two cooperating slotted parts one part consisting of composed rearrangeable members

joined on a plane parallel with the printing-face of the slug formed therein and separable at will.

9. In a linotype-machine, a mold consisting of a deeply grooved or slotted part, adapted to form the upper part of the slug-body and the characters on its edge, and a cooperating separable part having a slot therethrough, that it may receive metal at one side and deliver it at the opposite side to the other mold

member and also serve to give form to the base portion of the slug.

In testimony whereof I hereunto set my hand, this 9th day of December, 1904, in the presence of two attesting witnesses.

JOHN R. ROGERS.

Witnesses:

DAVID S. KENNEDY,  
JOHN S. PAULSEN.