No. 614,582. Patented Nov. 22, 1898.

O. V. SIGURDSSON.

EJECTOR BLADE FOR LINOTYPE OR ANALOGOUS MACHINES.

(Application filed Dec. 31, 1897.)

(No Model.) 2 Sheets—Sheet 1.

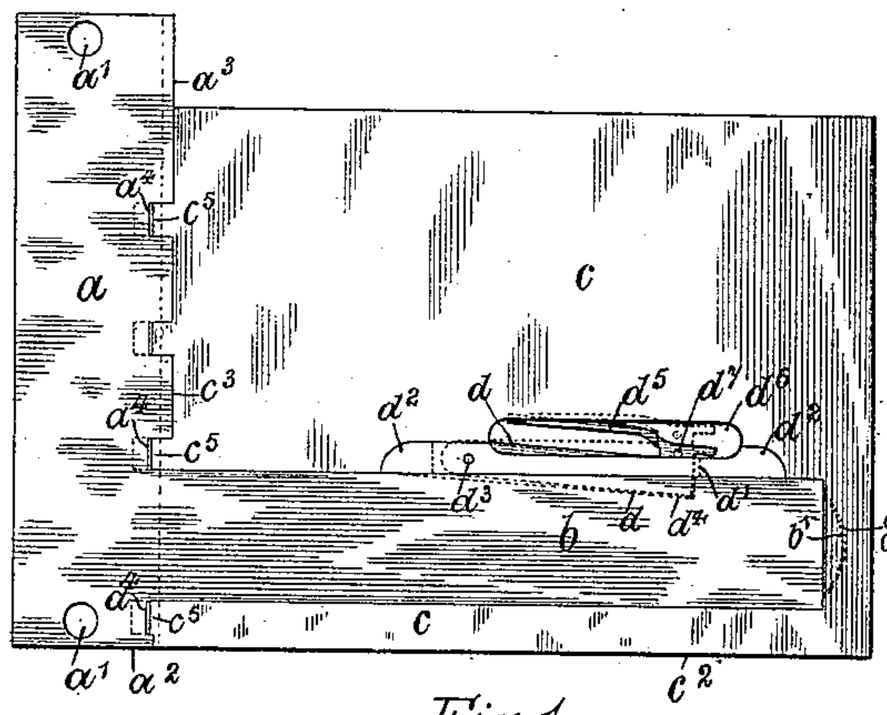


Fig. 1.

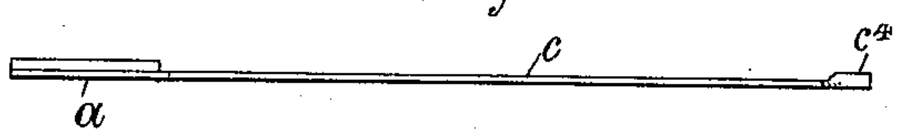


Fig. 2.

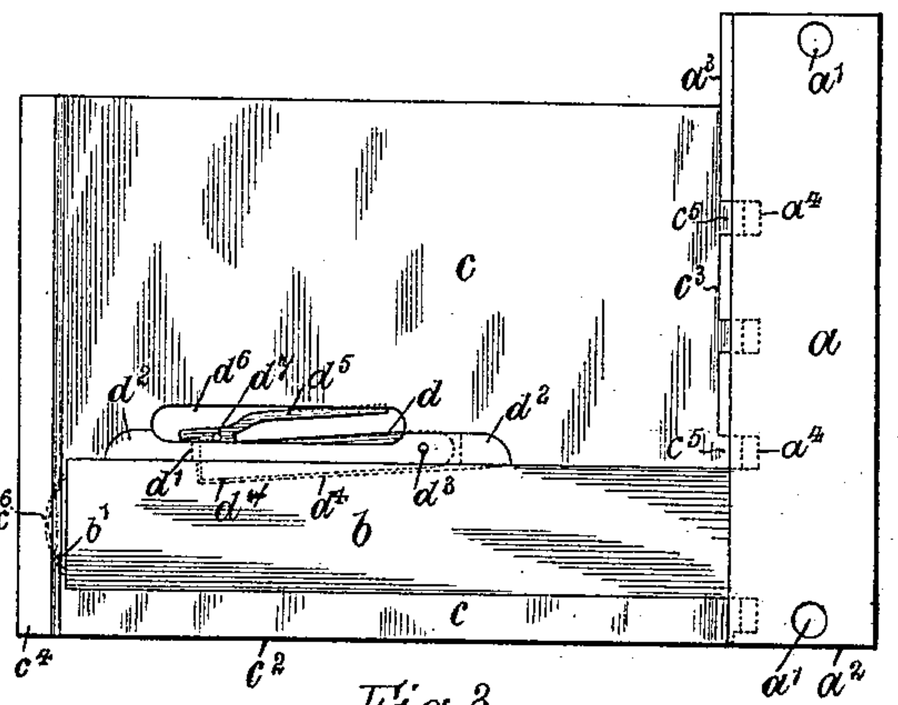
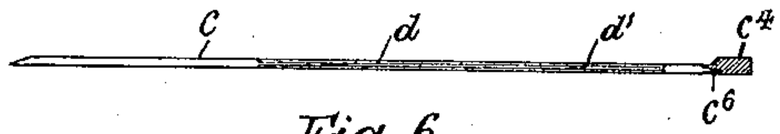


Fig. 3.



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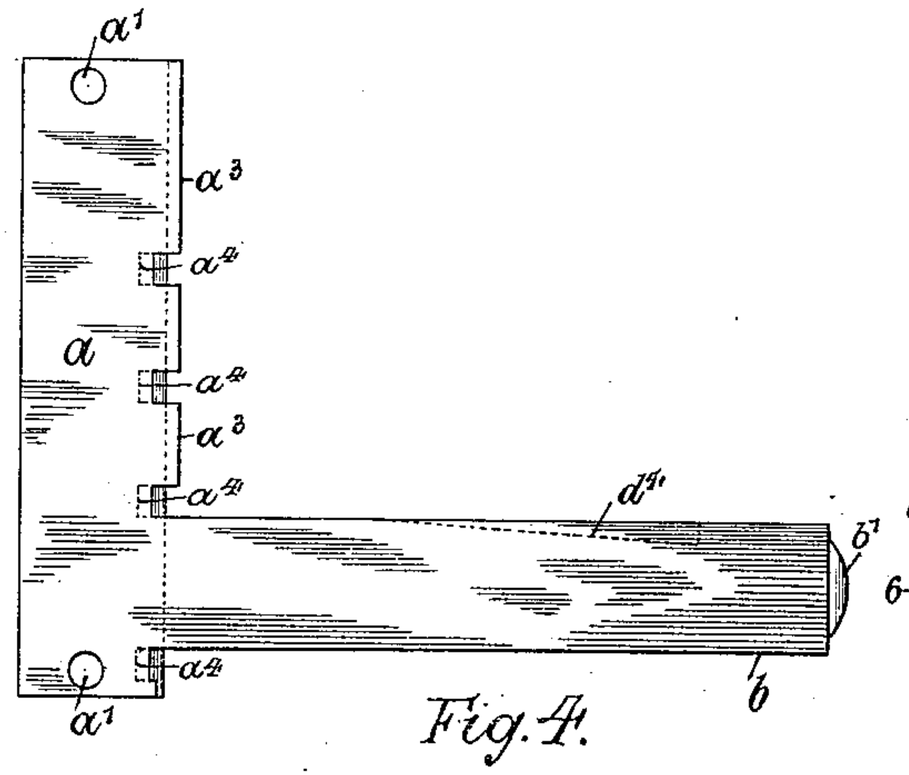

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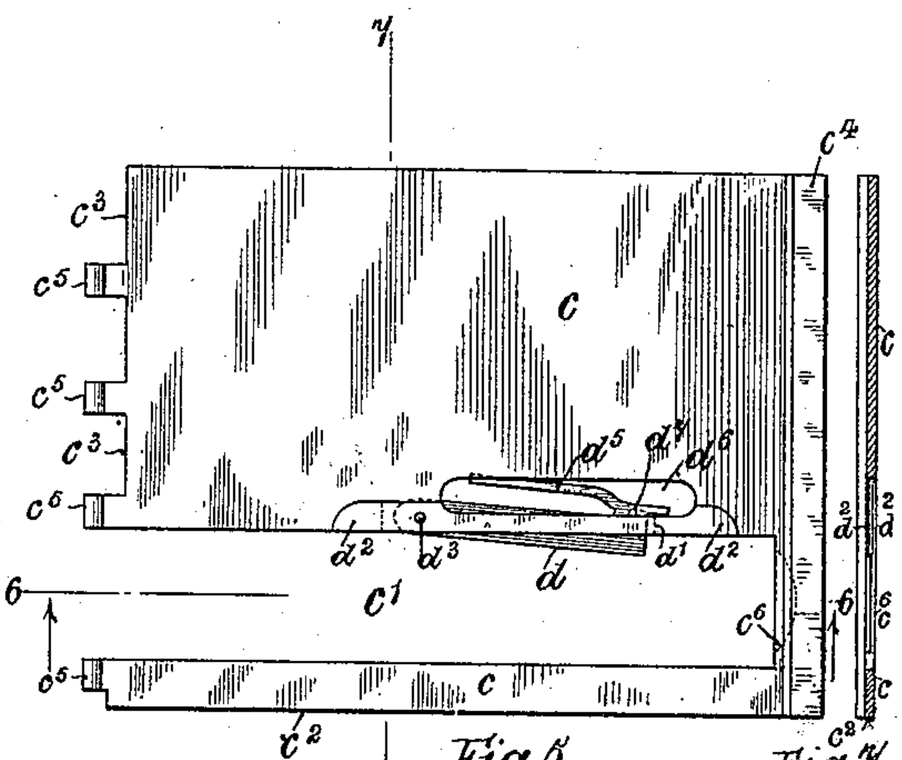

Fig. 5.

Fig. 7.

WITNESSES.

A. W. Kennedy.

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No. 614,582. Patented Nov. 22, 1898.

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EJECTOR BLADE FOR LINOTYPE OR ANALOGOUS MACHINES.

(Application filed Dec. 31, 1897.)

(No Model.) 2 Sheets—Sheet 2.

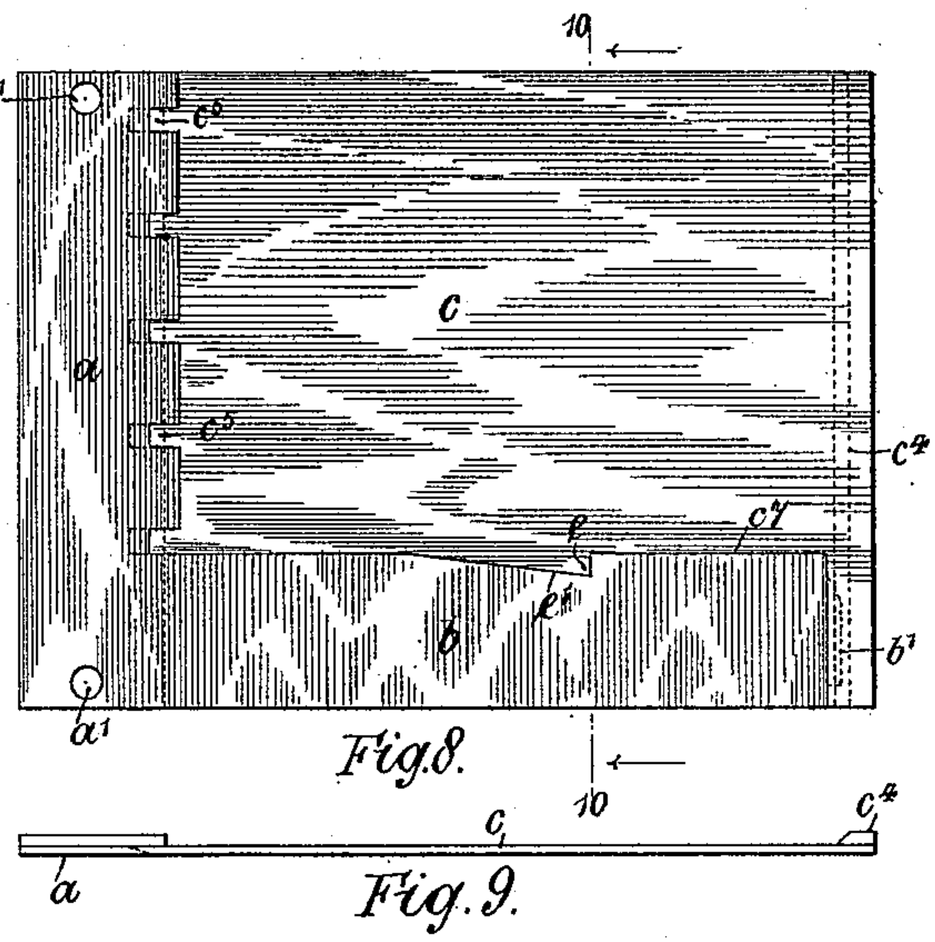

Fig. 8.

Fig. 9.

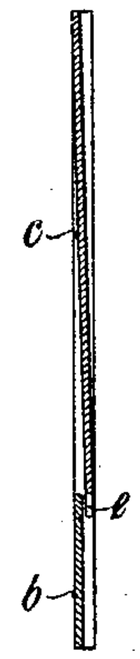

Fig. 10.

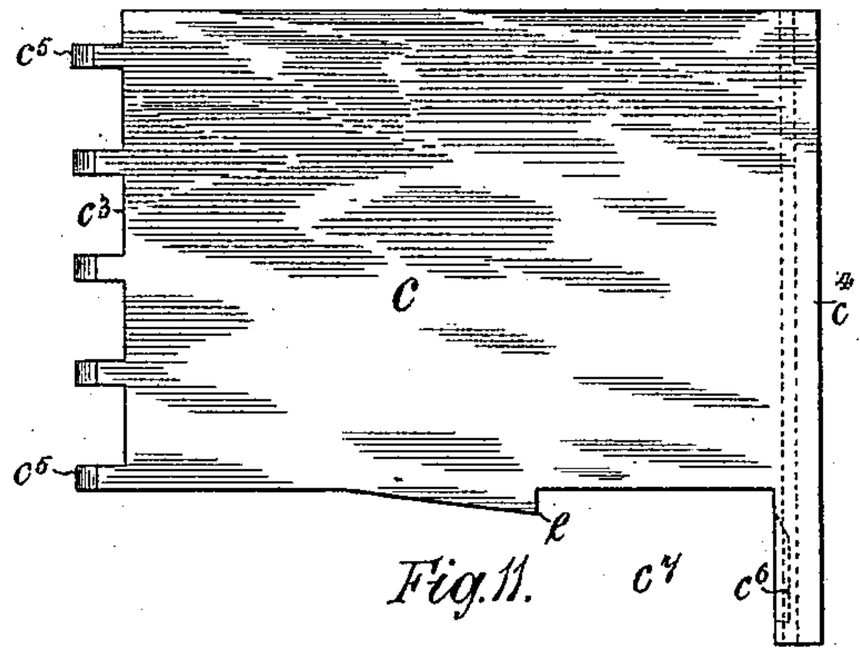

Fig. 11.

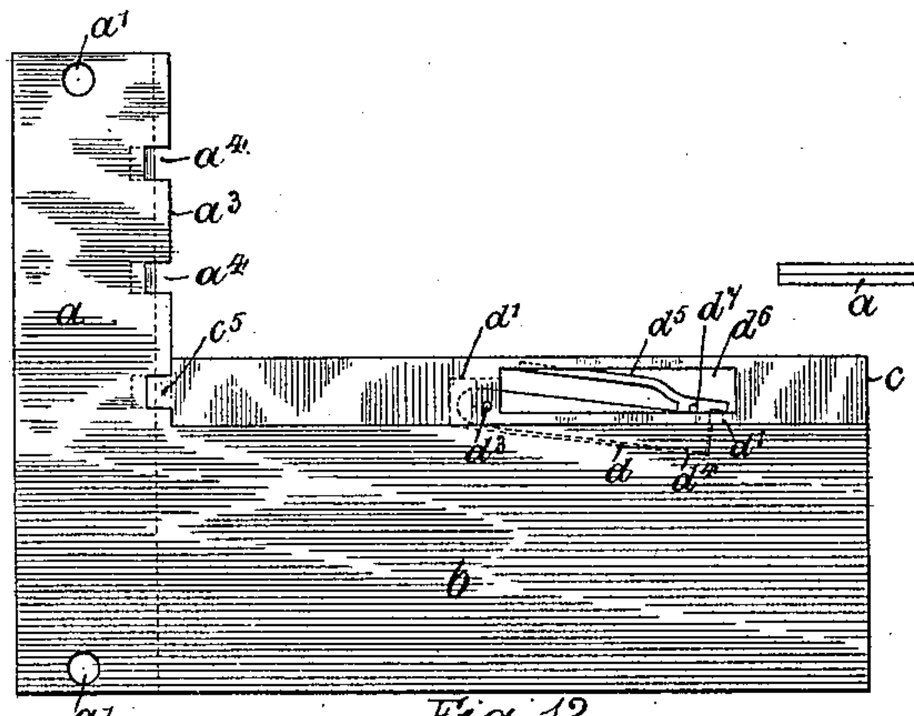

Fig. 12.

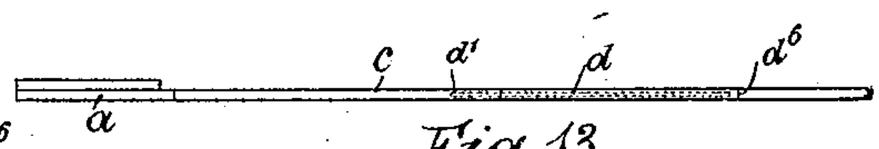

Fig. 13.

WITNESSES.
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UNITED STATES PATENT OFFICE.

ODDUR VIGFÚS SIGURDSSON, OF MANCHESTER, ENGLAND, ASSIGNOR TO THE MERGENTHALER LINOTYPE COMPANY, OF NEW YORK, N. Y.

EJECTOR-BLADE FOR LINOTYPE OR ANALOGOUS MACHINES.

SPECIFICATION forming part of Letters Patent No. 614,582, dated November 22, 1898.

Application filed December 31, 1897. Serial No. 665,043. (No model.)

To all whom it may concern:

Be it known that I, ODDUR VIGFÚS SIGURDSSON, a subject of the Queen of the United Kingdom of Great Britain and Ireland, residing at Manchester, England, have invented certain new and useful Improvements in the Ejector-Blades for Linotype and Analogous Machines, (for which I have obtained a patent in Great Britain and Ireland, No. 9,384, dated May 11, 1894;) and I do hereby declare that the following is a full, clear, and exact description of the invention, reference being made to the accompanying drawings, which are to be taken as part of this specification and read therewith, and one which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in the ejector-blades of linotypes and analogous machines; and the object of it is to obviate the necessity of changing the blade each time that the mold in the machine is changed for one of a different size, especially for one of a smaller size.

Linotypes or printing-bars vary in respect of two dimensions—their length and their thickness—and the ejector-blade of a linotype-machine for pushing the linotype out of the mold in which it is cast is constructed according to my invention in such a way that it can be modified in respect of both the said dimensions, as distinguished from replacing it by another, and that, too, without detaching the whole blade from the machine.

In carrying the invention into effect a bar (which may be thinner and shorter than the blade) is provided. It is made fast by one end to the ejector-carrying slide or equivalent ejector carrying the operating device in such a way that it shall stand within the plane of the travel of the said blade. The bar in question is hereinafter referred to as the "stock." A supplemental plate is provided for each size of mold to extend or fill out the stock to the proper dimensions of the ejector-blade, as such dimensions may be required to work in such mold. Each plate is slotted longitudinally, the slot allowing it to embrace the stock edgewise and stand in the same plane with it. When it is in this position, the plate end fits up to the ejector-head and the nose of the stock up to the internal end of the slot.

The plates above mentioned are of various widths and of various thicknesses along their noses, according to the lengths and widths, respectively, of the mold-cavities. The operative thickness of a plate may extend for only a short distance back from the nose or front edge of it, the remaining portion in the case of all the plates of the series being of one normal thickness thinner than the said nose or front edge.

A modification of the invention allows the plates and stock to be of a uniform thickness and the plates to stand parallel with the stock instead of embracing it.

Any suitable device may be used to hold a plate to the stock in the plane of it and to lock it to the said stock. I propose that the plate shall be held in the plane of the stock by suitable side guides and by feathers and tenons on either the stock or the plate adapted to engage in or with respectively corresponding parts on the other of them. A plate is locked to the stock by spring fingers or hooks retractable into the plate or into the stock by any suitable means and adapted to automatically engage edge on into the other of them.

The essence of the invention lies in an ejector which may be enlarged or diminished in cross-section to suit different molds by the application to or removal of supplemental blades or sections used in connection with the main blade or stock.

Referring to the accompanying drawings, which are to be taken as part of this specification and read therewith, Figure 1 is a side elevation of an ejector-blade made according to the present invention. Fig. 2 is a plan of the same. Fig. 3 is a side elevation of the opposite side of the ejector-blade illustrated in the preceding figures. Fig. 4 is a side elevation of the ejector-blade stock. Fig. 5 is a side elevation of the detached plate. Fig. 6 is an inverted sectional plan taken on the line 6 6 of Fig. 5. Fig. 7 is a vertical section taken on the line 7 7 of Fig. 5. The foregoing seven figures illustrate also one and the same device for holding the plate to the stock. Fig. 8 is a side elevation of an ejector-blade

made according to the present invention, but modified in respect of the shape of the plate, the position of the stock on the head, and the device for holding the plate to both. Fig. 9 is a plan of the same. Fig. 10 is a vertical section taken on the line 10 10 of Fig. 8. Fig. 11 is a side elevation of the detachable plate illustrated in the three preceding figures. Fig. 12 is a side elevation, and Fig. 13 a plan, of a modified form of the present invention, according to which the plate is as long as the stock and both of the same thickness throughout.

Referring to Figs. 1 to 7, *a* is a plate by which the present invention is incorporated with the "ejector-head." By the latter term I mean the front end of the ejector-slide. This plate *a* may be of any suitable shape and the means for incorporating it with the said head may be of any suitable type. Convenience suggests that it be rectangular in shape and of the proportions shown, and be held to the ejector-head by means of screws or holding-pins passed through holes *a'*. This plate *a* is, to prevent confusion of ideas, hereinafter referred to as the "head-plate."

b is the stock. It is a bar made in one piece with the head-plate, from which it projects at right angles. It is to be noticed that it does not project from the middle of the head-plate, but from near one end of it. The last-mentioned end corresponds with the head of the line, which head may be considered as a "constant," the shortening or lengthening of a line, due to change of front, showing itself at the other end. Assuming that the maximum difference in length of line is one-half the length (or height, looking at the drawings) of the head-plate *a*, then must the stock be set well within the dimensions of the shortest line. The stock is shorter than the ejector-blade. By "ejector-blade" is to be understood the combination of stock *b* and plate *a*, next described.

c is one of the series of plates with which each ejector-head is provided. A full series of plates is one for each size of mold used in the machine. Each plate has a longitudinal slot *c'* formed in it of the exact size of the stock *b* and at such a distance from its bottom edge c^2 that when the plate is made to embrace the stock in the plane thereof the said bottom edge will be alined with the bottom edge a^2 of the head-plate *a*, and its back edge c^3 fit close up to the front edge a^3 of the said head-plate.

The width of the plate *c* corresponds with the length of the cavity of the corresponding mold, and the thickness of it with the width (thickness of the linotype) of the said cavity. It is not absolutely necessary that the plate *c* and the stock *b* should be as thick throughout as the mold-cavity is wide. It is enough if the leading or front edge c^4 of the plate *c* possesses the proper thickness. Such possession is clearly illustrated in Figs. 1, 2, 3, 5, 6, and 7.

It is obvious that the practical utility of the invention cannot be enjoyed unless proper provision be made for holding the plate *c* and the stock *b* (then the ejector-blade) together in one and the same plane and for separating them when an ejector-blade of a different size is required. The present invention does not limit me in respect of either the type or the details of the said provision. That illustrated may be accepted as practically sufficient for the purpose. It consists of the steadying and the locking devices. The steadying devices are tenons c^5 c^5, with mortises a^4 a^4 at one end of the plate *c* and a tenon *b'* and mortise c^6 near the other. The tenons c^5 are on the back edge c^3 of the plate. These tenons have beveled rear edges. The mortises a^3 are all on the same side of the head-plate *a* and in the front edge of it. Further, they are undercut to receive each beveled edge, above mentioned, so that when the tenons c^5 are engaged in their respective mortises a^4 there is a steadying contact in each engagement between four surfaces. The tenon *b'* projects from the front end of the stock *b* and engages in a mortise c^6 opposite to it in the front end of the slot *c'*.

The locking device illustrated is as follows:

d is a bolt. It is a thin flat bar adapted to work in and out of a longitudinal slot *d'*, formed in the plate *c* half-way between its sides. This formation is conveniently effected by removing the necessary quantity of material and fixing a cover-plate d^2 over the resulting cavity.

d^3 is the pivot of the bolt. It stands at right angles with the sides of the plate *c*.

d^4 is the bolt-staple. It is a sloping groove cut in the top edge of the stock *b*, parallel with the sides of the latter. The position of the bolt *d* is so arranged in the plate *c* that the bolt-staple d^4 shall be at some appreciable distance behind the front end of the stock.

d^5 is the bolt-spring.

d^6 is a slot through the plate *c* and through which the end of the bolt *d* always shows. Through this end there is a hole d^7. The width of the slot d^6 is sufficient to allow of the unlocking motion of the bolt, which is effected by inserting the pointed end of any suitable lever in the hole d^7 and raising it.

The plate *c* is fixed to both the stock *b* and the head-plate *a* by sliding it longitudinally from the front over the stock and in the plane of it until the bolt *d* locks into its staple d^4. When the bolt has been unlocked, the plate *c* is detachable from the stock and head-plate.

Referring to Figs. 8 to 11, the stock *b* projects from the head-plate *a* at the bottom of it instead of from near the end. Consequently the slot *c'* of the construction illustrated in Figs. 1 to 7 becomes a longitudinal rabbet c^7. The locking device is an angular tooth *e*, projecting from the bottom edge of the plate *c* and in the plane of it. Its front edge is preferably vertical. *e'* is a notch of corresponding contour in the top edge of the stock *b* and in the plane of it, in which notch

the tooth *e* is adapted to fit. The plate *c* is fixed to the head-plate *a* and stock *b* in the way already described, the tooth *e* sliding over the side of the stock on its way to the notch *e'*. As soon as the engagements between the tenons and mortises are completed the tooth is opposite the notch and is sprung into it by the natural resilience of the plate *c*. The latter is unlocked by pushing the tooth *e* out of the notch *e'* laterally. In all other respects the improved ejector-blade illustrated in Figs. 8 to 11 is the same as the one illustrated in Figs. 1 to 7 and described therewith.

Referring to Figs. 12 and 13, the modification consists in making the blade *c* as long as the stock *b* and both of the same thickness throughout. The locking device is of the same construction as illustrated in Figs. 1 to 7 and described therewith.

I claim—

1. In a linotype-machine, an ejector, adjustable in size, comprising in combination, a main blade or stock, a supplemental blade, and means for locking said blades together.

2. In an ejecting mechanism for linotype-machines, an ejector consisting of longitudinal blades or sections, and means substantially as described for longitudinally locking them together.

3. In a linotype-ejector, a main ejector blade or stock, in combination with an auxiliary blade applied to its longitudinal edge, and locking devices, substantially as described, holding the auxiliary blade in position and permitting its removal at will.

4. In a linotype-machine and in combination with a main ejector-blade, an auxiliary blade, arranged to engage therewith at the two ends, and locking devices, substantially as shown, to maintain such engagement.

5. In a linotype-ejector, the combination of a main ejector blade or stock, an auxiliary blade, arranged to interlock therewith by longitudinal motion, and a latch or bolt, mounted in one of said members and engaging the other, substantially as described and shown.

6. In a linotype-ejector, the combination of the main ejector blade or stock, *a b*, and the auxiliary blade, *c*, arranged to engage therewith at the two ends, and a spring-actuated latch-bolt, *d*, entering the edges of the two blades, substantially as shown.

7. In a linotype-ejector, the combination of a main ejector blade, or stock, and a detachable blade or section, having its operative end of different thickness from that of the main blade.

In witness whereof I have hereunto affixed my signature, in presence of two witnesses, this 17th day of June, 1896.

ODDUR VIGFÚS SIGURDSSON.

Witnesses:
CHAS. S. WOODROFFE,
ROBT. A. BLAKE.