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PATENTED JULY 9, 1907.

F. P. HOWARD.

EJECTOR BLADE FOR LINOTYPE MACHINES AND KINDRED MACHINES.

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FIG. 1.

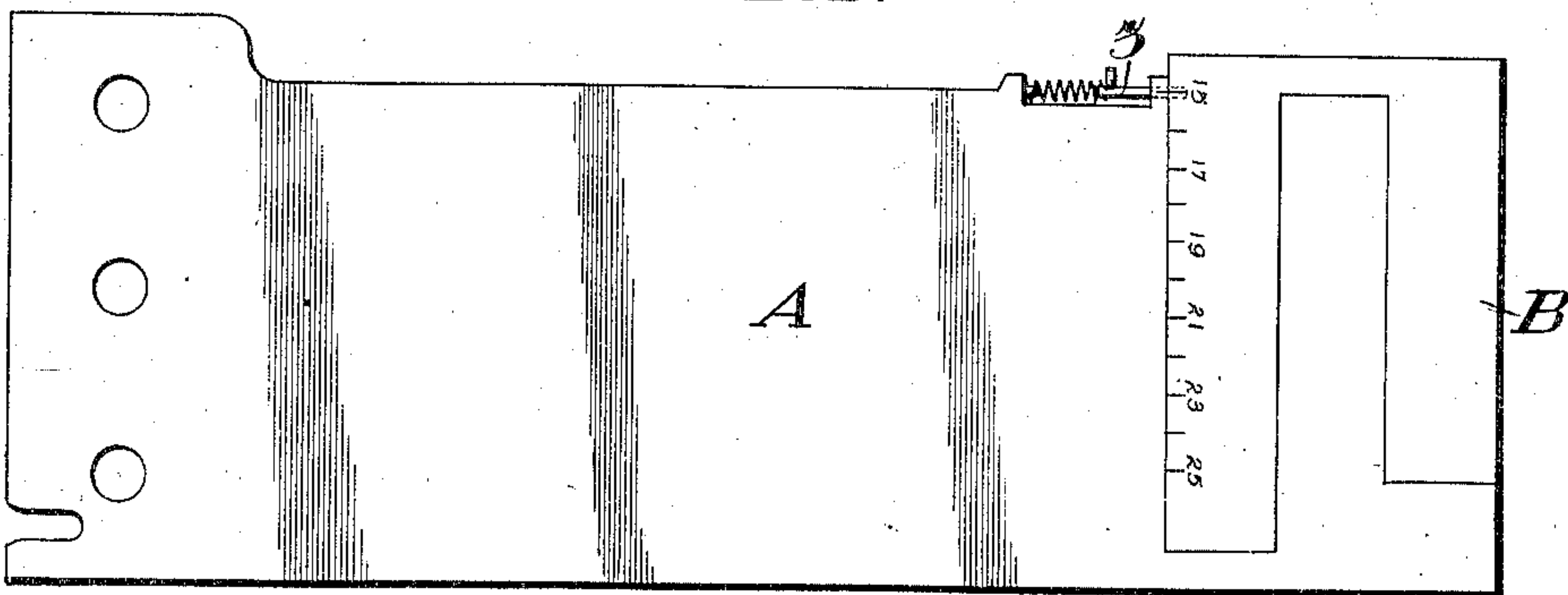


FIG. 2.

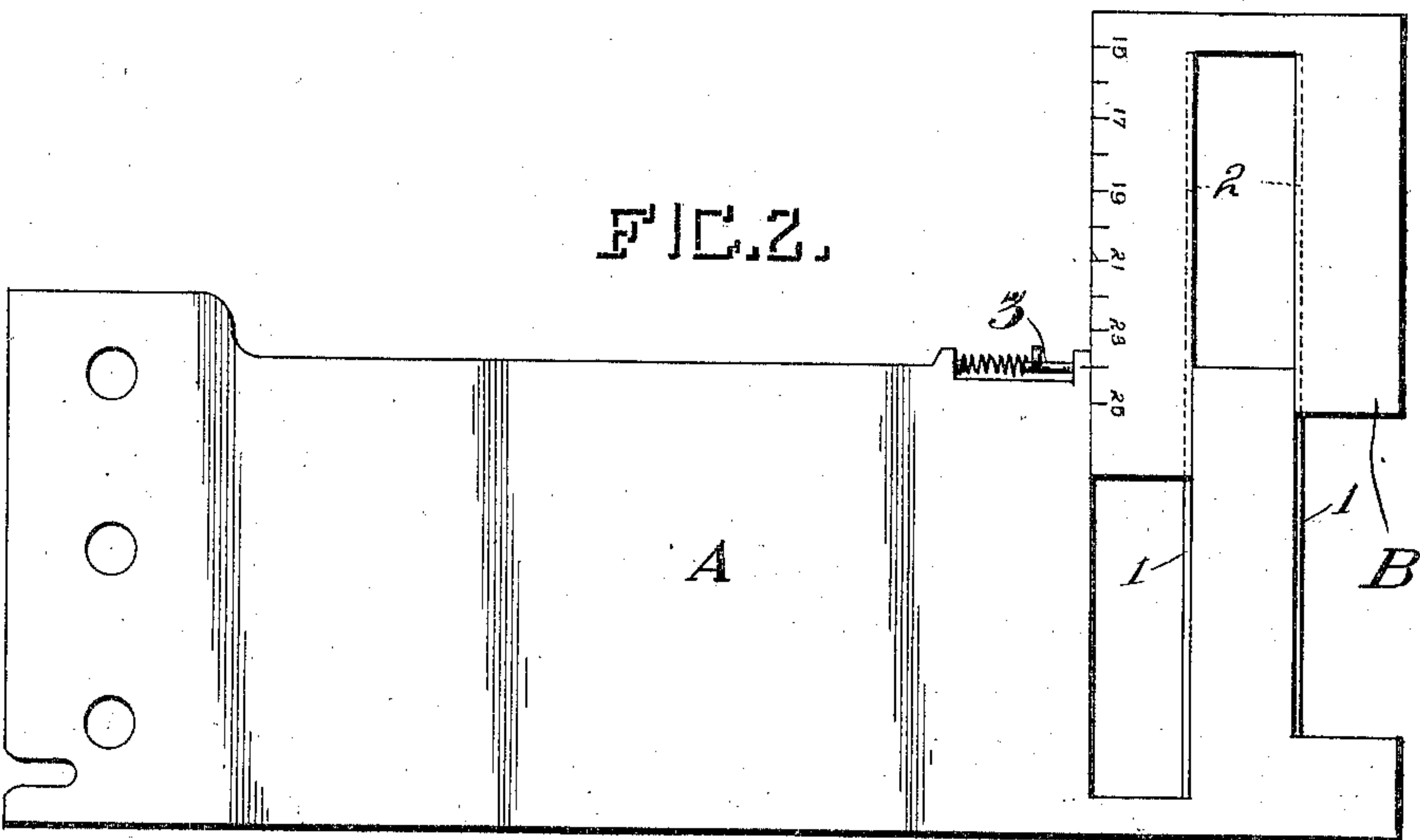


FIG. 3.

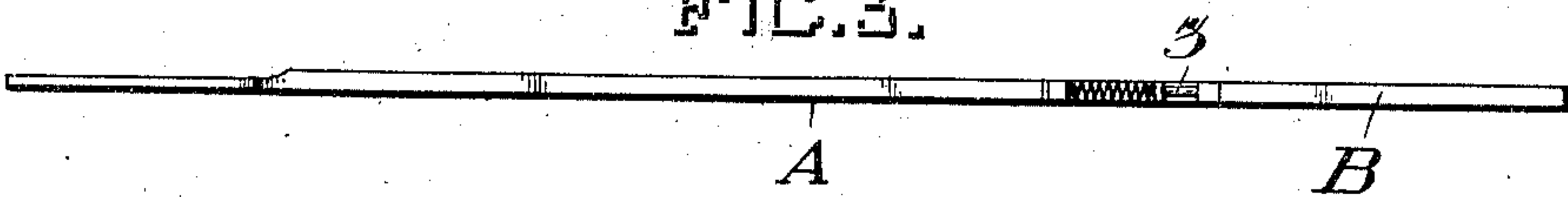
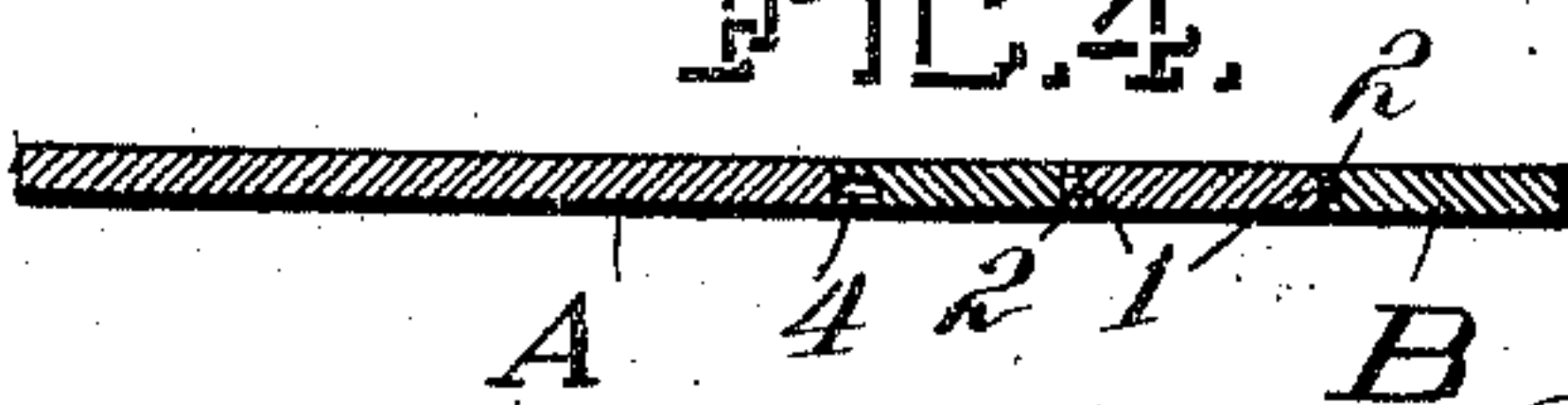


FIG. 4.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## EJECTOR-BLADE FOR LINOTYPE-MACHINES AND KINDRED MACHINES.

No. 859,661.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed July 13, 1904. Serial No. 216,359.

To all whom it may concern:

Be it known that I, FRANK PORTER HOWARD, a citizen of the United States, residing in the city of Washington, in the District of Columbia, have invented a new and useful Improvement in Ejectors for Linotype-Machines and Kindred Machines, of which the following is a specification, reference being made to the accompanying drawings, forming a part hereof.

At the present time there are known in the art various machines in which printing slugs or linotypes, having type characters in one edge, are cast in a long slot of a mold against a composed line of matrices momentarily presented to the face of the mold. These machines, variously known as linotype machines, monoline machines, &c., are represented for example in Letters Patent of the United States Nos. 436,532 and 506,198. In all of these machines, the mold is moved from the casting position and the contained slug delivered by a long thin ejector blade which enters the mold from the rear, driving the slug before it into a receiving galley. The molds are made interchangeable or adjustable in size in order that they may produce slugs varying in length as the character of the print may require.

Heretofore it has been the general practice to remove one ejector blade and substitute another of different width when the length of the mold was changed. As the molds were varied by small degrees between widely separated limits, it was necessary for the printer to provide a large number of blades at a very considerable cost. The change of the blades from one size to another was attended with substantial trouble and loss of time.

The aim of my invention is to overcome these difficulties, and to provide an ejector the width of which may be instantly and gradually varied from one extreme to the other, and this without attaching or applying parts thereto and without increase in thickness, which would prevent the passage through the mold.

To this end, the invention consists broadly in an ejector consisting of plural members so combined that they may be brought together to form a narrow ejector for the delivery of slugs of minimum length, or separated instantly to any required extent to adapt them for the ejection of longer slugs.

The form of the parts and the connection between them are susceptible of wide variation without departing from the limits of my invention.

I believe myself to be the first to construct in any form or manner an ejector consisting of members which are relatively adjustable in a direction transverse to that in which they advance to deliver the slug, so that they may co-operate in ejecting slugs of different lengths.

In the accompanying drawings I have shown my

improvement applied to an ejector blade such as is commonly used in a commercial linotype machine of the present day, and represented by Letters Patent of the United States No. 560,537.

In the drawings,—Figure 1 is a side view of the ejector as adjusted for the delivery of a slug of minimum length. Fig. 2 is a similar view with the forward or active end adjusted and widened for the delivery of a slug of maximum length. Fig. 3 is a top plan view of the same. Fig. 4 is a cross-section on the line 4—4, Figs. 1 and 2.

Referring to the drawings, A represents the flat metal ejector blade having its forward end adapted to pass through the mold of the linotype machine to deliver the slug therefrom, and its rear end formed for connection to an operating slide forming a permanent part of the machine, in the manner shown in Patent No. 560,537. The forward end of the blade is cut away transversely from one side in such manner as to leave a transverse tongue *a*, the lower corner of the blade *a'* being left its original length.

B represents the adjustable member or secondary blade of the ejector, made of  $\Omega$ -form and adapted to fit into the forward end of the blade A astride of the tongue *a*. The edges of the movable member are formed with tongues and grooves whereby the movable section is retained and held flush with the blade A on its side faces, while at the same time it is permitted to slide transversely. The forward edge of the secondary blade or member B stands in line with the lower forward end of the main blade A.

When the movable member stands in its innermost position, shown in Fig. 1, the blade presents a solid front end of minimum width and acts in all respects like a solid blade or ejector of equal width. As the member B is moved outward, however, it increases the over-all width of the ejector, so that it is adapted to eject slugs of greater length, the portion *a'* of the main blade A acting against one end of the slugs, while the movable member or blade B acts against the opposite end of the same. Thus it will be seen that by moving the member or blade B transversely step by step, the ejector may be adapted for the delivery of slugs of any required length.

The movable member B may be held or locked in the required position by means of any suitable character. The drawing shows a simple contrivance for the purpose, consisting of a spring-actuated bolt 3 seated in the upper edge of the blade A and arranged to engage at one end in notches or holes in the edge of the part B. The movable part B is preferably provided, as shown, with a series of graduations representing ems and half-ems to guide the operator in setting it for any given measure or length of line.



From the foregoing it will be understood, that the essence of my invention resides in so constructing the forward or operative end of an ejector (the part which acts against the slug) that it may be varied in width to correspond with variations in the length of the mold and the slug to be ejected.

In the form shown, the ejector is a unitary structure capable of being instantly applied to or removed from commercial linotype machines of the present day, without any change whatever therein. In the use of these machines, the molds are sometimes adjusted to produce slugs of widely different thicknesses. It is advisable to use an ejector having a thickness substantially equal to that of the slug, and for this reason, the construction of the ejector so that it may be instantly removed as a whole and replaced by another of different thickness, is advantageous.

It will be understood by those skilled in the art, that the ejector blade must be of very considerable length, and that it must be adapted for variation in width to correspond with slugs of different lengths without any material change in thickness.

In cross-section the ejector must, in order to give the best results, correspond in width and thickness with the thickness and length of the slug to be ejected.

Having described my invention, what I claim and desire to secure by Letters Patent is:—

1. An ejector for a linotype machine, comprising two blades and a sliding connection adapted to permit the separation of the blades edgewise; whereby the ejector may be varied in width to effect the delivery of slugs of different lengths.

2. In a linotype machine, the combination of an ejector

blade, a secondary blade movable transversely in relation to the first, and means for securing the blades in different relations; whereby the width of the ejector may be varied and fixed at will for the delivery of slugs of different lengths.

3. An ejector blade for a linotype machine, adapted to act edgewise against the slug, and provided with a transversely movable secondary blade also adapted to act against the slug.

4. In an ejector for a linotype machine, two members adapted to act against opposite ends of the slug, said members permanently connected by a transverse sliding joint; whereby the over-all width of the ejector may be varied at will.

5. In an ejector for a linotype machine, a main blade A, and a transversely movable section B connected thereto by a sliding joint adapted, as shown, to permit an increase in the width of the ejector without change in thickness.

6. In an ejector for a linotype machine, a main ejector blade A, and the transversely movable blade or section B, their side faces being flush with each other, in combination with an intermediate locking device, substantially as shown, to hold the movable section in place.

7. An ejector for a linotype machine, comprising plural blades and means for changing the distance between them and for securing them in their different relations.

8. An ejector blade for a linotype machine, having its active end provided with a laterally extensible portion; whereby it is adapted for adjustment to deliver slugs of different lengths.

9. A linotype ejector, having its active end divided longitudinally and the parts adjustably connected, to admit of its width being varied at will.

In testimony whereof, I have signed this specification, in the presence of two subscribing witnesses.

FRANK P. HOWARD.

Witnesses:

FRANK E. NEWTON,  
WATTS T. ESTABROOK.