

(No Model.)

2 Sheets—Sheet 1.

W. H. RANDALL.  
LINOTYPE MACHINE.

No. 560,537.

Patented May 19, 1896.

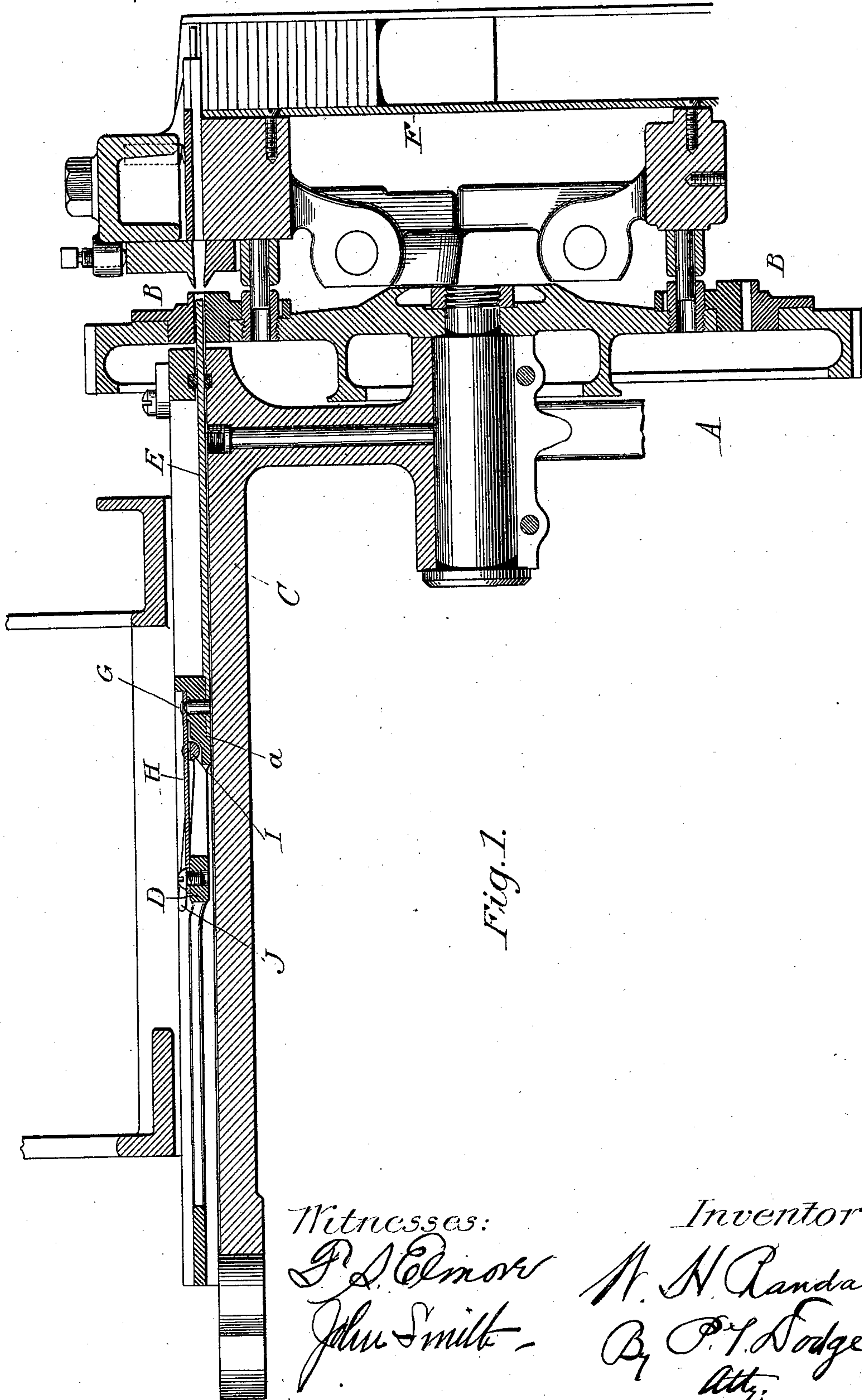


Fig. 1.

Witnesses:

*J. L. Elmore*  
*John Smith*

Inventor:

*W. H. Randall*  
*By P. F. Dodge*  
*Att'y*

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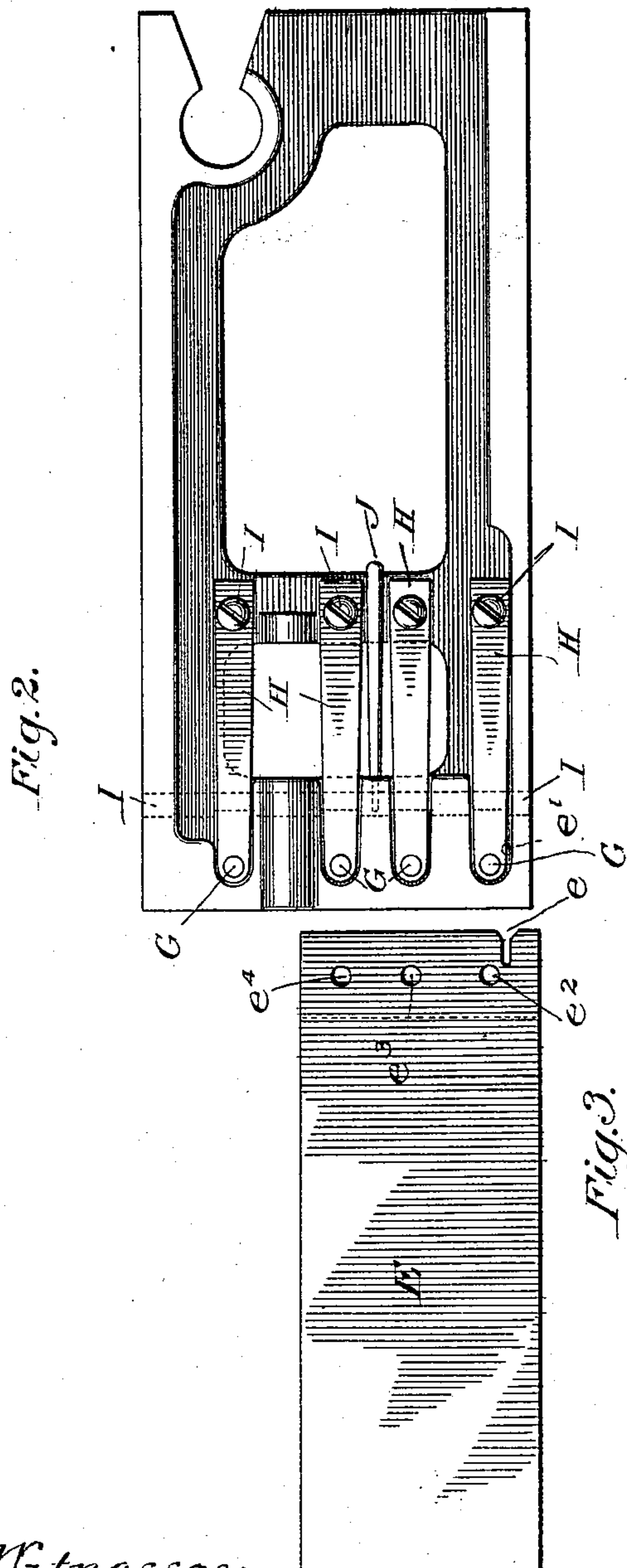
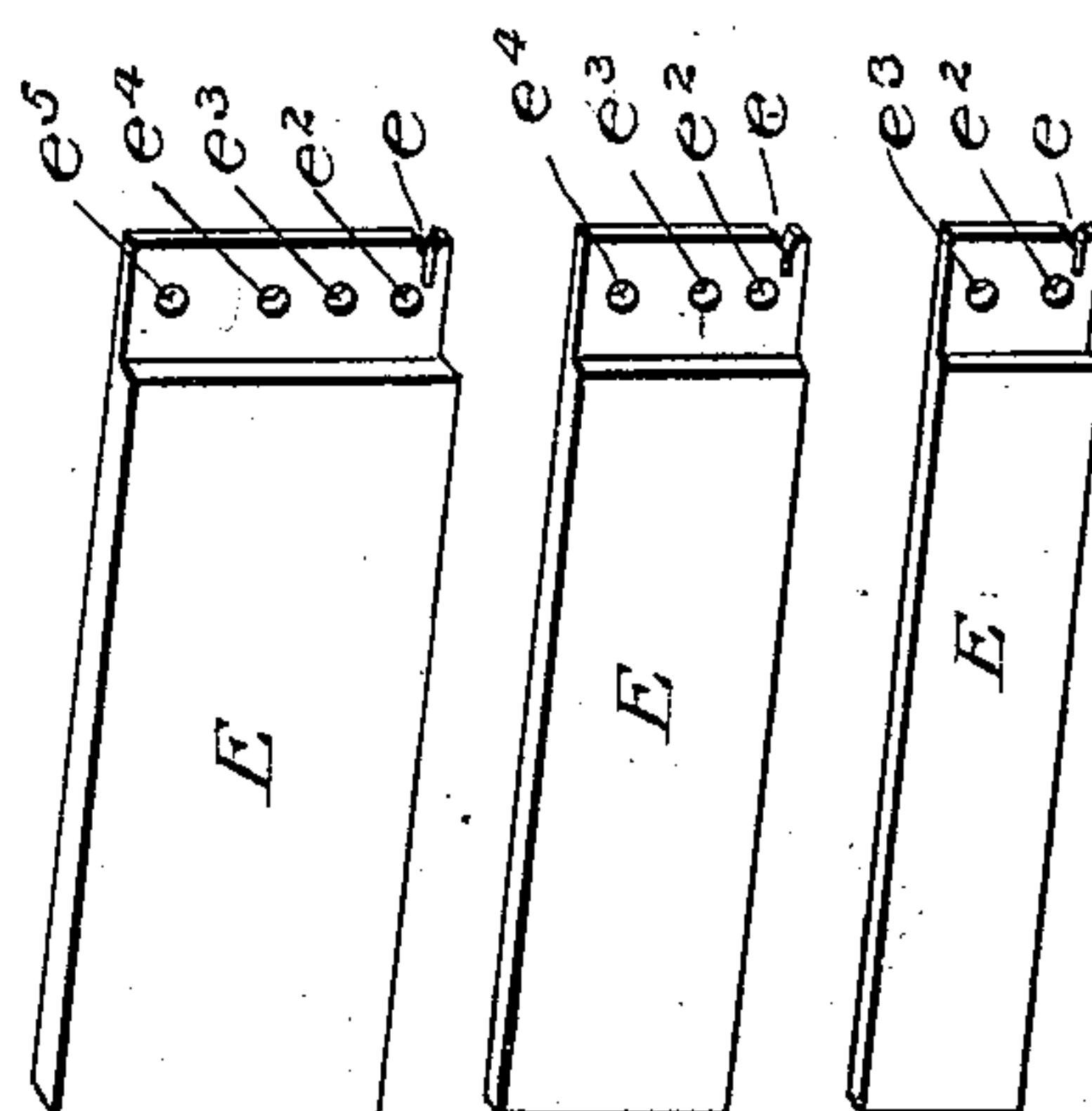
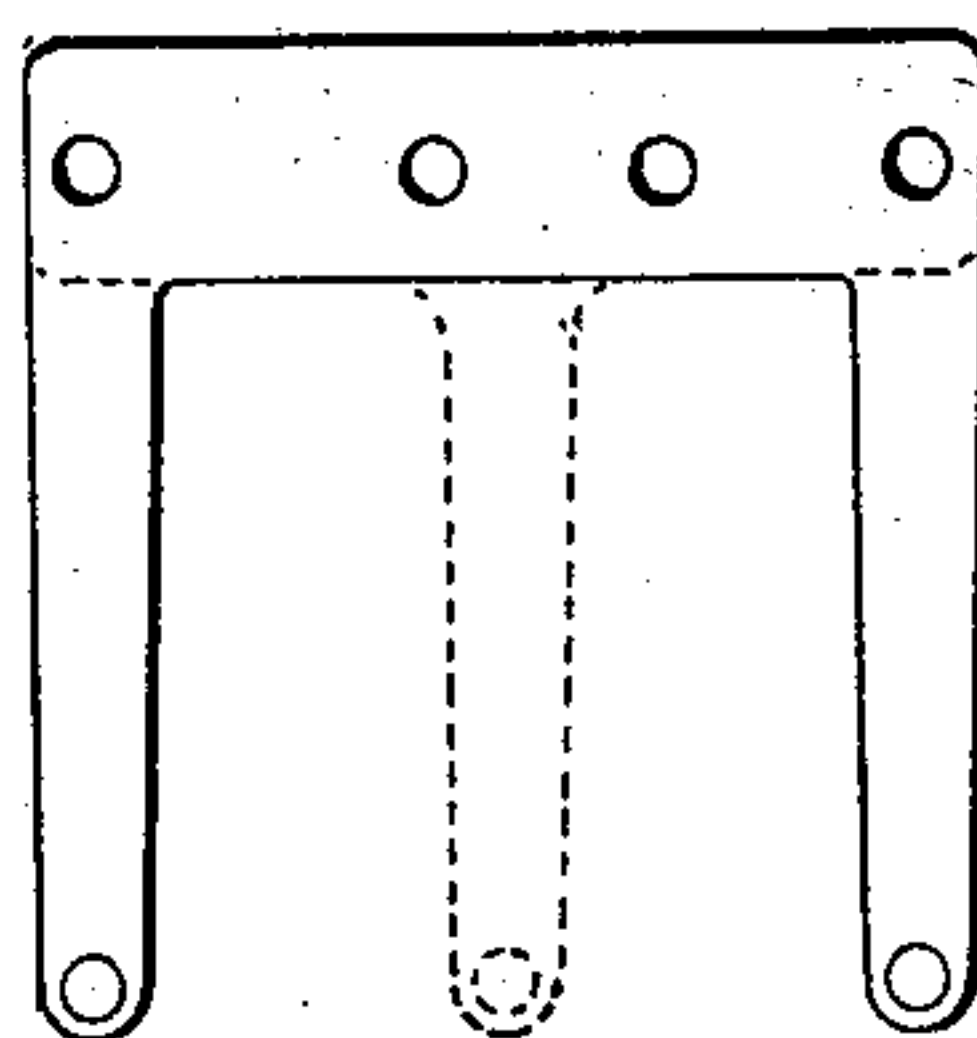


Fig. 4.



Witnesses:

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A. N. Randall  
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Atty



# UNITED STATES PATENT OFFICE.

WILLIAM HENRY RANDALL, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE  
MERGENTHALER LINOTYPE COMPANY, OF NEW JERSEY.

## LINOTYPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 560,537, dated May 19, 1896.

Application filed October 12, 1895. Serial No. 566,096. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HENRY RANDALL, 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.

In the Mergenthaler linotype-machine, such as is described in Letters Patent of the United States, No. 436,532, dated September 16, 1890, and in similar machines, it is customary to cast a type-metal slug or type-line in a mold, from which it is delivered by a reciprocating ejector-blade, which, advancing from the rear through the mold, drives the slug before it. It is the practice to frequently change the size of the mold employed in order to produce lines differing in length or thickness. This change of mold necessitates a corresponding change in the size of the ejector-blade. Heretofore the ejector-blades have been attached to a supporting-slide by means which involved a considerable expenditure of time in replacing one by another.

The object of the present invention is to facilitate the connection and disconnection of the ejector-blades; and to this end it consists in the employment of blades which are adapted to be withdrawn or removed endwise through the mold or mold-opening, and in the employment of latches or locking devices which admit of the blades being instantly connected to or disconnected from the carrying-slide without the removal of screws or like fastenings.

My invention is susceptible of embodiment in various forms, mechanical equivalents of each other, which will suggest themselves to the skilled mechanic after consideration of this specification and its accompanying drawings; but I have represented in the drawings those details of construction which I found to be best adapted to the general use. With the exception of the details hereinafter enumerated all parts of the machine may be constructed in the ordinary manner.

Figure 1 is a horizontal section through the mold, ejector-slide, and adjacent parts of the Mergenthaler machine with my improvements incorporated therein, the ejector-blade being secured in place. Fig. 2 is a side elevation of the ejector-slide and of a blade de-

tached therefrom. Fig. 3 is a view showing blades of different sizes and forms, which may be attached at will to the slide. Fig. 4 is a view illustrating modifications of the locking device.

Referring to the drawings, A represents a mold-wheel having removably secured therein the mold B, in which the slug or linotype is cast, this mold consisting simply of a block through which a slot of proper size is cut from front to rear.

C represents the horizontally-moving mold-slide mounted in the main frame and provided with a journal or trunnion on which the mold-wheel is mounted and arranged to revolve.

D is a horizontally-reciprocating ejector-slide mounted in a recess in the mold-slide and carrying at its forward end the ejector-blade E.

When the slide D is moved forward in relation to the other parts, the forward end of the ejector-blade is caused to act against the base of the slug in the mold and drive the same forward out of the mold and between the usual trimming-knives into the receiving-galley F at the front of the machine.

The foregoing actions and the mechanism by which they are effected are all the same as in the ordinary Mergenthaler machine.

The ejector-blade, instead of being made with a widened rear end, as heretofore, now consists simply of a flat sheet of steel of uniform cross-section throughout its body portion. These blades will vary in width and thickness according to the size of the molds with which they are to be used, but at the rear end they are all made of a thickness equal to that of the thinnest blade, so that they may all be fitted snugly into a cavity or recess formed in the side of the ejector-slide at its forward end.

Fig. 3 shows a series of blades of different sizes all reduced to common thickness at the end, as above described, that they may fit snugly into their places in the slide. Each blade is provided in the rear end with a notch *e*, with a flaring mouth to receive a guide pin or stud *e'*, fixed on the slide, in order to insure the entrance of the blade at the exact position required when it is thrust into place. The blades are provided near their rear ends



with two, three, or more holes  $e^2$   $e^3$ , &c., the number of the holes depending on the width of the blade. The mold-slide is provided with a series of sliding studs or pins G, seated in transverse holes and adapted to enter the corresponding holes in the ejector-blade. These locking-pins are attached each to one end of a spring H, seated in the side of the slide and secured at the opposite end by a screw I. These springs serve to throw the pins forward and hold them firmly in engagement with the ejector-blade, so that it is prevented from moving endwise, the blade being held sidewise to its position in the slide by the adjoining surface against which the slide moves.

In order to disengage the pins and release the slide, I employ a vertical rock-shaft J, seated in a hole in the slide and provided with a series of flattened surfaces, against which the springs rest, and also provided with a handle J, by which it may be turned. When turned by means of the handle, the shaft lifts the series of springs in unison, and thereby draws the pins out of the ejector-blade, which may then be drawn forward from the slide through the mold.

In applying another blade it is only necessary to thrust it rearward until its rear end enters the seat in the slide, after which the handle J is released and the locking-pins permitted to engage. It is obvious that the series of pins may be attached to a single spring-plate, such as is shown in Fig. 4, or that springs of any other approximate form may be employed.

It is obvious that the means for retracting the springs may be modified in form and arranged at will, provided only the mode of action, substantially such as is described herein, is retained.

It is to be noted that in a machine of the present type the ejector-slide is covered and concealed by the mold-slide, so that its inner end is not directly accessible; hence the importance of a construction permitting the

blade to be withdrawn through the mold and the arrangement of the mounting of the blade-securing devices movable in the ejector-slide, so that they may be operated from its outer or exposed side.

Having thus described my invention, what I claim is—

1. In a linotype-machine, the combination of the mold-wheel, its carrying-slide, the ejector-slide mounted in a mold-slide, the ejector-blade adapted for insertion and removable through the mold and the blade-fastening device carried up and movable through the ejector-slide, substantially as described.

2. In combination with the mold-slide, the ejector-slide and the ejector-blade inserted between the two slides, a blade-holding device extended movable through the ejector-slide.

3. In a linotype-machine, the combination of an ejector-blade, a supporting-slide therefor, spring-actuated pins mounted in the slide to engage the blade, and means for retracting said pins at will.

4. In a linotype-machine and in combination with the ejector-slide having a stud or guide thereon, an ejector-blade provided with a guiding-slot to receive said stud, a plurality of sliding pins mounted in the slide to engage the blade; spring-fingers connected to said pins, and a rock-shaft acting on the springs to retract the pins in unison.

5. In a linotype-machine, the retracting-slide, the spring-fingers attached thereto and provided with pins to retain the ejector-blade, and the rock-shaft provided with surfaces to elevate the pins and with an operating-handle.

In testimony whereof I hereunto set my hand, this 7th day of October, 1895, in the presence of two attesting witnesses.

WILLIAM HENRY RANDALL.

Witnesses:

JOHN CAMPBELL,

JAMES GILLIARD PARSONS.