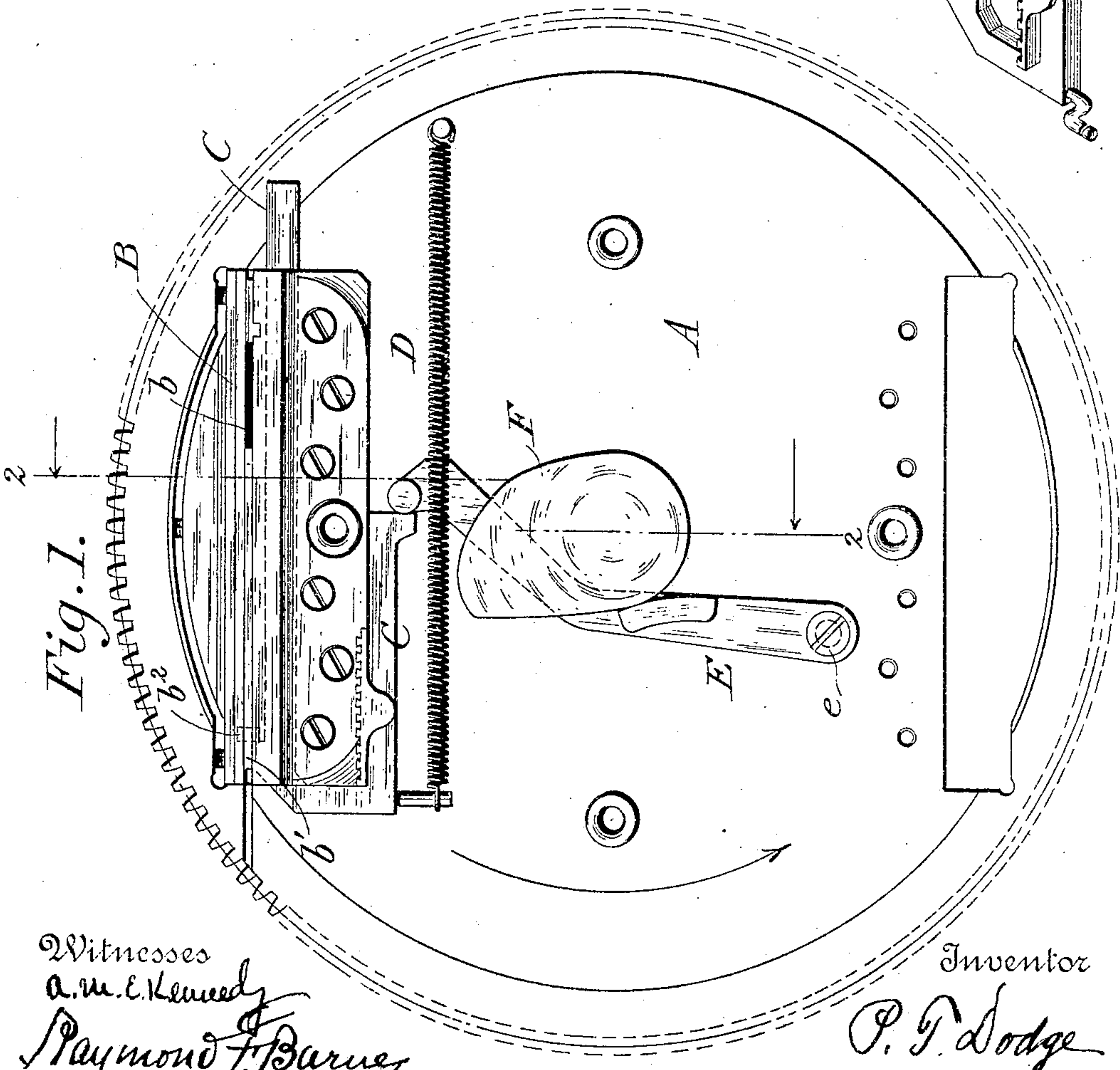
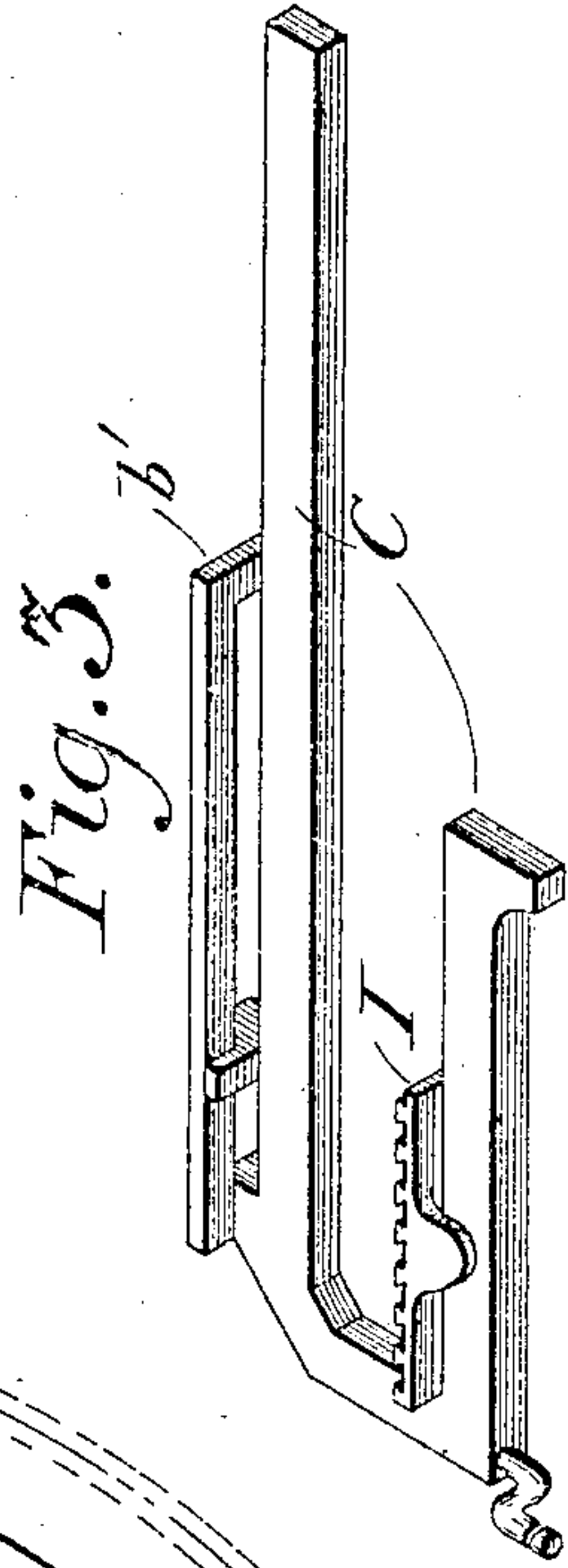
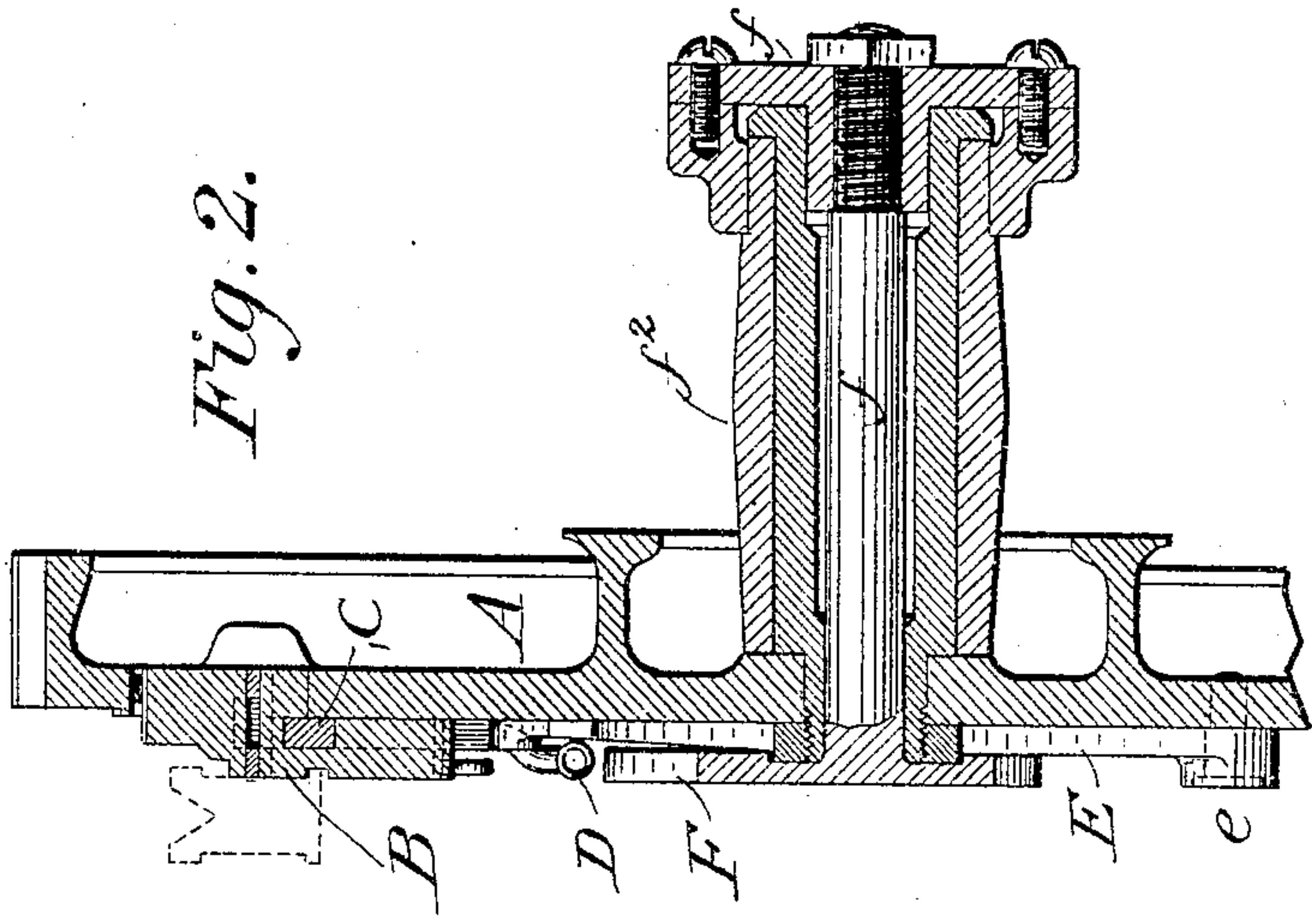


No. 803,996.

PATENTED NOV. 7, 1905.

P. T. DODGE.  
LINOTYPE MACHINE.  
APPLICATION FILED MAR. 6, 1905.

2 SHEETS—SHEET 1.



Witnesses  
A. M. Kennedy  
Raymond F. Barner.

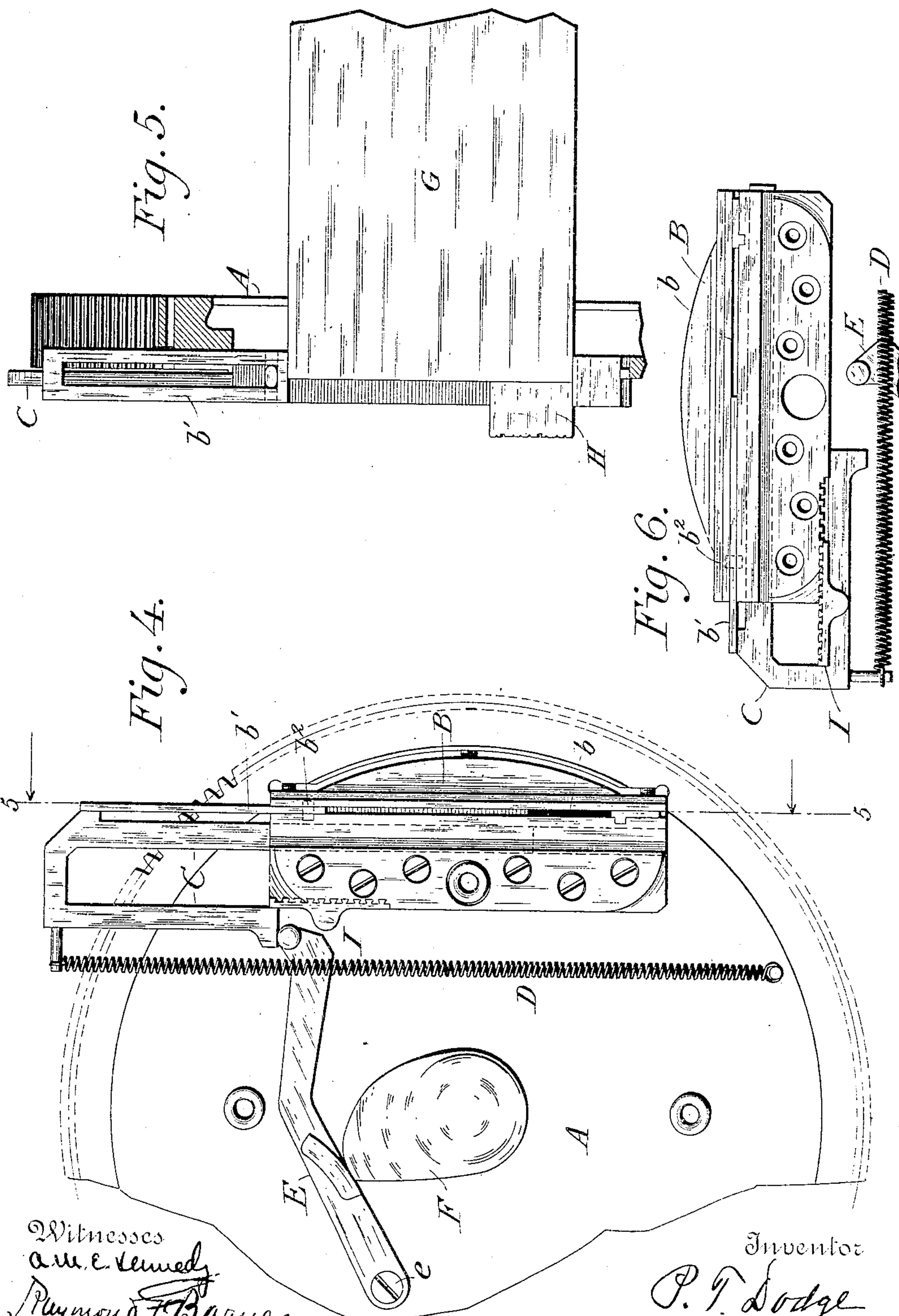
Inventor  
P. T. Dodge

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2 SHEETS—SHEET 2.



Witnesses  
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# UNITED STATES PATENT OFFICE.

PHILIP T. DODGE, OF BROOKLYN, NEW YORK, ASSIGNOR TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

## LINOTYPE-MACHINE.

No. 803,996.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed March 6, 1905. Serial No. 248,708.

*To all whom it may concern:*

Be it known that I, PHILIP T. DODGE, 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.

This invention has reference to Mergenthaler linotype-machines and kindred machines wherein a linotype or printing slug is cast in a slotted mold against a line of matrices temporarily assembled against the face of the mold. In this class of machines it is necessary to frequently change the measure or length of the linotypes or slugs produced, according to the width of the page or column of print required. This change is effected by altering the length of the slot in the mold, usually by removing a liner or distance-piece forming one end of the slot and substituting therefor another of different length. The slugs are expelled from the mold in a forward direction by an ejector-slide, which advances from the rear. It is necessary that this slide shall be of a width substantially equal to the length of the slug, and it is therefore necessary in the existing machines to remove the ejector-blade and substitute another of different width whenever a change is made in the length of the mold-slot. This involves the expenditure of considerable time and necessitates an investment in a large assortment of ejectors. The aim of my invention is to overcome these difficulties and permit the employment of a single ejector-blade for delivering slugs of all lengths.

To this end it consists, broadly, in a mold having its liner arranged to slide endwise without separation therefrom for the purpose of changing the length of the mold-slot and of the slugs produced therein in combination with means for automatically moving this liner to and fro and retracting it after each casting operation, so that an ejector-blade of maximum width may be passed through the mold to effect the delivery of the slug, whether long or short.

I have represented my invention in a form adapted for application to the commercial linotype-machine of the present day of the general organization represented in Letters Patent of the United States No. 557,000; but it is to be understood that my invention covers,

broadly, any organization in which a liner is automatically retracted and advanced between each casting operation and the next.

I have limited the drawings herein to those parts which are immediately associated with my improvement, and it is to be understood that the remaining parts may be constructed and arranged as represented in the patent above referred to or in any other suitable manner.

Referring to the drawings, Figure 1 is a front elevation of a mold, its carrying-wheel, and mold-adjusting devices, in accordance with my invention, the mold being in the casting position. Fig. 2 is a transverse section on the line 2 2, Fig. 1. Fig. 3 is a perspective view of the mold-liner and its actuating devices. Fig. 4 is a front elevation of the mold and adjacent parts, the mold being in the ejecting position, with the liner retracted to permit the passage of the ejector. Fig. 5 is a cross-section on the line 5 5, Fig. 4. Fig. 6 is a front elevation of the mold and adjacent parts, with the stop for the liner set in a position different from that in the preceding figures to give a slug or linotype of different length.

Referring to the drawings, A represents the usual vertical intermittingly-rotated wheel or disk for supporting the mold or molds.

B represents a slotted mold of the ordinary character fixed rigidly to the wheel and having its slot or mold proper normally open at the front and rear sides, so that it may cooperate with the line of matrices at the front and with the mouth of the metal-delivering pot at the rear. This mold, which may be otherwise constructed or built up in any suitable manner, contains a slot or cell *b*, in which the slug is cast, and a sliding liner or distance-plate *b'*, the inner end of which forms one end of the slot or cell. By sliding this liner endwise the length of the slot and of the slug or linotype produced therein may be varied at will.

C represents a sliding plate or bar lying between the mold and the disk and guided by a groove in the former. This slide is connected with the liner by a pin *b<sup>2</sup>* or in any other suitable manner, so that when moved endwise it will effect a corresponding movement of the liner.

D is a spring connected at one end to the



disk and at the opposite end to a stud protruding from the slide C; its tendency being to slide the liner inward and shorten the mold-slot.

E is a lever pivoted at *e* to the mold-wheel and bearing at its opposite extremity against the inner end of the slide C.

F is a non-rotating cam arranged to act against a projection on the face of the lever E. This cam may be supported in any suitable manner; but it is preferably carried on the forward end of a spindle *f*, extending centrally through the hub or journal of the mold-wheel and secured at the rear end to a plate *f'*, fastened to a rigid bearing *f''*, in which the hub rotates. After the casting operation the wheel revolves in the direction indicated by the arrow, Fig. 1, to the position shown in Fig. 4, when it is brought to rest with the mold standing in a vertical position preparatory to the ejection of the slug.

G represents the horizontally-moving ejector-blade arranged vertically and in position to pass through the mold from the rear in order to expel the contained slug or linotype H.

The form of the cam F is such that as the lever E is carried around it by the rotation of the wheel A it moves the lever outward, causing it in turn to move the slide C and the mold-liner *b'* outward against the influence of spring D, so that when the mold arrives at the ejecting position (shown in Figs. 4 and 5) the liner is in its outermost position and the mold-slot of such width that the ejector-blade G of maximum width may pass therethrough and cause the delivery of the slug or linotype regardless of the length of the latter. The blade may be constructed and guided as in the ordinary linotype-machines and operated by the same or any other suitable mechanism.

After the ejection of the slug and the retraction of the ejector the disk continues its rotation to the original or casting position, and during this continued movement the cam, releasing the lever, permits the spring D to restore the liner to its inner or casting position.

As the liner is in all cases withdrawn to its extreme position, it is possible to use in the machine the one ejector-blade of maximum width for the delivery of slugs of all lengths produced in the machine.

In order to adapt the mold to produce slugs of any given length at will, I propose to employ a stop device of any suitable character to limit the inward movement of the liner.

In the form shown the stop device consists of a plate I, having a series of transverse teeth adapted to enter corresponding grooves in the lower side of the mold. The plate may be withdrawn laterally, adjusted endwise to the desired point, and then reengaged. In Fig. 4 the plate is shown in position to permit the casting of a short slug, while in Fig. 6 it is adjusted to arrest the liner at an earlier

stage in order to produce a slug of greater length.

I have shown my automatic adjusting devices in one only of the many forms in which they may be constructed.

I believe myself to be the first to combine with a slotted mold adjustable to vary the length of its slot means for automatically effecting the opening and closing movement of the mold without removing or separating any of its parts and also the first to employ in connection therewith means whereby the closing movement of the mold may be varied at will to control the length of the slug produced therein.

It is to be noted that my automatically-actuated liner forms a permanent member of the mold and that the variation in the length of the slot is effected without removing or detaching the liner or any other member of the mold. This is of great advantage, since it admits of the parts being accurately fitted and of the liner being accurately and permanently guided within the mold.

Having described my invention, what I claim is—

1. In a linotype-machine, an ejector, and a slotted mold including a permanent attached sliding liner to determine the length of the mold slot or cell, in combination with means for automatically retracting the liner endwise and returning it to its original position, between the successive casting operations.

2. In a linotype-machine, the combination of an ejector and a slotted mold having a longitudinally-sliding liner mounted permanently therein to vary the length of the mold slot or cell, means for automatically retracting the liner endwise beyond the casting position and returning it thereto, between each casting operation and the next, and adjustable means for controlling the advance of the liner.

3. In a linotype-machine, a rotating wheel or carrier, a mold fixed therein and provided with a sliding member to determine the length of the slot or cell, a stationary operating device, and intermediate connections through which said device controls the adjustment of the mold.

4. In a linotype machine, a slotted mold, including a permanently-attached movable member to vary the length of the slot, automatic mechanism acting to move said member, and independent adjustable means to limit the inward movement of the member and thereby determine the length of the slot.

5. In a linotype-machine, a mold adjustable as to the length of its slot, a spring tending to close said mold and shorten the slot, means for automatically opening the mold to elongate the slot after each casting action, and an adjustable stop device to limit the closing of the mold.

6. The combination of a mold variable in

length, a rotating carrier therefor, a spring tending to shorten the mold, a lever acting to open the same, and a stationary cam for actuating the lever.

5 7. In a linotype-machine, the combination of a slotted mold having a permanent member movable endwise to elongate the slot, means independent of the matrix-clamping jaws for automatically opening the mold to its maxi-  
10 mum length after each casting action and

thereafter closing it to the casting length, and an ejector of maximum width arranged to coöperate with the extended mold.

In testimony whereof I hereunto set my hand this 3d day of March, 1905, in the pres- 15  
ence of two attesting witnesses.

PHILIP T. DODGE.

Witnesses:

JOHN F. GEORGE,  
K. L. BRENNAN.