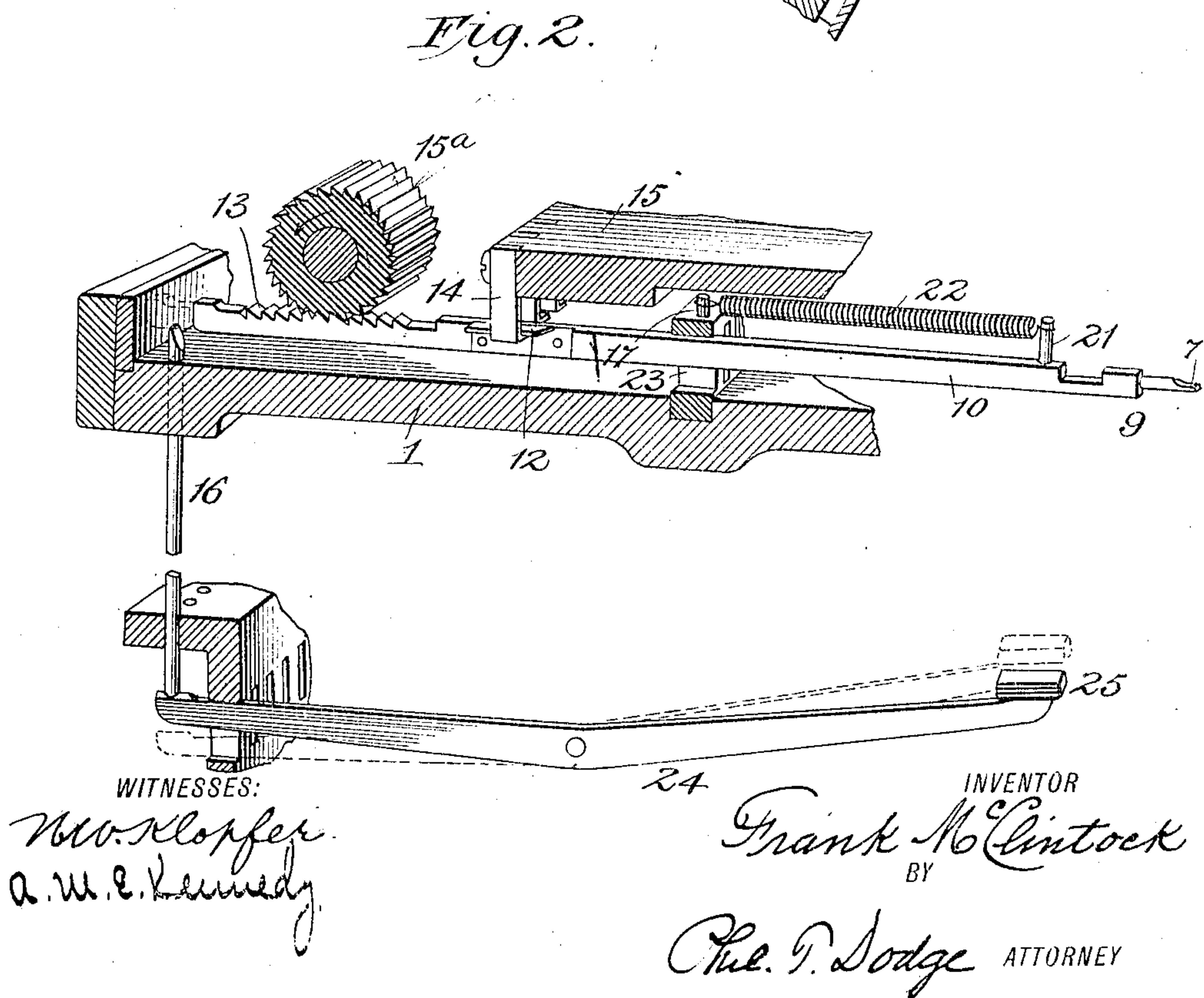
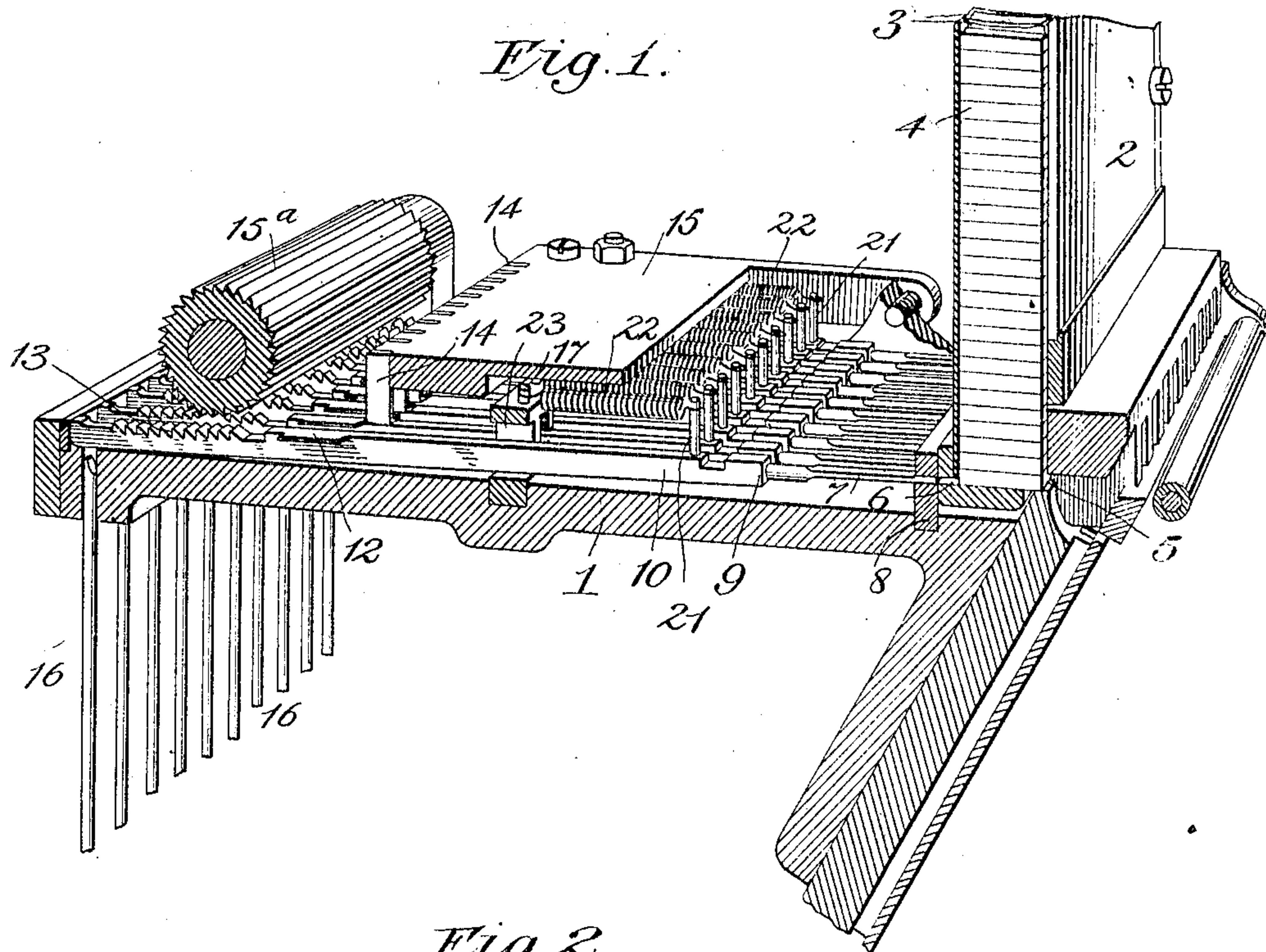


No. 836,698.

PATENTED NOV. 27, 1906.

F. McCLINTOCK.
TYPE SETTING MACHINE.
APPLICATION FILED SEPT. 5, 1905.



WITNESSES:

Wm. Klopfer
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INVENTOR

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BY

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UNITED STATES PATENT OFFICE.

FRANK McCLINTOCK, OF MOUNT VERNON, NEW YORK, ASSIGNOR TO
MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW
YORK.

TYPE-SETTING MACHINE.

No. 836,698.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed September 5, 1905. Serial No. 277,088.

To all whom it may concern:

Be it known that I, FRANK McCLINTOCK, of Mount Vernon, county of Westchester, and State of New York, have invented a new and useful Improvement in Type-Setting Machines, of which the following is a specification.

My invention is an improvement in type-ejecting mechanism heretofore invented by me and shown in United States Patent No. 702,458, issued June 17, 1902.

The objects of this invention are to provide means whereby the ratchet-teeth on the type-ejector bars will be more promptly disengaged from the teeth of the actuating roll or shaft and prevented from being accidentally thrown again into gear with the ratchet-teeth of the rotating shaft and also to simplify and reduce the cost of the manufacturing and assembling of the parts.

The invention is shown in the accompanying drawings.

Figure 1 is a sectional perspective view showing the parts in their normal position when not in operation. Fig. 2 is a similar view showing one of the key-levers depressed and the corresponding type-ejector bar in action.

Similar reference characters refer to similar parts in each of the views.

In the drawings, 1 is the bed-plate of the machine.

2 is the type-case, which has a plurality of type-channels 3, each channel containing type 4 of one kind only. Each type-channel is provided with an opening 5 in its front of suitable width to allow of only a single type being ejected therefrom and another opening 6 in the rear through which the forward end 7 of the type-ejector may enter.

10 represents the type-ejector bars, which have ratchet-teeth 13 near their rear ends and are provided with a laterally-projecting lip 12. The type-ejectors 7 are screwed into the front end of the ejector-bars 10 at the point 9.

15 is a pivoted plate to which the cam-pieces 14 are secured. By depressing this plate all of the acting ejector-bars may be thrown out of action, and thus the delivery of type arrested.

The type-ejector bars are retained in their proper position parallel to each other and

guided longitudinally by means of two bearings 8 and 23.

15^a is the ratchet-toothed roll, which is caused to rotate continuously by any convenient power.

16 represents the rods whereby the rear ends of type-ejector bars are elevated to bring the ratchet-teeth 13 into gear with the ratchet-teeth on the roller 15^a. The rods 16 are actuated by means of a key-lever 24, having a suitable finger-button 25. Upon the depression of the finger-key 25 the rod 16 is elevated, as shown in Fig. 2, which raises the rear end of the ejector-bar 10, thereby causing the ratchet-teeth 13 to become engaged by the ratchet-teeth on the rapidly-rotating roller 15^a, which thereupon forces the ejector-bar forward, and the flat end 7 enters the type-channel and engages with the lowest type in the channel 3 and ejects it therefrom through the opening 5 in the usual manner. As soon as the ejector-bar begins to move forward the lip 12 engages with the cam-piece 14, thereby preventing the said ejector-bar from dropping down and thus becoming disengaged from the ratchet-roller 15^a until it is moved forward the required distance to force the type entirely out of the type-channel.

It is very desirable that the weight of the ejector-bars be kept as light as possible, and it has been found in practice that the weight of the ejector-bars alone is generally insufficient to insure the required quick dropping of the rear end of the ejector-bar 10, particularly when a considerable number of type are contained in the channel. The ejector-bar has also been found heretofore to rebound upon reaching its normal retracted position in such a manner as to throw it again in gear, thus causing the ejection of a second type. In the present invention I have overcome these defects by an improvement in the manner of securing the springs whereby the ejector-bars are returned to their normal position. A close coil-spring 22 has one end secured to a stud 17 on the fixed cross-bar 23, and the forward end is secured to the upper end of a pin 21, which is attached to the type-ejecting bar 10. It is to be observed that the spring acts on the pin, forming a part of the ejector-bar at a point substantially above the latter and above the guide for the front end

of the bar. In other words, the spring acts on the bar at a point substantially out of line with the teeth and the guide at the front of the bar, so that it has a constant tendency to throw the rear end of the bar downward. It will be evident that the pull of the spring 22 on the upper end of the pin 21 will cause the ejector-bar to drop more quickly than heretofore and will prevent any tendency of the rear end rebounding into gear when it strikes the stop 18. The use of the spring in this manner thus allows the type-ejector bar 10 to be made very much lighter in weight, making the entire operation of the mechanism much easier and quieter. It is to be noted that the spring applied in the described relation to the bar serves three purposes: first, that of retracting the bar endwise when it is disengaged from the roll 15^a; second, that of insuring the disengagement of the bar and quickening its downward movement when the lip 12 passes forward of the cam 14; third, that of holding the bar down so that there will be no danger of its rebounding and accidentally reengaging the roll.

What I claim as my invention is—

1. In a type-ejecting mechanism, the combination of a continuously-rotating toothed roll, a type-ejecting bar having teeth to engage the roll, a finger-key and connections therefrom to throw the bar into engagement with the roll, means for retaining the parts in engagement until the ejector has advanced the required distance, and a spring connec-

tion for throwing the ejector out of engagement and returning it to its initial position.

2. In a type-ejecting mechanism, the combination of a continuously-rotating toothed roll, a type-ejector bar provided with ratchet-teeth to engage the roll and guided at the opposite end, means for moving the ejector-bar into engagement with the toothed roll, means for retaining the said engagement until the bar has advanced the required distance, and a spring having one end secured to a fixed support and the opposite end connected to the ejector at a point substantially out of line with the teeth, and a guide whereby the spring is caused to effect the disengagement of the ejector, return the same to its original position, and hold it out of engagement.

3. In a type-ejecting mechanism, the combination of a toothed roll, a toothed ejector-bar movable both longitudinally and edgewise, means for throwing the bar into engagement with the roll, means for retaining the engagement during the advance of the bar, and a spring tending to effect the disengagement of the bar when it is released, and to hold it out of action.

In testimony whereof I hereunto set my hand, this 28th day of July, 1905, in the presence of two attesting witnesses.

FRANK McCLINTOCK.

Witnesses

JOHN F. GEORGE,
P. T. DODGE.