(No Model.) 3 Sheets—Sheet 1.

L. K. JOHNSON & A. A. LOW.

TYPE SETTING APPARATUS.

No. 523,743. Patented July 31, 1894.

Fig. 1.

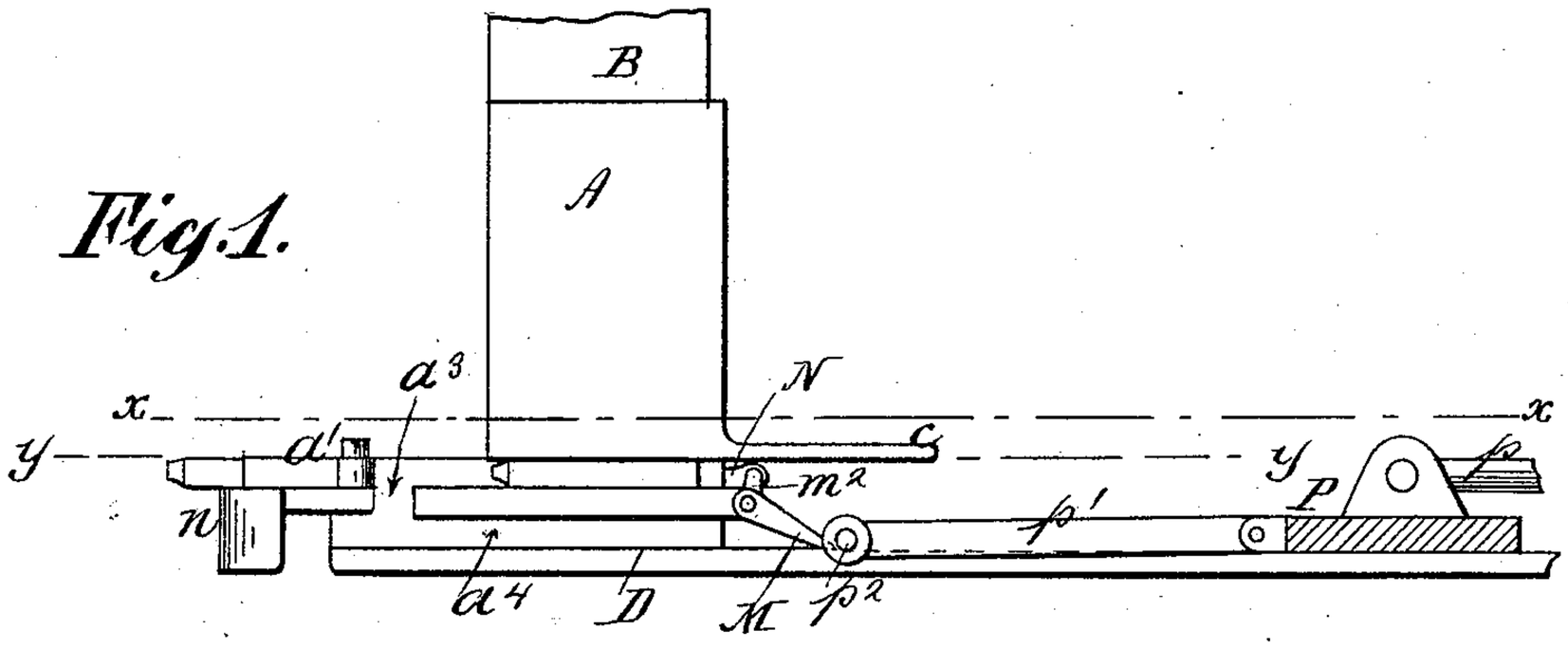

Fig. 2.

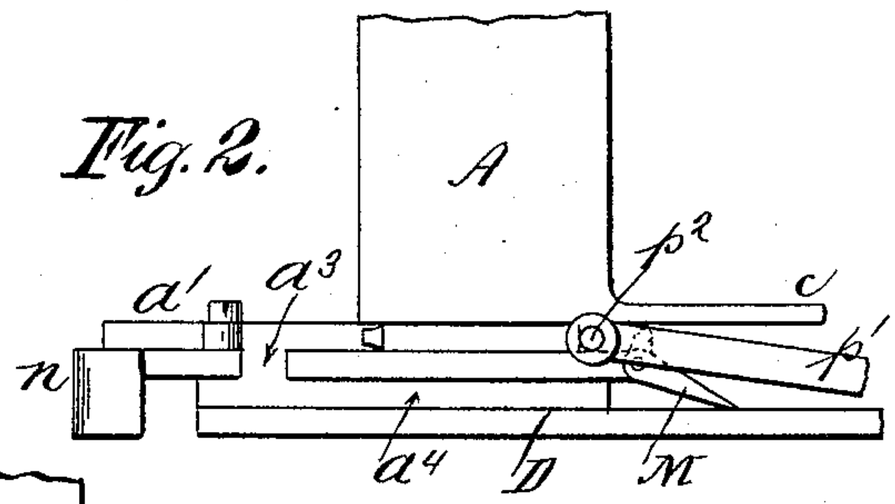

Fig. 3.

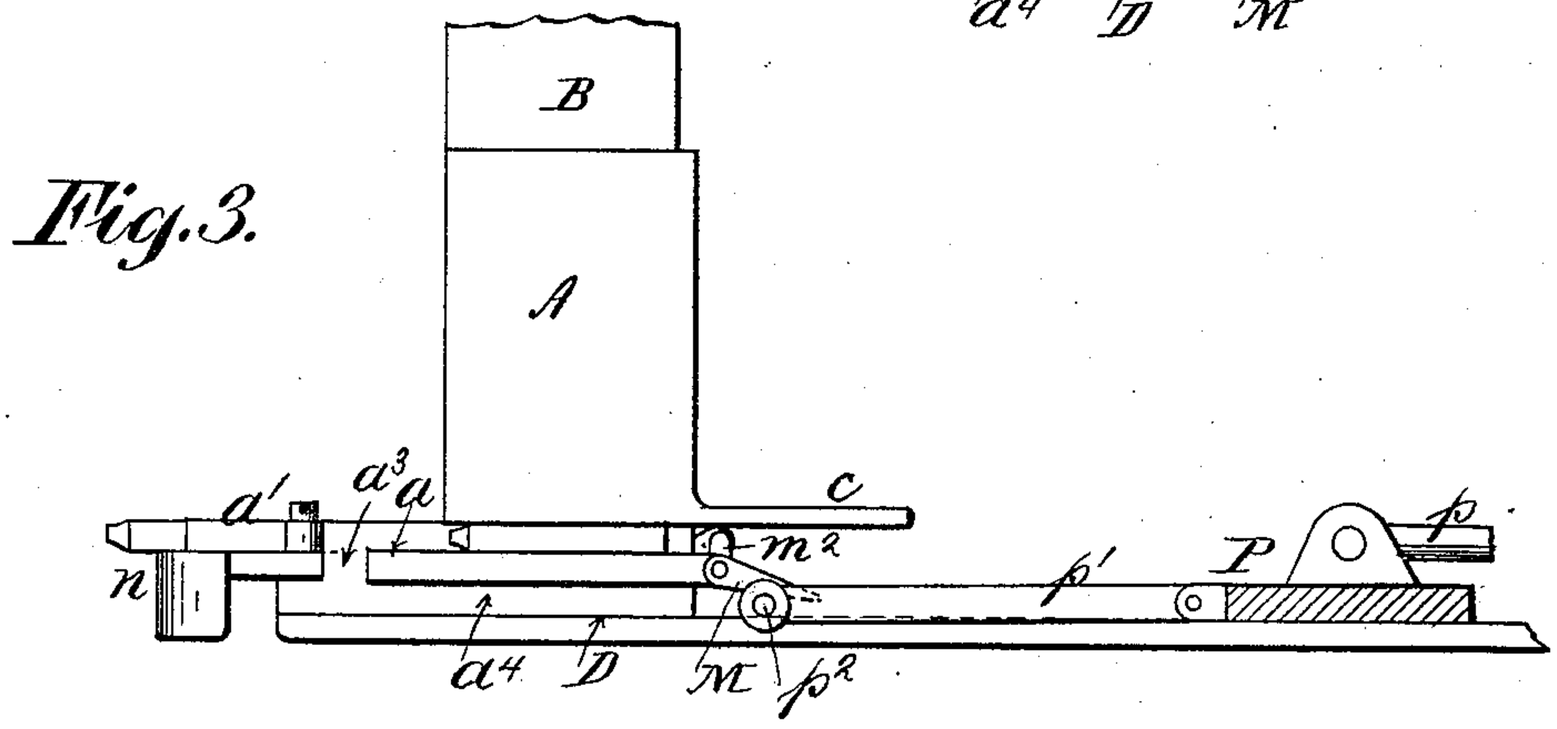

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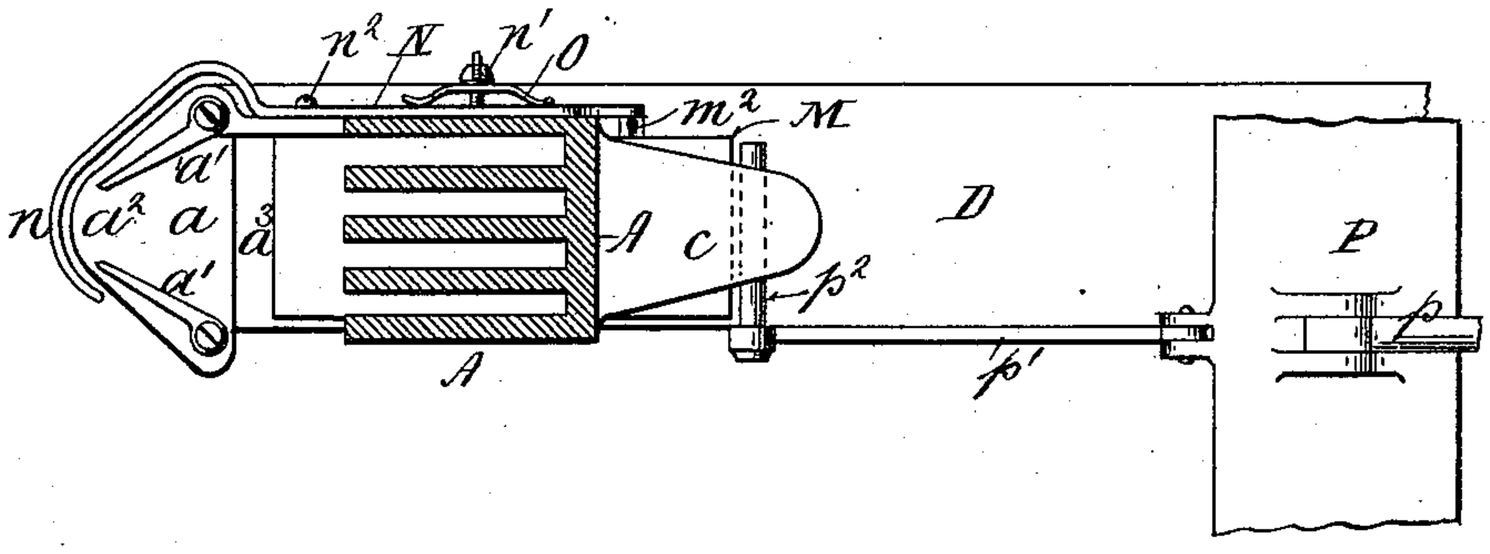
Fig. 6.



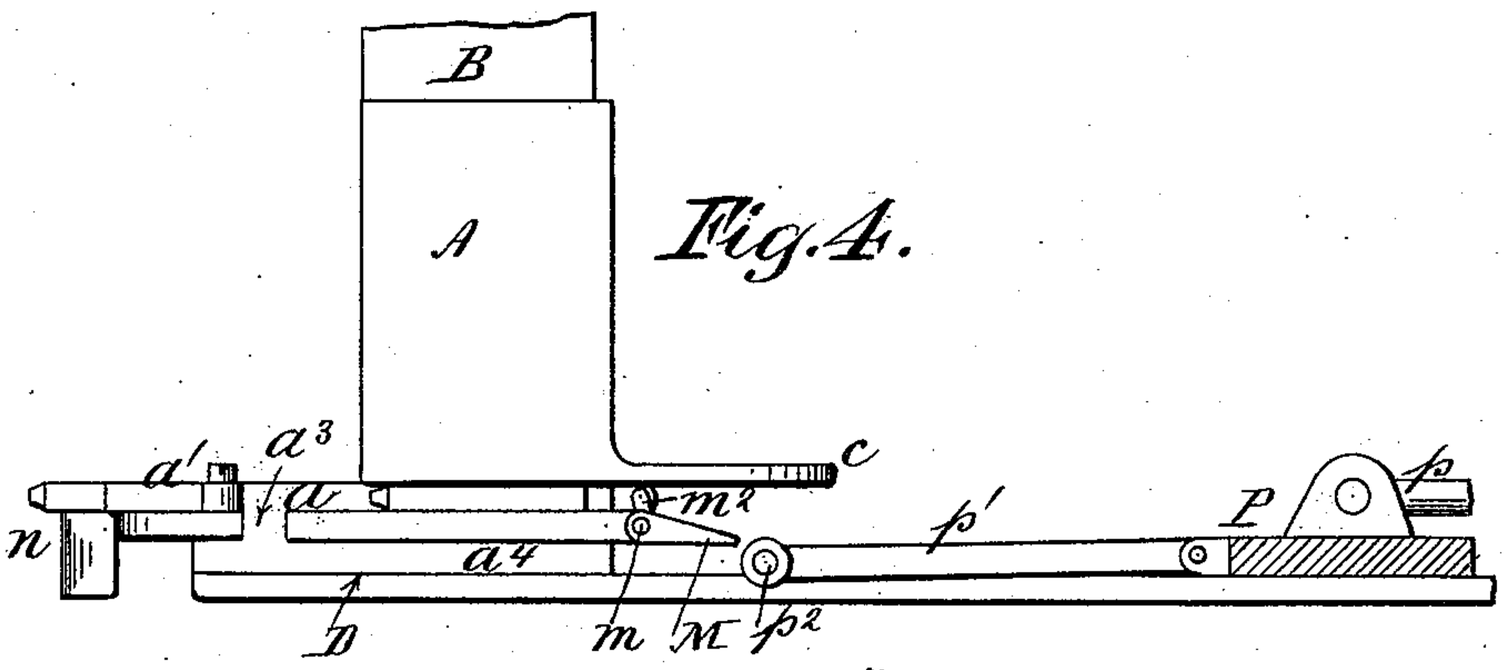


Fig. 4.

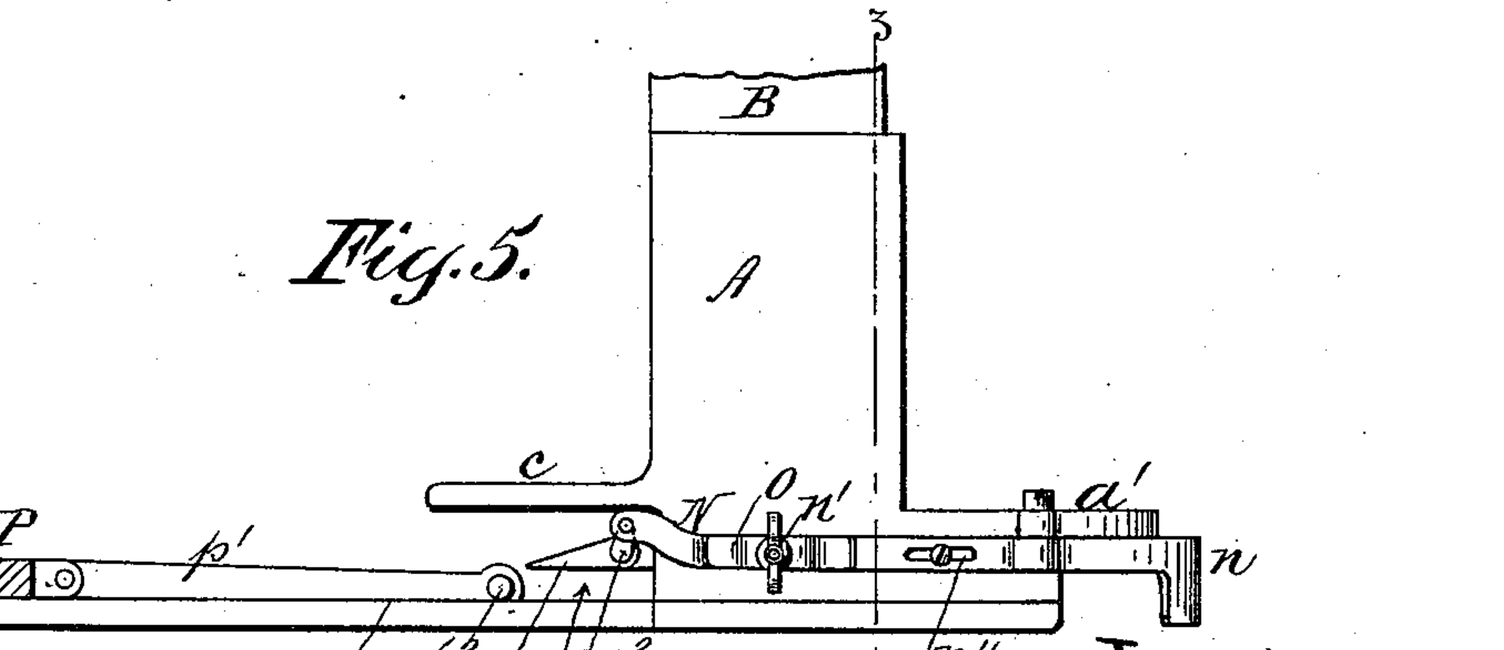


Fig. 5.

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TYPE SETTING APPARATUS.

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Fig. 7.

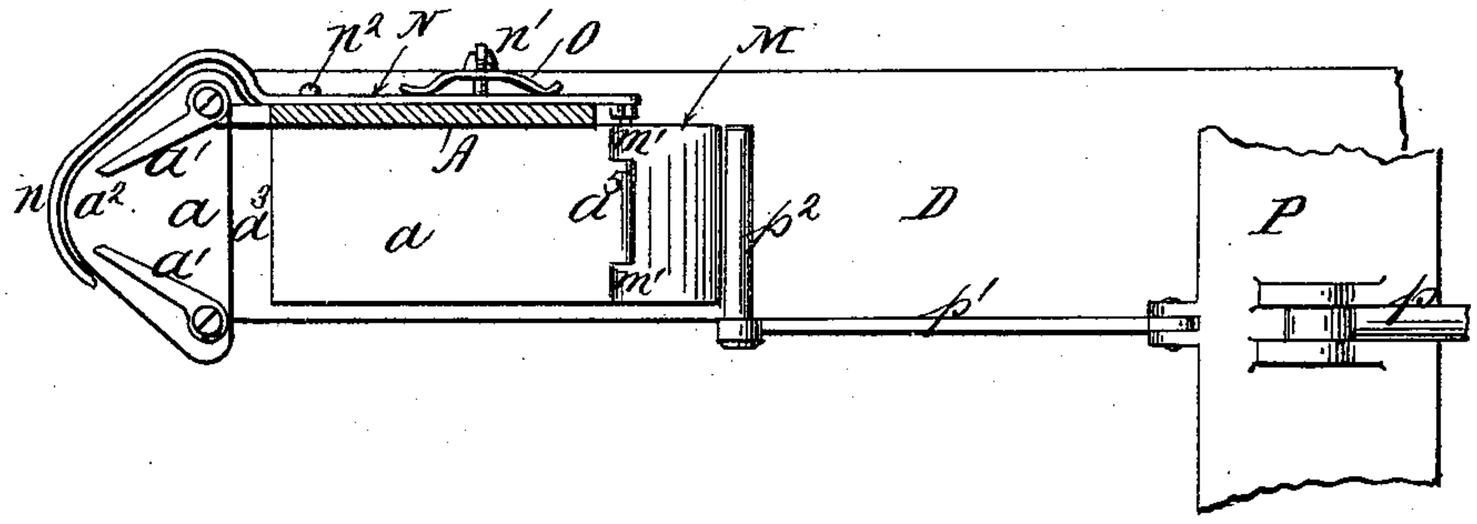


Fig. 8.

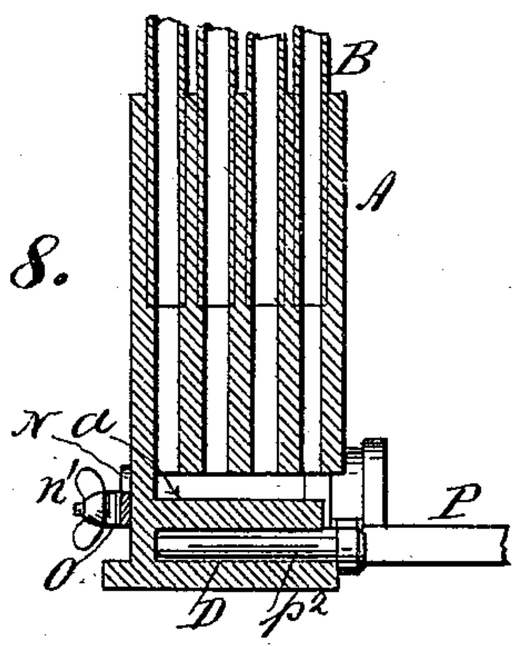


Fig. 9.

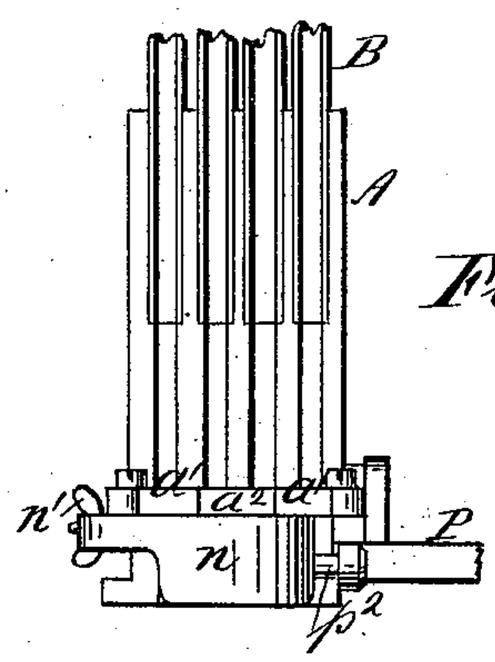


Fig. 12.

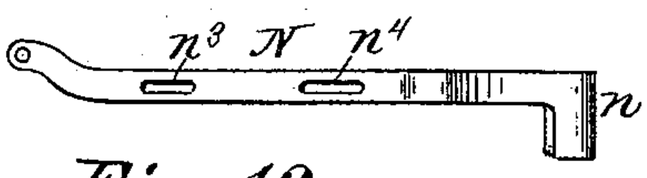


Fig. 10.

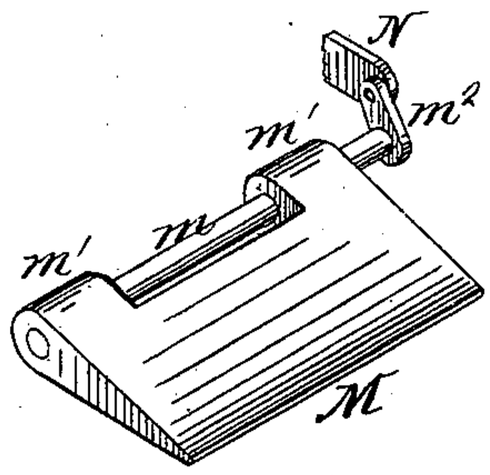
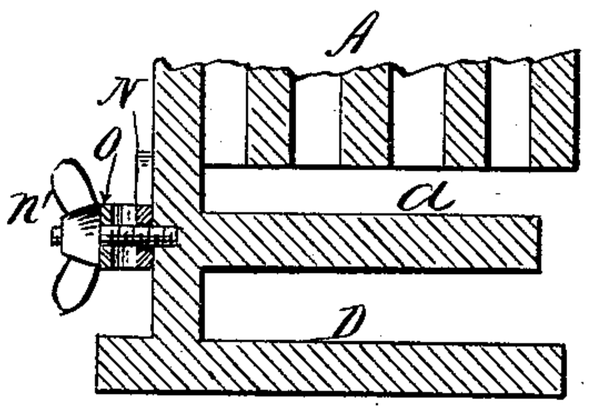


Fig. 11.



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UNITED STATES PATENT OFFICE.

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TYPE-SETTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 523,743, dated July 31, 1894.

Application filed January 24, 1894. Serial No. 497,854. (No model.)

To all whom it may concern:

Be it known that we, LOUIS KOSSUTH JOHNSON and ABBOT AUGUSTUS LOW, citizens of the United States, residing in the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Setting Apparatus, of which the following is a specification, sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

Our invention relates to the form of type setting apparatus set forth in our application, Serial No. 492,664, filed December 5, 1893, in which a plurality of types are forwarded simultaneously and made to converge together as they advance into position to be grasped collectively between the thumb and finger of the compositor.

The type forwarder in the application above referred to is operated by hand.

Our present invention is designed to relieve the hand of the compositor of the labor of forwarding the types, and at the same time to insure the forwarding and presentation of new types as fast as those preceding are removed from the case.

The invention consists essentially in combining and arranging with the plurality of type containing channels and with the means for converging the types upon a common support, of a constantly reciprocating pusher which acts only upon the types when thrown into action by a shunt or switch actuated, through the medium of a push bar, by the fingers of the compositor while in the act of grasping the preceding types which protrude from the front of the type platform. In our concurrent application, Serial No. 496,396, filed January 10, 1894, a similar result is accomplished by a finger lever by which the pusher arm is raised so as to bring the pusher finger into action on the type supporting platform; in our concurrent application, Serial No. 497,855, filed January 24, 1894, the pusher finger is raised into action by an elastic inclined plane interposed, by a finger bar, in its path at the latter part of its backward stroke.

In the present application we confine ourselves to the use of a pivoted extension of the type supporting platform which pivoted extension is swung down by the operator, while removing the preceding types, so that the pusher finger in its forward stroke rides up the extension and on to the type supporting shoulder,—the return stroke of the pusher finger again raising or opening the switch so that the pusher finger vibrates without acting on the types.

In the accompanying drawings Figure 1, is a side elevation showing the switch closed, and the pusher finger about to advance to forward fresh types. Fig. 2, is a view showing the pusher finger advanced into contact with the heels of the lowest types in the channels; Fig. 3, an elevation showing the pusher finger raising or opening the switch during the retractile movement of the pusher. Fig. 4, is a similar view showing the completion of the retractile movement of the pusher. Fig. 5, is an elevation of the opposite side of the device, with the parts in the position shown in Fig. 4. Fig. 6, is a horizontal section upon plane of line x, x, Fig. 1. Fig. 7, is a horizontal section upon plane of line y, y, Fig. 1. Fig. 8, is a vertical section upon plane of line z, z, Fig. 5. Fig. 9, is a front elevation. Fig. 10, is an isometrical perspective of the switch; Fig. 11, an enlarged sectional view showing the adjustment of frictional contact upon the finger bar; Fig. 12, a detail view of the latter.

The socket piece or support A, for the type containing channels B, may be of any convenient or desired construction, that shown in the drawings being substantially the same as in our applications hereinbefore referred to. The type supporting platform a, extends out beyond the front of the socket piece A, and is provided with the converging side walls a', a', ending in the port a^2, through which the forward ends of the types are made to project by the forward stroke of the type pusher P, when the latter is brought into action.

The type platform a, is slotted transversely at a^3, just behind the position which the heels of the types occupy when forwarded. This slot a^3, opens into a passage way a^3, the bottom of which is formed by the top of the main platform D, upon which the pusher P, rests,

in the arrangement shown in the drawings, although the pusher may be supported in any convenient or well known manner, the essential feature being the employment of a constantly reciprocating type forwarding device actuated by suitable mechanism.

The pusher bar P, is shown as reciprocated through the medium of a connecting rod p. To its front edge is pivotally connected one end of an arm p', having the lateral pusher finger p^2, projecting from its other extremity. This pusher finger rests normally upon the top of the table D, traveling back and forth thereon, as the pusher bar P, is reciprocated.

The type platform a, extends back slightly beyond the rear of the type containing channels B, where it is formed with a hinged extension M, which performs the function of a switch or shunt for the pusher finger p^2. This switch is attached to the rear of the type platform a, by the rod m, which passes through the knuckles m' m', formed on the extension M, and through the middle knuckle a, formed on the rear of the type supporting platform, and is rigidly secured to the switch M. The rod, m, on the side opposite that upon which the pusher arm p', is situated, is formed with a short crank m^2, connected with the rear end of the push bar N.

The push bar N, extends from the crank m^2, to the front of the type supporting shoulder a, being bent around the port a^2, so as to form a comparatively broad finger bearing n, immediately below the latter, against which the fingers of the compositor naturally press while in the act of grasping the types projecting through the port a^2, and over the front of the type platform.

The push bar N, is secured to the frame by any suitable means which will permit of its longitudinal movement within the slight limits required to move the crank m, sufficiently to open or close the switch M. As shown in the drawings the bar N, is held in position by set screws n', n^2, the shanks of which pass through longitudinal slots n^3, n^4, formed in the bar.

In order to regulate the degree of tension or resistance to movement in either direction afforded by the push bar N, we interpose a bow, or double ended spring O, between the head of the set screw n', and the outer side of the bar, as will be understood by reference to Figs. 5, 6, 7, and 11. By tightening or loosening the screw n', the resistance or frictional contact may be regulated with accuracy and wear may be compensated for.

The operation is as follows: The compositor in grasping the types protruding through the port a^2, at the front of the type platform a, brings his finger and thumb into contact with the finger bearing n, thereby pushing the bar N, back and acting on the crank m^2, which yields until the rear edge of the switch M, rests against the top of the platform D, when the parts are in the position illustrated in Fig. 1. As the pusher finger p^2, advances it rises up over the switch M, and encounters the heels of the lowest types in the channels as illustrated in Fig. 2. After the completion of its forward stroke the pusher finger p^2 drops through the slot a^3, into the passage a^4, and when near the end of its retractile stroke encounters the underside of the switch (as illustrated in Fig. 3) which it raises into its normal position against the frictional resistance of the push rod N, which is also thereby pushed back to its normal position. The parts remain in this position, the pusher finger reciprocating upon the table D, until the types advanced are grasped for removal, when the same operation is repeated. The upward movement of the pusher finger p^2, is limited by a stop c, projecting from the rear of the support A, or by other suitable means.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In type setting apparatus the combination of a plurality of type containing channels; a type platform, common to all the types, formed with a transverse slot; a reciprocating type forwarder arranged to advance over said type platform and to drop through said transverse slot at the end of its forward stroke; and a pivoted extension of the type platform, arranged to act as a switch for type forwarder, substantially in the manner and for the purpose described.

2. In type setting apparatus the combination of a plurality of type containing channels; a type platform, common to all the types, formed with a transverse slot; a reciprocating type forwarder arranged to advance over said type platform and to drop through said transverse slot at the end of its forward stroke; a pivoted extension of the type platform arranged to act as a switch for the type forwarder; and a push bar arranged to actuate said switch, substantially in the manner and for the purpose described.

3. In type setting apparatus the combination of a plurality of type containing channels; a type platform, common to all the types, formed with a transverse slot; a reciprocating type forwarder arranged to advance over said type platform and to drop through said transverse slot at the end of its forward stroke; a pivoted extension of the type platform arranged to act as a switch for the type forwarder; a push bar arranged to actuate said switch, and means for increasing the frictional resistance of said push bar, substantially in the manner and for the purpose described.

4. In type setting apparatus the combination of a plurality of type containing channels; a type platform, common to all the types, formed with a transverse slot; a reciprocating type forwarder; a pivoted extension M, of the type platform formed with a crank m, and

the push bar N, formed with the finger bearing *n*, and frictional adjustment O, for the purpose and substantially in the manner described.

5. In combination with the switch M, crank *m*, and push bar N, having the finger bearing *n*, the double spring O, and set screw *n'*, for the purpose and substantially in the manner described.

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