(No Model.) 3 Sheets—Sheet 1.

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

TYPE SETTING APPARATUS.

No. 523,744. Patented July 31, 1894.

Fig. 1.

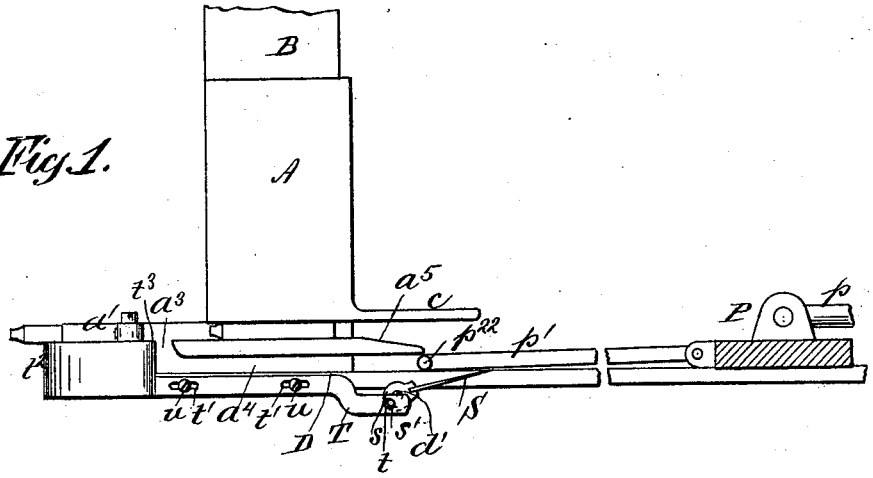
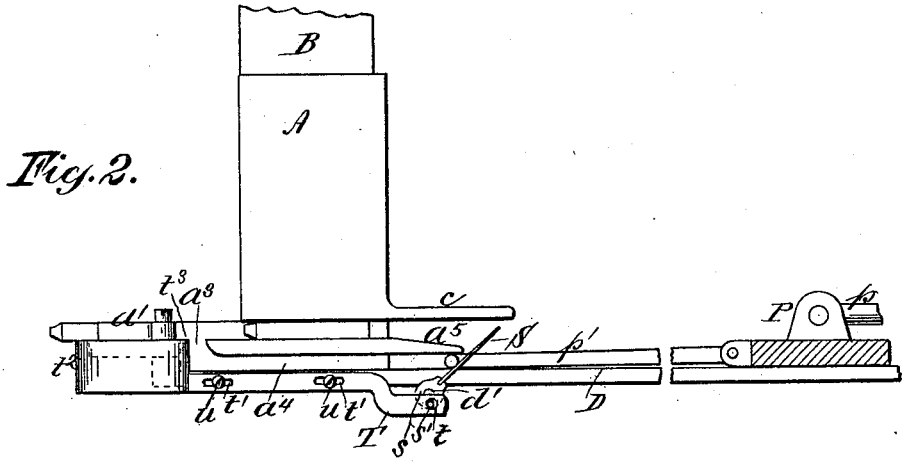


Fig. 2.



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(No Model.) 3 Sheets—Sheet 2.

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Fig. 3.

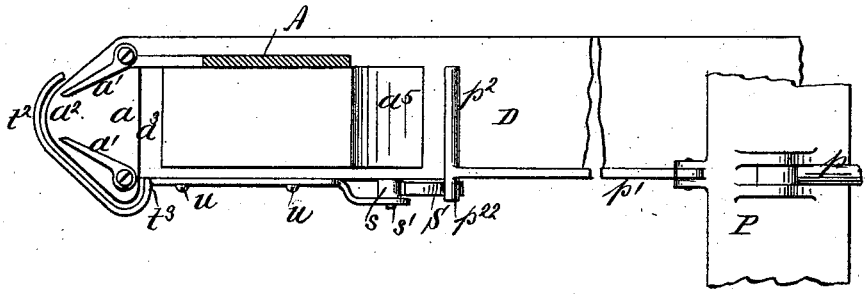


Fig. 4.

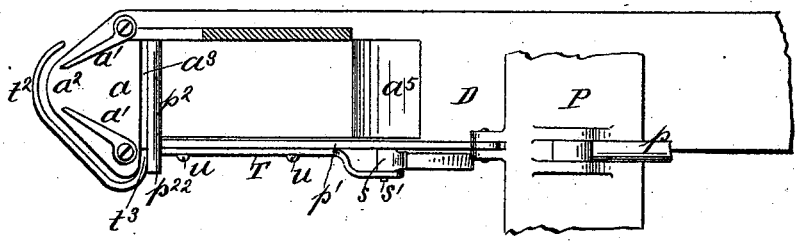
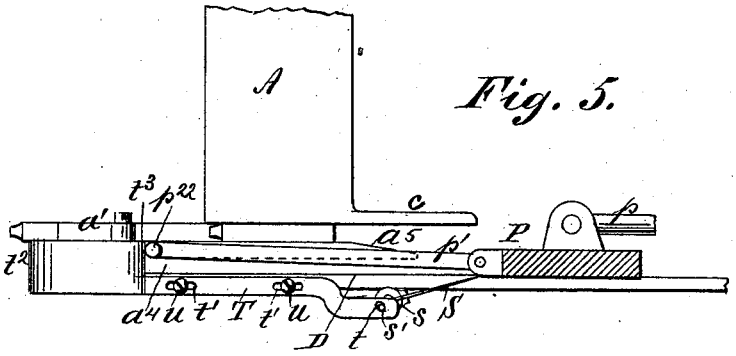


Fig. 5.



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TYPE SETTING APPARATUS.

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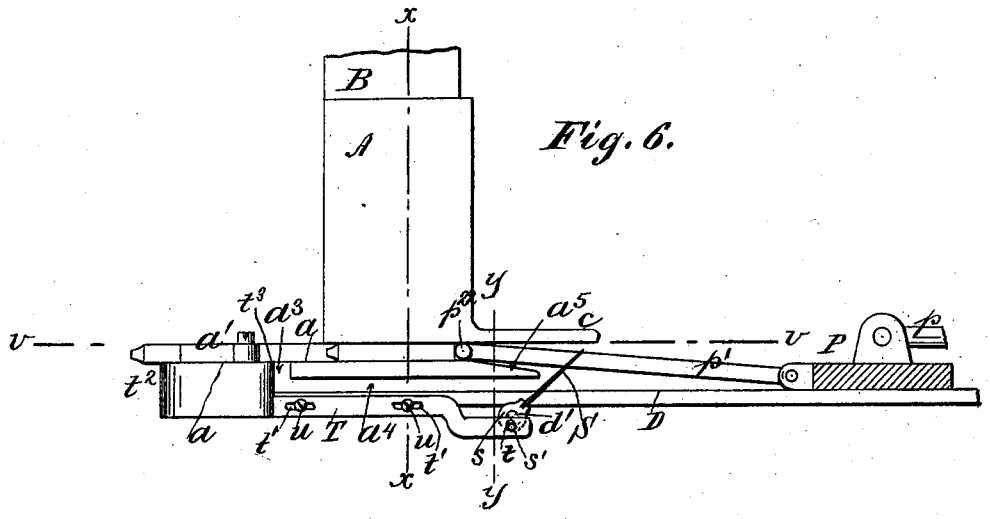


Fig. 6.

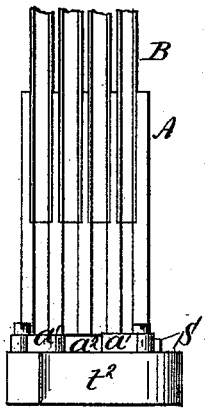


Fig. 7.

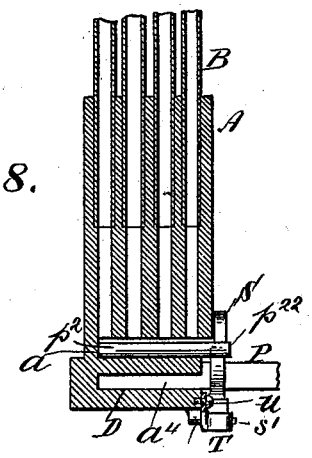
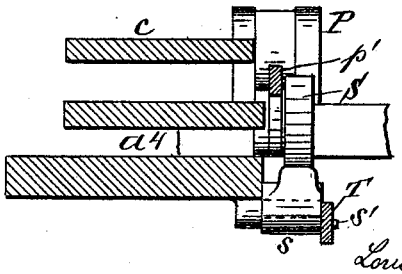


Fig. 8.

Fig. 9.



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UNITED STATES PATENT OFFICE.

LOUIS KOSSUTH JOHNSON AND ABBOT AUGUSTUS LOW, OF BROOKLYN, ASSIGNORS TO THE ALDEN TYPE MACHINE COMPANY, OF NEW YORK, N. Y.

TYPE-SETTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 523,744, dated July 31, 1894.

Application filed January 24, 1894. Serial No. 497,855. (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, a constantly reciprocating pusher which acts only upon the types when thrown into action by an inclined plane interposed in its path at the latter part of the retractile stroke,—said inclined plane being 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 platform; in our concurrent application Serial No. 497,854, filed January 24, 1894, the pusher finger is raised into action by a pivoted extension of the type platform acting as a switch by a finger push bar. In the present application we confine ourselves to the use of the incline which is interposed by the operator in the path of the receding pusher finger by the simple act of grasping the preceding types for removal, the forward stroke of the pusher finger returning the parts to their normal positions with relation to each other.

In the accompanying drawings Figure 1, is a side elevation of the apparatus, showing the parts in their normal positions, with the elastic incline lowered; Fig. 2, a similar elevation showing the elastic incline raised and the pusher finger in contact therewith; Fig. 3, a horizontal section upon plane of line v, v, Fig. 1; Fig. 4, a similar view showing the pusher finger advanced; Fig. 5, an elevation, with the parts in the position shown in Fig. 4; Fig. 6, an elevation, showing the position of the parts when the pusher finger encounters the heels of the lowest types in the channels. Fig. 7, is a front elevation; Fig. 8, a vertical section upon plane of line x, x, Fig. 6; Fig. 9, a vertical section upon plane of line y, y, Fig. 6.

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 passageway a^4, 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 upon the platform a, 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 beveled extension a^5.

The pusher finger p^2, is raised to this rear extension a^5, of the type platform a, by a flat spring S, pivotally mounted on the frame at d'. When this spring is at rest in its normal position, as in Figs. 1 and 5, it is depressed below the position of the pusher finger at the end of its retractile stroke; when it is raised, as in Fig. 2, it is interposed in the path of the pusher finger p^2, or rather of an extension p^{22}, thereof, so that at or near the end of its retractile movement the pusher finger is forced upward in line with the type platform, over which it then advances on its forward stroke.

Projecting from the hub s, of the flat spring S, is a stud s', which engages with a slightly elongated slot t, in the push bar T. This push bar T, is mounted on the frame by any means which will admit of slight longitudinal movement of the bar. As shown in the accompanying drawings it is simply held against the side of the frame by set screws u, u, the shanks of which pass through the longitudinal slots t', t'. The forward end of the push bar T, is bent around the front edge of the type platform a, forming a finger bearing t^2, under and adjoining the type port a^2.

The degree of frictional resistance to the longitudinal movement of the push bar T, may be regulated by the set screws u, u, by the spring tension device shown in our concurrent application hereinbefore referred to, or by any other suitable means.

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.

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 thumb and finger into contact with the finger bearing t^2, thereby pushing the bar T, back, causing it to act on the stud s', and raise the spring S, into an inclined position, as indicated in Fig. 2,—the backward movement of the push bar T, and consequently the inclination of the spring S, being limited either by the contact of the finger bearing t^2, with the front of the type platform, or by a suitable stop arranged for the purpose. With the elastic incline S, thus set, the pusher finger p^2, near the end of its retractile movement encounters the spring S, and during the completion of its retractile stroke is forced upward by the latter and snapped into position to advance upon the type platform during its next forward stroke. As it advances it encounters the heels of the lowest types and forwards them into position for removal like those immediately preceding them, as is fully set forth in our said prior application. Just before the completion of its forward stroke by the pusher, and during its descent through the transverse slot a^3, it comes in contact with a shoulder t^3, on the push rod T, forcing the latter forward again into its normal position, and thereby depressing the spring S, so that the pusher finger p^2, will reciprocate idly upon the table D, until the forward types are removed and the push bar is again pressed back to set the elastic incline S.

We have hereinbefore described our new form of switch as being elastic, so as to yield slightly before the pusher-finger, but while we prefer this form of elastic switch, on account of its accuracy and certainty of operation, we do not necessarily confine ourselves thereto since the switch may be more or less rigid and still perform the function of raising the pusher finger, provided the latter reciprocates rapidly, and that the elevation of the pusher finger is completed at the extreme of its retractile movement.

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; a spring switch for raising the type forwarder to the type platform; and means for throwing the spring switch in and out of position 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 spring switch pivotally connected to the frame; and a push bar for actuating the same substantially in the manner and for the purpose set forth.

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 the said transverse slot, at the end of its forward stroke; a spring switch pivotally connected to the frame and a push bar connected therewith and formed with a finger bearing substantially in the manner and for the purpose described.

4. In type setting apparatus the combination of a plurality of type containing chan-

nels; 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 an elastic switch for raising the said type forwarder to the type platform substantially in the manner and for the purpose set forth.

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