

(No Model.)

4 Sheets—Sheet 1.

L. K. JOHNSON.
TYPE SETTING APPARATUS.

No. 523,740.

Patented July 31, 1894.

Fig. 1.

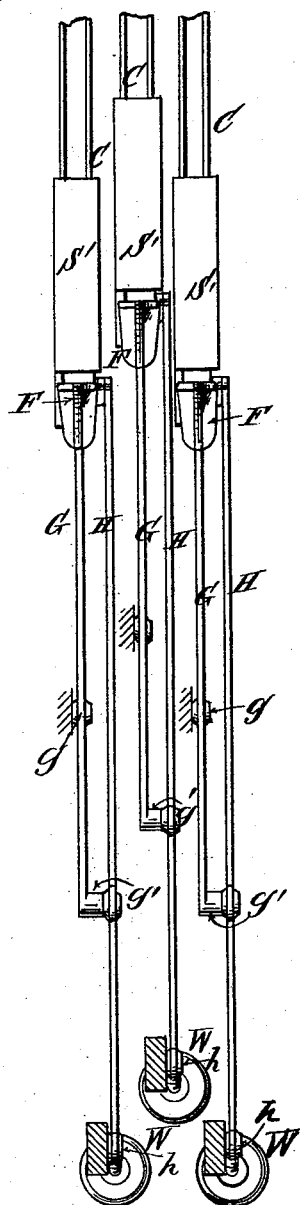
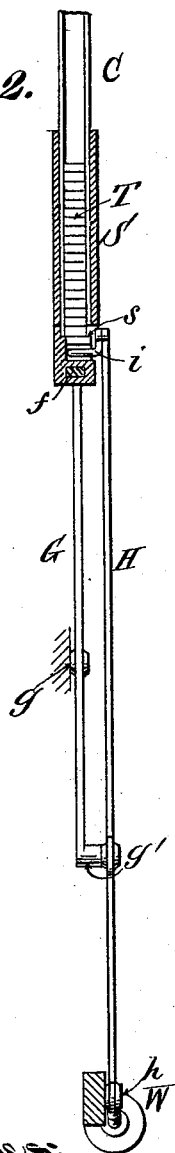


Fig. 2.



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By his attorney
George William Smith

(No Model.)

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Fig. 3.

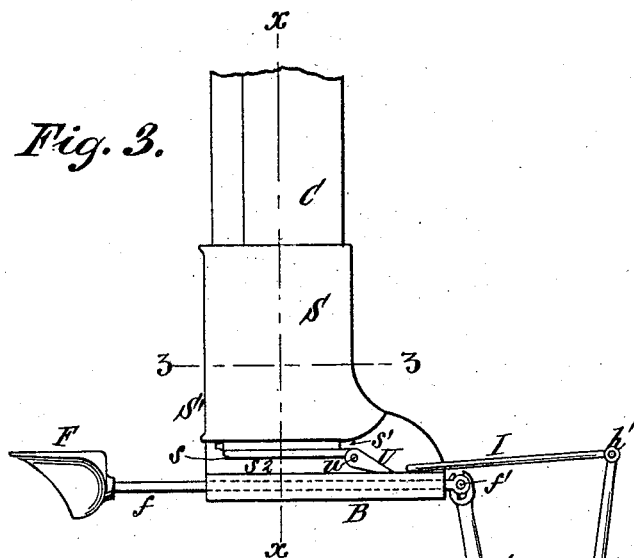
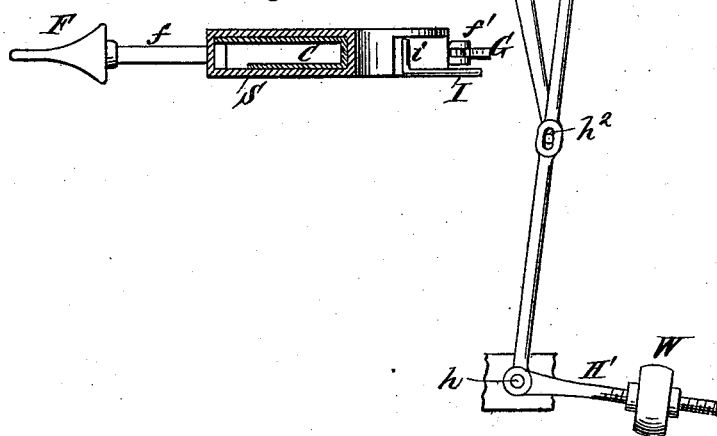


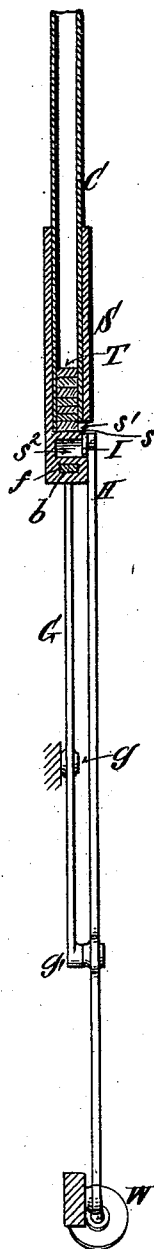
Fig. 12.



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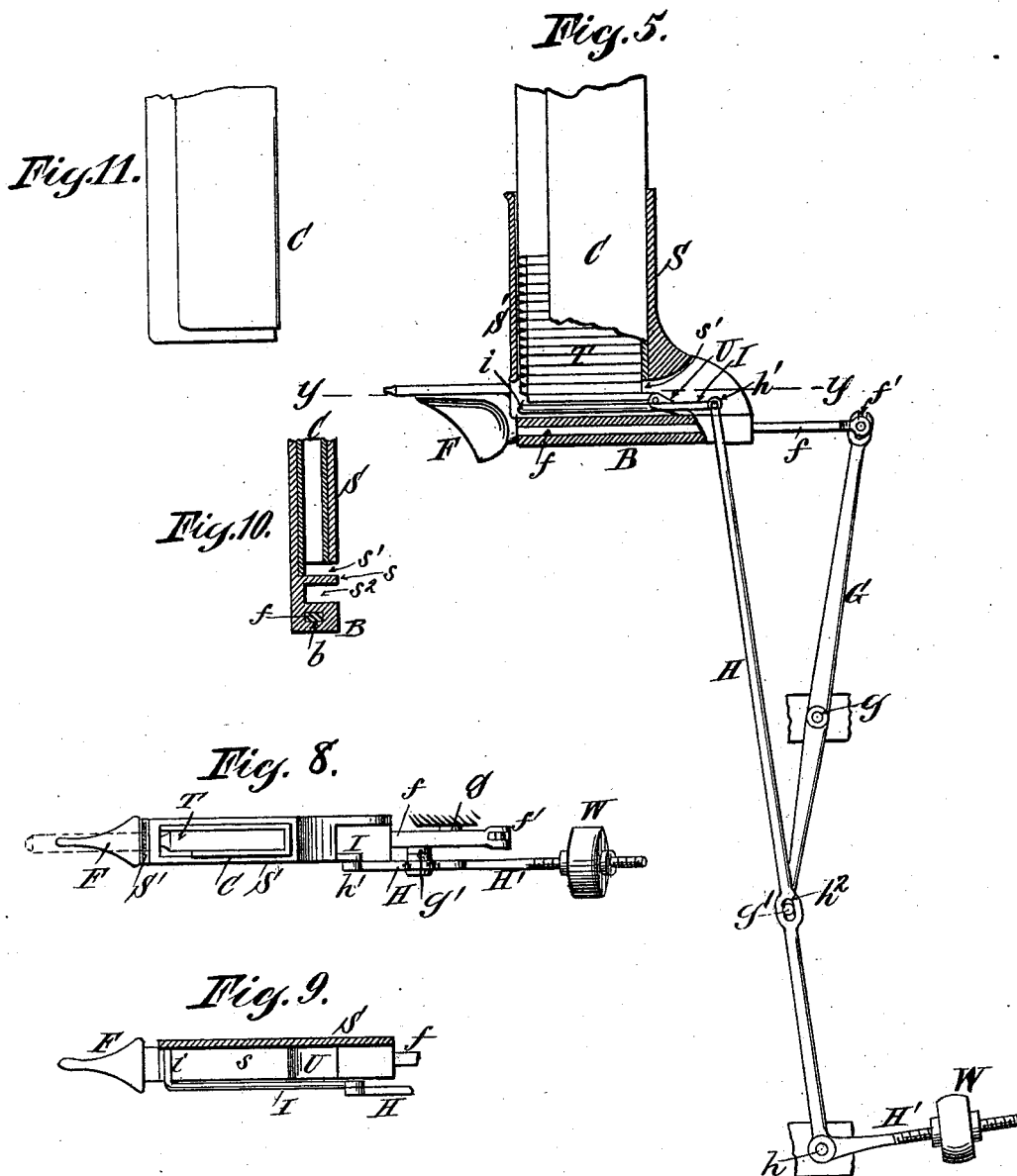
Fig. 4.



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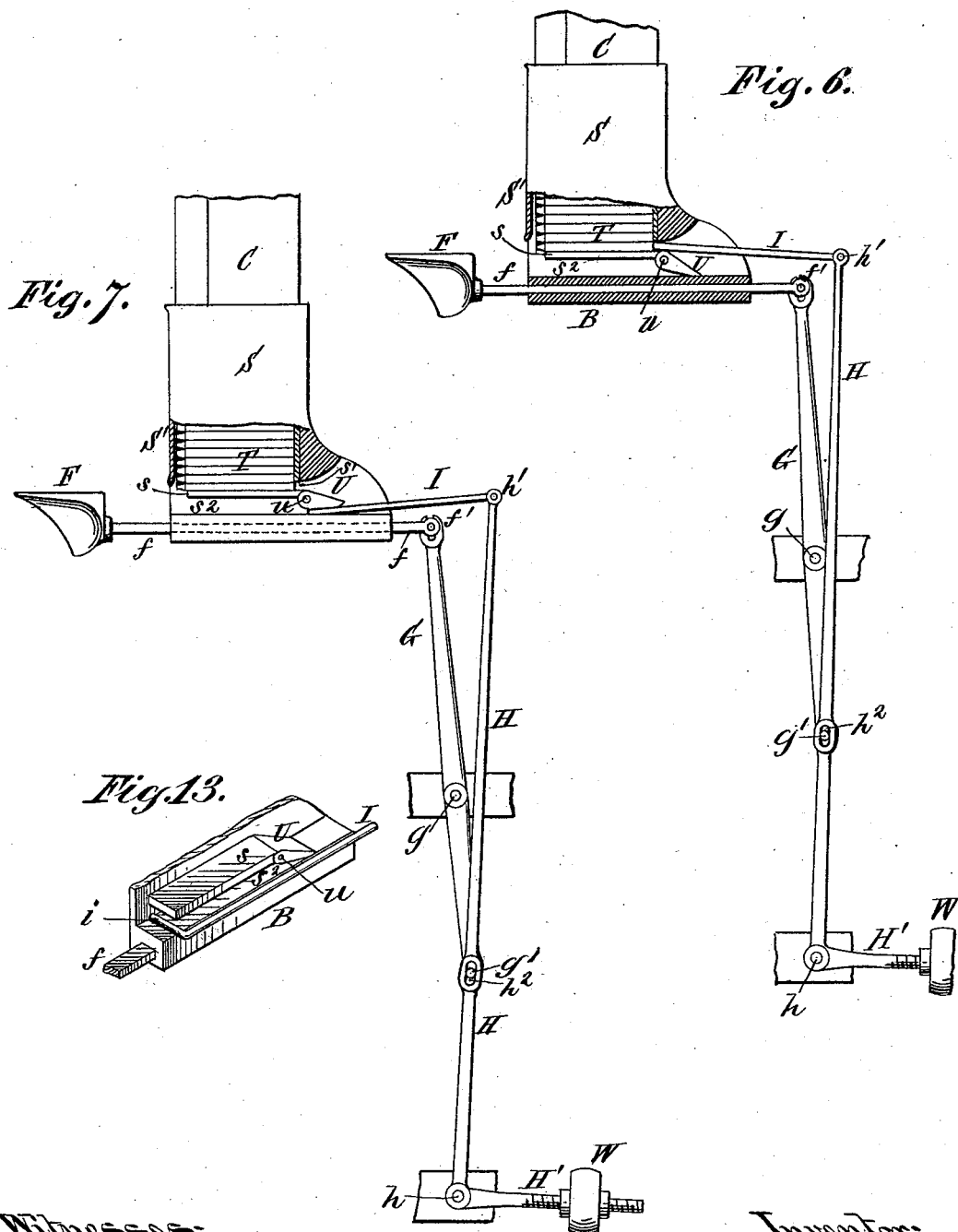
(No Model.)

4 Sheets—Sheet 4.

L. K. JOHNSON.
TYPE SETTING APPARATUS.

No. 523,740.

Patented July 31, 1894.



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UNITED STATES PATENT OFFICE.

LOUIS K. JOHNSON, OF BROOKLYN, ASSIGNOR TO THE ALDEN TYPE MACHINE COMPANY, OF NEW YORK, N. Y.

TYPE-SETTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 523,740, dated July 31, 1894.

Application filed November 23, 1893. Serial No. 491,700. (No model.)

To all whom it may concern:

Be it known that I, LOUIS K. JOHNSON, a citizen 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.

My improvements relate to the class of apparatus in which the types are arranged in upright columns in prescribed positions in type containing channels, the object of the invention being to facilitate the withdrawal of the lower types as required.

In my application, Serial No. 465,697, filed March 13, 1893, I show a pusher finger actuating intermediate levers so as to forward the lowest type in a column, actual contact being had with the heel of the type by the upper end of a vibratory push lever. While the arrangement referred to accomplishes the result sought it is still susceptible of improvement since the end of the type forwarding lever has to pass under and in contact with the lowest type while returning to its normal condition after forwarding a type. I obviate this in my present invention which consists primarily in causing the type forwarder to be retracted upon a lower plane than that of the lowest type after it has forwarded the preceding type; and secondarily in the special means hereinafter set forth for accomplishing this result.

In the accompanying drawings I illustrate means for carrying out my improvements practically although I do not wish to confine myself to the identical form and construction of parts shown since it is obvious that various modifications may be introduced without departing from the spirit and intent of my invention. In practice the arrangement of parts shown is duplicated for each denomination of type to be contained in the setter case as a whole, and I herein illustrate only sufficient mechanism to give a clear idea of the novel parts and movements claimed.

Figure 1, is a front elevation of three type containing channels provided with my type forwarding mechanism, the upper portions of

the type channels being broken away, and the type supporting shoulders being arranged at different elevations so as to give clearness for the finger pieces. Fig. 2, is a front elevation of my improved type forwarding mechanism showing the finger piece and channel socket in section. Fig. 3, is a side elevation of my type forwarding mechanism in the retracted position. Fig. 4, is a sectional elevation on plane of line *x, x*, Fig. 3. Fig. 5, is a sectional elevation of the type forwarding mechanism pushed back into the position which it assumes in forwarding the type, the lower end of the type channel being broken away to show the types above the type supporting channel. Fig. 6, is a view similar to Fig. 5, showing the position of the parts at the moment when the type forwarder is about to advance the lowest type. Fig. 7, is a similar view to Figs. 5 and 6, showing the type pusher passing under the automatic shunt during the retractile movement of the parts; Fig. 8, a plan of a single channel and mechanism. Fig. 9, is a horizontal section upon line of *y, y*, Fig. 5. Fig. 10, is a vertical section upon line *x, x*, Fig. 3, showing the lower end of the type channel, the socket, type shoulder, &c., without the types and without the actuating parts. Fig. 11, is an elevation of the lower end of a type containing channel. Fig. 12, is a horizontal section upon plane of line *z, z*, Fig. 3. Fig. 13, is an isometrical view illustrating more clearly the relation of the type shoulder, type forwarder return slot, and shunt to each other.

The types *T*, are arranged in type containing channels *C*, which latter are supported in any suitable manner in a frame or rack from which they may be removed individually. Any number of type channel supports may be combined in one case, preferably arranged at slightly different elevations so as to permit of the channels being brought into proximity vertically while affording ample clearance for the fingers of the operator. As shown in the drawings, the lower ends of the channels *C*, are supported in the sockets *S*, which are in turn supported by the frame or rack, or form a part thereof. The lower end of the type containing channel is shown in Figs. 2, 4 and 10, one side wall being shorter than the other, so that when the other side wall rests against

the type supporting shoulder s , a transverse slot or opening s' , will be left above the type supporting shoulder and said shorter side wall of the channel. Below the type supporting shoulder s , is another slot or channel s^2 , at the rear end of which is the shunt U. Below the channel s^2 , is the sleeve or bearing B, formed with the rectangular recess b , in which the shank f , of the finger-piece F rests loosely. To the rear end f' , of pusher shank or rod f , is connected the lever G, pivoted at g , to a stationary part of the frame and connecting at its lower end g' , with the lever H, which latter is pivoted at its lower end h , to a stationary part of the apparatus while its upper end h' , is pivotally connected with the type forwarder I.

As shown in the drawings the upper end of the lever G, is bifurcated where it passes over a pin projecting from the end of the pusher rod f , so as to compensate for the horizontal motion of the latter, while its lower end g' , engages with a slot h^2 , in the lever H, so as to permit of the levers working freely one over the other.

The shunt U, may consist of any suitable means for automatically closing the rear end of the passage s^2 , after the passage underneath it of the type shoulder i . The latter as will be seen from Figs. 9, 12 and 13 projects laterally from one side of the type forwarder I, this shoulder i , alone entering the passages s' , and s^2 .

As shown in the drawings, the automatic shunt U, consists of an inclined gate or pawl, the upper end of which is pivotally connected at u , to the rear end of the type shoulder s , from which it extends backward at an incline as will be seen by reference to Figs. 3, 6 and 13.

The upper side of the finger piece F, is flat, and is formed upon the same plane as the top or type surface of the type shoulder s . The front wall S' , of the socket piece S, is made to act as a front guard to retain all but the lowest type, excepting the one resting directly upon the type shoulder s , within the type containing channel.

The operative parts tend constantly to maintain their normal positions automatically by reason of a counter-weight W, secured adjustably upon the arm H' , of the lever H. The adjustment of the weight W, provides for the accurate adjustment and balancing of the parts with relation to the work to be done.

It is obvious that a spring or other equivalent mechanism may be substituted for the weight W.

The operation of my improved mechanism is as follows: The parts being in the position shown in Fig. 3, the operator, using his thumb and finger, pushes inward the finger-piece F, which causes the rod f' , to throw the upper end of the lever G, over into the position shown in Fig. 5, the lever G, in turn throwing the lever H, forward. During this forward

stroke of the upper end of the lever H, the shoulder i , of the type forwarder I, advances over the inclined top of the shunt U, comes in contact with the heel of the lowest type (as shown in Fig. 6) and projects the said lowest type onto the top of the finger piece F, and between the thumb and finger of the operator; or in such position that the operator can readily grasp or lift it from the top of the finger-piece. Having performed this function the shoulder i , of the type forwarder I, drops down into the channel s^2 . As the operator removes his fingers from the finger piece F, the counterweight W, retracts the operative parts. As the levers G and H, swing back into their normal position the type shoulder i , is drawn through the channel s^2 , and under the shunt U, (as shown in Fig. 7) returning to its former position shown in Fig. 3.

The shunt U, shown in the drawings is supposed to be of sufficient weight to act automatically by gravity, but a spring pawl or equivalent device may be substituted if preferred.

As shown in the drawings and for convenience in illustration, the socket S, front guard S' , type shoulder s , and bearing or support B, are made in one piece or connected together, but this is not essential. The several parts named may be supported independently or otherwise formed as may be found most convenient in assembling a series of channels with their independent type forwarding mechanism in one case.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In typesetting mechanism, the combination of a type containing channel, a type supporting shoulder formed with a channel underneath its type supporting surface, an automatic shunt for closing said channel, and a reciprocating type forwarding shoulder arranged and operating substantially in the manner and for the purpose set forth.

2. The combination of a type containing channel C, a type supporting shoulder s , formed with the channel s^2 , underneath it, the automatic shunt U, the reciprocating type forwarder I, formed with the laterally projecting type shoulder i , and means for reciprocating the said type forwarder I, substantially in the manner and for the purpose described.

3. The combination of a type containing channel C, type supporting shoulder s , formed with the channel s^2 , beneath it, the automatic shunt U, the type forwarder I, formed with the laterally projecting type shoulder i , the lever H, the lever G, the rod f , and the finger piece F, the whole arranged and operating substantially in the manner and for the purpose set forth.

4. The combination of a type containing channel C, the type supporting shoulder s , formed with the channel s^2 , underneath it, the automatic shunt U, the type forwarder I,

formed with the type shoulder *i*, the levers *g*, and *H*, the rod *f*, and finger piece *F*, together with means for automatically retracting the parts substantially in the manner and for the purpose set forth.

5 5. In combination with a type containing channel *C*, type supporting shoulder *s* formed with a channel *s*² beneath it, the automatic shunt *U*, the type forwarder *I* formed with a lateral type shoulder *i*, the levers *G* and *H*, rod *f*, and finger piece *F*, together with an adjustable weight *W*, mounted upon one of the levers in such manner as to tend constantly to maintain the parts in their normal position.

15 6. In combination with a type containing channel *C*, type supporting shoulder *s* formed with channel *s*² beneath it, type forwarder *I*

formed with the lateral type shoulder *i*, the gravity shunt *U*, arranged and operating substantially in the manner and for the purpose described.

7. The combination with a type containing channel *C*, the type supporting shoulder *s* formed with a channel *s*² beneath it, the type forwarder *I* formed with the lateral type shoulder *i*, intervening levers *G*, *H*, and push rod *f*, the finger piece *F*, formed with a type rest the surface of which coincides with the upper surface of the type supporting shoulder *s*, for the purpose and substantially in the manner described.

LOUIS K. JOHNSON.

Witnesses:

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