

4 Sheets—Sheet 1.

No. 539,951.

Patented May 28, 1895.



W. W. Gardner.

August 11th 1891

Louis H. Johnson
Abbot Augustus Low
By their Attorney
George William Smith

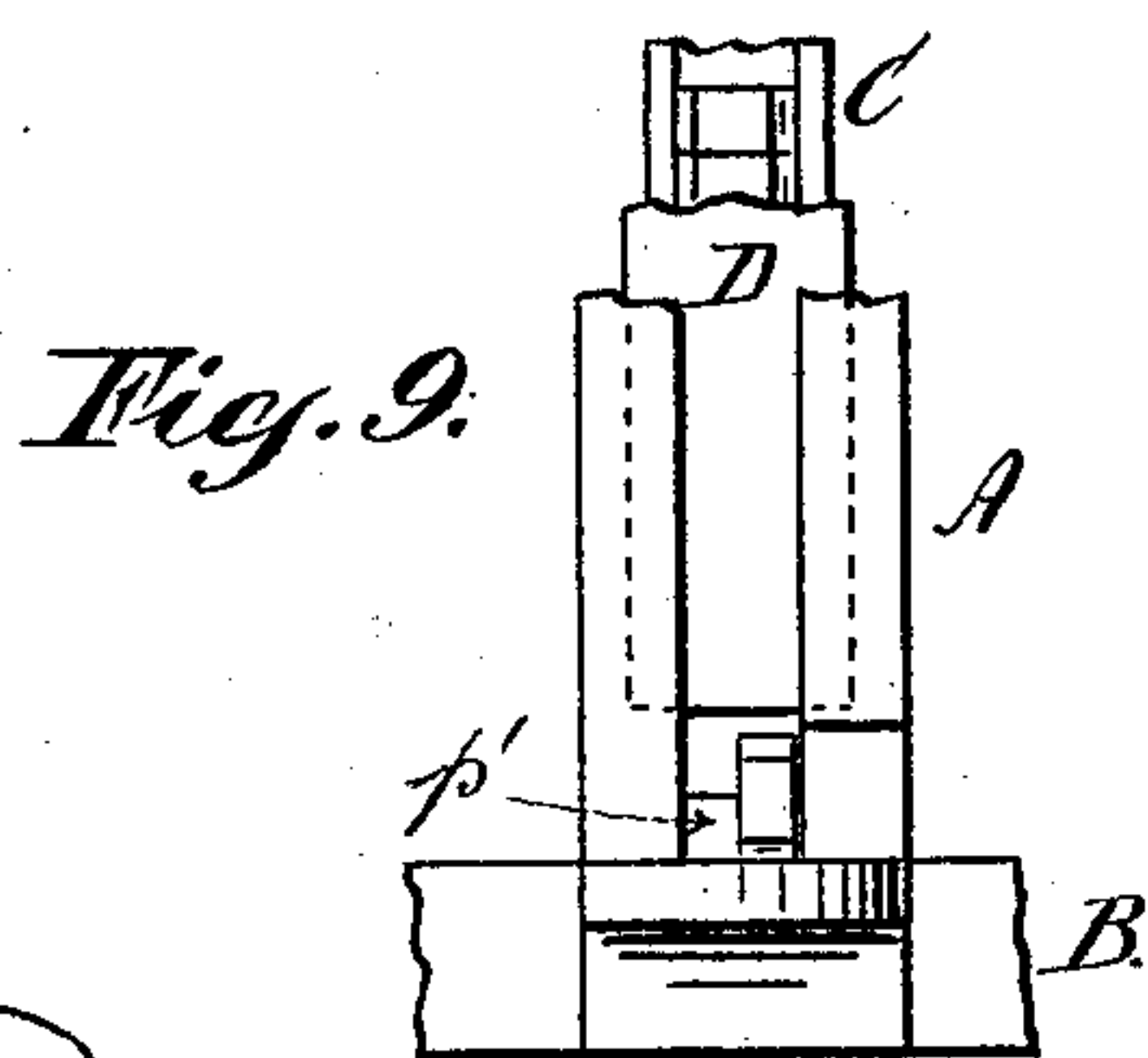
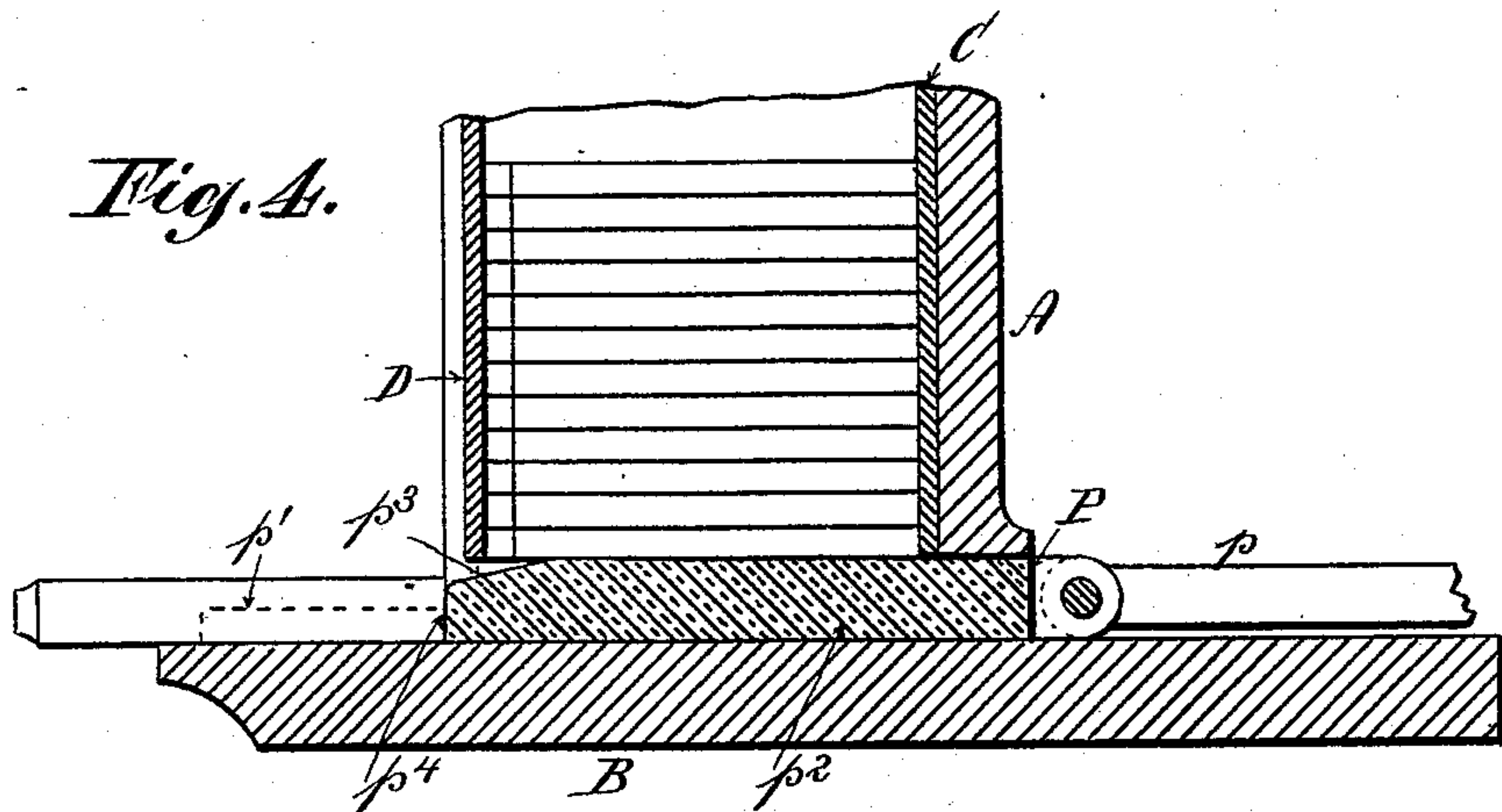
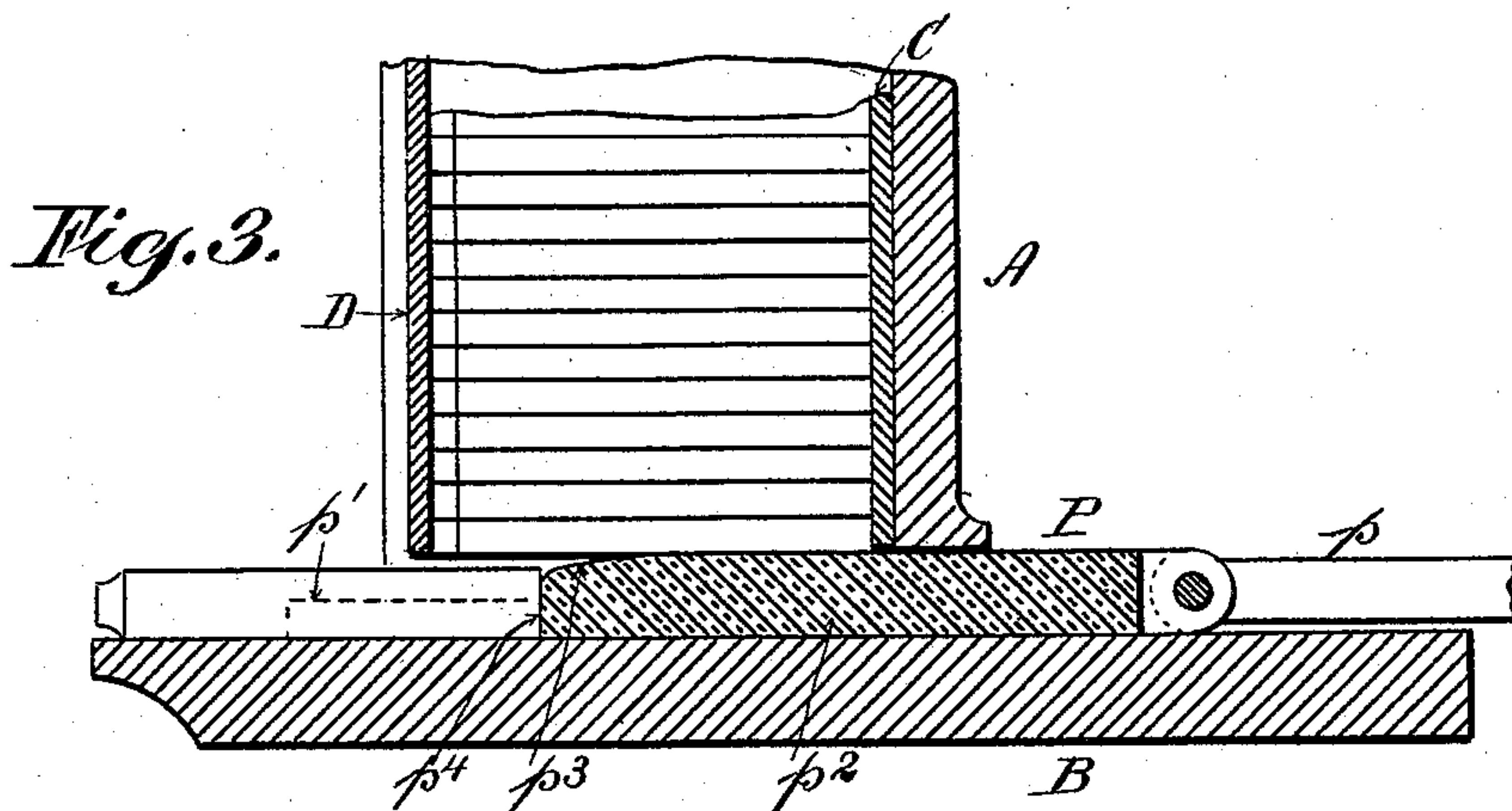
(No Model.)

4 Sheets—Sheet 2.

L. K. JOHNSON & A. A. LOW.
TYPE SETTING APPARATUS.

No. 539,951.

Patented May 28, 1895.



Witnesses:

D. W. Gardner.

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Inventors:

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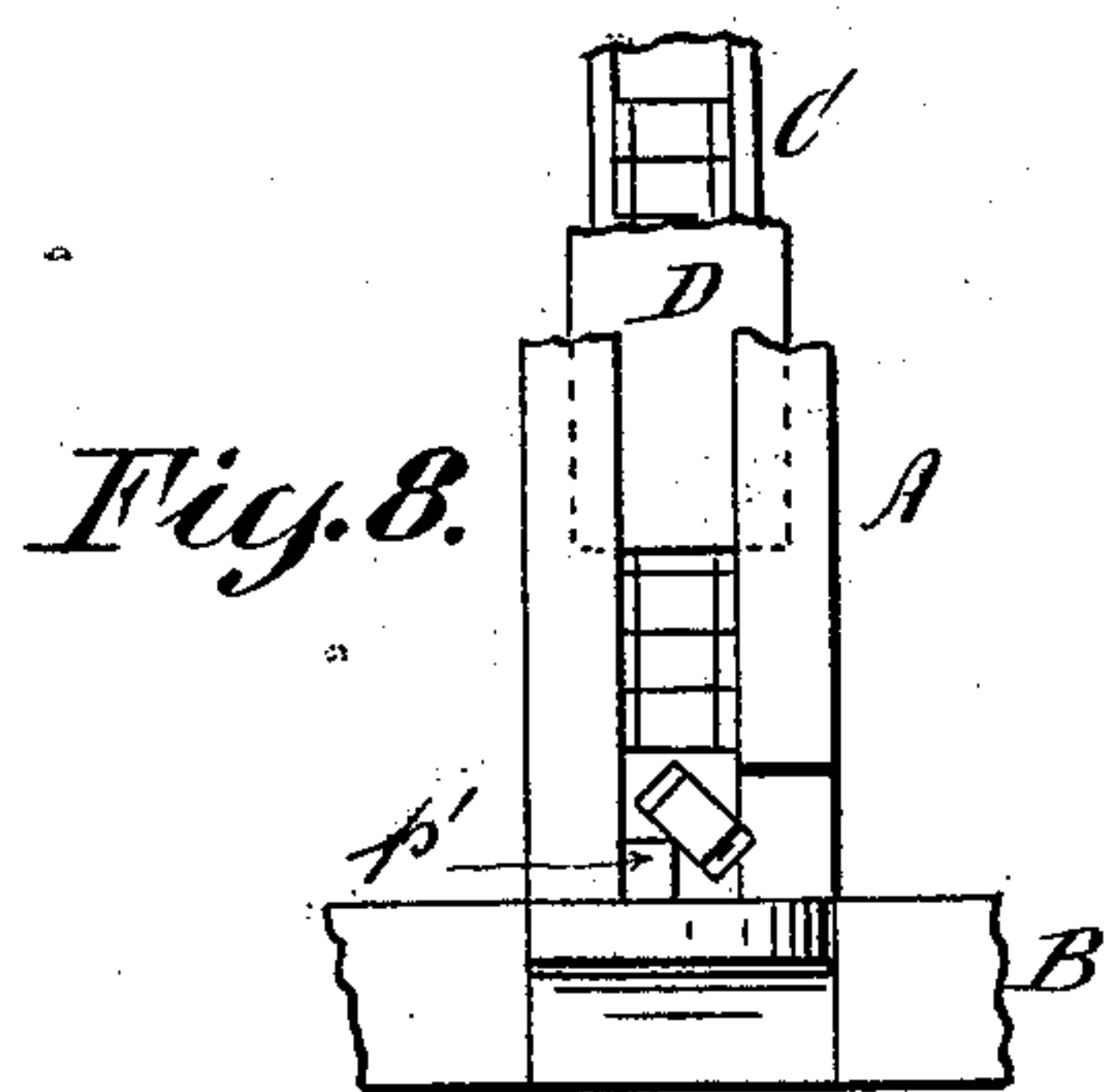
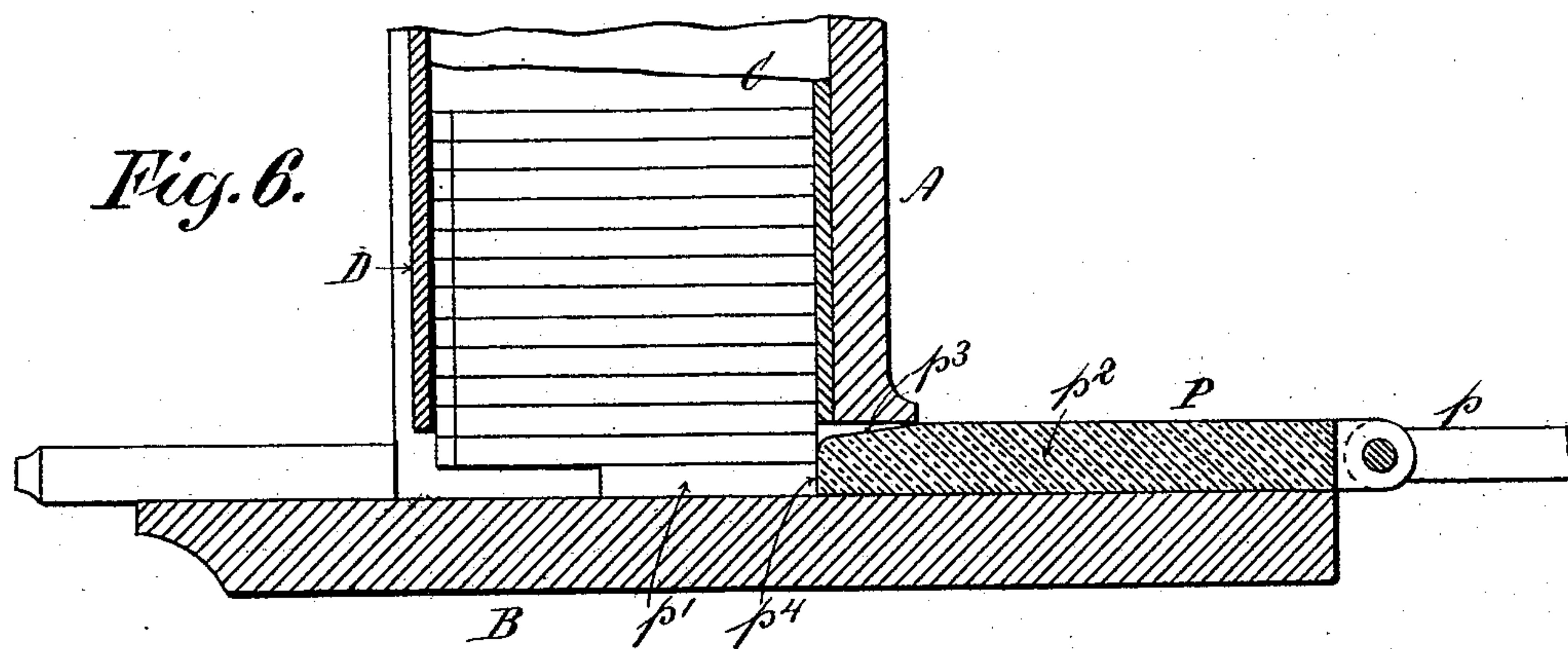
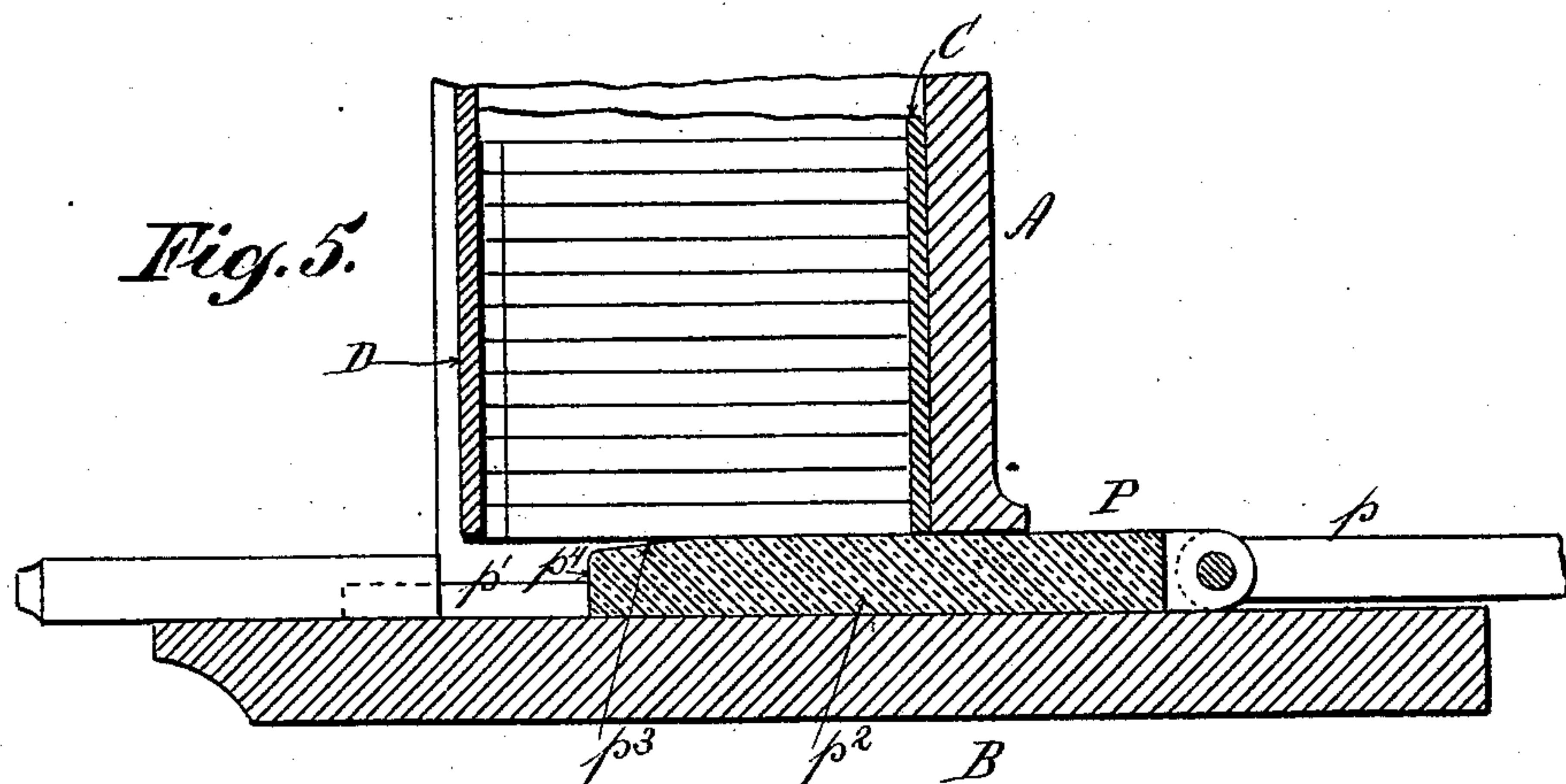
(No Model.)

4 Sheets—Sheet 3.

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TYPE SETTING APPARATUS.

No. 539,951.

Patented May 28, 1895.



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(No Model.)

4 Sheets—Sheet 4.

L. K. JOHNSON & A. A. LOW.
TYPE SETTING APPARATUS.

No. 539,951.

Patented May 28, 1895.

Fig. 10.

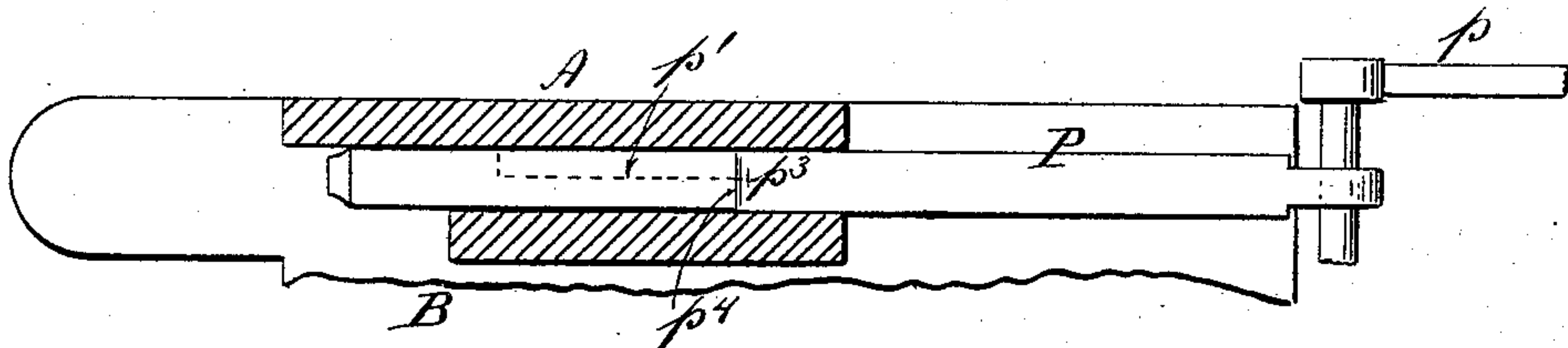


Fig. 11.

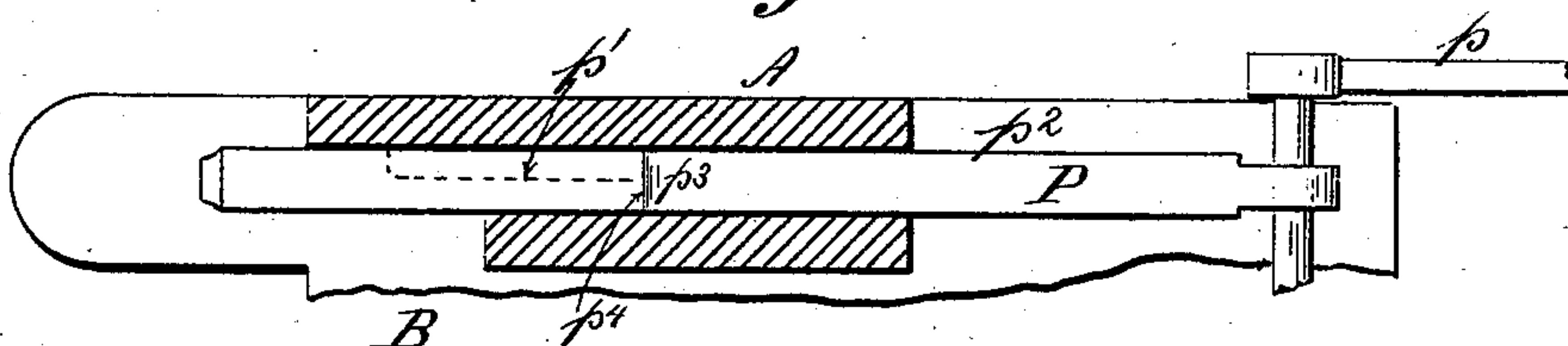


Fig. 12.

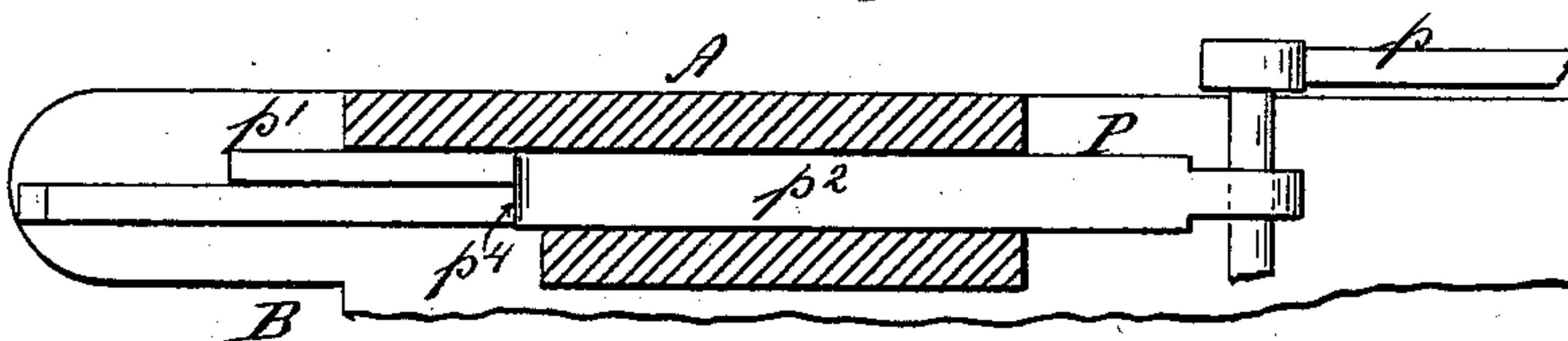


Fig. 13.

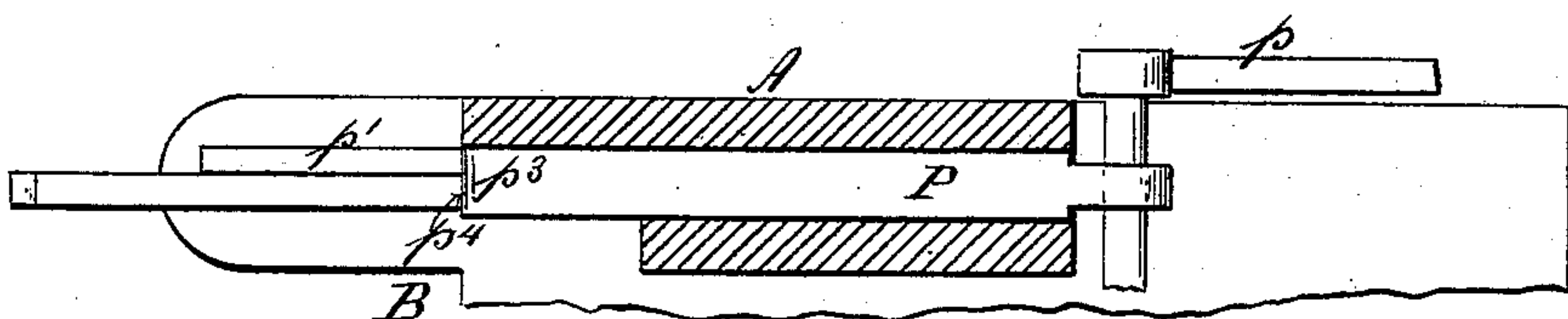
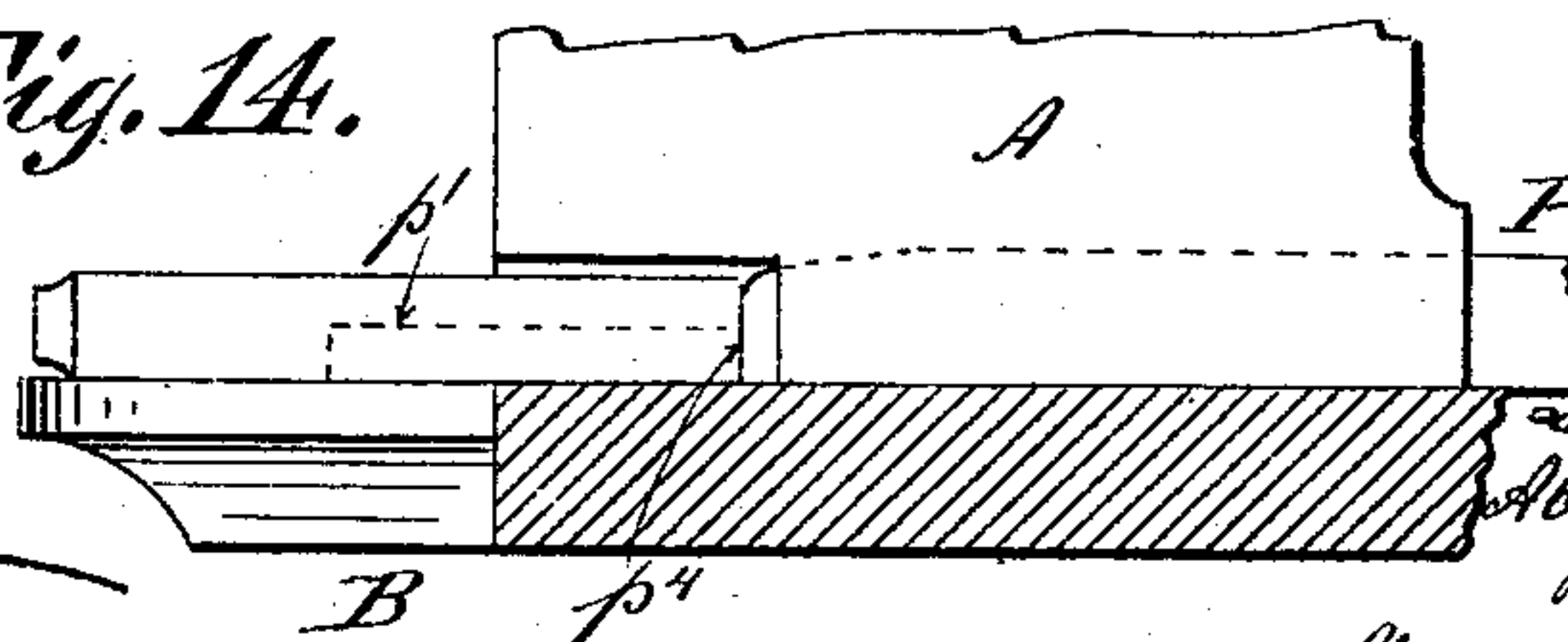


Fig. 14.



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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. 539,951, dated May 28, 1895.

Application filed November 12, 1894. Serial No. 528,544. (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 improvements relate to the class of type setting apparatus in which the types are arranged in prescribed position with relation to each other, in type containing channels from the lower ends of which they are successively forwarded into position to be grasped by the fingers for removal to the stick.

There are certain advantages in distributing the types into the containing channels, so that they rest upon their "flat" or broad sides. It is desirable however, in our present method of handling the types, that the types as forwarded successively from the lower end of the type containing channel be turned upon their edges, making a quarter turn, so that the types may be conveniently grasped for removal between the thumb and finger of the operator in contact with the broad or flat sides of the type. In application Serial No. 522,982, filed September 14, 1894, this axial movement of the type is effected by forwarding the types through quarter twist grooves. In application Serial No. 523,073, filed September 15, 1894, the types fall by gravity from contractions of the primary type supporting floor onto the type presenting platform, making a quarter turn as they descend. In our present application the types in the containing channels rest upon the intermittently reciprocating pusher, until allowed to successively descend therefrom, by reason of their contracted supports which are less than half the width of the type, and which allow the lowest type to descend to the type presenting platform as soon as the column of types above is raised sufficiently by the main portion of the pusher to allow the said lowest type to describe a quarter turn in

its descent. In other words the contracted support is upon the pusher itself, and not upon the type platform as in the last application hereinbefore referred to.

By our present invention we are enabled to effect the turning of the types before they have advanced beyond the type containing channel, so that the stroke of the pusher may be materially reduced, and the type presenting platform contracted and simplified in construction.

In the accompanying drawings, Figure 1 is a vertical section, upon an enlarged scale, through the type-platform, type-forwarder, type-channel and support, &c., the lower portions only of the type-channel and its holder being shown and the pusher being in the retracted position. Fig. 2 is a similar view showing the type-forwarder slightly advanced and in the act of raising the column of type from the lowest type which is being forwarded. Fig. 3 is a similar view showing the type-forwarder still farther advanced, so as to free the lowest type from the pressure of the column above and allow it to turn upon its longitudinal axis. Fig. 4 is a similar view showing the completion of the forward stroke of the pusher. Fig. 5 is a similar view showing the partial retraction of the pusher. Fig. 6 is a similar view showing the pusher fully retracted, leaving the type just forwarded in position for removal from the front of the type-presenting platform. Fig. 7 is a front view of the parts in the position shown in Fig. 2. Fig. 8 is a front view showing the turning of the type just prior to the position illustrated in Fig. 3. Fig. 9 is a similar view of the parts in the position shown in Fig. 3. Fig. 10 is a horizontal section through the channel-support, showing the parts in the position illustrated in Fig. 1. Fig. 11 is a similar view showing the parts in the position shown in Fig. 2. Fig. 12 is a similar view showing the parts in the position as illustrated in Fig. 3; Fig. 13, a similar view showing the parts in the position as illustrated in Fig. 4; Fig. 14, a sectional elevation showing the side wall of the channel-support formed so as to allow the type to turn upon its longi-

tudinal axis before it has cleared the type-containing channel.

The channel holder A, is supported above the platform B, in any suitable manner, and sustains the type containing channel C, by any of the means heretofore shown and described.

D, is the front plate.

The pusher P, may be reciprocated intermittently by any suitable means, as through a pitman p , connecting it with the operating mechanism. The forward end of each pusher P, is formed with an extension or finger p' , of less height and width, than the width of the types in the containing channel. Preferably, the height of the finger p' , is about equal to one-half the width of the type, while its width is slightly less than one-half the width of the type, so that when the lowest type is relieved from all pressure above as shown in Figs. 3 and 8, it will naturally drop over on its edge into the position shown in Fig. 9. In order to effect this clearance of the lowest type as it is being forwarded and before it leaves the front of the holder A, the body p^2 , of the pusher, is made thicker than the width of the type, so as to lift the column of type above bodily, as it advances underneath the same during its forward stroke. This action is facilitated by curving or inclining the front edge p^3 , of the body p^2 .

When the type forwarder P, is in its retracted position, the lowest type in the column rests upon and is supported by the type finger p' , the weight of the column of types above holding it in this position. The front edge p^4 , of the pusher P, above the type finger p' , forms a shoulder against which the heel of the type rests, so that, when the type forwarder P, starts forward it pushes the lowest type away from that next above, the heel of which latter is encountered by the curve or incline p^3 , and gradually raised to the top surface of the pusher P. It is obvious that as the forward motion of the pusher P, continues the body p^2 , will eventually lift the column of type above away from the lowest type as shown in Fig. 3, leaving the latter free to turn upon its longitudinal axis as is illustrated in Fig. 8, when the continued motion of the pusher P, will advance it on its edge

until its forward end projects beyond the front of the type platform B.

During the retractile movement of the pusher P, the column of type drops down until the lowest type rests upon the type finger p' , as shown in Fig. 6, when, the type last forwarded being removed, the operation is repeated through the medium of suitable automatic means not necessary to be here shown.

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

1. In a type case, the combination of a type containing channel supported independently; an intermittently reciprocating type forwarder of greater height than the width of the type, formed with a type supporting shoulder of less width than the type; and a type platform, for the purpose and substantially in the manner described.

2. In a type case, the combination of a type containing channel supported independently; an intermittently reciprocating type forwarder, of a greater height than the width of the type, formed with a type finger of less than one-half the width of the type and of a height equal to one-half the thickness of the type, and a type platform, substantially in the manner and for the purpose set forth.

3. In a type case, the combination of a type containing channel supported independently; an intermittently reciprocating type forwarder of greater height than the width of the type, formed with a type supporting shoulder of less width than the type; and a type channel support formed to allow the type to turn upon its longitudinal axis before leaving the holder, substantially in the manner described.

4. In a type case, the combination of a type containing channel supported independently; an intermittently reciprocating type forwarder, formed with a type supporting shoulder of less width than one-half the width of the type; and a type presenting platform, substantially in the manner and for the purpose described.

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Witnesses:

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