

(No Model.)

2 Sheets—Sheet 1.

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

TYPE DISTRIBUTING APPARATUS.

No. 336,645.

Patented Feb. 23, 1886.

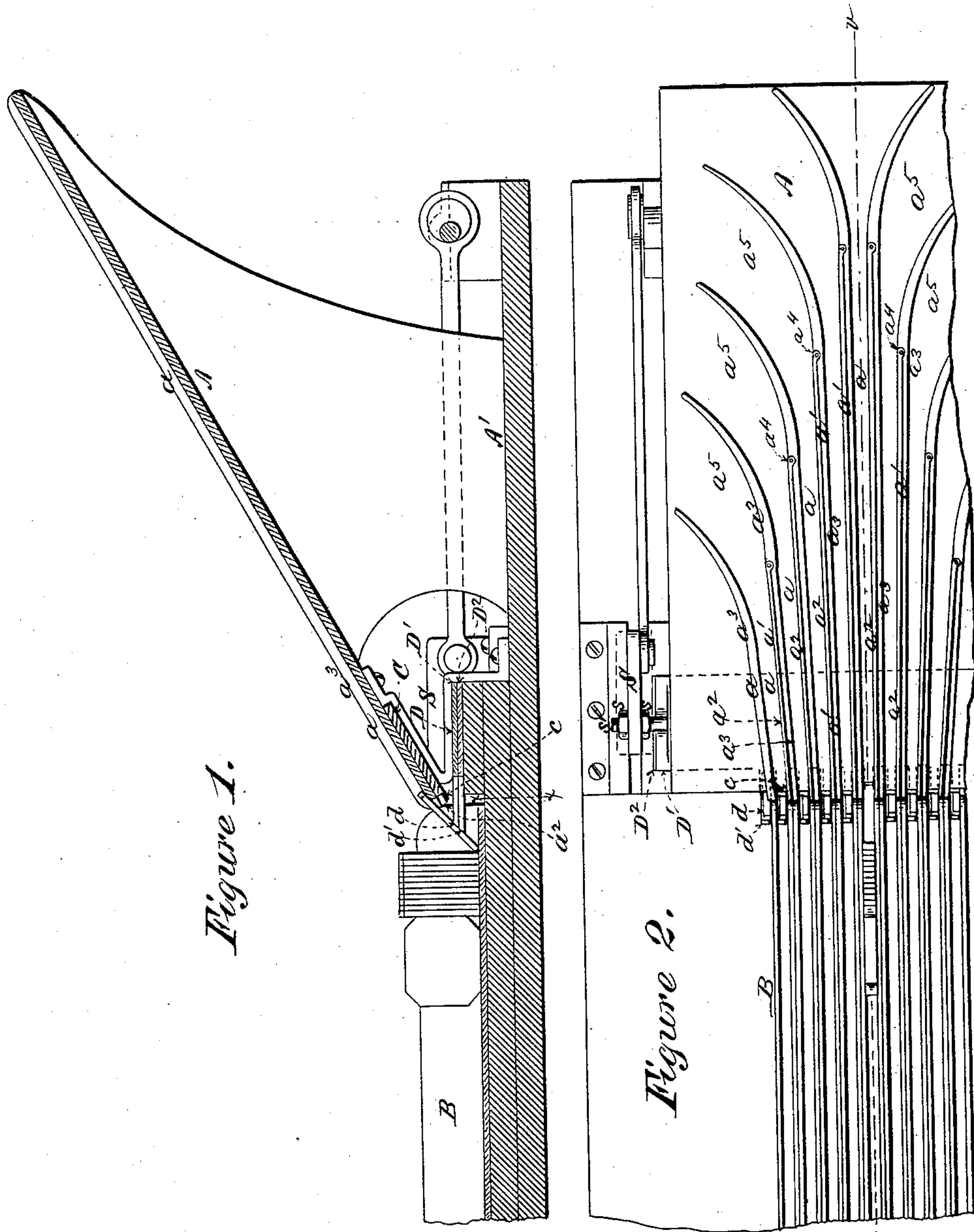


Figure 1.

Figure 2.

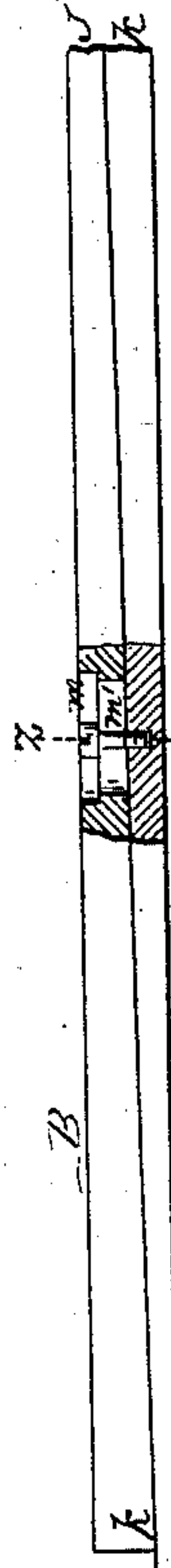
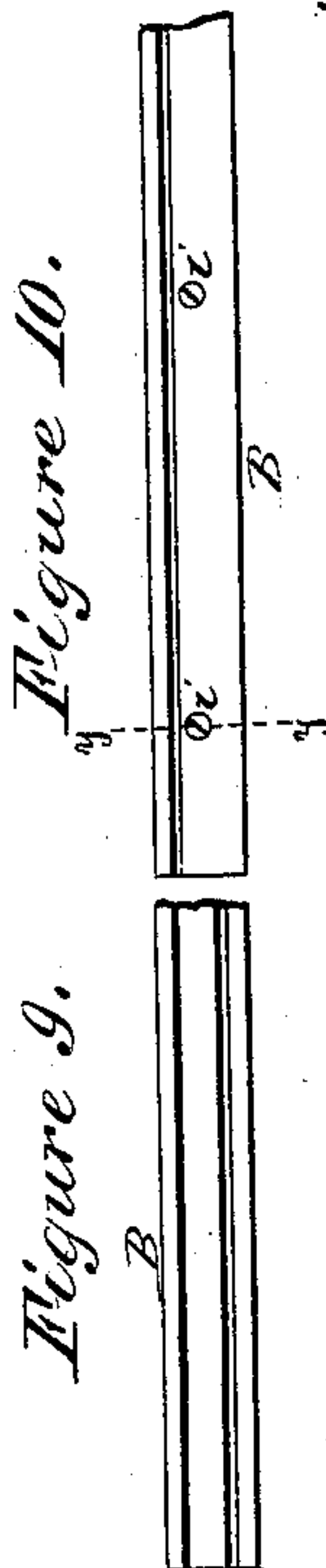
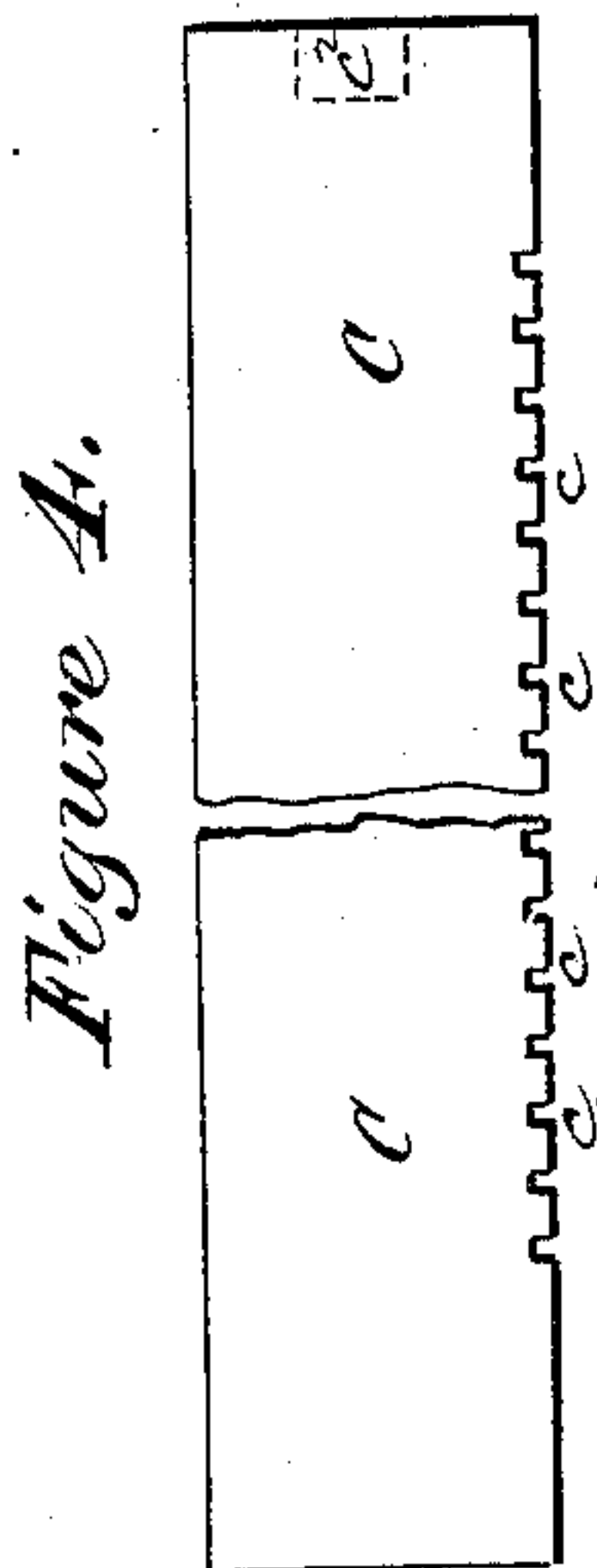
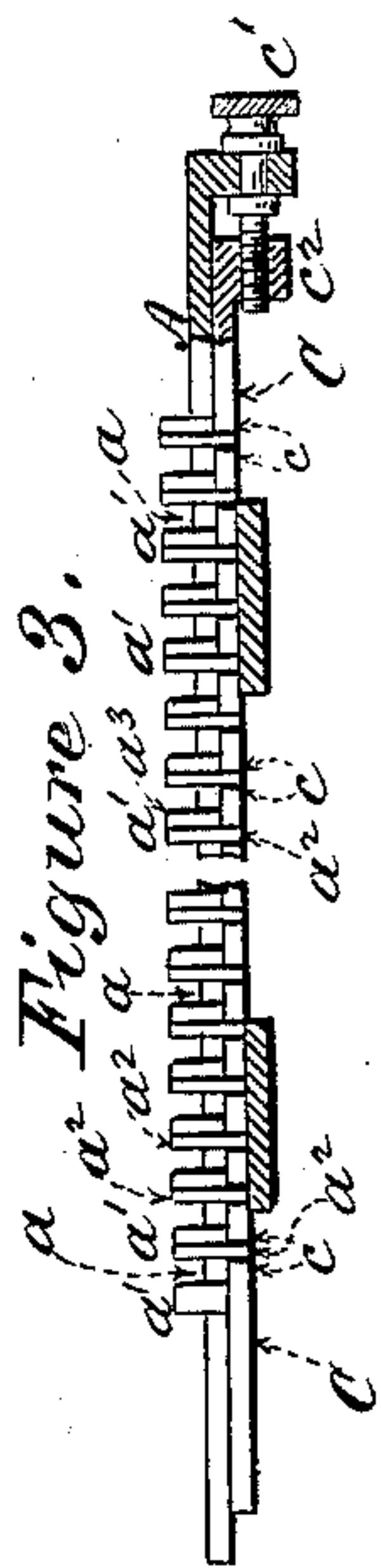
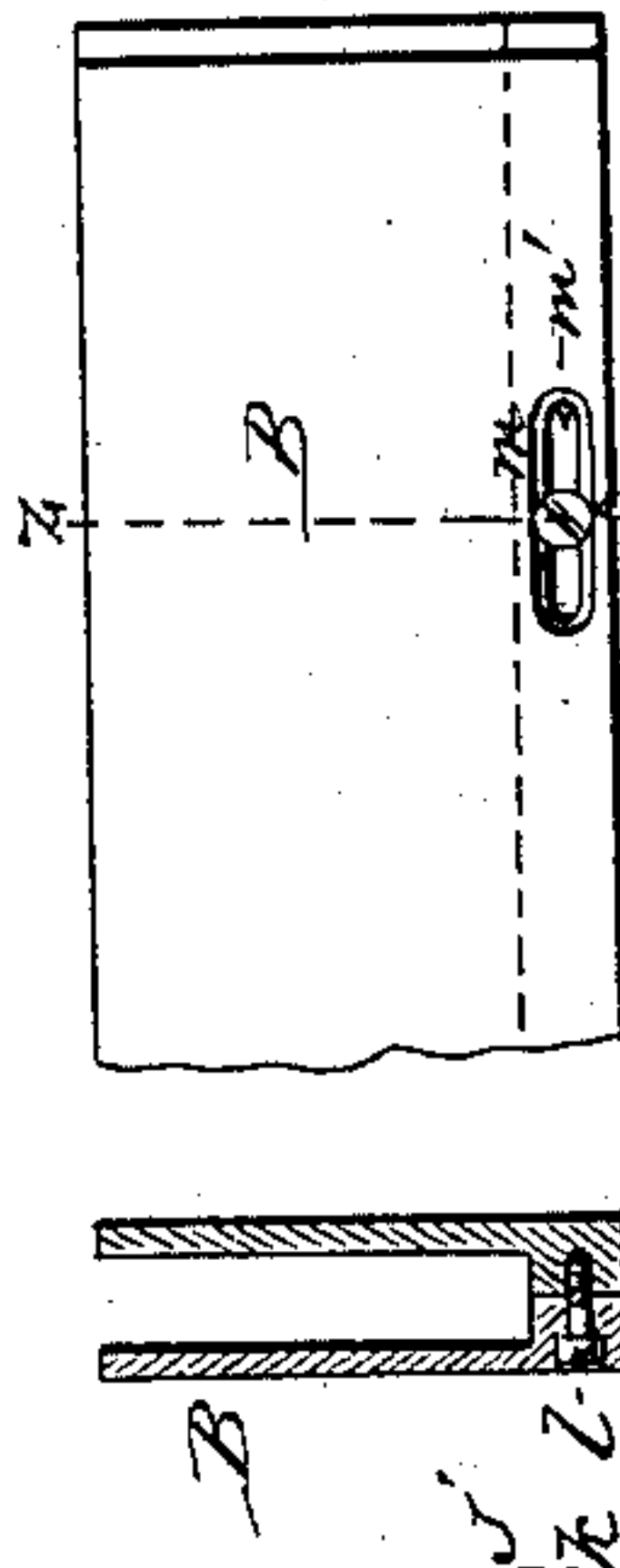
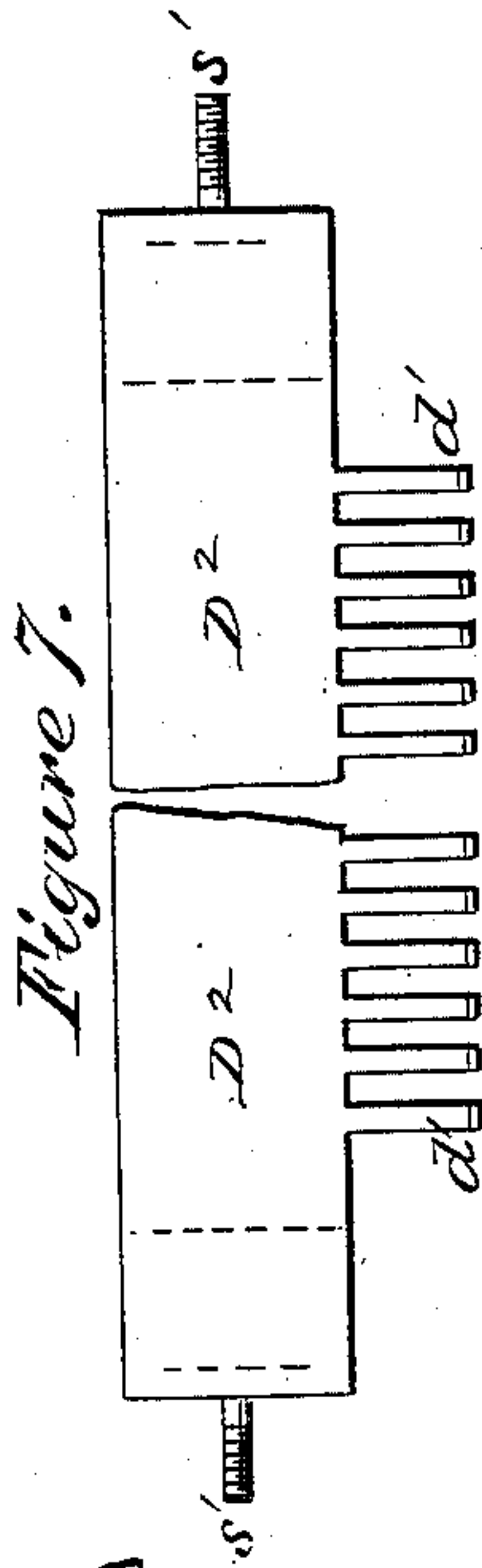
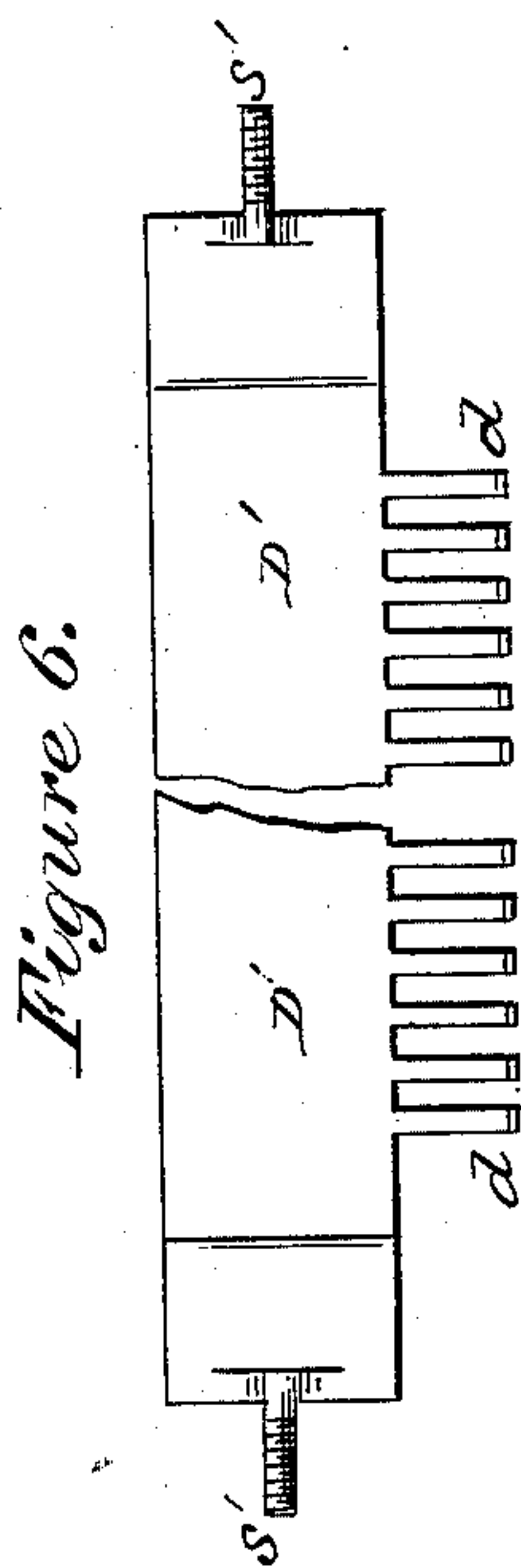
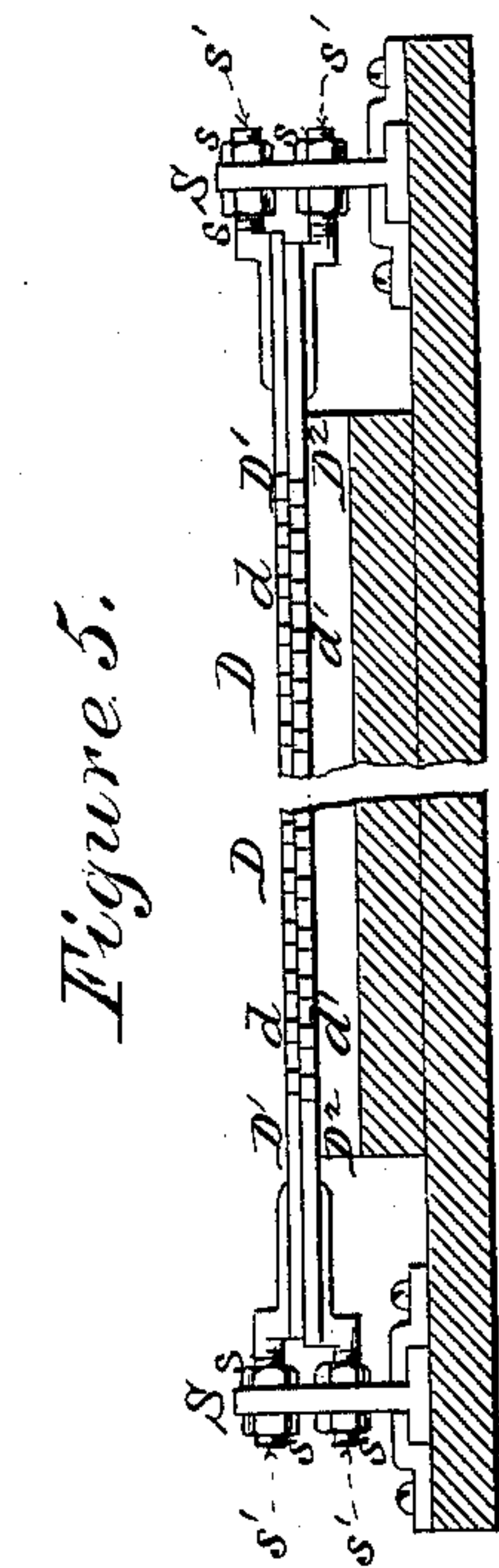
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UNITED STATES PATENT OFFICE.

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TYPE-DISTRIBUTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 336,645, dated February 23, 1886.

Application filed October 9, 1883. Serial No. 108,486. (No model.)

To all whom it may concern:

Be it known that we, LOUIS K. JOHNSON and A. 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-Distributing Apparatus, of which the following is a specification.

Our invention has for its object the production of a hand type receiving and distributing apparatus that will be adapted to all sizes of type, from, say, nonpareil to pica; and the invention consists, first, in a series of movable conduit-walls or partitions, pivoted to an inclined conduit-bed near their upper extremities in such manner that their lower ends may be made to approach toward or recede from opposed stationary conduit side walls upon the said conduit-bed for the purpose of varying the width of the type-passages; secondly, in conjunction with the said adjustable conduits in a device for effecting the relative adjustment of their side walls, substantially as hereinafter designated; thirdly, in a reciprocating type raiser and pusher, the projecting tongues or pusher-fingers of which are adjustable in width according to the width of the type to be distributed to adapt them to properly support and forward the type; and, lastly, in a series of type-containing channels or reservoirs, the side walls of which are made relatively adjustable to suit the size of the type to be distributed into them.

We are aware that heretofore, as in our Patent No. 282,988, dated August 14, 1883, provision has been made for the use of containing-channels of different sizes in a single apparatus; but in such case the transition from one width of passage to the other is sudden and there is the possibility of derangement to the descending type. This danger is still further increased where very large type are being distributed by the fact that the fingers of the pusher are permanent in size, and, being made to enter the smallest channels, only bear upon the larger type for a portion of their widths, thus permitting them in some cases to turn upon their longitudinal axis.

In our present invention we effectually guard against these dangers and produce a single apparatus equally adapted to all sizes of types

by making the side walls of the conduits from the receivers converge gradually downward until their inner surfaces coincide with and form continuations of the inner side walls of the containing-channels irrespective of the size of the latter, so that the types, whatever their width, are gradually and gently guided down to and supported laterally while passing the point of transfer, and by making the pusher-fingers that they can be increased or diminished in width to snugly fit the interior of the channels in use at the time, thereby enabling us to support all sizes of type squarely and evenly. By making the side walls of the containing channels or reservoirs relatively adjustable we are enabled to adapt them accurately to correspond with the adjustment of the conduits, while a single series may be made to accommodate any and all sizes of type, thus rendering the apparatus complete as a whole and suitable for all sizes and varieties of type.

In the accompanying drawings, Figure 1 is a sectional elevation illustrating our improved construction on plane of line *v v*, Fig. 2. Fig. 2 is a plan of a portion of one side of the apparatus, showing the relative arrangement of the receiving-conduits, containing-channels, and pusher-bar. Fig. 3 is a view of the front or lower ends of the receiver-conduit partitions and the plate for adjusting them, the central portion being broken away, and the extremity of the plate being represented in section to show the adjusting-screw. Fig. 4 is a plan of the adjusting-plate with its central portion broken away. Fig. 5 is a front view of the adjustable pusher, showing the bed of the apparatus in section on plane of line *x x*, Fig. 1. Figs. 6 and 7 are respectively plans of the plates of which the pusher is composed, showing their central portions broken away. Fig. 8 is a transverse section of one of our adjustable type-reservoirs or containing-channels on plane of line *y y*, Fig. 10; and Figs. 9 and 10, respectively, top and bottom views of a portion of the same. Fig. 11 is a bottom view of a portion of one of our adjustable type-reservoirs or containing-channels, portions being broken away to show the longitudinal recesses and set-screws, and illustrating an alternative method of construction. Fig. 12 is a trans-

verse section of the same on plane of line $z z$, Figs. 11 and 13; and Fig. 13 is a side view of one of the same, showing one of the longitudinal recesses and set-screws.

5 The receiving-conduits, as heretofore, are arranged upon an inclined plane or bed, A, which is mounted upon the table or frame A' of the apparatus; but instead of rigidly securing or forming conduits upon the inclined
10 plane we attach or connect partitions $a' a'$ with and upon it in such manner that they are relatively adjustable for the purpose of varying the width of the passages or conduit-spaces $a a$ between them. This may be accomplished
15 by permanently pivoting the movable portions $a^2 a^2$ of the conduit walls or partitions $a' a'$ to the inclined plane near their upper ends, as shown in the drawings, or in any other suitable manner.

20 When pivoted, as shown, the adjacent pivots $a^4 a^4$ are arranged at such distances apart and in such relation to each other that they will allow the widest types to pass between the partitions which they secure.

25 The stationary portions $a^3 a^3$ of the conduit wall, or partitions $a' a'$ are rigidly secured to or formed upon the inclined plane A, and each constitutes a permanent guide or wall on one side of its particular conduit, so that the
30 width of the latter may be varied by adjusting the opposite or movable side wall, $a^2 a^2$, with relation to the said stationary portion a^3 . This stationary section a^3 of each partition a' extends upward to and coincides with that
35 part of the adjustable portion a' which adjoins the pivots $a^4 a^4$, as shown in Fig. 2, so that no matter what the position of the adjustable portion a' may be, the upper extremity of the latter will always practically con-
40 stitute a continuation of the upper extremity of the stationary part a^3 . From this maximum width of a channel the conduits may be varied to properly conduct the smaller types by bringing the lower ends of the movable
45 portions $a^2 a^2$ of the partitions $a' a'$ nearer to the opposed stationary portion $a^3 a^3$ of the said partitions $a' a'$ more or less, according to the width of the particular type to be distributed, thus forming passages that contract gradually
50 and uniformly from the upper ends of the conduits (or receivers proper $a^5 a^5$) to their extreme lower ends, where they meet, and coincide with the reservoirs or transfer-channels B, which latter are always of the proper
55 width to receive and support the type laterally without unnecessary looseness or play.

The upper ends of the partitions $a' a'$ are preferably bent away from each other, as shown in the drawings, or otherwise constructed to form receivers $a^5 a^5$, which in this case are simply the widened mouths of the conduits a , into which the types may be quickly and conveniently dropped.

65 The adjustment of the lower ends of the movable portions a^2 of the conduit walls or partitions a' may be effected by a device of any

convenient and desirable construction, that shown in the drawings consisting, essentially, of a plate or slide, C, which is adjustable longitudinally, said plate receiving or being con-
70 nected with and controlling the position of the lower ends of the movable portions a^2 of the conduit-partitions a' , and by its position their relation to the stationary portions a^3 of the latter.

75 In the drawings the lower ends of the movable portions of the conduit-partitions are shown as simply bent over and resting between shoulders $c c$, formed in the plate C, and the adjustment of the plate C is effected by
80 means of a stationary screw, c' , attached to the under side of the inclined plane A, or the frame-work, and engaging a nut or lug, c^2 , upon the under side of the adjustable plate C.

The reciprocating pusher-bar D is mounted
85 and actuated in any convenient or well-known manner, its peculiarity being that it is composed of two superimposed combs or plates, D' D², having corresponding comb-teeth or
90 pusher-fingers $d d'$. These plates are mounted in such manner that they may both be independently adjusted longitudinally, so as to vary the positions of their respective sets of
95 comb-teeth or pusher-fingers. When the smallest size of type are to be distributed, (in which case correspondingly narrow reservoirs or containing-channels are employed,) the
100 plates D' D² are each adjusted longitudinally toward the center of the table until the teeth or fingers $d d$ in both plates coincide with
105 each other vertically. When a larger size of type is to be distributed, the plates are adjusted longitudinally in opposite directions (more or less) until the superimposed teeth or
110 fingers are spread out or separated, so that the combined width horizontally of any two superimposed teeth is equal to the width of the type to be operated upon. This longitudinal
115 adjustment of the plates D' D² may be effected in a variety of ways, that shown in the drawings consisting in mounting them upon recip-
rocating slides S S, between which they are adjusted with relation to each other by means
of nuts $s s$, bearing against the sides of said slides and working upon screws $s' s'$, project-
ing from and forming the support for the op-
posite ends of the plates.

For the purpose of adapting a single set of the reservoirs or containing-channels to accom-
120 modate all sizes of type for which the apparatus is designed, and thus make the latter complete and compact, we make the side wall of the said reservoirs or containing-channels
adjustable with relation to each other, so that
125 the width of the channel may be varied to correspond to the width of the particular type to be distributed. This may be accomplished in a variety of ways, two of which are illus-
trated in the drawings.

130 In Figs. 8, 9, and 10 the spine or one side wall of the channel is formed with a longitudinal groove, g , into which a corresponding

tongue, *h*, projecting from the opposite side wall, fits, and in which it is held by countersunk set-screws *i*. The adjustment of the width of the channel is effected by loosening the set-screw and inserting or withdrawing the tongue *h*, more or less, as required, and then retightening the set-screw.

In Figs. 11, 12, and 13 one-half of the spine or bottom of the channel projects from each side wall, and each half tapers in width from one end to the other, so that when the two sides are placed together, as shown in Fig. 11, with the narrow end, *j*, of one adjoining the wide end, *k*, of the other, any longitudinal movement of the sides with relation to each other will vary the width of the channel between them. The sides are held together in the position desired by set-screws *l*, countersunk in one side and screwing into the other, and passing through longitudinal recesses *m* and slots *m'*, formed in one side piece, to allow of its longitudinal adjustment upon the other side piece.

What we claim as our invention is—

1. In a type-distributing apparatus substantially such as herein designated, the adjustable conduit walls or partitions pivoted to the inclined conduit-bed near their upper extremities in such manner that their lower ends may be advanced or retraced with relation to the opposed stationary conduit side walls, for the purpose and substantially in the manner described.

2. In a type-distributing apparatus sub-

stantially such as designated, an independently-adjustable slide or plate adapted to receive or connect with movable conduit side walls or partitions, in combination with and for the purpose of controlling the position of the latter with relation to the stationary side walls of the conduits, substantially in the manner and for the purpose described.

3. In a type-distributing apparatus substantially such as designated, a reciprocating type pusher or forwarder formed with pusher teeth or fingers, which are adjustable in width, for the purpose and substantially in the manner described.

4. In a type-distributing apparatus substantially such as herein designated, the reciprocating comb pusher-bar formed of independently-adjustable superimposed slides or plates, each provided with a corresponding series of teeth or pusher-fingers, substantially in the manner and for the purpose described.

5. In a type-distributing apparatus substantially such as designated, a reservoir or containing-channel one side wall of which is formed with a longitudinal groove and the other with a corresponding tongue or projection, which is adjustable within the said groove, for the purpose and substantially in the manner described.

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