

(No Model.)

4 Sheets—Sheet 1.

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

TYPE SETTING AND DISTRIBUTING MACHINE.

No. 275,664.

Patented Apr. 10, 1883.

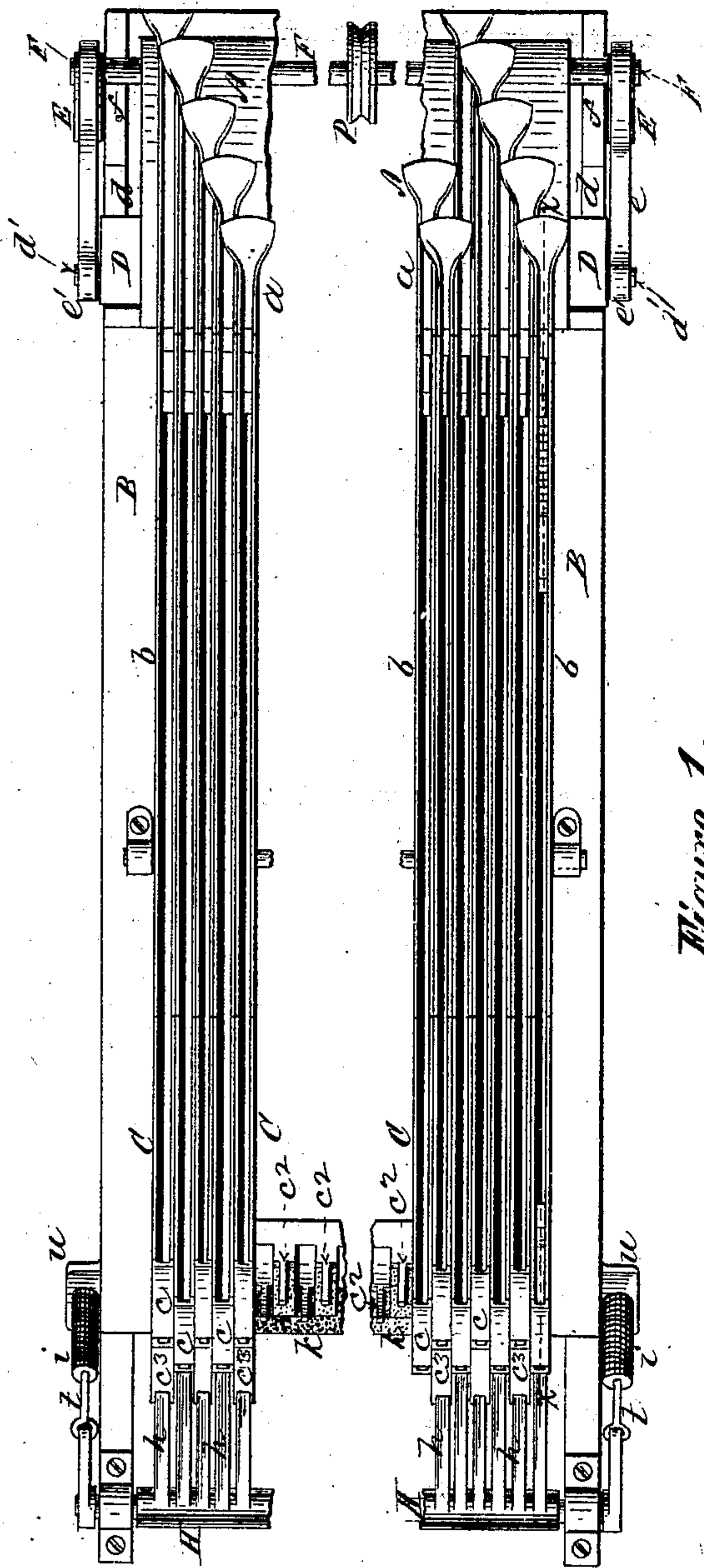


Figure 1.

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A. Gref. Jr.
W. Gardner.

Inventors

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A. Augustus Low
By their attorney
Geo. W. M. M. M.

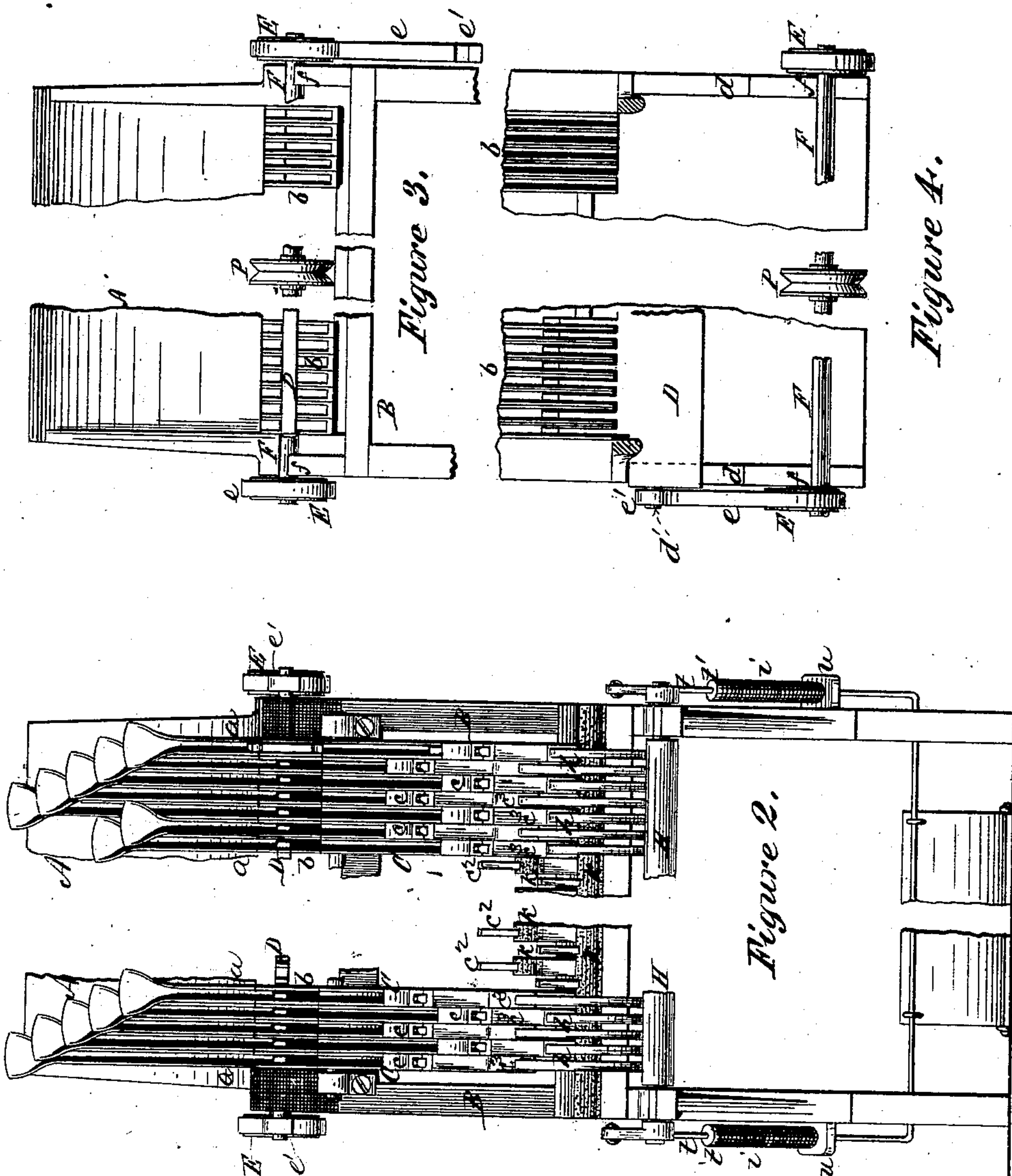
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L. K. JOHNSON & A. A. LOW.
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(No Model.)

4 Sheets—Sheet 3.

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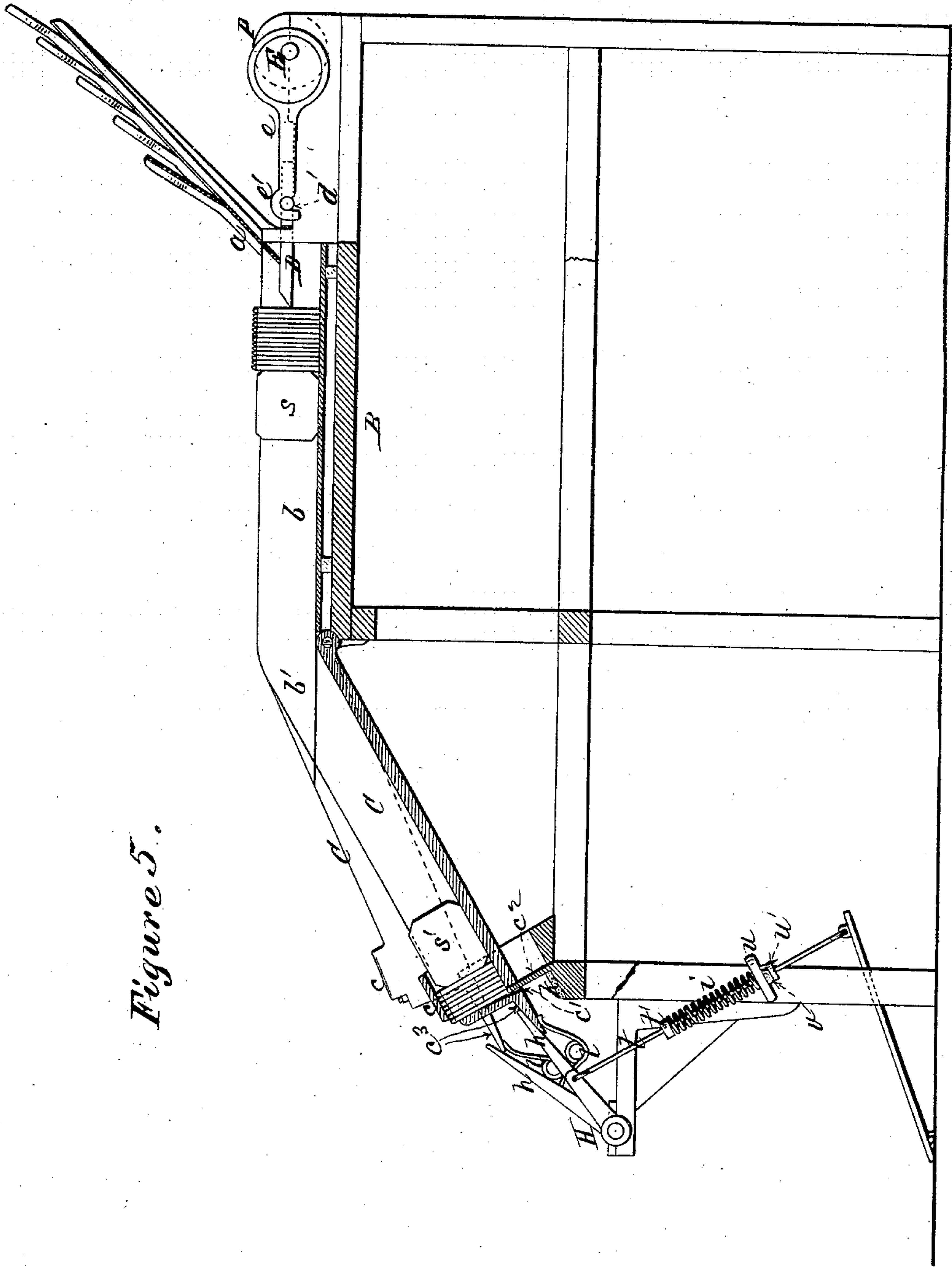


Figure 5.

Witnesses:

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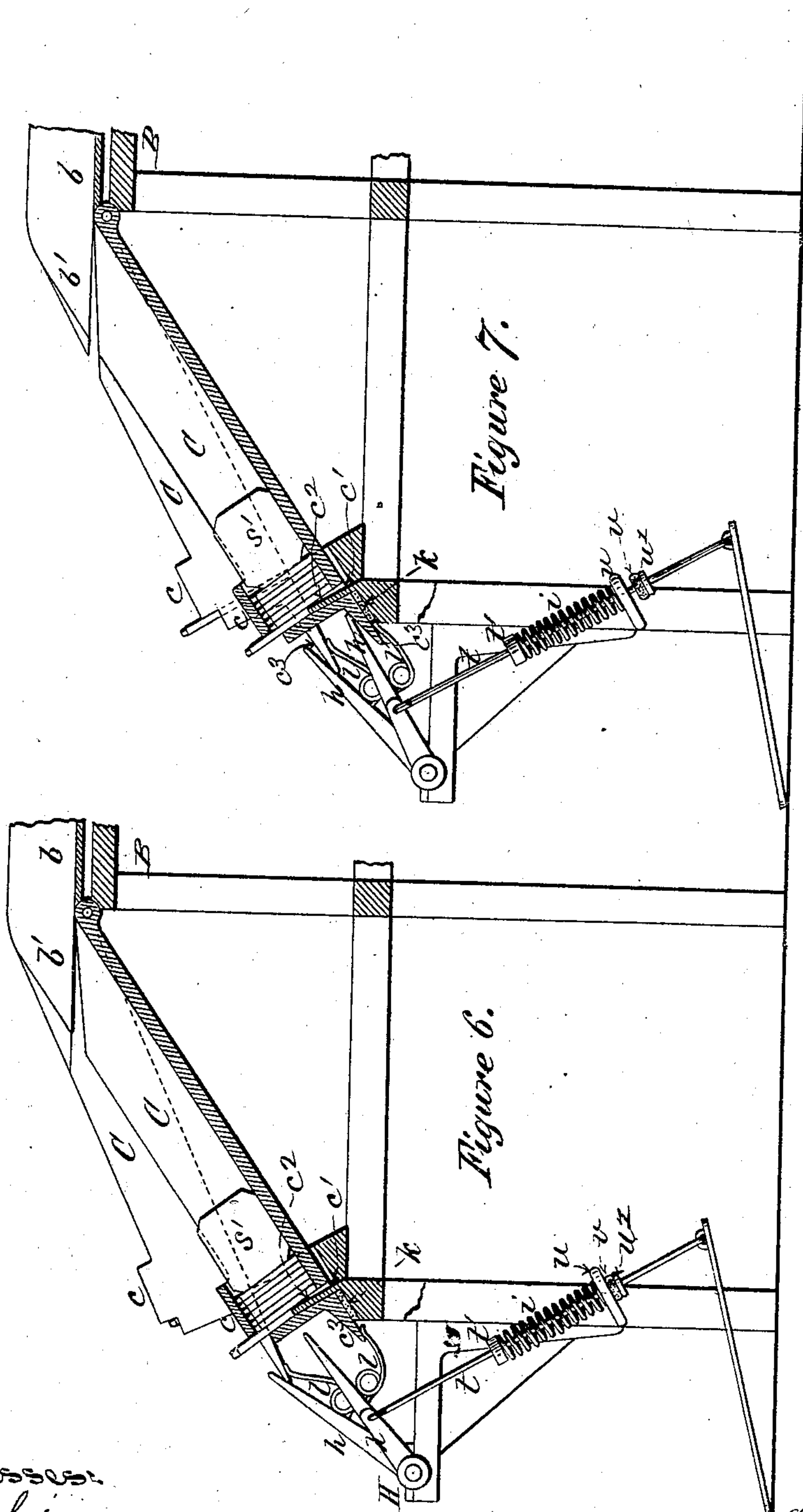
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(No Model.)

L. K. JOHNSON & A. A. LOW.
TYPE SETTING AND DISTRIBUTING MACHINE.
No. 275,664.

4 Sheets—Sheet 4.

Patented Apr. 10, 1883.



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UNITED STATES PATENT OFFICE.

LOUIS K. JOHNSON AND A. AUGUSTUS LOW, OF BROOKLYN, NEW YORK.

TYPE SETTING AND DISTRIBUTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 275,664, dated April 10, 1883.

Application filed July 1, 1882. (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 Setting and Distributing Apparatus, of which the following is a specification.

Our invention relates to that class of apparatus in which provision is made both for setting and redistributing the type without transferring or disturbing the type-containing channels; and it consists, first, in combining and arranging, substantially as hereinafter designated, a bank or series of oscillating setter-channels, similar to those described in the application for patent filed by Louis K. Johnson December 30, 1881, from which the types may be removed by hand by first depressing the lower ends of the setter-channels away from the upper portions of the lowest types, with a corresponding bank or series of distributor channels, receivers, &c., adapted to receive and forward the types in a prescribed manner.

A second feature of our invention consists in constructing and arranging the oscillating channels and connections of the type-setting portion of the apparatus in such manner that any one may be depressed independently to secure a particular type, or the whole series or bank may be depressed simultaneously, thus presenting and exposing at one time a single type of each and all the denominations represented in the bank, ready to be immediately grasped and withdrawn by the compositor. This latter operation is adapted to be performed by the foot, thus economizing time, since the channels may be depressed while the right hand of the compositor is engaged in arranging the types already taken in the stick, and it also relieves his hand of all labor except that involved in simply grasping and withdrawing the exposed type.

Still another feature of our invention consists in arranging the lower ends of the oscillating setter-channels in such manner that they occupy positions alternately in advance of and above each other, by which means we are enabled to place the said channels side by side without any intervening spaces, so that their

independence of movement and accessibility will not be interfered with, while a whole bank or series of channels sufficient to contain all the denominations of type required may be made to occupy a comparatively-small horizontal space, and thus be within convenient distance of the compositor.

The last feature of our invention consists in so mounting the reciprocating pusher-bar and the driving-shaft of the type-distributing portion of the apparatus that they may be readily removed or swung out of the way, so as to give access to and permit of the removal or insertion of the transfer or distributor type-containing channels from the rear of the apparatus.

In the accompanying drawings, Figure 1 is a plan of our improved apparatus with the central portion broken away. Fig. 2 is a front elevation of the portions of the apparatus shown in Fig. 1. Fig. 3 is a rear elevation of the upper portions of the apparatus shown in Figs. 1 and 2, the portion on the right being shown with the reciprocating pusher-bar and driving-shaft removed from position to admit of the insertion or removal of the transfer or distributor channels. Fig. 4 is a horizontal section on plane of line *ww*, Fig. 3, immediately underneath the bank of receivers, giving a top view of the parts shown in the latter figure. Fig. 5 is a vertical longitudinal section through one of the combined type-channels on plane of line *xx*, Fig. 1, the rest of the apparatus being shown in elevation; Fig. 6, a similar view of the front or setter portion of the apparatus, showing the first oscillating channel depressed independently; Fig. 7, a similar view, illustrating the method of depressing all the setter-channels together.

In the drawings, A represents a bank of receivers and conduits adapted to hand distribution. The receiving or transfer channels *b* are mounted upon the table or frame B, so as to coincide with and constitute continuations of the receiver-conduits *a*. At their front ends the side walls, *b'b'*, of these receiving-channels *b* are continued forward over and beyond the point of conjunction with the oscillating setter-channels C, so as to form a continuous guide and lateral support for the type while it is being slid from one to the other.

The reciprocating pusher-bar D, (which is of the ordinary comb form,) for raising and forwarding the types as they descend from the conduits *a*, simply rests upon open ways or slides *d d*, so that when the eccentric-rods *e e* are disconnected, it may be withdrawn bodily. The forward ends of the eccentric-rods *e' e'* are slotted or hooked, so as to drop over the pins or shoulders *d' d'* upon the ends of the pusher D, so that while they are held in position during use by gravity they may be quickly swung back and away from the pusher or as quickly reconnected with it.

The driving-shaft F, upon which the eccentrics E E and driving-pulley P are mounted, also rests upon open seats or pillow-blocks *f f* in order that it may be readily raised therefrom after unshipping the driving-belt, which passes over the driving-pulley from below, so that in use it will tend to retain the journals of the driving-shaft in their proper positions upon the open pillow-blocks. By thus mounting and connecting the pusher-bar and the driving-shaft they may be quickly removed to give access to the receiving-channels *b* from the rear of the apparatus. The principal object in thus providing for the removal and insertion of the distributor receiving-channels from the rear is to allow an empty channel to be substituted in place of a full one, in case the types of a particular denomination should happen to be deposited in the distributing end faster than they were removed from the setting end of the apparatus, without interfering with the use or operation of the setter-channels.

The setter-channels C are similar in general construction and operation to those described in the application for patent of L. K. Johnson before referred to. Each setter-channel is pivoted at its inner extremity in such a manner that the upper surface of its floor will correspond to and unite with that of the floor of the distributor receiving or transfer channel *b*, which is placed to coincide with it.

As shown in the drawings, the combined gage-plate and finger-piece *c* is permanently attached to the top of the oscillating channel, although it may be made adjustable, if preferred. Its office is to control the number of type to be withdrawn from the channel, and also to furnish a bearing or rest for the finger, by which the channel may be depressed independently.

An opening or space, *c'*, is provided for the reception of the type shoulder or abutment *c²* at the lower rear portion of each oscillating setter-channel. This shoulder or abutment *c²* sustains the lowest type in a column, and when the channel is depressed causes the upper portion of said lowest type to project beyond the top of the gage-plate and finger-piece *c* sufficiently to be grasped between the thumb and finger and withdrawn. In the present case the outer front ends of the channels are formed with tongues or projections *c³*, which are engaged by arms or levers *h*, projecting from a

rock-shaft, H, mounted upon the front of the apparatus. The rock-shaft is sustained with its arms or levers in the highest position by one or more mainsprings, *i*. As shown, the latter are situated upon the treadle-rods *t*, and act between shoulders *t'* upon the latter, and fixed supports *u* upon the frame being limited in their expansion by stops *u'* upon the rods *t*, which stops are provided with buffers *v v* to prevent jar.

It is obvious that the springs may be otherwise placed, or analogous devices may be used to tend constantly to sustain the levers or depressors in their highest position without departing from the principle of our invention, which is to construct a depressor capable of depressing all the channels simultaneously, but which in its normal position will allow all the setter-channels to assume either their highest or normal positions or to be depressed independently. The extent of the downward motion of the parts is determined either by the bottom of the setter-channels coming in contact with the cushioned seats or stops *k k* in front of the stationary abutments or type-shoulders *c²*, as shown, or by other suitable stops arranged to limit the motion of the parts. To return the setter-channels to their normal positions when relieved from downward pressure, we employ secondary retractile springs *l l*, which are shown as attached to the under sides of the depressor-levers *h h*, and bearing upon the under sides of the channel tongues or projections *c³ c³*. It is obvious that these springs also may be varied in position, the only requisite being that their elasticity shall be so employed as to tend constantly to sustain the channels in their highest position.

For the purpose of enabling us to place the setter-channels as close together as possible, and thereby bring the requisite number of channels within convenient distance of the compositor, we make the alternate channels of shorter length than the others, and also elevate the positions of their front ends a distance equal to the extent of motion common to all, so that the type from these channels are presented and withdrawn from a plane above and in the rear of those in the lower channels sufficiently removed to obviate all danger of interference or inconvenience.

Instead of varying the lengths of the setter-channels, the same result may be attained, if desired, by elevating the alternate channels of both the setter and distributor a sufficient distance above those next adjacent, thus presenting the type for removal in the same vertical plane, but a sufficient distance apart to admit of convenient handling.

It will of course be understood that the alternate stationary type shoulders or abutments *c² c²*, the seats or stops *k*, and the depressing arms or levers *h h* are correspondingly elevated above those adjacent to make the extent of motion uniform throughout the entire bank.

The operation is as follows: The types are

distributed into the receivers A and descend through the conduits *a* to the distributor or transfer channels *b*, in which they are raised and forwarded by the reciprocating pusher D against the resistance of the slugs *s*. As occasion requires they are slid down into the oscillating setter-channels, the slugs *s* removed and replaced before the pusher, and a following slug, *s'*, placed upon the rear and top of the column. When a single type is desired, the compositor places his finger upon the top of the gage or finger-piece of the proper channel and depresses the latter against the resistance of its secondary spring *l*, thus bringing the desired type between the thumb and finger. In withdrawing the type the channel is allowed to conform to the action of the secondary spring *l*, which returns it to its normal position. These secondary springs *l*, as compared with those operating the rock-shaft H, are of slight elastic power, being only strong enough to raise a single channel filled with type, so that the main springs *i i* effectually resist any tendency of the rock-shaft to follow the downward motion of the single channel. When more than one type is required, or even when one is required and speed is essential, the operator presses his foot upon the treadle, forcing down the rock-shaft or depressor H against the resistance of the main springs *i i*, thus depressing the front ends of all the setter-channels and exposing a type of each denomination in position to be immediately grasped and withdrawn. When the compositor removes the pressure from the treadle the main springs *i i* and secondary springs *l l* insure the return of all the parts to their former positions. Since the compositor can again in like manner depress all of the channels with his foot while engaged with his hands in placing and arranging the types already taken in the stick, it is obvious that he can work more rapidly than where each channel has to be depressed independently by hand.

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

1. In combination with a reciprocating pusher and a driving-shaft connected together substantially as set forth, the open ways and pillow-blocks *d d f f*, for the purpose of allowing the said pusher-driving shaft and connections to be quickly removed from position to give access to the rear of the distributor-channels, substantially in the manner and for the purpose described.

2. The combination, with a type-distributing

apparatus substantially such as designated, of a series of oscillating type-setter channels, from the lower ends of which the types are projected by stationary shoulders when the setter-channels are depressed, the said oscillating channels coinciding with and being pivoted so as to form continuations of the distributor receiver-channels, substantially in the manner and for the purpose set forth.

3. In a combined type setter and distributor substantially such as herein set forth, the distributor or transfer channels having their side walls extending forward over and beyond the point of junction with the oscillating setter-channels, in combination with the latter, having their upper rear side walls formed to correspond with and form continuations of the said walls of the distributor-channels, substantially in the manner and for the purpose described.

4. In combination with a series of oscillating type-setter channels, from the lower ends of which the types are projected by stationary shoulders when the setter-channels are depressed, substantially as set forth, a depressor adapted to depress all the channels simultaneously, while at the same time in its normal position it permits the channels to be depressed individually and independently, substantially in the manner and for the purpose described.

5. In combination with a series of oscillating type-setter channels, from the lower ends of which the types are projected by stationary shoulders when the setter-channels are depressed, a depressor adapted to depress all the channels simultaneously, provided with a treadle and retractile springs for the purpose of operating it, substantially in the manner set forth.

6. In combination with a series of oscillating type-setter channels, from the lower ends of which the types are projected by stationary shoulders when the setter-channels are depressed, and a depressor adapted to depress all the channels simultaneously, substantially as herein designated, a series of secondary retractile springs attached to the said depressor, and adapted to return the channels individually to their normal position after depression, substantially in the manner and for the purpose described.

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