

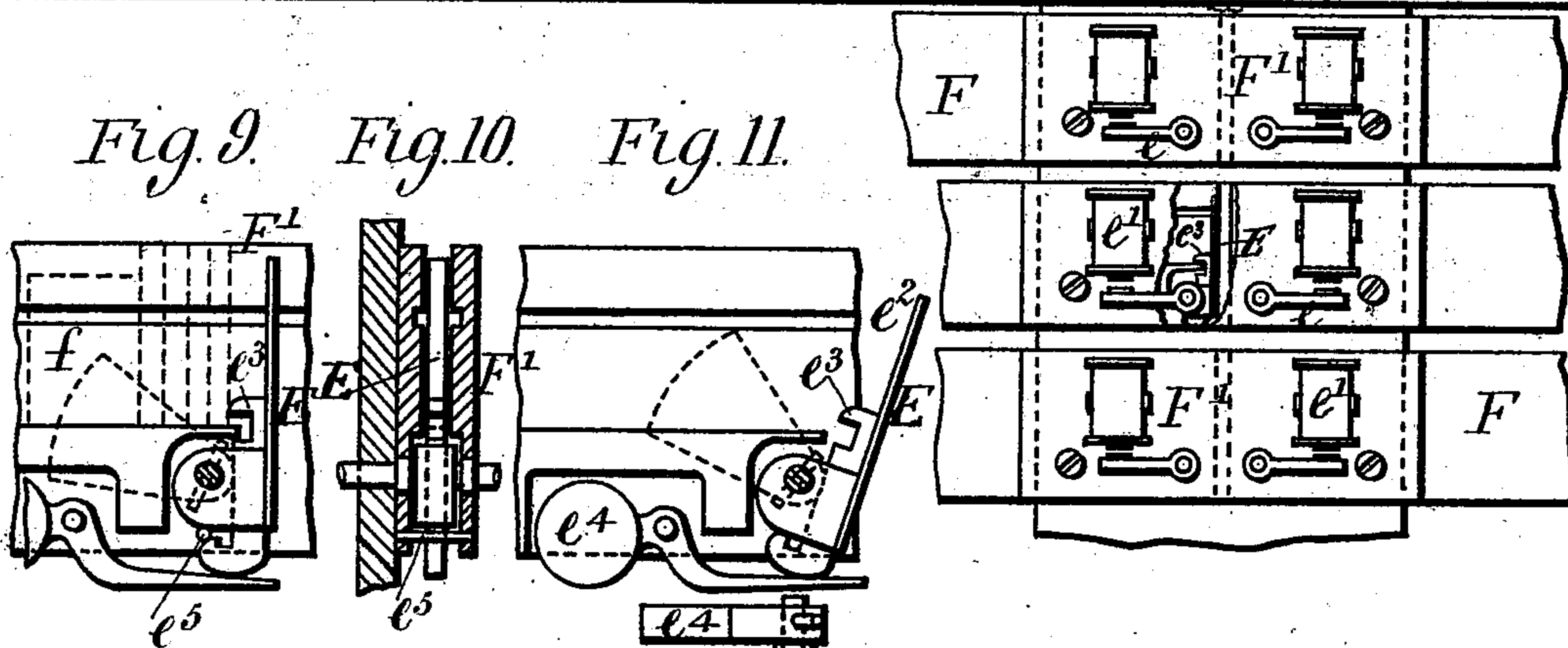
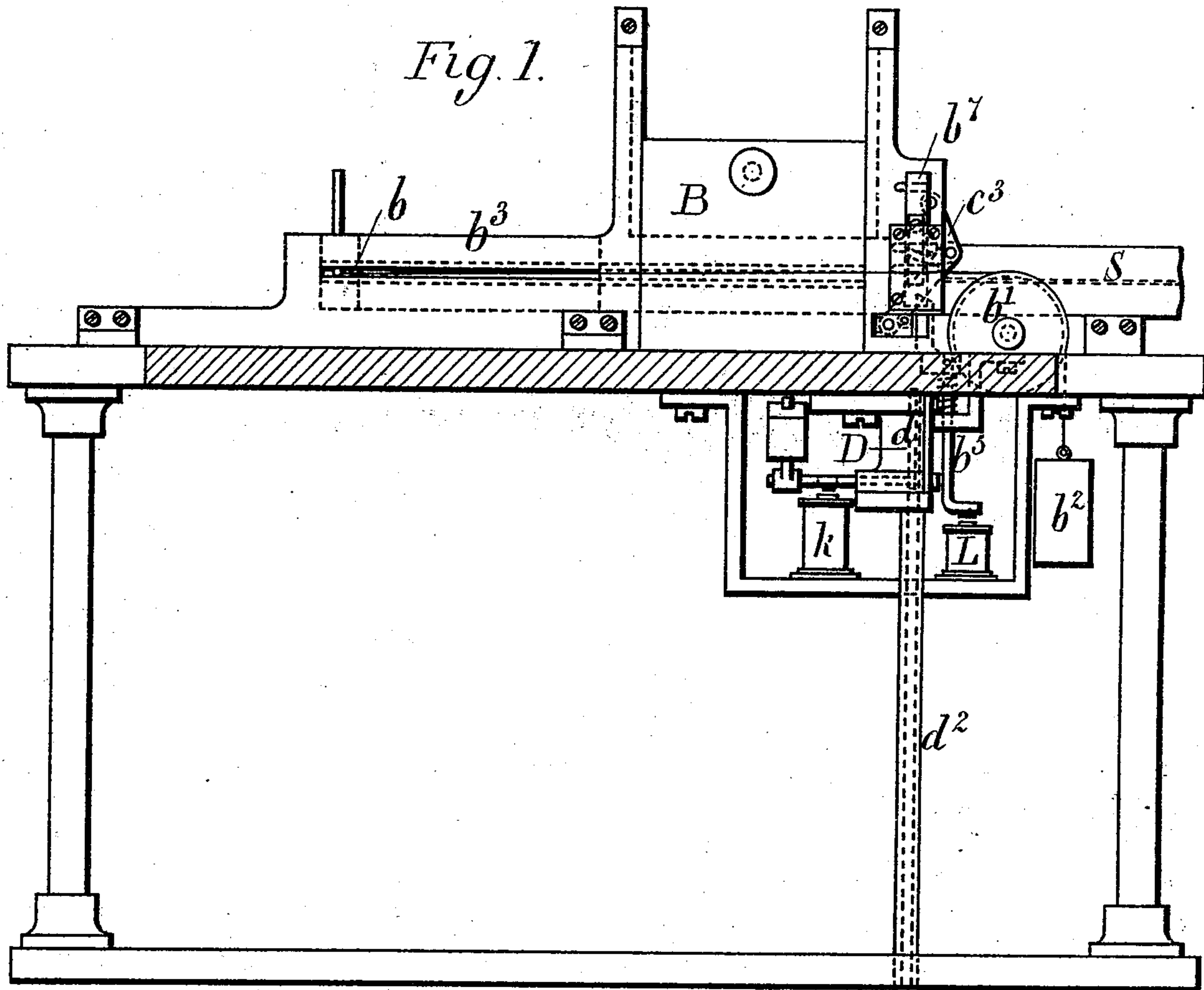
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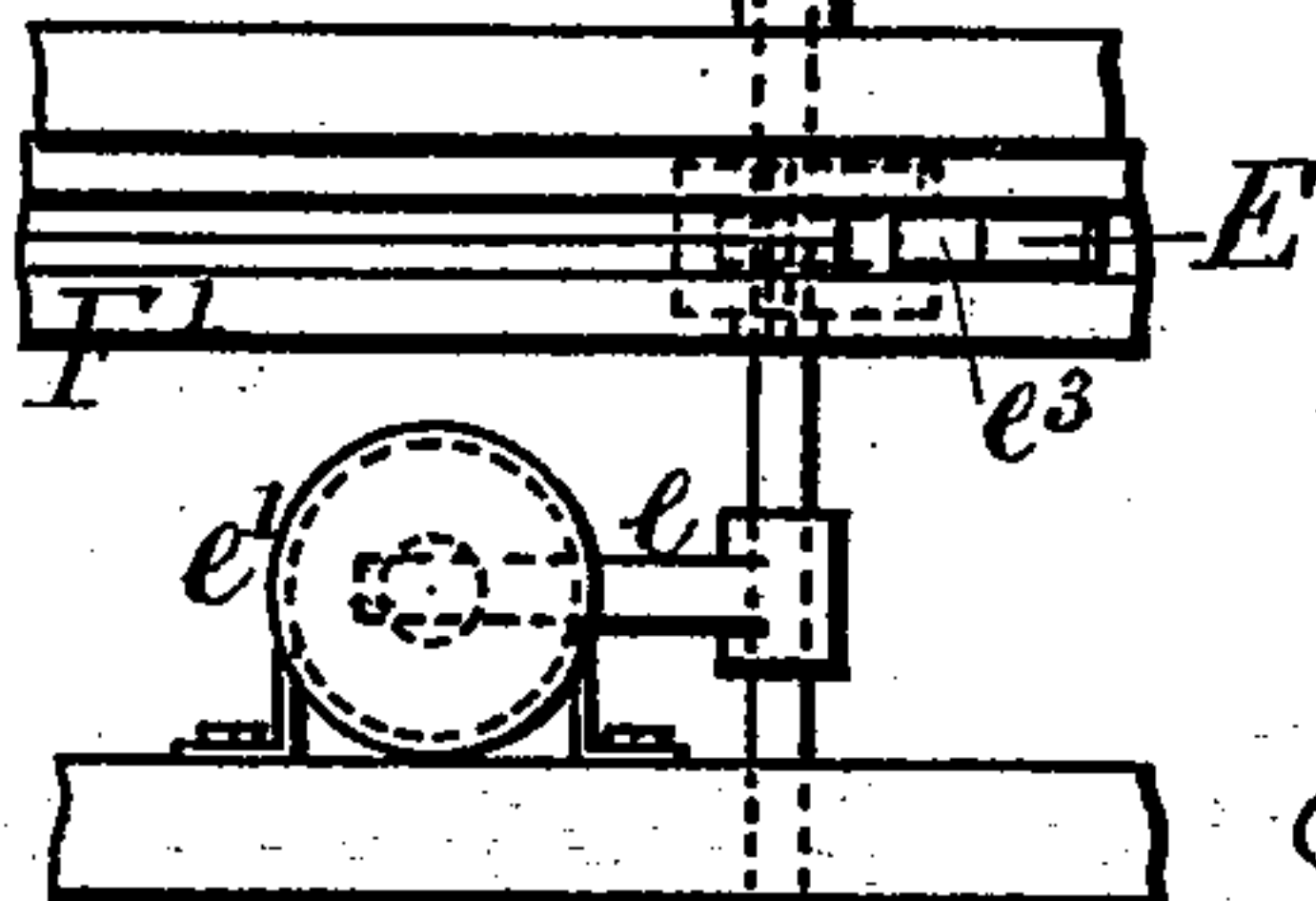
C. F. HILDER.  
APPARATUS FOR DISTRIBUTING TYPE.

No. 517,802.

Patented Apr. 3, 1894.



*Fig. 12.*



Witnesses;  
G. H. Rea,  
Thos. A. Green

Inventor:  
Charles F. Hilder  
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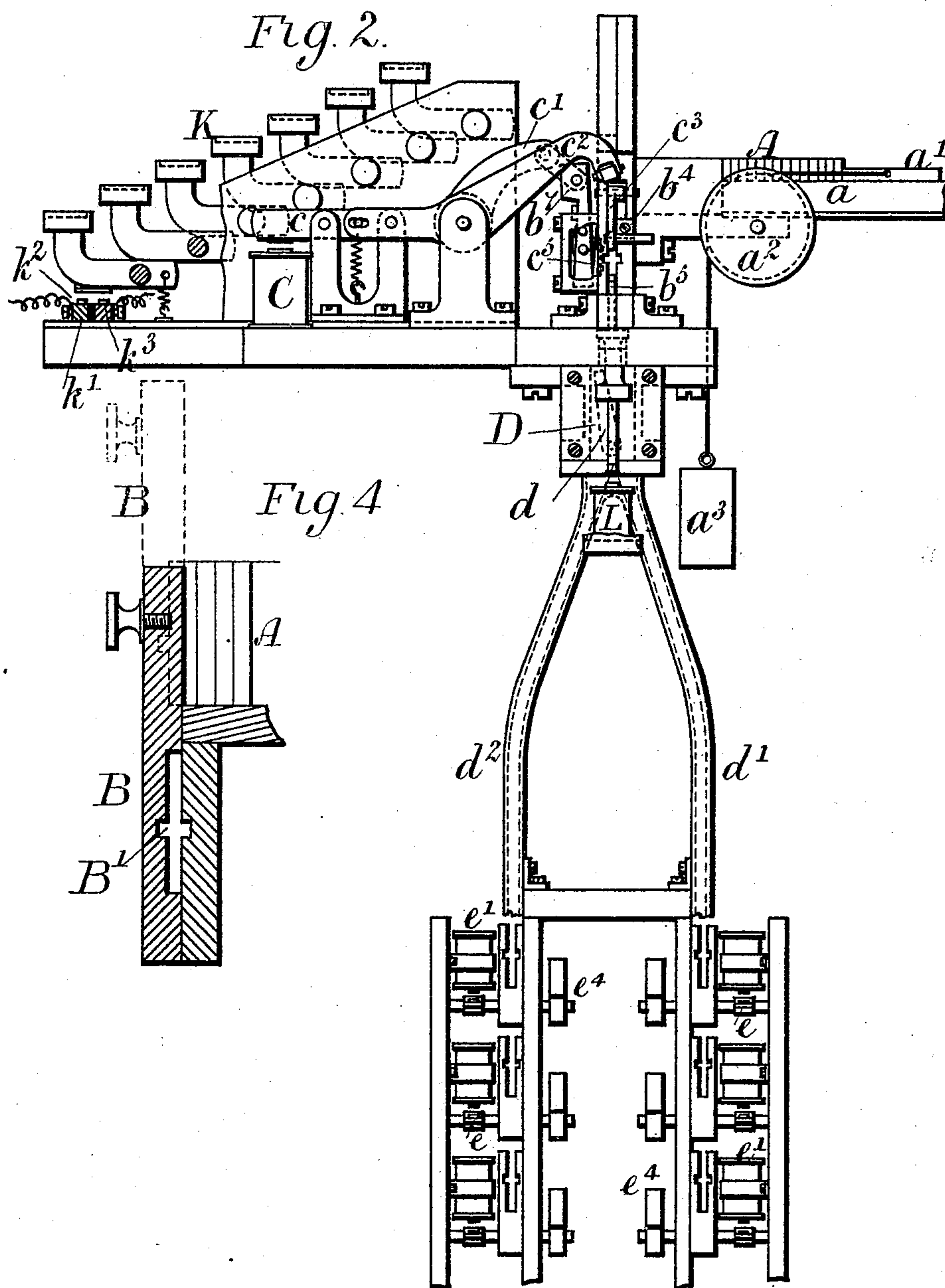
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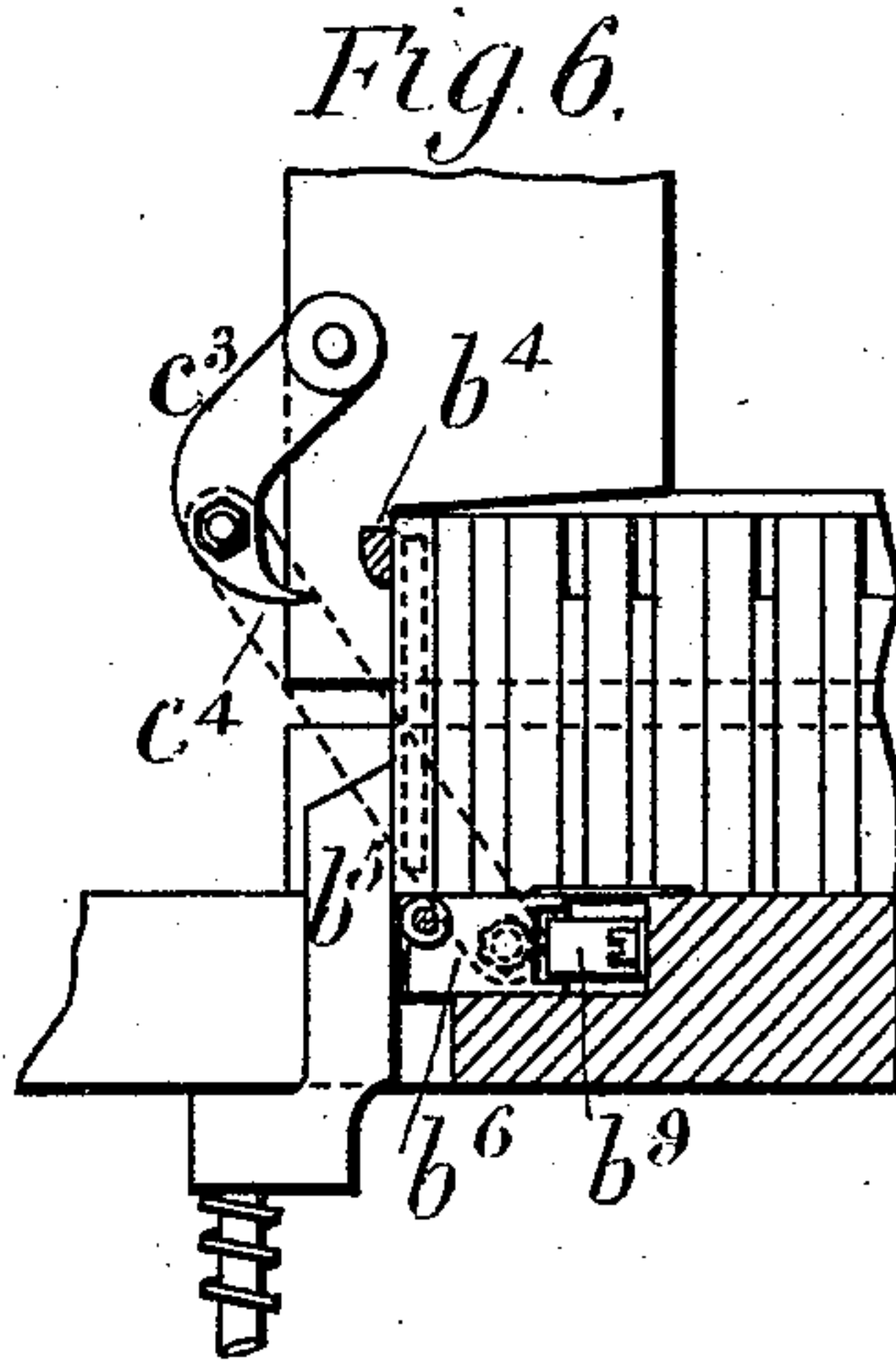
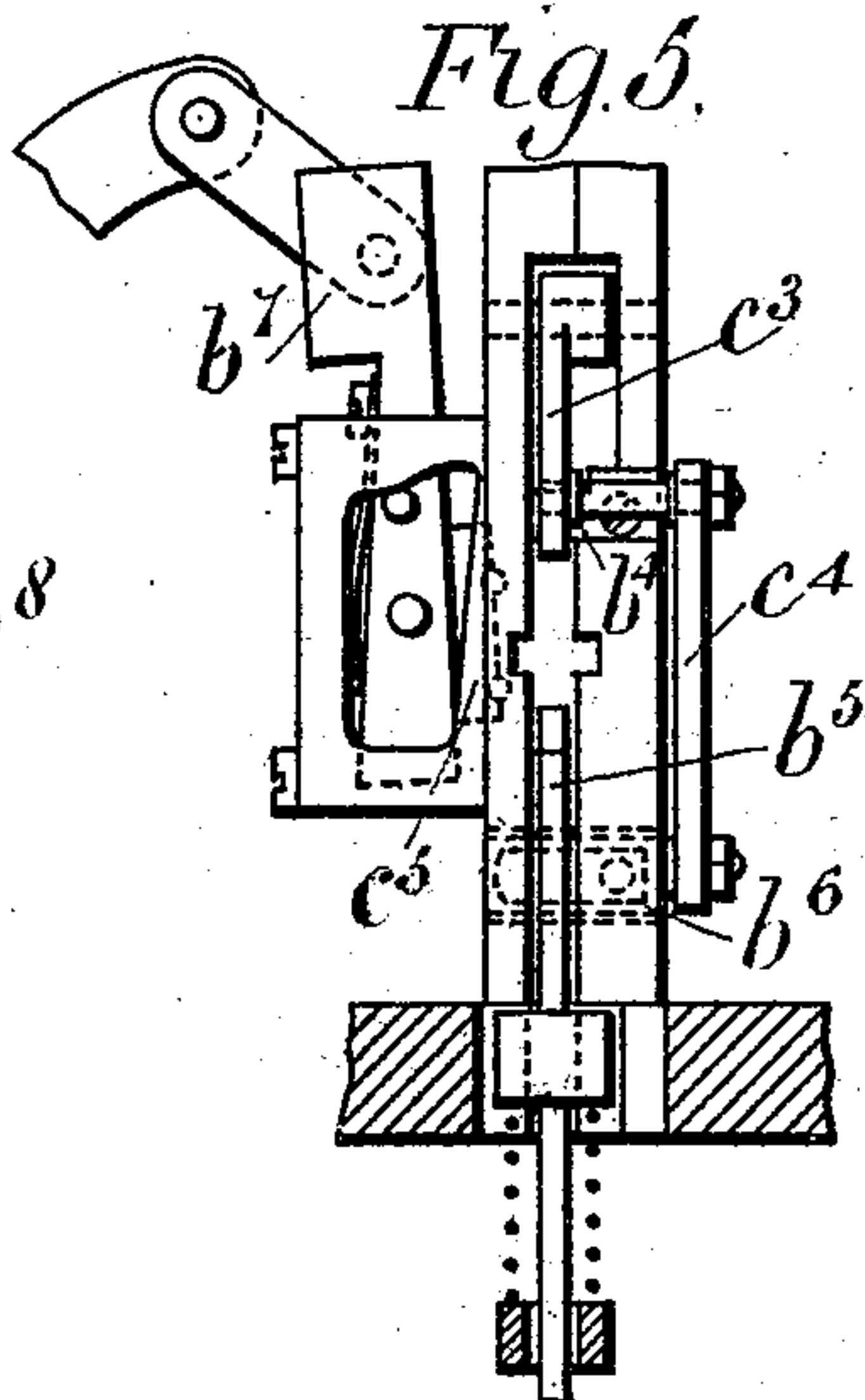
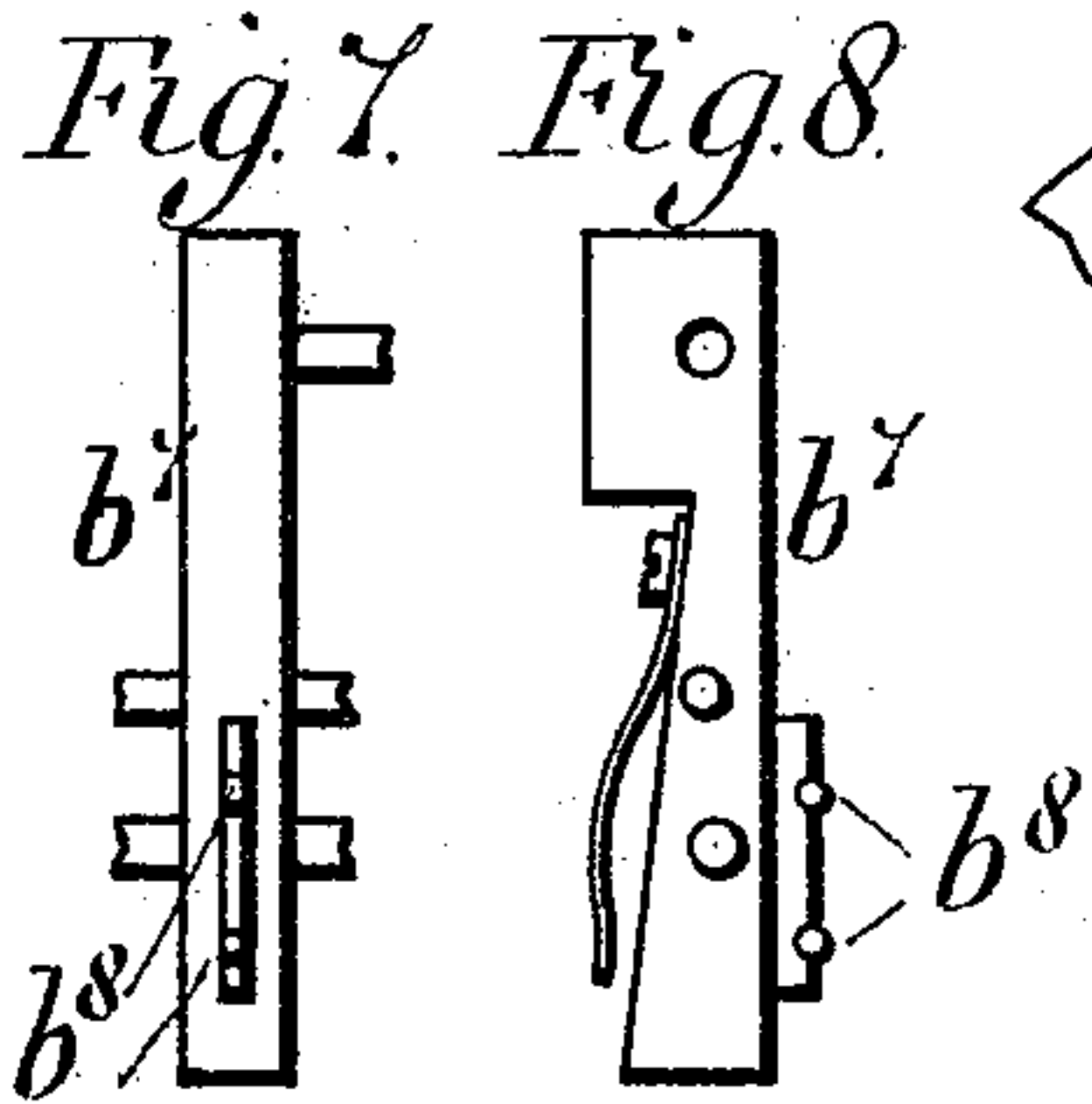
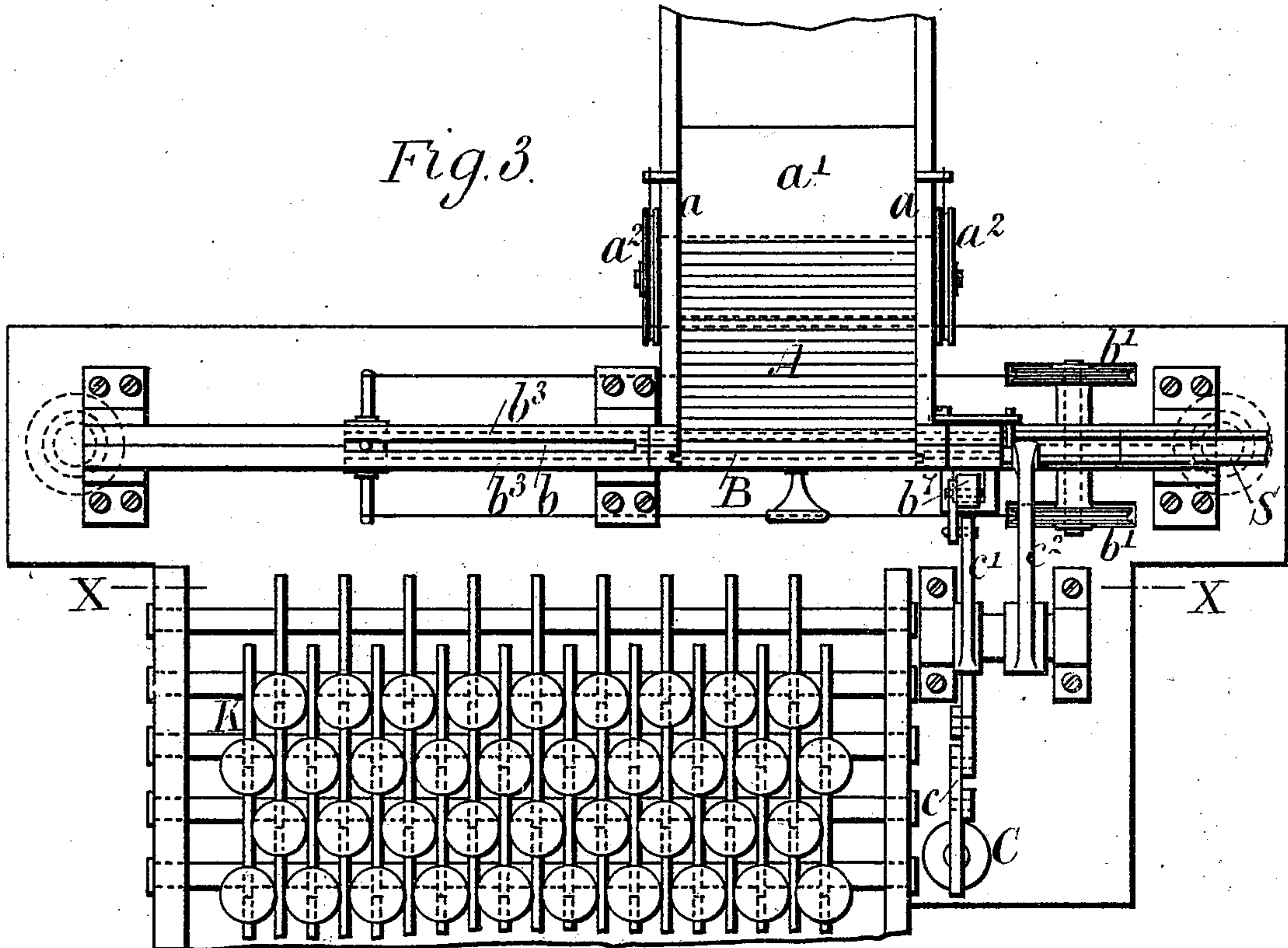
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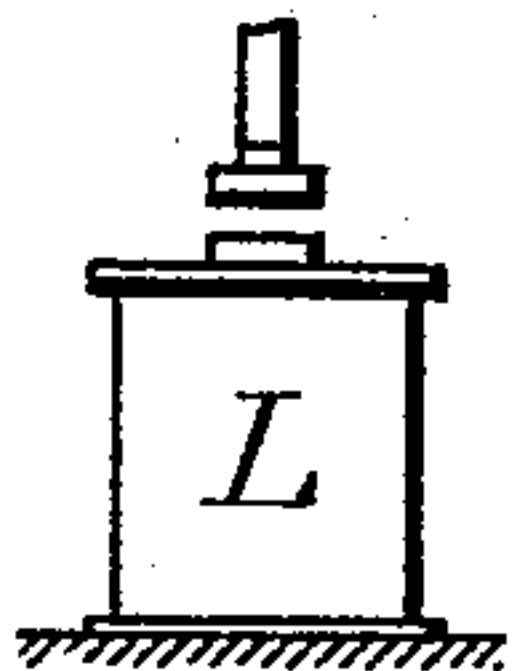
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Thos. A. Green



Inventor:  
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# UNITED STATES PATENT OFFICE.

CHARLES FREDERICK HILDER, OF LONDON, ENGLAND.

## APPARATUS FOR DISTRIBUTING TYPE.

SPECIFICATION forming part of Letters Patent No. 517,802, dated April 3, 1894.

Application filed July 24, 1893. Serial No. 481,301. (No model.) Patented in England July 25, 1892, No. 13,524; in France July 21, 1893, No. 231,674, and in Belgium July 22, 1893, No. 105,664.

*To all whom it may concern:*

Be it known that I, CHARLES FREDERICK HILDER, a citizen of England, residing at 28 Gray's Inn Chambers, Holborn, London, Eng-  
5 land, have invented certain new and useful Apparatus for Distributing Type, (for which I have obtained Letters Patent in Great Britain, dated July 25, 1892, No. 13,524; in France, dated July 21, 1893, No. 231,674, and in Bel-  
10 gium, dated July 22, 1893, No. 105,664,) of which the following is a specification.

My invention relates to apparatus for distributing types which is arranged to operate in the following manner: A column of types  
15 forming part of a printing form is placed on a table or galley between guides and is pressed forward toward a sluice gate. The front line of the types is pushed into a recess of the gate, and by the descent of the gate is car-  
20 ried down into a space between guides along which the line is pressed toward a separating device at the end of the line. The operator, looking to the matter which had been printed from the form, knows what character  
25 is at the end of the line, and by depressing one of a number of keys, of which there is one for every character, he liberates the foremost type of the line which thereupon descends a channel having a number of lateral  
30 switch gates, one for every character. By the same action of the key as that which liberates the types, an electrical current is transmitted to an electromagnet by which the particular switch gate belonging to the particu-  
35 lar character is opened, the type being thus admitted to a compartment appropriated to that particular type. When one type of a line is thus disposed of, the line is advanced so as to bring the next up to the separator and thus  
40 type after type of the line is caused to descend to its appropriate compartment. The space types, which are lower than the character types, are disposed of by simply passing under an end stop into a compartment  
45 provided for them. Such being the method

of operating, I shall describe apparatus by which this operation is effected, referring to the accompanying drawings.

Figure 1 is a section on X X of Fig. 3. Fig. 2 is a side view and Fig. 3 is a plan of dis-  
50 tributing apparatus according to my invention. Figs. 4 to 12 inclusive show details to an enlarged scale, the parts in these figures being marked with reference letters similar to those used in Figs. 1, 2 and 3.

A is the column of type which has to be dis-  
55 tributed, which is laid on a table or galley between two side guides  $a$ , and which is pressed forward by a bar or follower  $a'$  to which are attached cords passing over pul-  
60 leys  $a^2$  and connected to weights  $a^3$ . In front of the column is a vertically sliding gate B which can be raised by hand to the position indicated by dotted lines in Fig. 4 so as to ad-  
65 mit the front line of types into a recess at the back of the gate. Before raising the gate B, a follower  $b$  which is urged toward the right by cords passing over pulleys  $b'$  to weights  $b^2$ , is drawn back by hand to the po-  
70 sition shown in Figs. 1 and 3, and then, on lowering the gate B, the line of types engaged in its recess is brought down to a space between two side guides  $b^3$   $b^3$  immediately in front of the follower  $b$ , which presses the line of types toward an upper stop  $b^4$  and a lower  
75 stop  $b^5$  (Figs. 5 and 6).

When the foremost type of the line is a space type the lower stop  $b^5$  is drawn down by means which will presently be described, and thereupon the space type (of which there  
80 may be several together) being sufficiently low to pass under the upper stop  $b^4$ , is pushed into a trough S. When the foremost type of the line is a character type, it cannot pass under  $b^4$  and it cannot pass  $b^5$ , which in this  
85 case is not withdrawn, but it rests on a roller forming the front of a horizontally sliding gate  $b^6$ . By the action of any one of a number of keys K an electrical contact is made by which an electromagnet C is excited, moving  
90



its armature lever  $c$ , the arm  $c'$  of which is made to descend in a circular arc. As it descends it presses forward and downward a vertically sliding piece  $b^7$  (shown separately in Figs. 7 and 8) which has on its front face, that is to say the face presented toward the type, projection  $b^8$  corresponding to the nicks in the edge of the type. By this movement these projections are made to engage in the nicks of the foremost type and to push it down. The type in descending past the roller on which it rested pushes back the gate  $b^6$  in opposition to a spring  $b^9$ . When the type is in this position it is momentarily held by the pressure of the roller against its lower part and the pressure of the succeeding type or follower  $b$  on its upper part, but the armature lever  $c$  continuing to move, another of its arms  $c^2$  having a roller mounted on its end, as it descends, pushes down a hook shaped lever  $c^3$  the nose of which presses against the succeeding type or follower  $b$  thereby relieving the front and partly lowered type from the pressure on its upper part. The movement of the hook shaped lever  $c^3$  is conveyed by a link  $c^4$  to the sliding gate  $b^6$ , pushing it back, and thus relieving the partly lowered type from the pressure on its lower part. The sliding piece  $b^7$ , as it approaches the lower part of its stroke, moves along an incline  $c^5$  away from the descending type which, being thus released from the projections in its nicks and relieved from pressure as above described now freely descends into a passage  $D$  in which there is situated a switch gate  $d$ . This switch is counter weighted so as usually to keep passage free to a descending channel  $d'$ , but when any of the keys  $K$  appropriated to thick types is depressed an electrical contact is made by which an electromagnet  $k$  is excited. This, attracting its armature lever which is on the axis of the switch  $d$ , throws the switch over so as to close the channel  $d'$  and open another channel  $d^2$ . Thus the thicker types are caused to descend the channel  $d^2$ , the thinner types descending  $d'$ . In each of these channels as shown more fully by Figs. 10, 11, and 12 on each side, or it may be only on one side, there are a number of side gates or shutters  $E$  each counter weighted so as to leave the descending channel  $d'$  or  $d^2$  clear for the types to pass them. But on the axis of each shutter there is an armature lever  $e$  which, when one of the keys  $K$  is depressed making a contact, is attracted by an electro magnet  $e'$  thus brought into circuit, the shutter being thus thrown into the attitude shown at  $e^2$  (Fig. 11) in which position it directs a descending type toward the compartment  $F$  of which it forms the gate. On the face of the shutter is fitted a sliding catch  $e^3$  which is pressed upward by a counterweighted lever  $e^4$  so that when the shutter is moved to the attitude  $e^2$ , a notch of the sliding piece  $e^3$  engages on a pin  $e^5$ , the shutter being thus held in the position  $e^2$  un-

til the type descending upon  $e^3$  presses it down, thus releasing its notch from the pin  $e^5$  whereupon the shutter returns to the position  $e$  (Fig. 9) reopening the channel  $d'$  or  $d^2$  and pressing the line of type along the compartments  $F$  into which the last type has been delivered.

In each of the compartments  $F$  there is a follower  $f$  shown behind types by dotted lines in Fig. 9 having ribs which slide along grooves formed in the sides of the compartment, this follower keeps the types upright in the compartment.

The compartments  $F$  are removable being attached to a fixed body  $F'$  in which the shutter apparatus is mounted, all in such manner that any compartment  $F$ , when it is filled with types, can be removed to a composing machine and an empty compartment put in its place against the fixed body  $F'$ .

It has been described above that when any one of the keys  $K$  is depressed, an electrical contact is made. As shown in Fig. 2 this is effected by a piece of metal  $k'$  which is fixedly insulated on the key, and which is, by depression of the key, pressed down on two metal spring plungers or contacts  $k^2$ ,  $k^3$  insulated from each other. The one contact  $k^2$  is connected by a conductor to the one terminal of a battery or other source of electricity, the other contact  $k^3$  is connected in series to the coils of the electro magnets above referred to, that is to say the electro magnet  $C$  which operates the slotter mechanism, the electro magnet  $e'$  which operates the shutter  $E$ , and in the case of thick types, the electro-magnet  $k$  which operates the switch gate  $D$ . One of the keys  $K$  makes a contact for an electro magnet  $L$ , the spring armature of which is directly connected with stop  $b^5$  which is drawn down as above described for passage of the space types into  $S$ .

Having thus described the nature of my said invention and the best means I know for carrying the same into practical effect, I claim—

1. In apparatus for distributing types the combination of a transverse channel, a follower and its cords pulleys and weights, an upper stationary stop and a lower movable stop with spring armature electro magnet and finger contact key, whereby space types occupying the front end of a separated line of type are separated from the line, substantially as described.

2. In apparatus for distributing types in combination with a transverse channel a follower and its cords pulleys and weights an upper and a lower end stop, a vertically sliding piece having projections fitting the nicks of the type, a horizontally sliding gate and roller, an armature lever and its two arms, electromagnet and finger contact key, whereby the front character type of a separated line of types is separated, substantially as described.



3. In apparatus for distributing types the combination of a switch gate, two descending channels, pivoted shutters at the side of each channel, a sliding catch on each shutter and  
5 its weighted lever and for each shutter a receiving compartment, an electro-magnet and a contact key whereby each separated character type is transferred into its appropriate compartment, substantially as described.  
10 In testimony whereof I have signed my name to this specification, in the presence of

two subscribing witnesses, this 7th day of July, A. D. 1893.

CHARLES FREDERICK HILDER.

Witnesses:

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