

No. 713,557.

Patented Nov. 11, 1902.

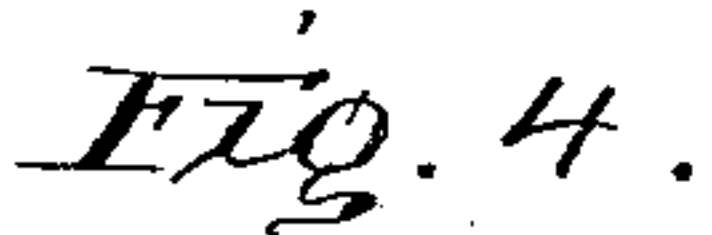
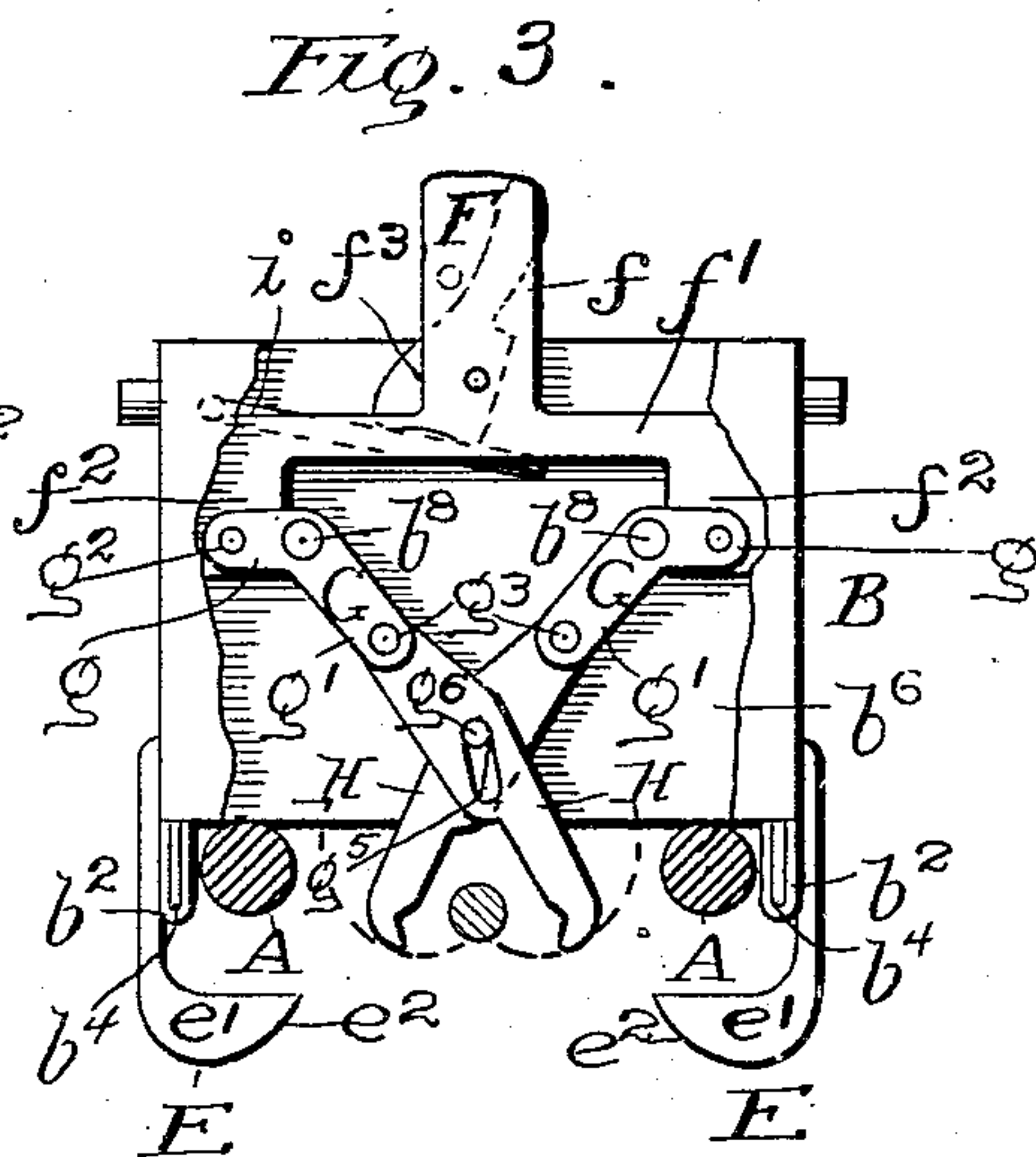
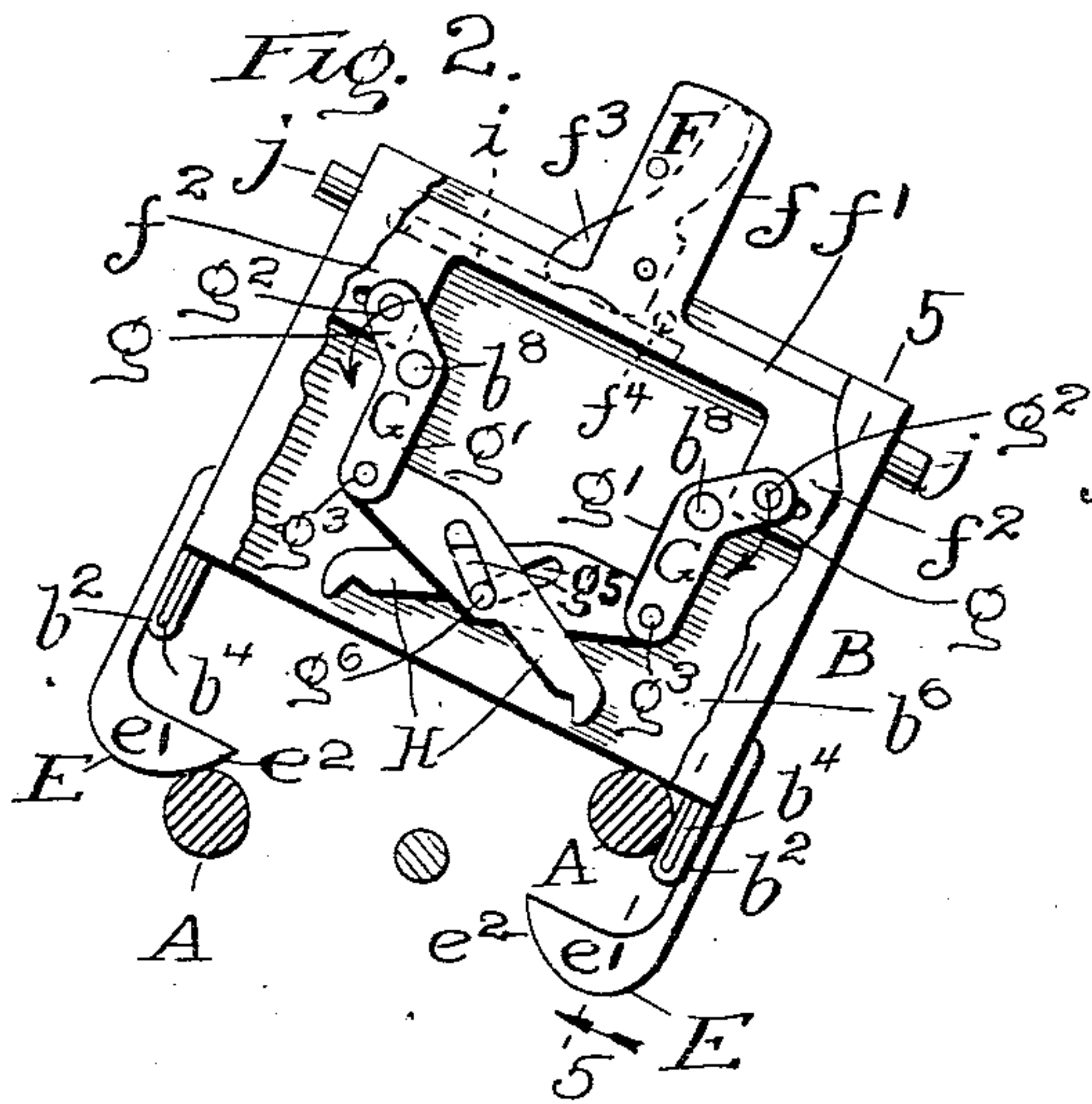
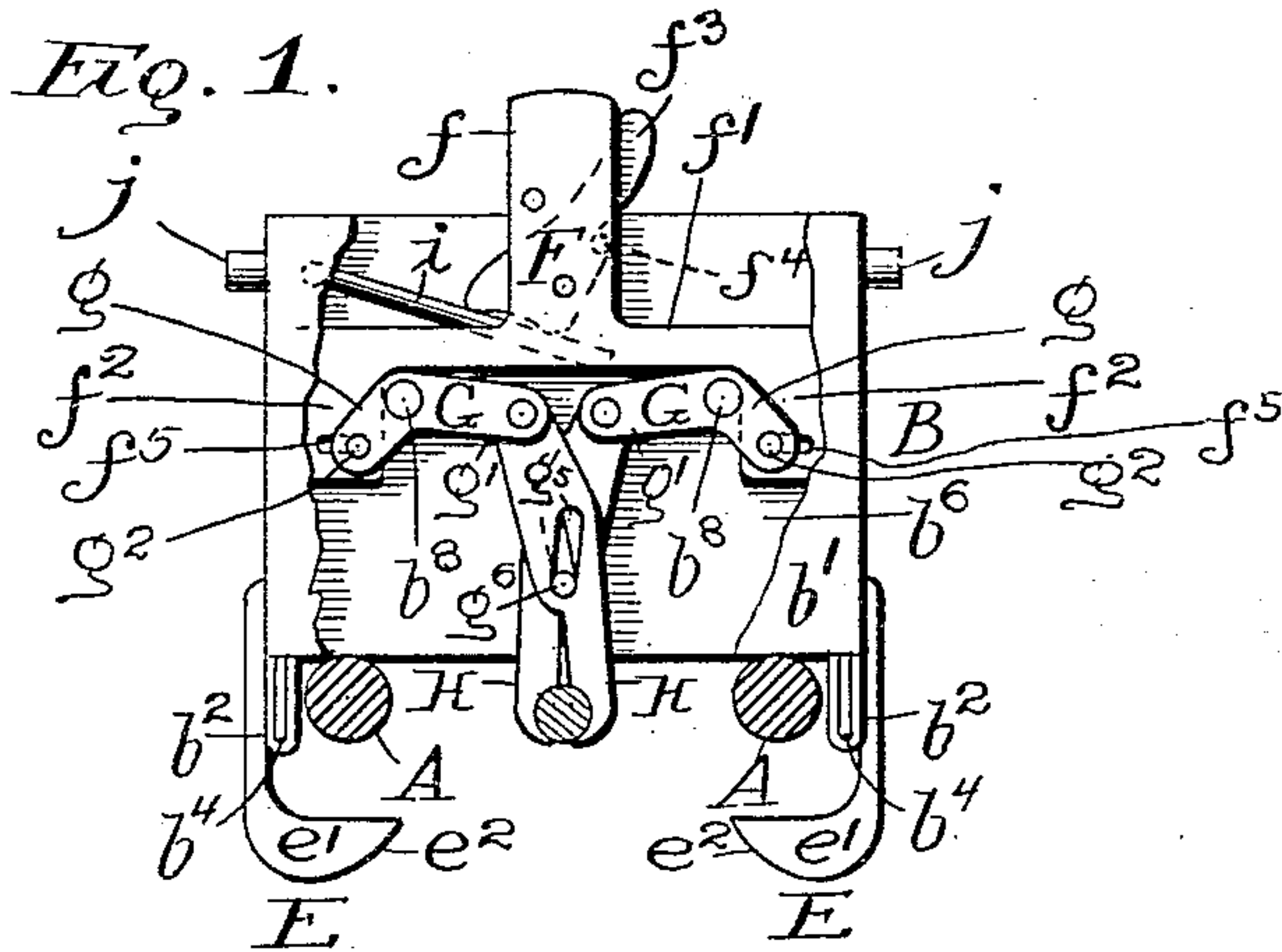
W. L. CHURCHILL.

CASH CARRIER.

(Application filed Mar. 26, 1902.)

(No Model.)

2 Sheets—Sheet 1.



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CASH CARRIER.

(Application filed Mar. 26, 1902.)

(No Model.)

2 Sheets—Sheet 2.

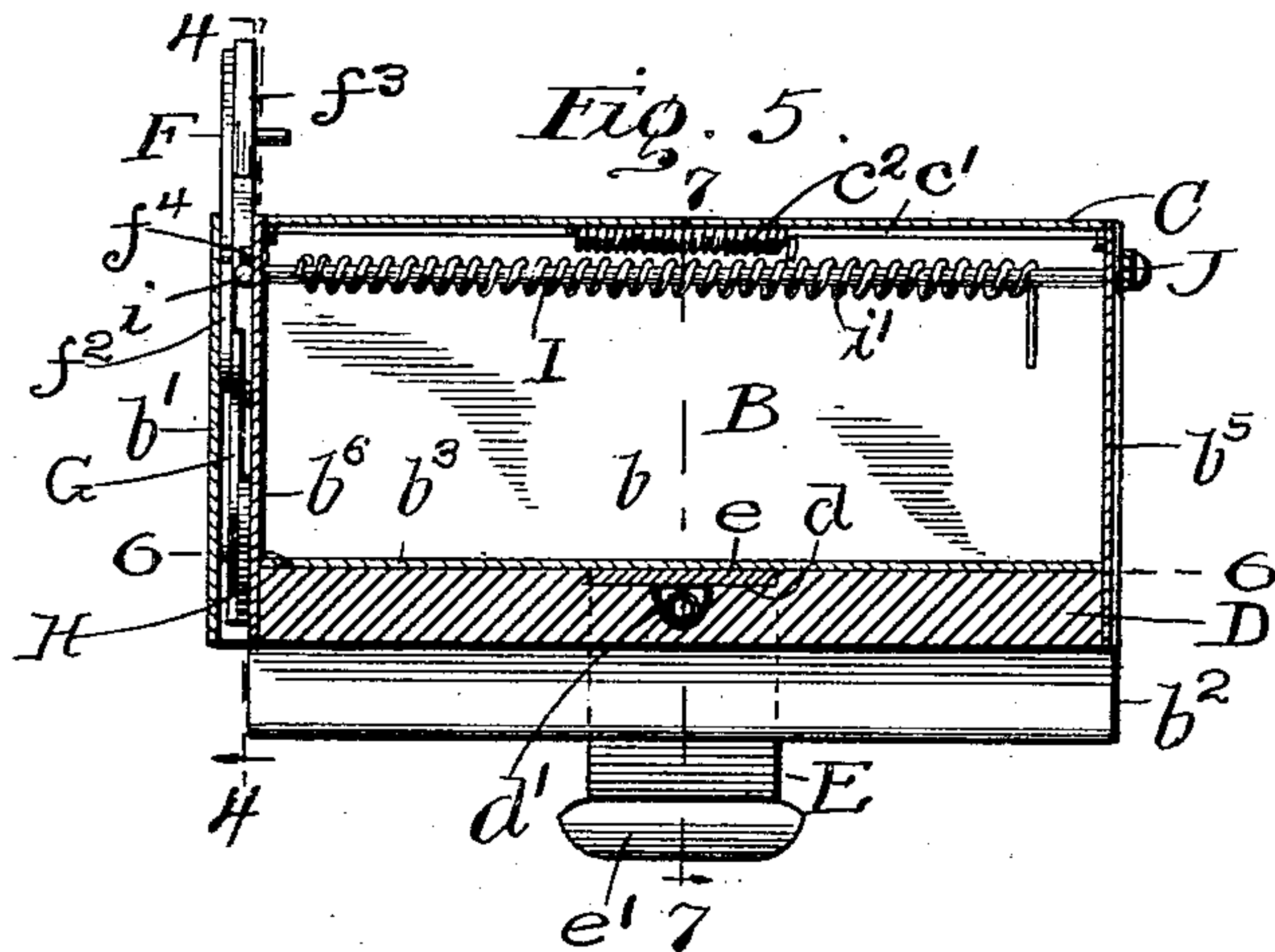


Fig. 6.

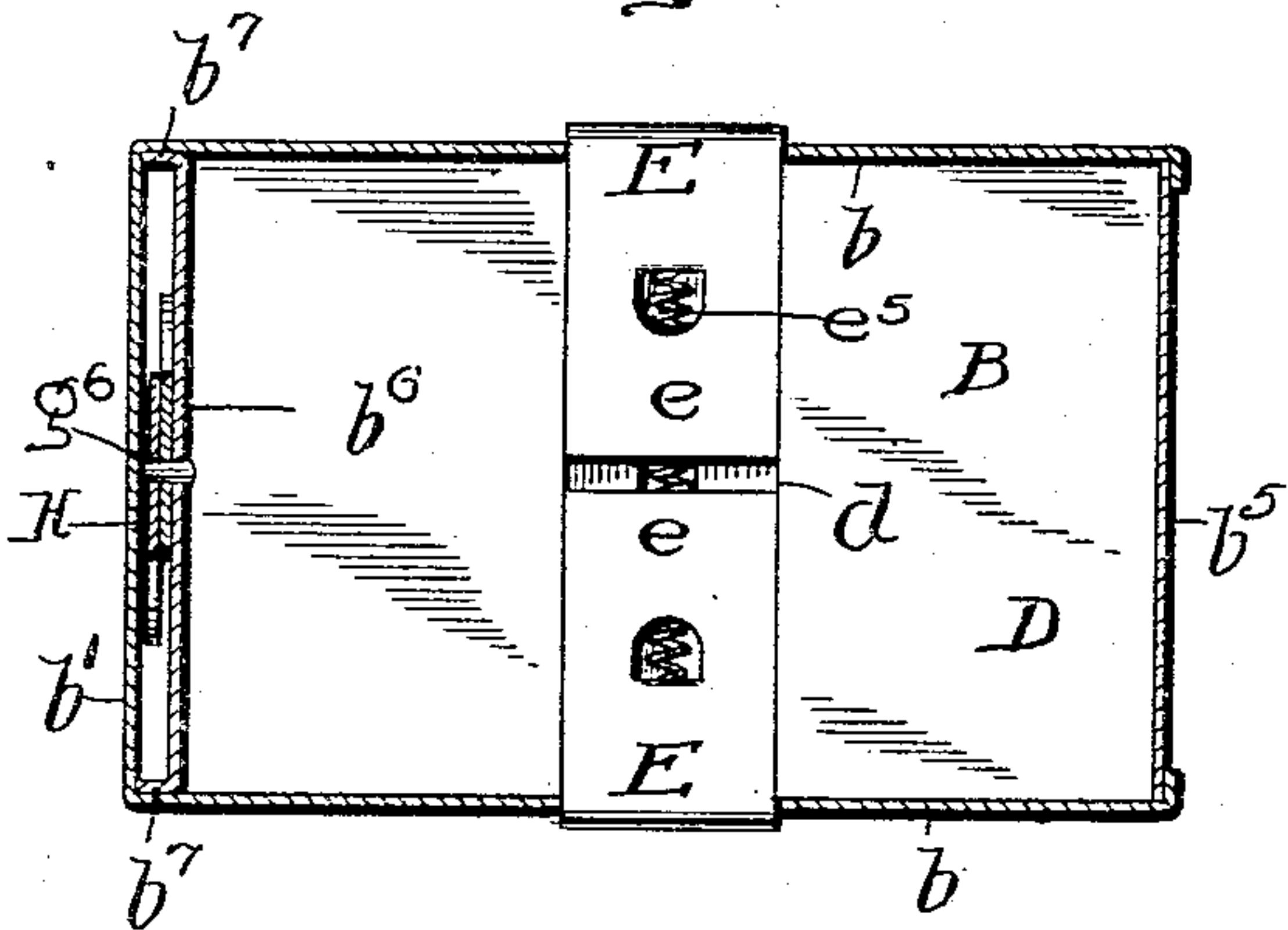


Fig. 7.

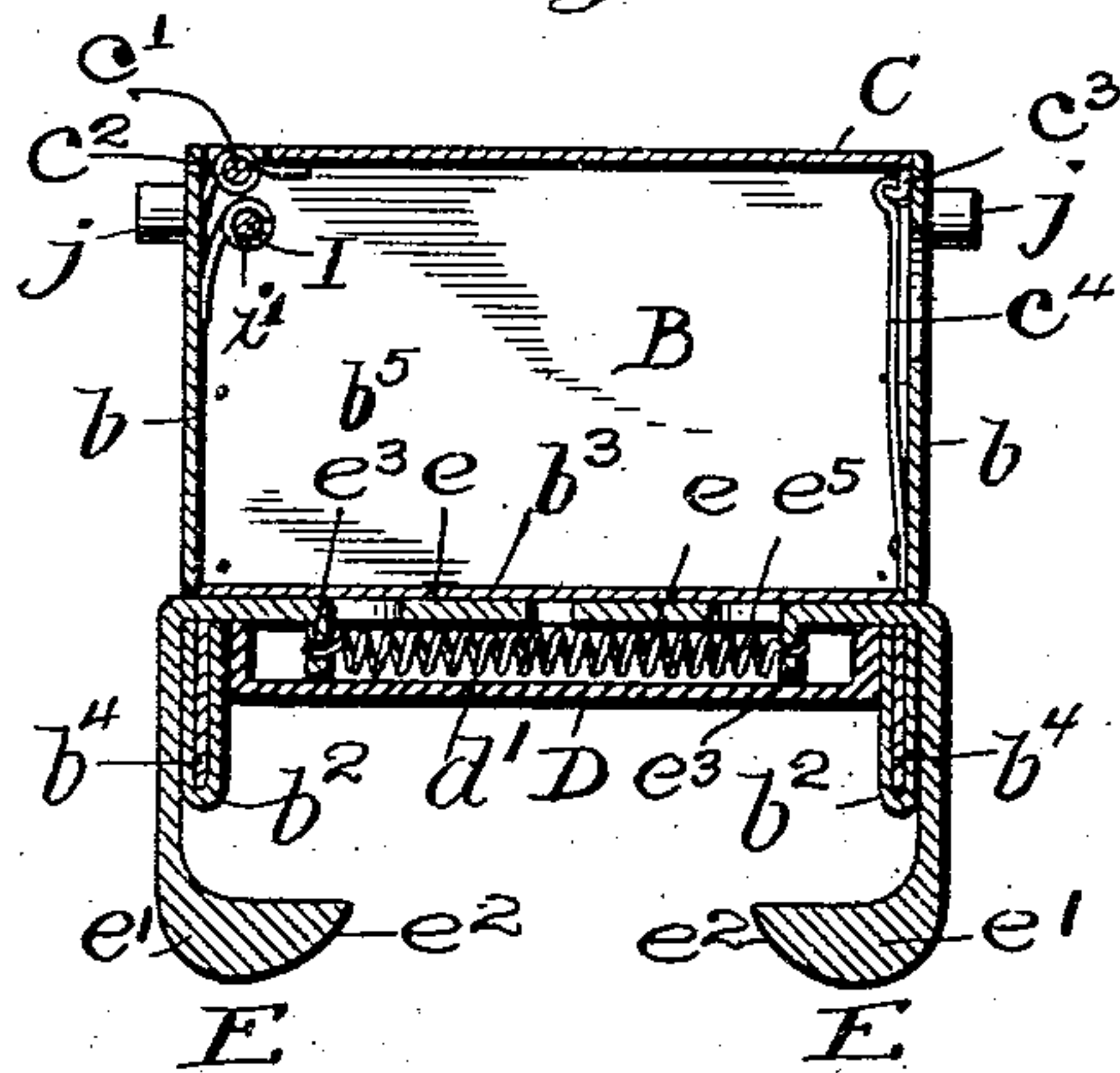
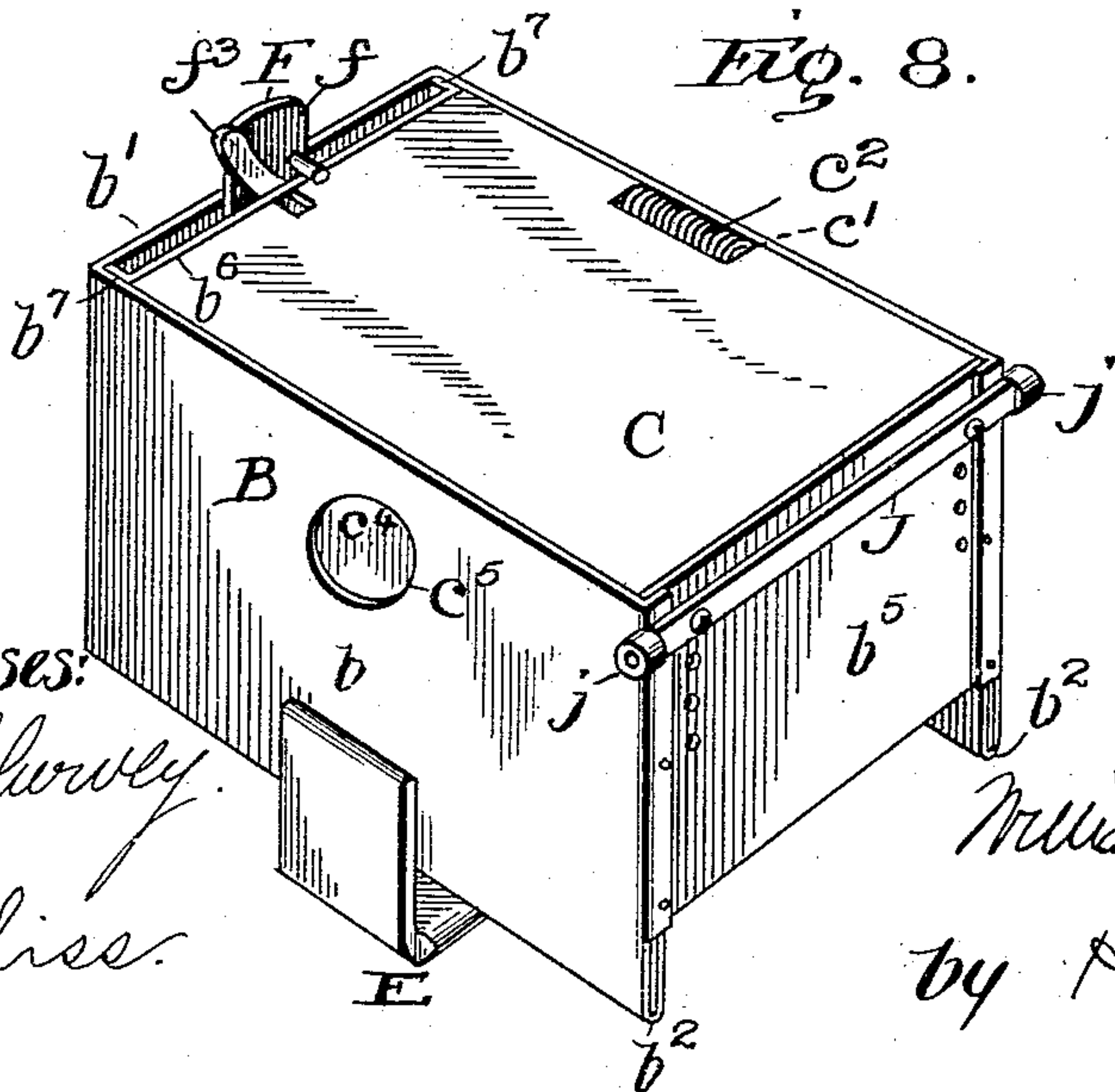


Fig. 8.



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UNITED STATES PATENT OFFICE.

WILLIAM L. CHURCHILL, OF CHICAGO, ILLINOIS.

CASH-CARRIER.

SPECIFICATION forming part of Letters Patent No. 713,557, dated November 11, 1902.

Application filed March 26, 1902. Serial No. 100,028. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. CHURCHILL, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cash-Carriers, of which the following is a specification.

My invention relates to certain new and useful improvements in cash-carriers of the type wherein a closed box-carrier slides upon suitably-suspended rails, being propelled by a driven cable substantially in line with the rails; and its object is to produce a cash-carrier of this type which shall be cheap, light, and simple for use primarily in connection with an entire system of this type of store-service designed by me, but useful also in other systems of the same general type.

To these ends my invention consists in certain novel features of construction, which are fully described herein and illustrated in the drawings.

In the drawings, Figure 1 is a front elevation of my improved carrier, having certain parts broken away. Fig. 2 is a similar elevation showing how the carrier is placed on the tracks. Fig. 3 is a similar elevation showing the cable-jaws about to grasp the cable. Fig. 4 is a section through the box in the line 4 4 of Fig. 5 looking in the direction of the arrow. Fig. 5 is a section in the line 5 5 of Fig. 2 looking in the direction of the arrow. Fig. 6 is a section in the line 6 6 of Fig. 5 looking downward. Fig. 7 is a section in the line 7 7 of Fig. 5, and Fig. 8 is a perspective of the carrier.

Referring to the drawings, A A are two rails, preferably circular in cross-section, upon which the car runs, and they are supported or suspended as desired.

B is the box or carrier. It is preferably constructed of metal, as shown herein. In this construction two side pieces b b and a front piece b' are cut from a single piece of metal. The two side pieces b b are carried down below the desired lower line of the box and sharply recurved, as shown in Fig. 7, thereby forming lugs b^2 b^2 , extending below the lower line of the box. The bottom of the box consists of a single piece of sheet metal b^3 , bent downward on the two sides to form downwardly-projecting portions b^4 b^4 , which

are inserted in the spaces left in the lugs b^2 b^2 by the recurving of the sides, and they are there riveted or otherwise secured as desired. The rear piece of the box b^5 is riveted to the ends of the side pieces b b , these pieces being bent over, as shown in Fig. 8, for the purpose. On the front of the box is a sheet of metal b^6 , having forwardly-extending portions b^7 b^7 . This piece makes a small chamber in the front of the box to receive the cable-grasping mechanism. The bottom of the box terminates at the piece b^6 , so that this chamber runs completely through the carrier from top to bottom.

The top C of the box consists of a plate of metal hinged at c' to the top of one of the side pieces, and it is provided with a coiled spring c^2 , which tends to open it. Upon the edge of the cover opposite to the spring is a loop or lug c^3 , adapted to engage a spring c^4 on the inside of the box, this spring when in engagement with the loop or lug keeping the cover closed against the force of the spring c^2 . The spring c^4 can be reached and released through a hole c^5 in the side of the box.

In order to prevent the box from rattling and jangling when running along the rails, it is desirable to provide a non-metallic surface for contact with the tracks. For this reason the plate D, of gutta-percha or some similar compound, is secured upon the bottom of the box B between the lugs b' b' and is secured in place upon the box as may be desired. It will be observed that this plate comes into contact with the rails, and all vibrations which pass to the box must necessarily pass through it, their effect being consequently greatly lessened.

In systems of this general type the cash-carrier travels in all positions upon the rails. It may be inclined at any angle, it may run vertically, and it may run upside down hanging from the rails. In order to act well in all these positions, there must be provided some special means for keeping the carrier upon the rails. The system which I have adopted consists in the use of movable hooks extending downward from the sides of the box and inward under the rails, so as to keep the box in position, these hooks being laterally movable to permit the box to be placed upon and removed from the rails at any point as may be desired. The particular construction of

this device is clearly shown in Fig. 7. The plate D upon the bottom of the carrier is provided with a shallow slot d , running across the whole width of the plate at its center.

5 In the bottom of this slot is cut a groove d' , the relative length of which with respect to the slot d is clearly shown in the section shown in Fig. 7. The two hooks which engage the track (designated by the reference-

10 letters E E) are provided with inwardly-extending flat portions e e , which run in the slot d and almost meet at its center. The hooks extend downwardly from the sides of the carrier, the lugs b^2 b^2 being normally in con-

15 tact with the same, to a point some distance below the bottom of the lugs and thence inward, ending in the heavier portions e' e' , having the beveled surfaces e^2 e^2 . The flat inwardly-extending portions ee have each a downwardly-

20 projecting stamped tongue e^3 , which enters a groove d' in the center of the slot d . It will be seen that if the hooks E E are pulled outward these tongues will eventually come in contact with the end of this groove, thereby

25 limiting the lateral motion of the hooks. To these two tongues is connected a spring e^5 , which tends to draw the hooks together and normally holds them in contact with the sides of the box. The hooks, however, may be

30 readily drawn apart either by hand or by any spreading mechanism to permit the carrier to be removed from the rails, and they are also spread apart in placing the carrier on the rails, as is shown in Fig. 2. In placing the

35 carrier on the rails it is placed over one of the rails and the beveled portion e^2 of one of the hooks is placed upon the opposite rail, and the box is then pushed downward. The wedging action of the rails upon the beveled

40 surface forces the hook outward, and the box slips readily into place, the hook springing back immediately and securing the box firmly upon the rails. I consider this mechanism for holding the carrier upon the rails particu-

45 larly desirable, for it permits the box or carrier to be placed upon and removed from the rails at any point in their length.

Secured to the plate b^6 and running in the chamber or slot heretofore described is the

50 cable-engaging portion of this device, and its construction and operation will now be described. The slide F is yoke-shaped and consists of an upwardly-projecting portion f , a cross-piece f' , and two downwardly-extending

55 portions f^2 f^2 . The upwardly-extending portion f is provided on its rear side with a latch f^3 of the form shown in the drawings, and the latch is normally held in the position shown in Fig. 2 by a spring-rod I, the opera-

60 tion of which will be presently described. The latch is adapted to engage a pin f^4 upon the plate b^6 , as shown in Figs. 1, 4, and 5, and when in that position it locks the slide F in its lower position. The slide can be raised

65 to its original upper position by depressing the latch. Upon the member b^6 are pivoted by pivots b^8 two rotatable members G G, each

having two radial arms g g , g' g' . The arms g g are provided with pins g^2 g^2 , extending backward toward the body of the box and in

70 engagement with slots f^5 f^5 in the downwardly-projecting portion f^2 f^2 of the yoke-shaped slide F. The effect of this connection is that downward motion of the slide will rotate the members G G in the direction shown

75 by the arrows in Fig. 2, and upward motion of the slide will reverse this rotation. To the arms g' g' of the members G G are pivotally connected jaws H H by means of pivots g^3 g^3 . These jaws are provided with slots g^5 g^5 ,

80 which run upon a pin g^6 , extending forward from the plate b^6 . Motion of the arms g' g' in the direction shown by the arrow in Fig. 2 causes the ends of the jaws H H to swing downward, gradually drawing together until

85 the points b^3 , g^3 , and g^6 are in line, and thereafter they swing together and upward, the ends of the jaws traversing the path indicated by the dotted lines in Fig. 3. In other words, the jaws swing downward at first,

90 keeping a considerable distance apart, and then change their motion to one together and upward, grasp the cable, and draw it to the position shown in Fig. 1—that is to say, when

95 it is desired to pick up cable the slide is pushed down, the members G G are rotated, the jaws swing downward, grasp the cable, and draw it upward to the position shown in Fig. 1, which is the position of all this mechanism when the car is in motion. When the

100 slide reaches its lower position, the latch f^3 catches upon the pin f^4 and holds the slide in this position, thereby keeping the jaws in engagement with the cable.

The spring-rod heretofore referred to is

105 designated by I, and it is clearly shown in Fig. 5. It is L-shaped in form, having a portion i extending across the front of the box and in engagement with the latch f^3 , tending, as before explained, to keep it in the position

110 shown in Fig. 2. The spring-rod I is surrounded by a coiled spring i' , which imparts to it rotary tension. It will be observed that the projecting portion i in pressing upward against the latch f^3 also tends to raise the

115 yoke F to the position shown in Fig. 2. When it is desired to drop cable, all that is to be done is to depress the latch f^3 against the force of this spring, this being done preferably by means of a cam upon the side of the

120 track, and the spring-rod I will immediately raise the yoke, causing the arms to separate and swing upward, reversing the motion heretofore described. I consider this a particularly desirable form of cable-grasping mechanism, for the reason that the jaws are nor-

125 mally apart and they swing downward, converging meanwhile upon the normal position of the cable. Even if the cable is some distance out of its proper position the jaws will

130 meet it, pull it into the normal position, grasp it, and raise it, as heretofore described. There is another advantage in this type of construction in that it is not necessary to have any

extra tension upon the cable at the points of releasing it from engagement with the jaws. In my device, therefore, the cable can be dropped at any point on the track where a suitable latch-releasing mechanism is provided and no abnormal relation is required between the cable and the track.

Upon the top of the box B is a rod J, having at its end two rollers *jj*, as shown in Fig. 8, and these rollers are used to operate switching mechanisms at various points in the track. The rod J can be secured at any height upon the back of the box, and the switching mechanism in systems of this type is placed at various heights along the track, so that the roller of one car will operate only the switches at its own station. I consider the use of rollers in place of the ordinary lugs particularly advantageous, for the reason that there is much less friction when they are used, and therefore there is not so much strain and wear on the cable in operating the switching mechanism.

In this specification I do not claim the general features of this carrier construction, inasmuch as they are fully covered by other applications filed by me on carriers of this general type, Serial Nos. 100,026 and 100,027, filed March 26, 1902.

I realize that considerable changes can be made in the details of construction in this device, and I do not desire to limit myself to the particular form herein set forth.

I claim as new and desire to secure by Letters Patent—

1. In a device of the class described, the combination with a box adapted to run upon suitable rails, of rotatable members pivoted upon the front of said box, cable-engaging jaws connected to said members, slidingly pivoted upon a suitable fulcrum, means for holding said rotatable members in a normal position with respect to said box, in which position said jaws are raised with respect to said box and separated, and means whereby said members can be rotated and thereby close and depress said jaws, substantially as described.

2. In a device of the class described, the combination with a box adapted to run upon suitable rails, of rotatable members pivoted upon the front of said box, slotted cable-engaging jaws connected to said members, a pin upon said box engaging the slots in said jaws, means for holding said rotatable members in a normal position with respect to said box wherein said jaws are raised and separated, and means for rotating said members and closing and depressing the jaws, substantially as described.

3. In a device of the class described, the combination with a box adapted to run upon suitable rails, of two rotatable members pivoted upon the front of said box, two cable-engaging jaws pivoted to said rotatable members, said jaws being slidingly pivoted upon a suitable fulcrum and normally in a sepa-

rated position, a slide upon the front of said box, engaging said rotatable members and adapted, by its depression, to rotate the same and close said jaws, and means for holding said slide normally in an upper position, substantially as described.

4. In a device of the class described, the combination with a box adapted to run upon suitable rails, of two rotatable members pivoted upon the front of said box, two cable-engaging jaws pivoted to said rotatable members, said jaws being slidingly pivoted upon a suitable fulcrum in a normally separated position, a slide upon the front of said box, engaging said rotatable members and adapted, by its depression, to rotate the same and close said jaws, and a spring adapted normally to hold said slide in its upper position, substantially as described.

5. In a device of the class described, the combination with a box adapted to run upon suitable rails, of two rotatable members pivoted upon said box, cable-engaging jaws pivoted upon said rotatable members, said jaws being slidingly pivoted between their ends upon a suitable fulcrum and normally separated and raised with respect to said box, projecting pins upon said rotatable members, a movable slide upon the front of said box, slotted to engage said projecting pins, said slide being adapted by depression to rotate said members and to close and lower said jaws, and means for holding said slide normally in its upper position, substantially as described.

6. In a device of the class described, the combination with a box adapted to run upon suitable rails, of two rotatable members pivoted upon said box, cable-engaging jaws pivoted upon said rotatable members, said jaws being slidingly pivoted between their ends upon a suitable fulcrum and normally separated and raised with respect to said box, projecting pins upon said rotatable members, a movable slide upon the front of said box, slotted to engage said projecting pins, said slide being adapted by depression to rotate said members and to close and lower said jaws, and an L-shaped spring-rod running through said box, and having a portion in engagement with said slide, said rod being adapted to hold said slide normally in its upper position; substantially as described.

7. In a device of the class described, the combination with a box adapted to run upon suitable rails, of members, G, G, pivoted upon said box, projecting arms upon said members, slotted cable-engaging jaws pivoted to two of said arms, a pin upon said box, engaging the slots in said jaws, said jaws being normally separated and raised with respect to said box, projecting pins upon the remaining arms, a slide upon the front of said box adapted to engage said pins and adapted to rotate said members and close said jaws, and means for holding said slide normally in its upper position; substantially as described.

8. In a device of the class described, the combination with a box adapted to run upon suitable tracks, of members, G, G, pivoted upon said box, each of said members having
5 two radial arms, slotted cable-engaging jaws pivoted to two of said arms, a pin upon said box extending through the slots in said jaws, said jaws being normally separated and raised with respect to the box, a slide vertically movable with respect to said box and engaging
10 the remaining arms of said members and adapted by its depression to lower said jaws and swing them together upon the cable and a suitable latch upon said slide, adapted to
15 lock said latch in its lower position; substantially as described.

9. In a device of the class described, the combination with a box adapted to run upon suitable rails, of rotatable members pivoted
20 upon said box, two radial arms upon each of said rotatable members, slotted cable-engaging jaws pivoted to two of said arms, a pin upon said box engaging the slots in said jaws, a vertically-movable slide in engagement with
25 said members and adapted by its depression to rotate said members and operate said jaws, a latch upon said slide adapted to lock it in its lower position, and a spring-rod in engagement with said latch and adapted to impart
30 tension to said latch and to hold said slide normally in its upper position; substantially as described.

10. In a device of the class described, the combination with a box, of a vertically-moving slide upon said box, cable-engaging jaws
35 also supported upon said box and means whereby motion of said slide can operate said jaws, of a latch upon said slide, a spring-rod in engagement with said latch and adapted to impart tension to said latch and to hold said
40 latch normally in its upper position; substantially as described.

11. In a device of the class described, the combination with a box adapted to run upon suitable rails, of suitable roller-cams secured
45 to the sides of said box and adapted to operate a switching mechanism; substantially as described.

12. In a device of the class described, the combination with a box adapted to run upon
50 suitable rails, of a cross-bar, J, secured to said box and projecting laterally therefrom and roller-cams upon the ends of said cross-bar adapted to operate a suitable switching mechanism; substantially as described. 55

In witness whereof I have hereunto set my hand, at Chicago, in the county of Cook and State of Illinois, this 23d day of March, A. D. 1902.

WILLIAM L. CHURCHILL.

Witnesses:

CHAS. O. SHERVEY,
S. BLISS.