

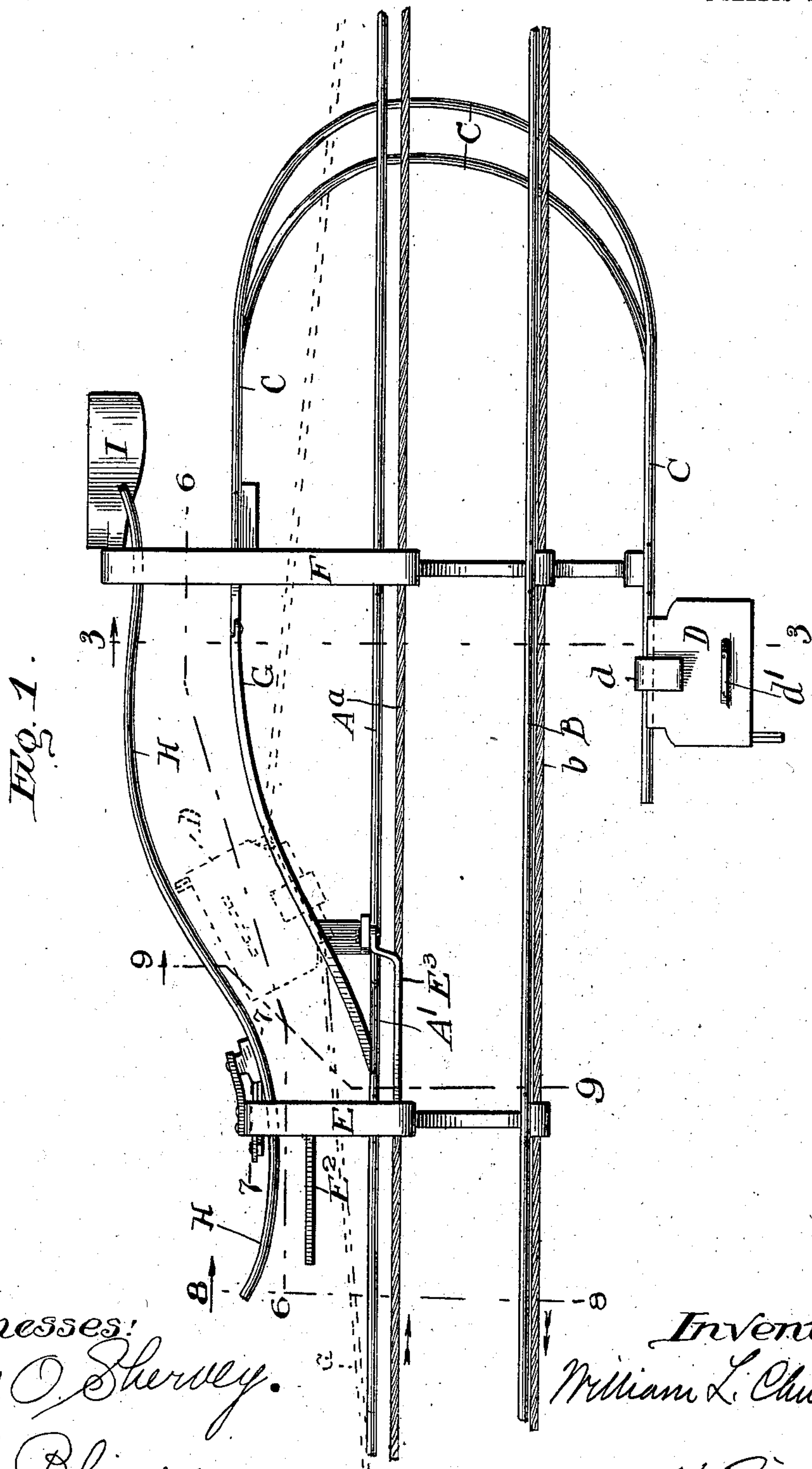
No. 726,816.

PATENTED APR. 28, 1903.

W. L. CHURCHILL.
STATION FOR STORE SERVICE APPARATUS.
APPLICATION FILED AUG. 13, 1902.

NO MODEL.

4 SHEETS—SHEET 1.



Witnesses:
Chas O. Shervey.
S. Bliss.

Inventor:
William L. Churchill
by A. Pitner.
Atty

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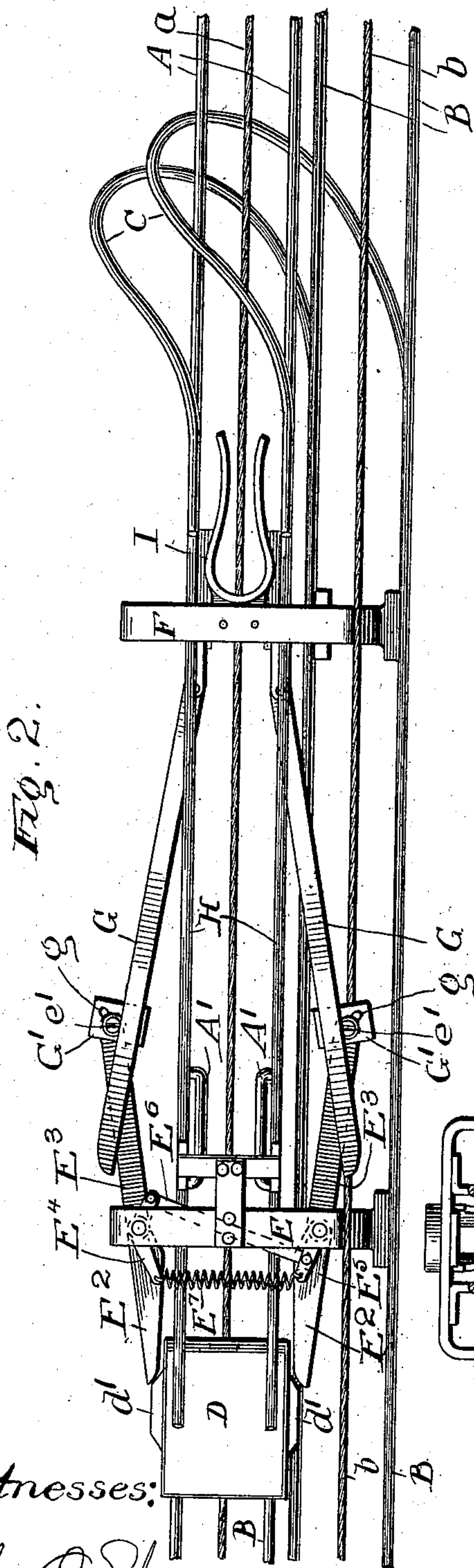


Fig. 2.

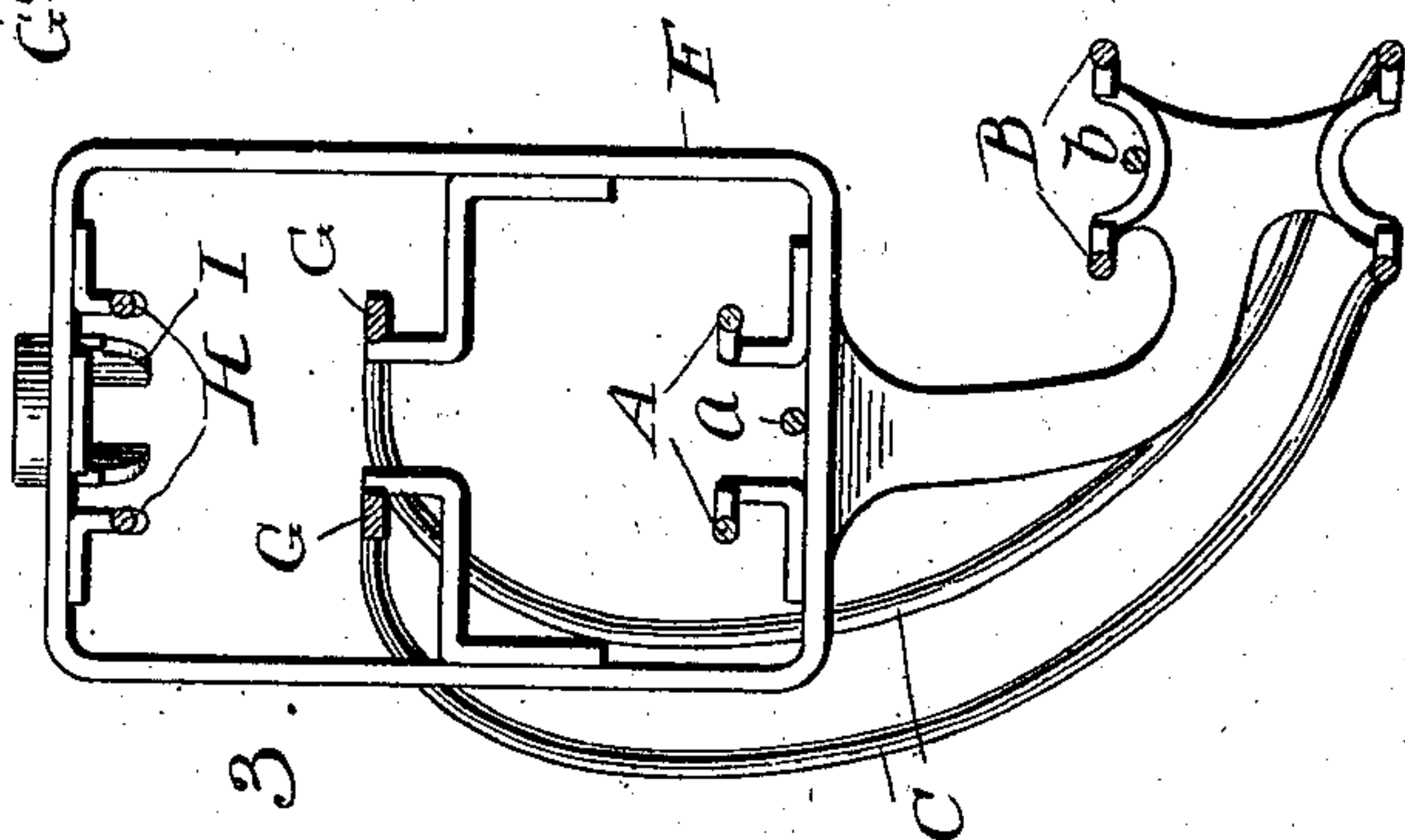


Fig. 3.

Fig. 4.

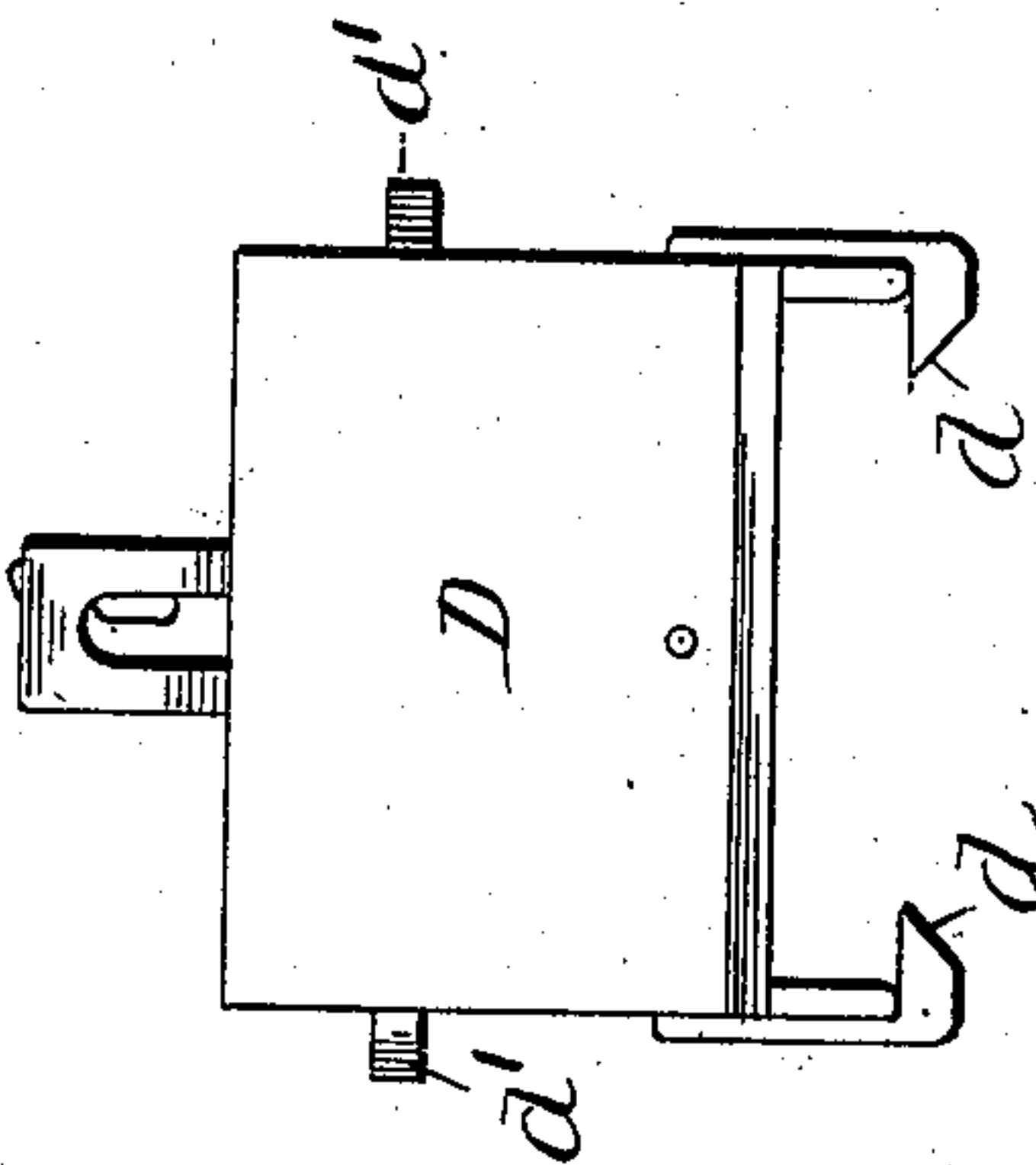
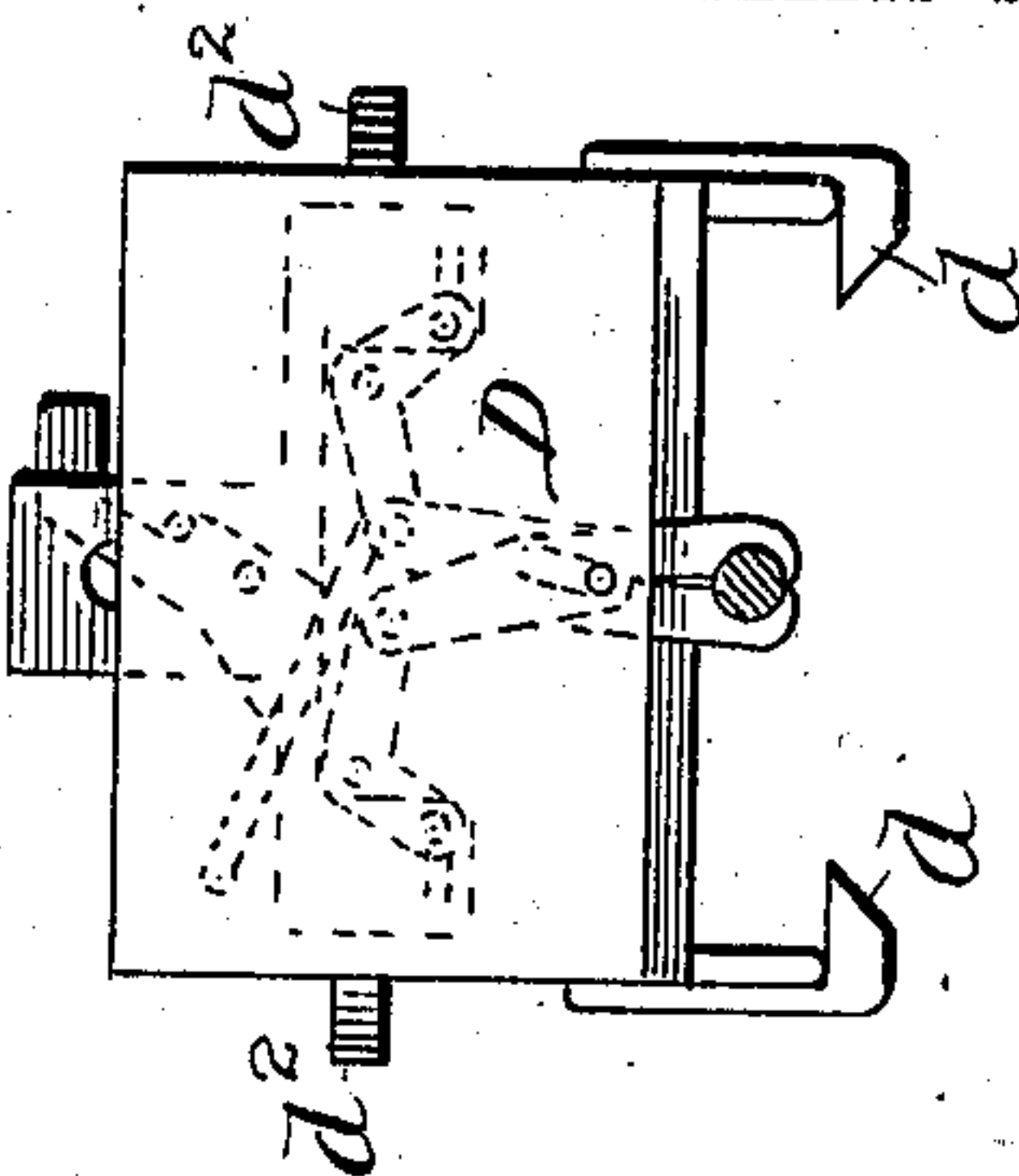


Fig. 5.



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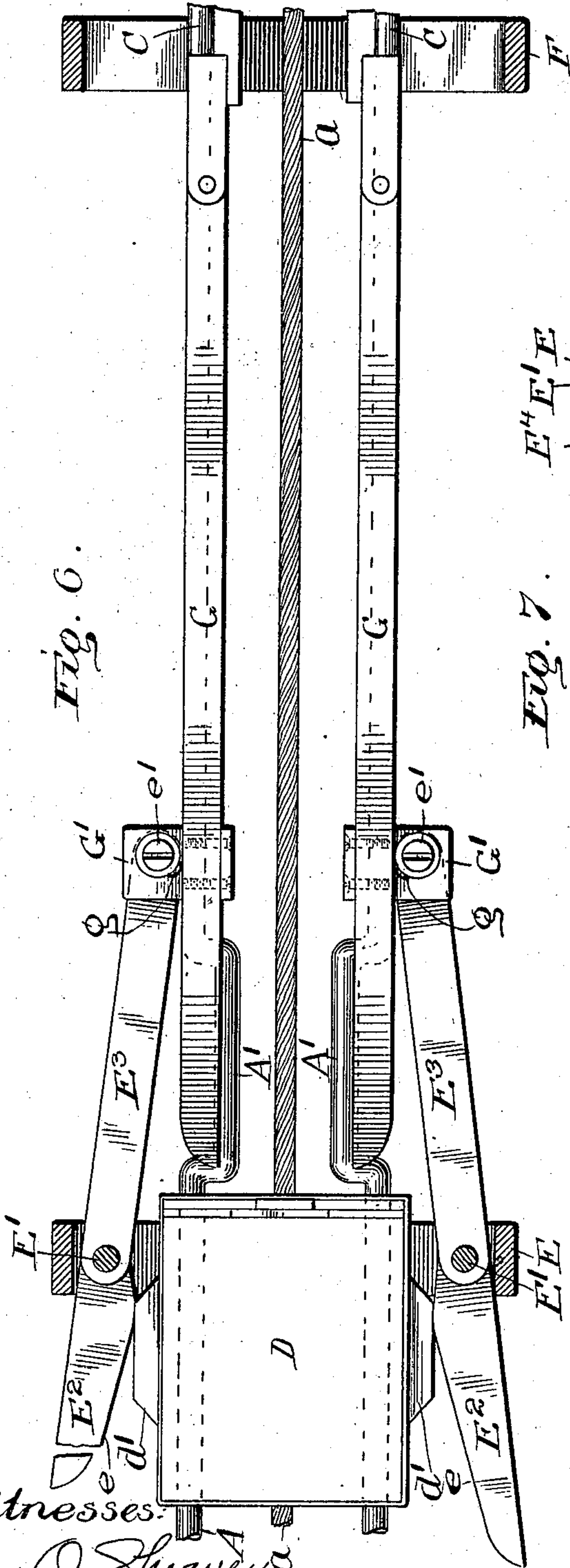


Fig. 6.

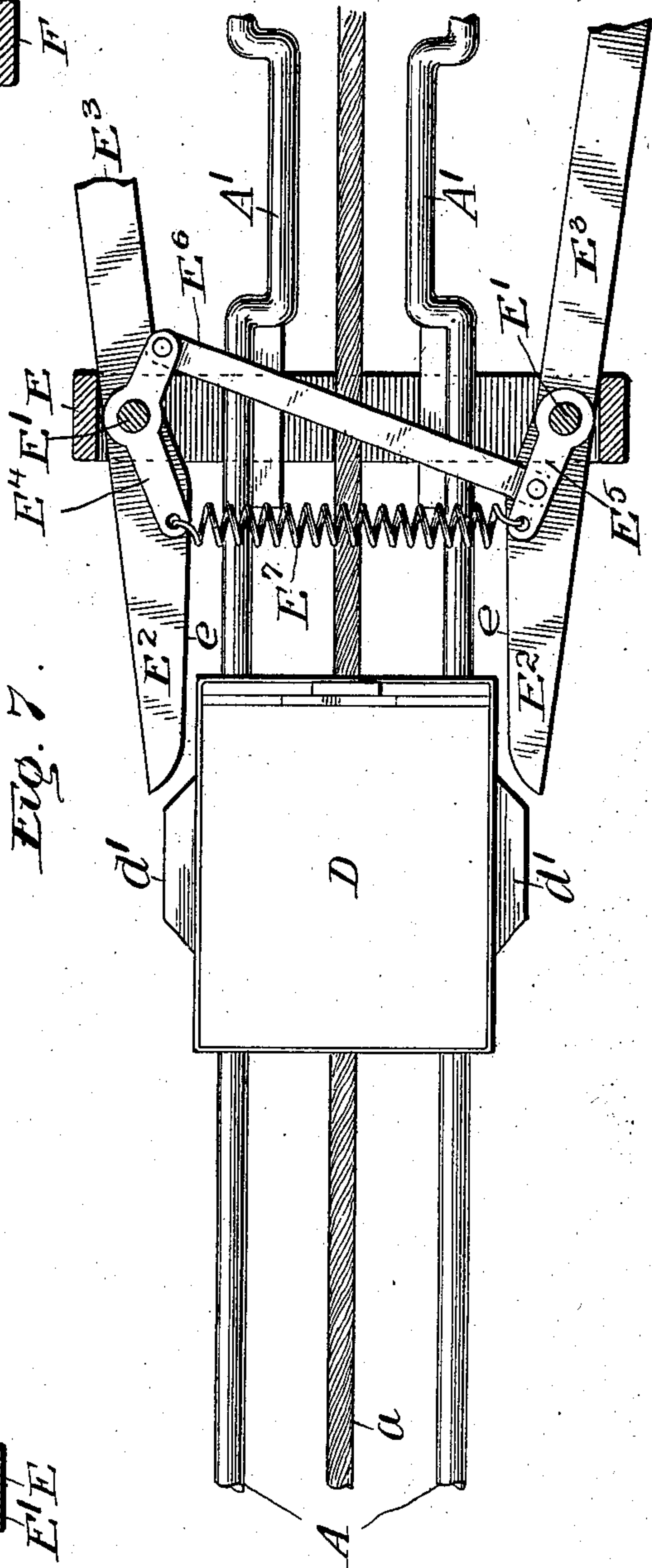


Fig. 7.

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4 SHEETS—SHEET 4.

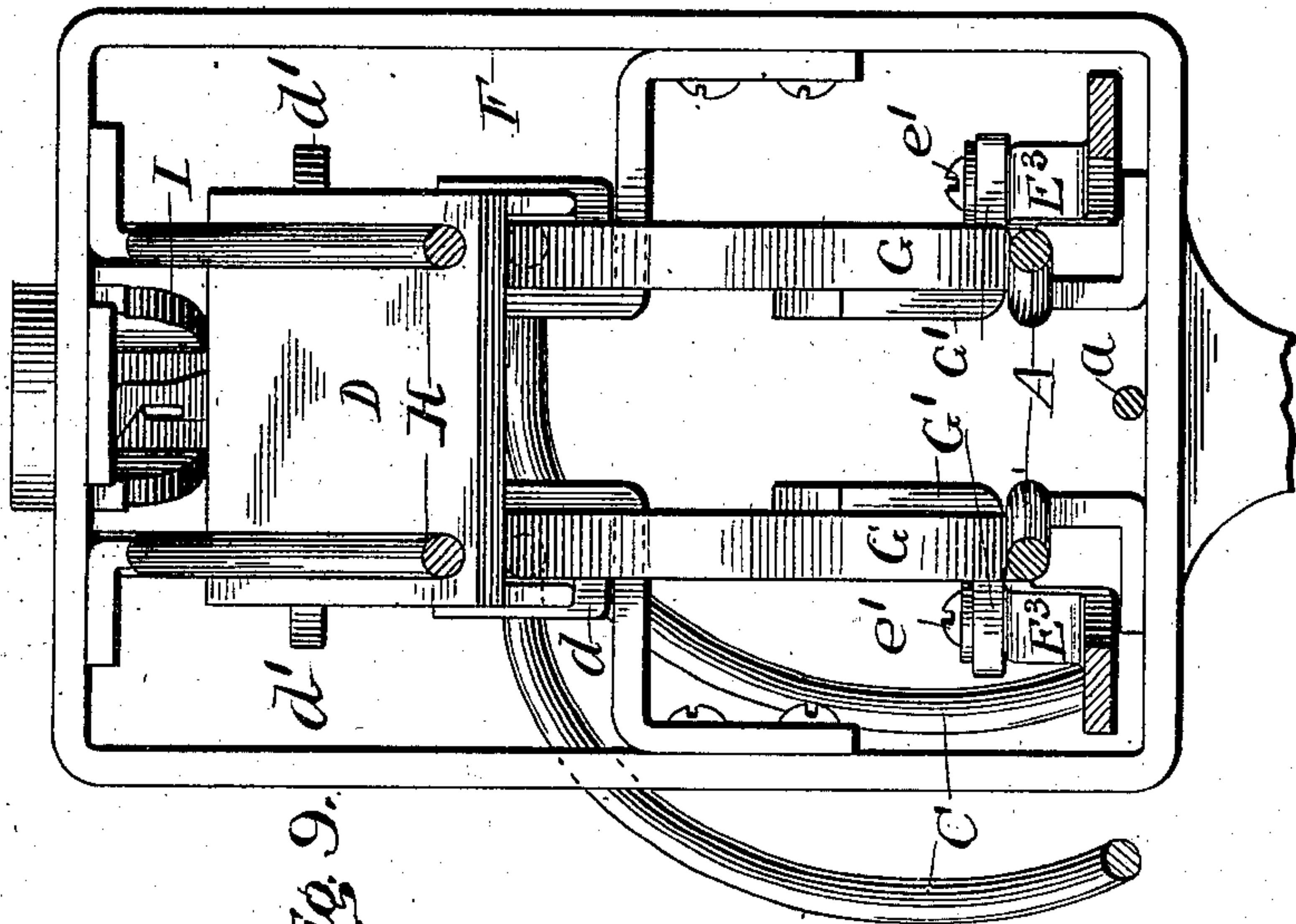


Fig. 9.

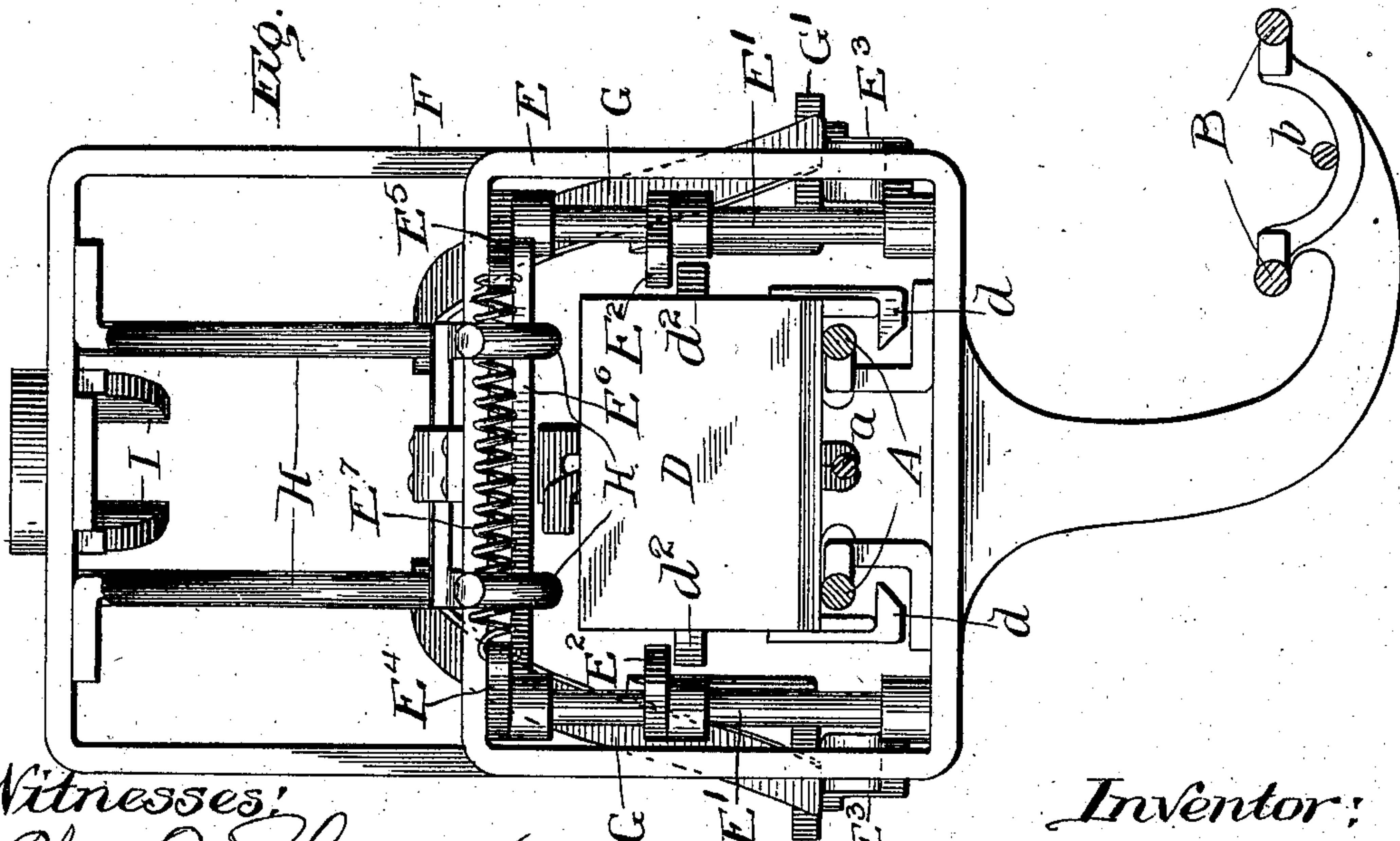


Fig. 8.

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UNITED STATES PATENT OFFICE.

WILLIAM L. CHURCHILL, OF CHICAGO, ILLINOIS, ASSIGNOR TO NATIONAL PNEUMATIC SERVICE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

STATION FOR STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 726,816, dated April 28, 1903.

Application filed August 13, 1902. Serial No. 119,519. (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 Stations for Store-Service Apparatus, of which the following is a specification.

My invention relates to certain new and useful improvements in stations for store-service apparatus; and its object is to provide a device of this class primarily for use in connection with the system of store-service apparatus covered by my application for patent on store-service apparatus filed March 26, 1902, and allotted serial number 100,029, and my three applications on cash-carriers filed March 26, 1902, and allotted serial numbers 100,026, 100,027, and 100,028, respectively. Without any material modifications, however, this station could be used with other systems; but all the details of construction are intended for use with the other portions of my system.

The purpose of my invention is to provide a station which will automatically switch cash-carriers from the main track to the terminal track with as little friction, noise, and general mechanical difficulty as possible.

To these and certain minor ends my invention consists in certain novel features of construction clearly shown in the accompanying drawings and described in this specification.

In the drawings, Figure 1 is a side elevation of my improved station. Fig. 2 is a plan of the same. Fig. 3 is a section in the line 3 3 of Fig. 1 looking in the direction of the arrow. Fig. 4 is an end view of one of the carriers in use in connection with the general system. Fig. 5 is a similar view of another carrier, showing the cable-gripping mechanism in position to grip the cable. Fig. 6 is a section in the line 6 6 of Fig. 1. Fig. 7 is a section in the line 7 7 of Fig. 1, a certain deflecting track being removed to illustrate the parts beneath it. Fig. 8 is a section in the line 8 8 of Fig. 1, and Fig. 9 is a section in the line 9 9 of Fig. 1.

Referring to the drawings, A is a receiving-track, the cable *a* running beneath it in the usual way to propel the cash-carriers. B is

the main sending-track, provided with a similar cable *b*. The track B is offset or staggered with relation to the track A, as is clearly shown in Figs. 3 and 8.

C is the terminal track of the station, running in a broad sweep from a point immediately above the receiving-track A to a point immediately below the sending-track B. It will be noted that the track inverts the cash-carriers, (indicated by D,) so that they move upon suitable hooks *d*, which reach under the tracks. The cash-carriers can be removed from the end of the track C in the usual manner. The three tracks heretofore described are supported by brackets E and F, the bracket F being clearly shown in Fig. 3 and the bracket E being clearly shown in Fig. 8. It will be noted that the tracks C extend a short distance to the left of the bracket F, where they terminate, and to their ends are pivoted two curved, preferably flat, switch-rails G G, adapted under proper influence to be swung toward the receiving-track A. At the point where the switch-tracks would normally reach the receiving-track said track is provided with two inwardly-extending yoke-shaped portions A' A', the object of which is to permit the hooks *d* to pass by the main track when a carrier rides up the switch-rails. When said switch-rails are swung into place over the gaps at A' in the tracks, they form a continuation of the part of the track lying to the left of the tracks and deflect the carriers intended for this station from the main track. Above the switch-rails G is a guide-track H, (see Fig. 2,) the object of which is to prevent a carrier from flying off the track on the curve of the switch-rails or from throwing too much strain upon the downwardly-extending hooks of the carriers. At the termination of this track is a grip-releaser I, Figs. 1 and 2, the object of which is to release the cable mechanism on the carrier. It will be understood that this particular form of grip-releaser is the one used in connection with the type of cash-carrier in use in my system; but it can be varied as desired to accommodate the stations to other types of carriers.

The operation of so much of the station as

has so far been described will be quite obvious. When a carrier approaches a stop at any station, a suitable mechanism is provided which swings the switch-rails G together, 5 their ends swinging into the space left in the track A by the yoke-shaped portions A' A', and the cash-carrier rides up upon said switch-rails. It finally reaches the grip-releasing mechanism I, which releases the carrier from 10 its connection with the cable, the carrier then passing by its own momentum about the curve of the terminal track C, eventually reaching approximately the position shown in Fig. 1.

15 The device which is used to operate the switch-rails will now be described. The carriers, in the first place, are provided with laterally-projecting cams d' d^2 , Figs. 4 and 5. It will be noted that the cams on the carrier 20 shown in Fig. 4 are higher than those shown in Fig. 5, the carrier shown in Fig. 4 being intended for use in connection with one station and that in Fig. 5 for use in connection with another station. Journaled in the 25 bracket E are shafts E' E' on opposite sides of the track, respectively. Non-rotatably secured to these shafts are two levers E², provided with inner cam-surfaces e e . The levers E² are placed at such height that they 30 will engage the laterally-projecting cams on the sides of a cash-carrier destined for the station at which they are located. Two other levers E³ E³ are also non-rotatably secured to the shafts E' E', so that each pair of levers 35 and its shaft, practically speaking, forms a single lever of the first order, pivoted upon the shaft E'. The operation of these levers will be clearly understood by reference to Figs. 6 and 7. The projecting cams strike 40 the cam-surfaces e on the levers E² E² and spread them apart, thereby throwing the levers E³ together. The opposite ends of the lever E³ from the levers E² are provided with pins or set-screws e' , which run in slots g , 45 Fig. 2, formed in blocks G' G', rigidly attached to the switch-rails G. It will be noted that when the levers E² are spread apart, as heretofore described, the switch-rails G are thrown together in position to cause the carrier to 50 ride up upon them. Near the top of the shafts E' E' are non-rotatably secured levers E⁴ E⁵, respectively, connected by a link E⁶, Fig. 7, the object of which connection is to cause the two shafts, and consequently the levers and 55 switch-rails, to move simultaneously with regard to any inequalities which might exist in the projecting cams on the carriers. A spring E⁷, connected to the levers E⁴ and E⁵, tends to draw the levers E² normally together, there- 60 by returning the moving parts of the station to their proper position immediately after the passage of the cash-carrier.

By reference to Fig. 8 it will be noted that a carrier not intended to stop at a given station 65 entirely fails to move the levers E². In that figure the carrier is shown having laterally-projecting cams lower than the levers E².

One of the advantages of this construction lies in the fact that no particular arrangement of the stations in their order needs to be ob- 70 served in order to make the system work effectively. In the systems heretofore in use a definite relation had to be preserved between the switching mechanisms at the vari- 75 ous stations. In most cases where a selecting system is used the carriers having the highest cams or whatever mechanism they had upon them were taken off first, the ones having the next highest cams next, and so on. It will 80 be noted that with my system it is entirely immaterial whether the carrier having the highest cam is taken off first or last or inter- 85 mediately. The cams can pass either above or below the switch-actuating levers. This is of great advantage in installation and in the addition of new stations.

I realize that various changes can be made in the details of construction without materially departing from the invention, and I do not, therefore, limit myself to the specific 90 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 receiving-track, carriers 95 adapted to run on the same, and a terminal track supported above said receiving-track, of suitable rails pivoted to the ends of said terminal track and extending downward to bring their free ends into the plane of said 100 terminal track, said rails being normally separated at their free ends by a greater space than the width of said receiving-track, and means for swinging the free ends of said rails together upon said receiving-track to deflect 105 a carrier from said receiving-track to said terminal track, substantially as described.

2. In a device of the class described, the combination with a suitable receiving-track, a yoke-shaped offset in each of the rails there- 110 of, carriers adapted to run upon said rails, and a terminal track supported above said receiving-track, of suitable switch-rails pivoted to the ends of said terminal track and ex- 115 tending downward to bring their free ends into the plane of said receiving-track, their free ends being normally separated by a greater distance than the width of said receiving-track, and means for bringing the free 120 ends of said switch-rails together into the gaps formed by said yoke-shaped offsets in the rails of said receiving-track, whereby said switch-rails may deflect a carrier from said receiving-track to said terminal track, sub- 125 stantially as described.

3. In a device of the class described, the combination with a suitable receiving-track, a yoke-shaped offset in each of the rails there- 130 of, carriers adapted to run upon said rails and a terminal track supported above said receiving-track, of suitable switch-rails pivoted to the ends of said terminal track and extending downward to bring their free ends into the plane of said receiving-track, their free ends

being normally separated by a greater distance than the width of said receiving-track, and means operated by certain of said carriers for bringing the free ends of said switch-rails together into the gaps formed by said yoke-shaped offsets in the rails of said receiving-track, whereby said switch-rails may deflect a carrier from said receiving-track to said terminal track, substantially as described.

4. In a device of the class described, the combination with a suitable receiving-track, a yoke-shaped offset in each of the rails thereof, carriers adapted to run upon said rails, and a terminal track supported above said receiving-track, of suitable switch-rails pivoted to the ends of said terminal track and extending downward to bring their free ends into the plane of said receiving-track, their free ends being normally separated by a greater distance than the width of said receiving-track, means for bringing the free ends of said switch-rails together into the gaps formed by said yoke-shaped offsets in the rails of said receiving-track, whereby said switch-rails may deflect a carrier from said receiving-track to said terminal track, and means for separating the free ends of said switch-rails after the passage of a carrier, substantially as described.

5. In a device of the class described, the combination with a suitable receiving-track, a yoke-shaped offset in each of the rails thereof, carriers adapted to run upon said rails and a terminal track supported above said receiving-track, of suitable switch-rails pivoted to the ends of said terminal track and extending downward to bring their free ends into the plane of said receiving-track, their free ends being normally separated by a greater distance than the width of said receiving-track, means operated by certain of said carriers for bringing the free ends of said switch-rails together into the gaps formed by said yoke-shaped offsets in the rails of said receiving-track, whereby said switch-rails may deflect a carrier from said receiving-track to said terminal track, and means for separating the free ends of said switch-rails after the passage of the carrier, substantially as described.

6. In a device of the class described, the combination with a suitable receiving-track, carriers adapted to run on the same, projecting members on said carriers, a terminal track supported above said receiving-track and suitable switch-rails pivoted to the ends of said terminal track and extending downward to bring their free ends into the plane of said terminal track, and having their free ends normally separated by a space greater than the width of said receiving-track, of suitable levers supported beside said receiving-track and adapted to be engaged by the projecting members on certain of said carriers and means of connection between said levers and said switch-rails whereby the motion of said levers may bring said switch-rails together

upon said terminal track to deflect a carrier therefrom, substantially as described.

7. In a device of the class described, the combination with a suitable receiving-track, carriers adapted to run on the same, projecting members on said carriers, a terminal track supported above said receiving-track and suitable switch-rails pivoted to the ends of said terminal track and extending downward to bring their free ends into the plane of said terminal track, and having their free ends normally separated by a space greater than the width of said receiving-track, of a lever of the first order supported beside said receiving-track and having one end connected to one of said switch-rails and the other end in position to be moved by the projecting members on certain of said carriers and means whereby the motion of said lever may actuate the other of said switch-rails, substantially as described.

8. In a device of the class described, the combination with a suitable receiving-track, carriers adapted to run on the same, projecting members on said carriers, a terminal track supported above said receiving-track and suitable switch-rails pivoted to the ends of said terminal track and extending downward to bring their free ends into the plane of said terminal tracks and having their free ends normally separated by a space greater than the width of said receiving-track, of two levers of the first order suitably supported on opposite sides of said receiving-track and adapted to be actuated by the projecting members on certain of said carriers, one end of each of said levers being connected to one of said switch-rails whereby certain of said carriers may automatically swing said switch-rails together, substantially as described.

9. In a device of the class described, the combination with a suitable receiving-track, carriers adapted to run on the same, projecting members on said carriers, a terminal track supported above said receiving-track and suitable switch-rails pivoted to the ends of said terminal track and extending downward to bring their free ends into the plane of said terminal tracks and having their free ends normally separated by a space greater than the width of said receiving-track, of two levers of the first order suitably supported on opposite sides of said receiving-track and adapted to be actuated by the projecting members on certain of said carriers, one end of each of said levers being connected to one of said switch-rails whereby certain of said carriers may automatically swing said switch-rails together, and means for separating said rails after the passage of said carriers, substantially as described.

10. In a device of the class described, the combination with a suitable receiving-track, carriers adapted to run on the same, projecting members on said carriers, a terminal track supported above said receiving-track

and suitable switch-rails pivoted to the ends of said terminal track and extending downward to bring their free ends into the plane of said terminal track, and having their free ends normally separated by a space greater than the width of said receiving-track, of two levers of the first order supported on opposite sides of said receiving-track having cam-surfaces adapted to be actuated by the projecting members on certain of said carriers, the ends of said levers opposite to said cam-surfaces being connected to said switch-rails and adapted, when moved, to swing them together upon said receiving-track, two cranks non-rotatably connected to said levers and extending on opposite sides of their fulcrum and a rigid link connecting the terminals of said cranks whereby said levers and tracks may be moved simultaneously, substantially as described.

11. In a device of the class described, the combination with a suitable receiving-track, carriers adapted to run on the same, projecting members on said carrier, a terminal track supported above said receiving-track and suitable switch-rails pivoted to the ends of said terminal track and extending downward to bring their free ends into the plane of said terminal track, and having their free ends normally separated by a space greater than the width of said receiving-track, of two levers of the first order supported on opposite sides of said receiving-track having cam-surfaces adapted to be actuated by the projecting members on certain of said carriers, the ends of said levers opposite to said cam-sur-

faces being actuated by said switch-rails and adapted, when moved, to swing them together upon said receiving-track, two cranks non-rotatably secured to said levers and extending in the same direction from the fulcrum of their respective levers, and a spring connecting the ends of said cranks and adapted to hold the ends of said levers provided with cam-surfaces together and consequently hold said switch-rails apart, substantially as described.

12. In a device of the class described, the combination with a suitable receiving-track and carriers running thereon, of station switching devices comprising a series of selective parts upon the carriers and cooperating selective parts upon the stations operating by movement at right angles to the line of movement of the carriers, substantially as described.

13. In a device of the class described, the combination with a suitable receiving-track and carriers running thereon, of station switching devices comprising a series of selective parts upon the carriers and a series of cooperative selective parts upon the stations operating independently of any particular order of arrangement of the stations.

In witness whereof I have hereunto set my hand, at Chicago, in the county of Cook and State of Illinois, this 21st day of July, A. D. 1902.

WILLIAM L. CHURCHILL.

Witnesses:

CHAS. O. SHERVEY,
S. BLISS.