

(No Model.)

2 Sheets—Sheet 1.

H. H. HAYDEN.
STORE SERVICE APPARATUS.

No. 283,239.

Patented Aug. 14, 1883.

Fig. 1.

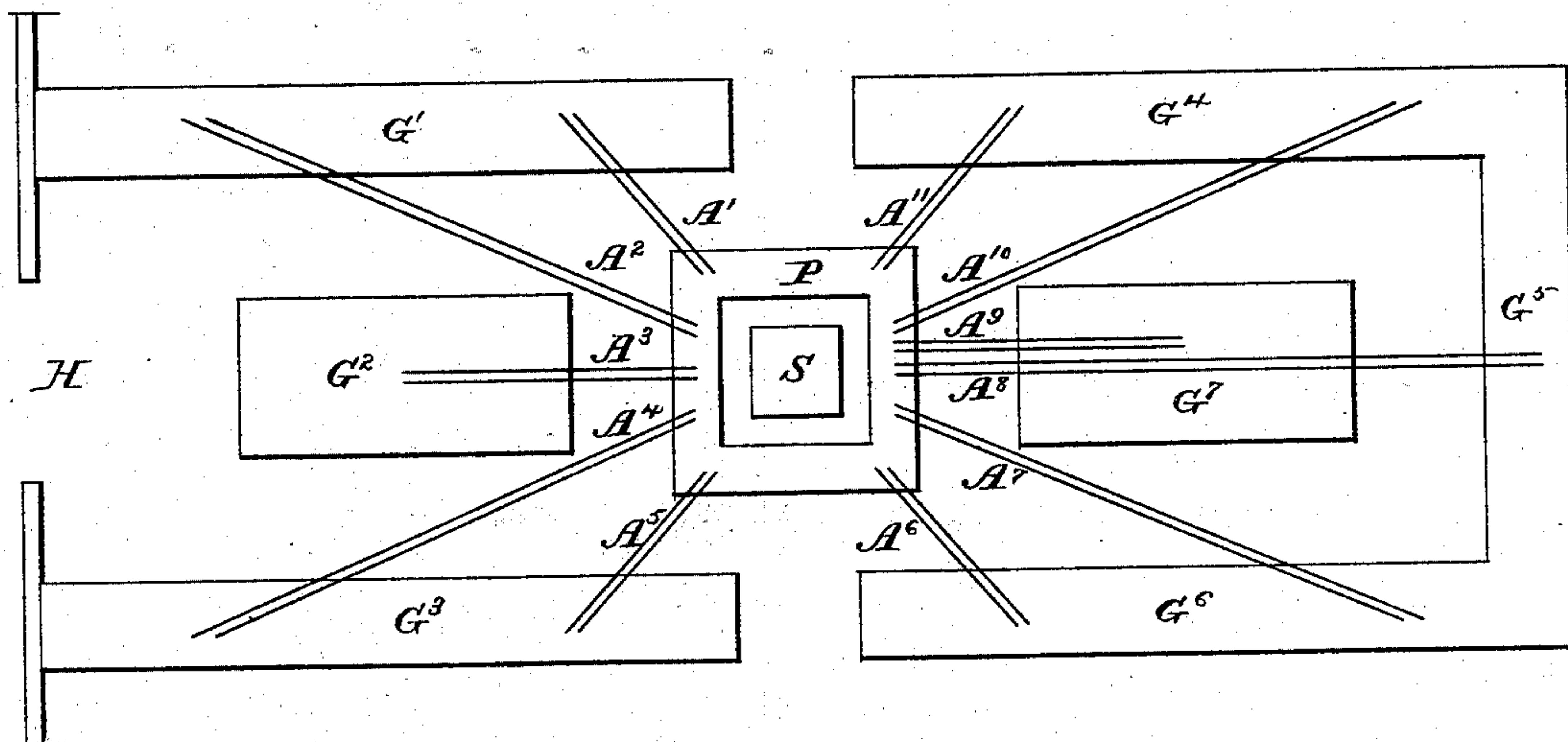


Fig. 2.

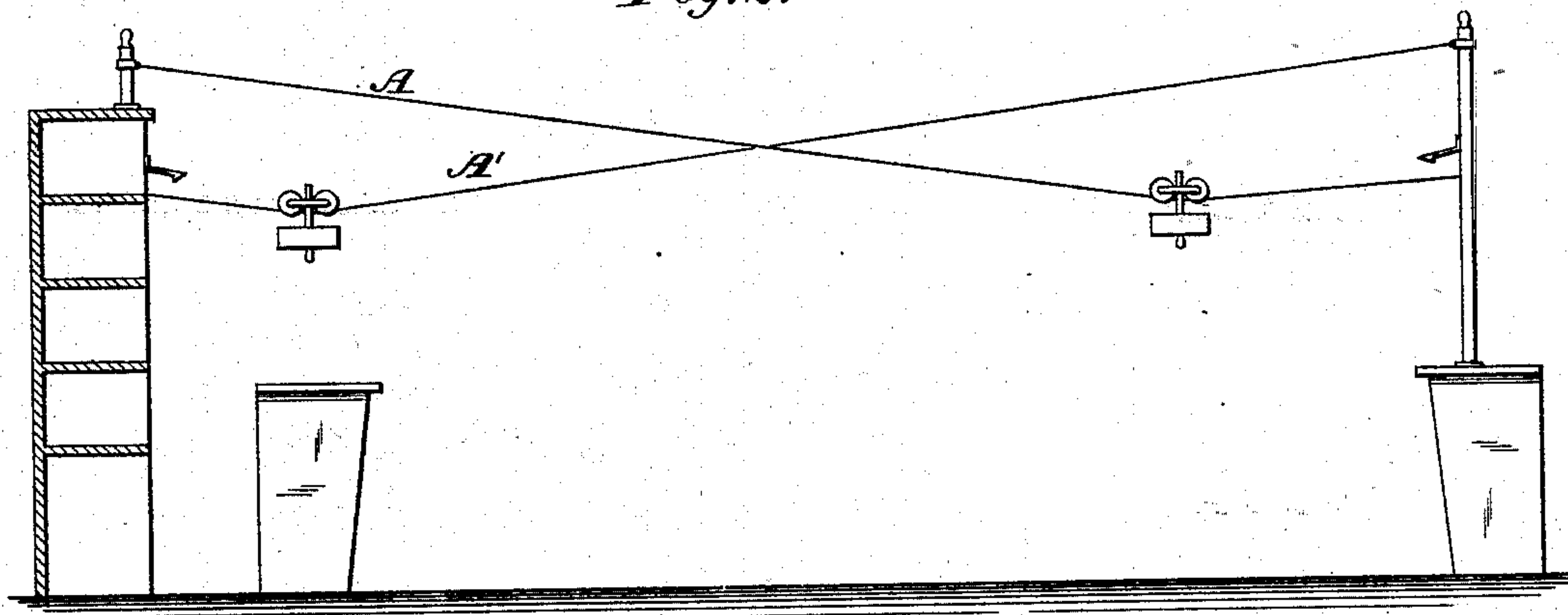
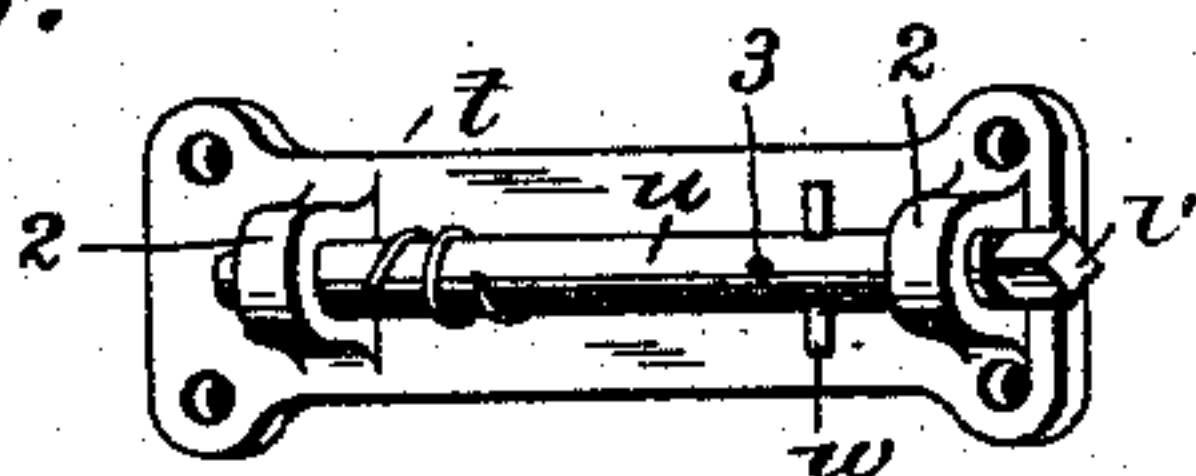


Fig. 3.



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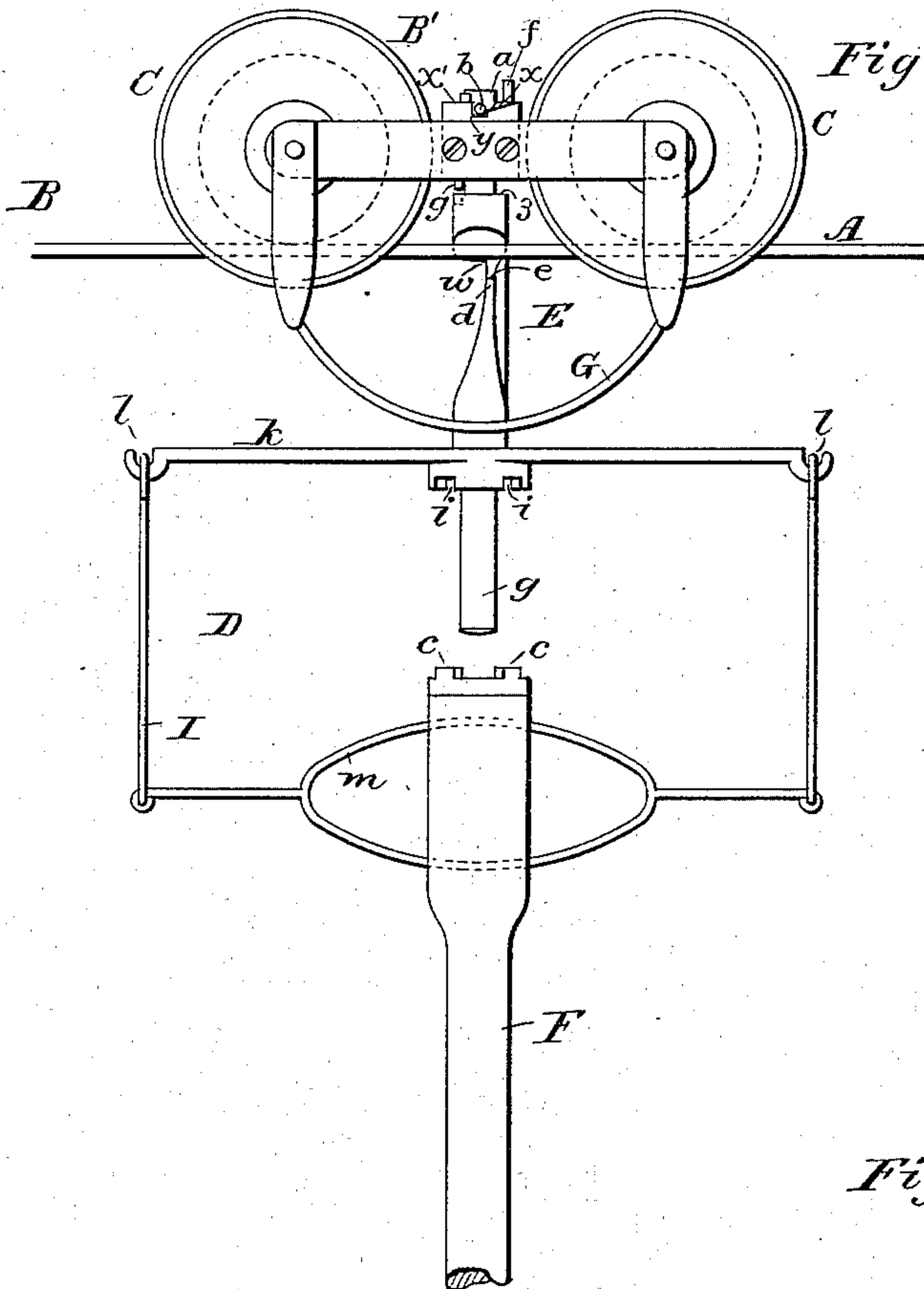


Fig. 4.

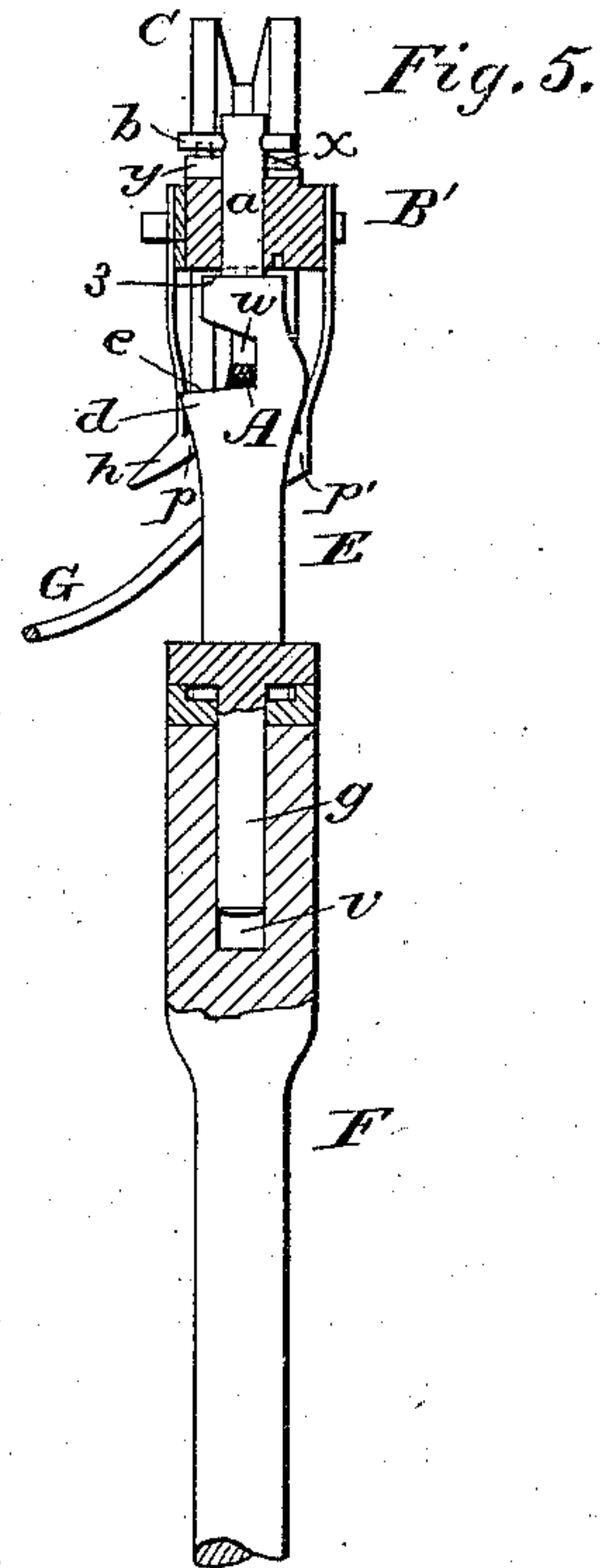


Fig. 5.

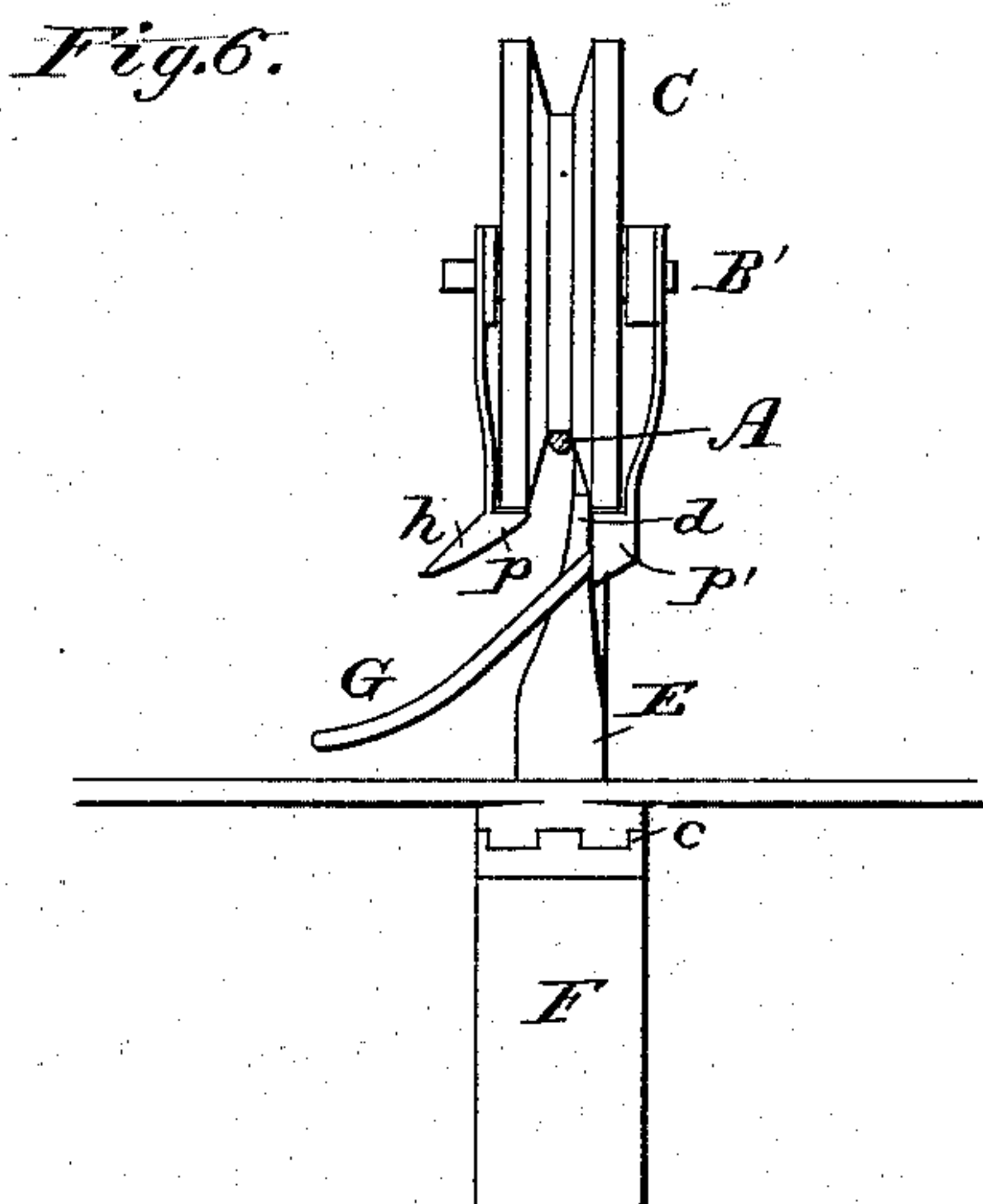
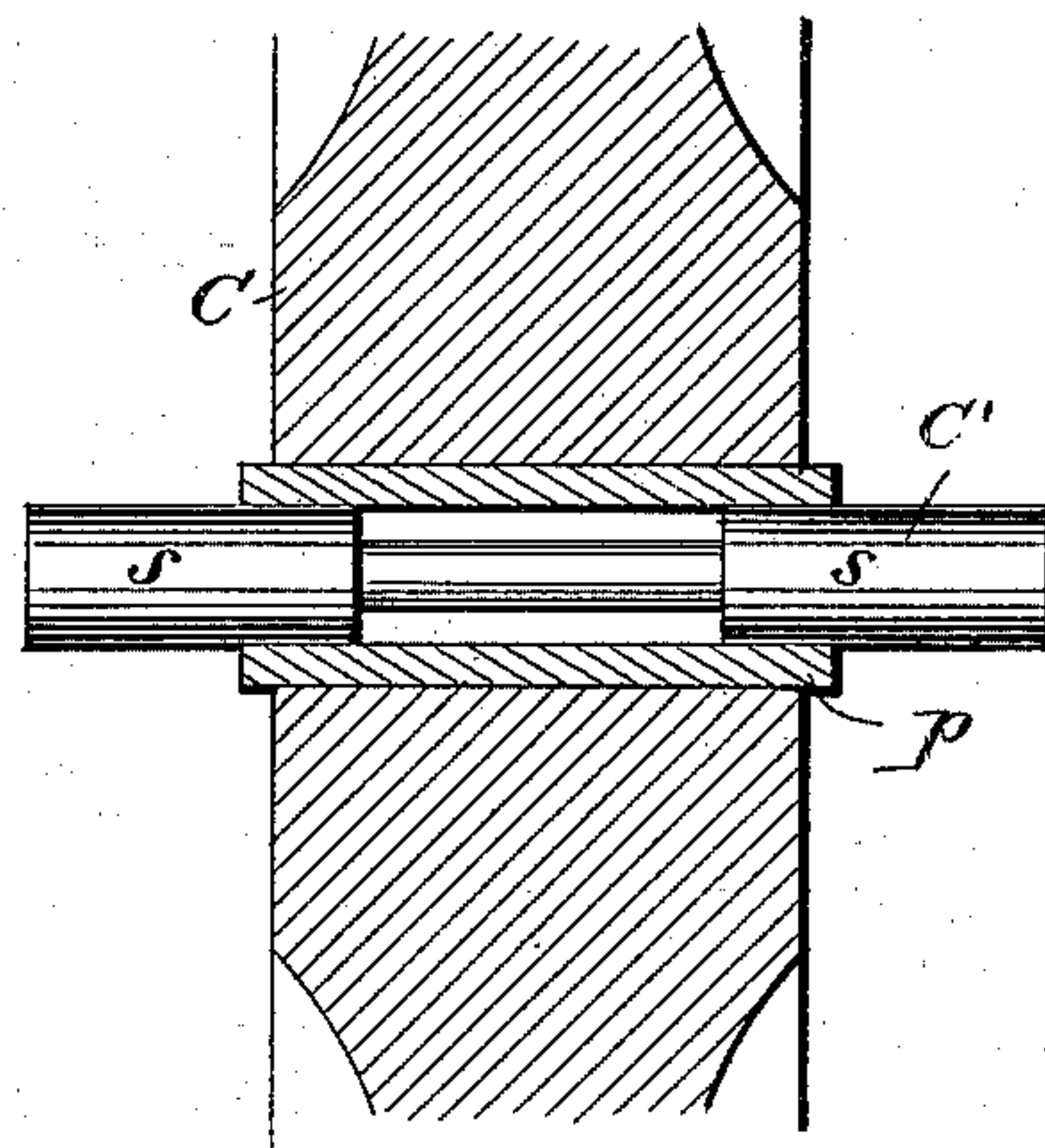


Fig. 6.

Fig. 7.



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UNITED STATES PATENT OFFICE.

HARRIS H. HAYDEN, OF NEW YORK, N. Y.

STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 283,239, dated August 14, 1883.

Application filed July 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, HARRIS H. HAYDEN, a citizen of the United States, and a resident of the city, county, and State of New York, have
5 invented certain new and useful Improvements in Store-Service Apparatus, of which the following is a specification.

My invention relates to store-service apparatus; and it consists in certain improvements
10 in the arrangement of ways, and in the way-supports, carriers, and manipulating appliances, whereby to provide an apparatus specially adapted for small stores, and secure increased efficiency.

15 In the drawings, Figure 1 is a diagram representing a plan of a store and illustrating my invention. Fig. 2 is a diagram of a store in elevation. Fig. 3 is a detached perspective view illustrating a wire-tightening device. Fig. 4 is a
20 side view of a car illustrating my improvements. Fig. 5 is a cross-section of Fig. 4. Fig. 6 is an edge view of the car. Fig. 7 is a detached section of a car-wheel and bearing.

In adapting store-service systems to the
25 needs of a great variety of stores, there are some in which the volume of business transacted does not make it necessary to employ the usual system, comprising stops, &c., yet the merchant desires to have his different
30 counters put in ready communication with a central desk where all cash payments can be made, and where, if required, the goods can be examined and wrapped up. A very effective and economical plan for fitting up such
35 a store is illustrated in Fig. 1, which represents a common ground plan of a store. In this figure G^1 , G^3 , G^4 , G^5 , and G^6 represent wall-counters, and G^2 and G^7 middle counters. S is a cash-desk, and P a packing-desk surrounding it on four sides. H is the entrance.
40 To put such a series of counters in communication with desks S and P, wires or cables A^1 , A^2 , A^3 , &c., are stretched in pairs between any desired portion of a counter and the central desk, inclining one wire in one direction
45 and the other in the reverse direction, so that a carrier may pass by gravity down on one and return on the other. By this means I avoid the necessity of employing stop devices,
50 and secure a much cheaper structure than is

possible where carriers pass to different stations over the same track.

Heretofore, where wires have been used as single tracks and the car has passed down and returned over the same wire, it has been supposed to be necessary to make the wires as
55 taut as possible. I have discovered that great advantages result, especially where it is desired to convey parcels, sometimes of considerable weight, from leaving a certain amount of
60 slackness in the wire, as thereby a carrier, after passing along the main extent of the wire at a considerable rate of speed, will gradually be checked by being caused to pass upward to a slight degree before reaching its destination. By this means bumpers at the end of
65 the wire may be dispensed with, all that is required being a catch or lock to hold the car in place at the end of the line.

Fig. 2 illustrates the double-inclined wire-
70 way, consisting of the wires A A' , suitably supported at their opposite ends, and each sufficiently slack to sag a little under the weight of the carrier, so that the latter must ascend slightly at the termination of its travel, its
75 speed being thereby gradually retarded without noise or shock.

It will be obvious that a slack wire may be employed in those cases where but a single wire is extended between the main desk and
80 each station.

In adjusting the tension of a wireway it is very desirable to be able to change the degree of tension quickly and by slight gradations. One way of accomplishing this is shown by
85 the device in Fig. 3, which consists of a bracket, t , adapted to be screwed to the wall or shelving, (or it may be made with a separable grooved back to clamp on an upright rod,) and having ears 2 2, through which passes a
90 pin, u , terminating at one end in a square head, v . The wire A is passed through a hole, 3, in the pin u , and is wound thereon by turning the pin by a wrench or key to any desired tension, and this tension is preserved by
95 means of the peg w , set in a hole, several of which are drilled in the pin w at angles to each other, so that the position of the pin u can be adjusted to a part turn and the pin then held permanently in place, and exactly the
100

degree of tension can be secured that may be adapted to the length of each of the wires and the weight of the carriers traveling thereon.

5 It sometimes occurs that detachable cars running upon rails or wires will become derailed accidentally, and cause injury by falling upon the cases in the store, or upon the heads of those beneath. To prevent this I provide each
10 car with a locking device—such, for instance, as that for which Letters Patent No. 241,008 were granted to me May 3, 1881. My present improvement differs from that set forth in said patent in that the locking device is constructed in any suitable manner, so as to re-
15 lease the car as soon as the receptacle portion of the carrier is lifted. One form of locking device for securing this result is shown in Figs. 4, 5, and 6.

20 The body B of the car is shown as consisting of a frame, B', supporting the grooved wheels C C; but it may be constructed in any suitable manner. The receptacle D may also be of any suitable construction, the connection between
25 the two being such that the receptacle may be elevated slightly without lifting the body from the way. In the construction shown the receptacle is provided with a central post, E, terminating at the upper end in a pivot, *a*,
30 which extends through an opening in the frame B', and is provided with a cross-pin, *b*. An enlargement or hub around the opening through which the pivot *a* passes is provided with two inclined faces, *x x'*, upon which the
35 pin *b* rests, and with two lateral notches, *y*, into which the pin extends when the parts supported thereby are in their lowest position, in which case the receptacle cannot be turned independently of the body of the carrier. In the
40 post is a recess, through which the rail or way A extends, a projection, *d*, which may be fin-shaped, to prevent it from catching on the wire when the car is being placed on the track, extending from the post underneath the way, so
45 that when the parts are in the position shown in Fig. 4 any upward movement of the receptacle or lower portion of the carrier will bring the edge *e* of the fin-shaped retainer against the rail and prevent the further upward move-
50 ment or the detachment of the carrier.

The projection *d* occupies such a position in respect to the post E that when the latter is turned one-fourth of a revolution the projection will be brought to a position parallel to
55 and at one side of the way, so that the receptacle may be elevated to such an extent as to take the wheels from the way and the carrier from the track. The depth of the recesses *y* is such that the pin is removed therefrom by the
60 time the shoulder 3 of the post is against the body of the frame, when the post may be turned until the projection *d* is parallel to the way, as shown in Fig. 6, when farther motion in this direction will be prevented by contact of
65 the pin *b* with the stop-pin *f*. The swinging of the frame or body of the carrier upon the

post after the carrier is removed from the way is prevented by a short pin, *g*, which, when the parts are in the position shown in Fig. 4, enters a corresponding notch in the post. 70
When the carrier is placed upon the track, the contact of the wheels with the way will limit the downward motion of the body, when the pivot *a* will be supported by the contact of the pin *b* with the inclined faces *x x'*. After the
75 wheels are upon the way the receptacle and post are turned one-fourth of a revolution, when the pin *b* will slide upon the faces *x x'*, and finally descend into the notches *y*, the parts being then locked in position and the
80 carrier secured in such manner to the track that derailment is impossible.

The faces *x x'* may be beveled, so that the weight of the lower frame and receptacle, or both, will cause the body to turn with a cam
85 motion and lock itself automatically without being turned by the attendant.

I do not limit myself to the precise construction of locking device herein set forth, as various arrangements may be devised whereby
90 the descent of the receptacle, or part to which the latter is secured, retains the shoulder or edge or other device holding the carrier to the way in its place, and whereby the lifting of the receptacle permits the detent to be changed
95 in its position to release the carrier.

Different appliances may be employed for turning the post. It may be turned by simply turning the receptacle by hand by means of a key applied thereto, or automatically, as
100 above described. I have shown a turning device in which a long handle, F, is the means both of lifting the carrier and turning the receptacle portion. The said handle has a socket, *v*, in the end, and terminal projections *c*, adapted to notches *i*, in a part of the frame surrounding a pin, *g*, adapted to the socket *v*. The pin
105 *g* serves to center and guide the handle F, the contact of the end of which with the frame lifts the latter and the post, and the entrance
110 of the projection *c* into the notches *i* insures the turning of the receptacle when the handle F is turned. The use of a handle F also facilitates the application of the carrier to the
115 way; and to insure the ready placing of the wheels in proper position upon the way, curved fingers *h* extend below and outwardly from the lower edges of the wheels at one side, while a curved yoke, G, extends downward past the
120 opposite side, beneath the wheels, toward and beyond fingers *h*, as shown, this arrangement of fingers serving, when the yoke G is brought against the rail, to guide the latter exactly to its position below the grooved wheels, the yoke preventing any turning of the carrier after the
125 contact of the yoke with the rail. Barbs *p p'*, under the edges of the wheels, prevent the wire from slipping between the wheel and frame.

When the receptacle is rigid, the pin *g* and notched hub or portion is at the lower part of
130 the same. When, however, the receptacle consists of two parts, one flexibly connected to

the other, the pin *g* and notched portion is upon a superior part, and the lower portion is so connected to the upper that it may be swung to one side and permit the handle *F* to be applied. As shown, the upper portion consists of a bar, *k*, bent at the ends to form hooks or eyes *l*, upon which is hung a wire frame, *I*, having an open ring, *m*, at the center, into which may be introduced the crowns of hats or the bodies of other articles to be carried by the car; or a bag or basket may be placed in the opening *m* of the frame to receive the cash-book or other articles.

To avoid the rapid wear of the pins *C'*, upon which the wheels *C* turn, as well as to reduce friction, I reduce the central portion of the pin, so as to leave two enlarged ends, *s s*, and I insert in the center of each wheel a box, *p*, consisting of a steel tube adapted to the ends *s*. By this means I secure a very hard bearing-surface of limited extent, with a central chamber for the reception of oil, which serves to keep the bearing-surfaces constantly lubricated.

Without limiting myself to the precise construction and arrangement of parts shown and described, and reserving for subsequent applications for Letters Patent such features as are not herein specifically claimed,

I claim—

1. The combination, with the stations and desk of a store and terminal supports, of ways suspended between the terminal supports, inclined in opposite directions, and extending in pairs between each station and the desk, substantially as set forth.

2. The combination, with the counters and desk or desks of a store, of pairs of inclined wireways extending between the counters and desk, and adapted to support carriers traveling between these points, substantially as set forth.

3. The combination, with the stations and desk of a store, of flexible ways suspended at the ends, and each longer than the distance between the points of suspension, and carriers moving on the ways, substantially as and for the purpose set forth.

4. A car for store-service apparatus, provided with a device for locking it to the way, and with means, substantially as described, whereby the locking device is held in its locked position by the weight of the carrier or receptacle, substantially as set forth.

5. A carrier for store-service apparatus, provided with a body and a portion suspended from and movable in respect to the body, and a locking device constructed to be released when the movable portion of the car is raised, substantially as set forth.

6. The combination, with the carrier-body, of a detent constructed to be rotated to carry it beneath or from the way, and appliances whereby the revolution of the detent is prevented until the receptacle is lifted, substantially as set forth.

7. The combination of the carrier-body, receptacle pivoted to the body, so as to turn and slide vertically independently thereof, cross-pins *b*, adapted to notches in the body, and projection *d* upon the receptacle portion of the carrier, substantially as set forth.

8. A carrier provided with the frame, with wheels resting upon the way, a suspended portion connected movably to the body portion, and a device constructed to lock the carrier to the rail and to release it therefrom, and a detachable key or handle, adapted to engage with the movable portion, to move the latter independently of the wheel-frame, substantially as set forth.

9. A store-service carrier provided with guides and fingers, arranged, when applied to the way, to direct the latter to a position beneath the wheels, substantially as set forth.

10. The combination, in a store-service carrier, of wheels provided with hardened tubular boxes *t*, and journal-pins *C'*, extending through said boxes and reduced in diameter at the centers, substantially as specified.

11. A store-service carrier having a receptacle portion with a central open ring, substantially as set forth.

12. A store-service carrier having a basket or other receptacle pivoted to the carrier-frame.

13. A tightening device for a wire used as a store-service way, consisting of a bracket, a perforated revolving pin supported thereby, and cross-pins for holding the same in place, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRIS H. HAYDEN.

Witnesses:

WM. TRUSLOW,
WM. B. DE LACY.