

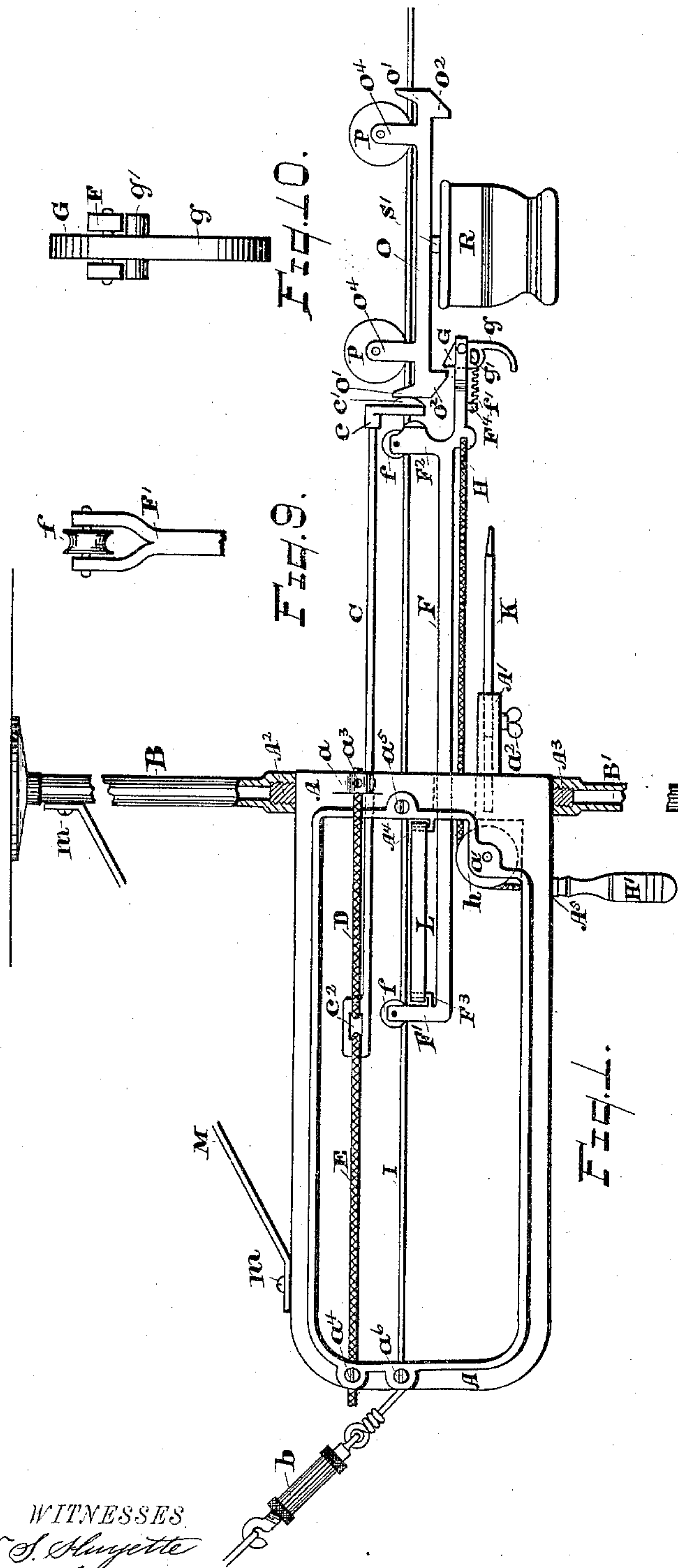
(No Model.)

2 Sheets—Sheet 1.

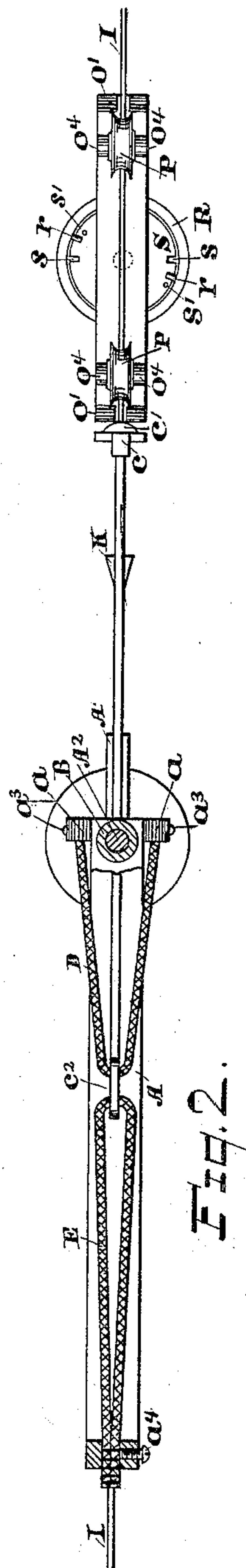
J. G. DAVIS.  
CASH CARRIER APPARATUS.

No. 409,933.

Patented Aug. 27, 1889.



WITNESSES  
*W. S. Huxtable*  
*Samuel E. Thomas*



INVENTOR  
*John G. Davis*

(No Model.)

2 Sheets—Sheet 2.

J. G. DAVIS.  
CASH CARRIER APPARATUS.

No. 409,933.

Patented Aug. 27, 1889.

Fig. 3.

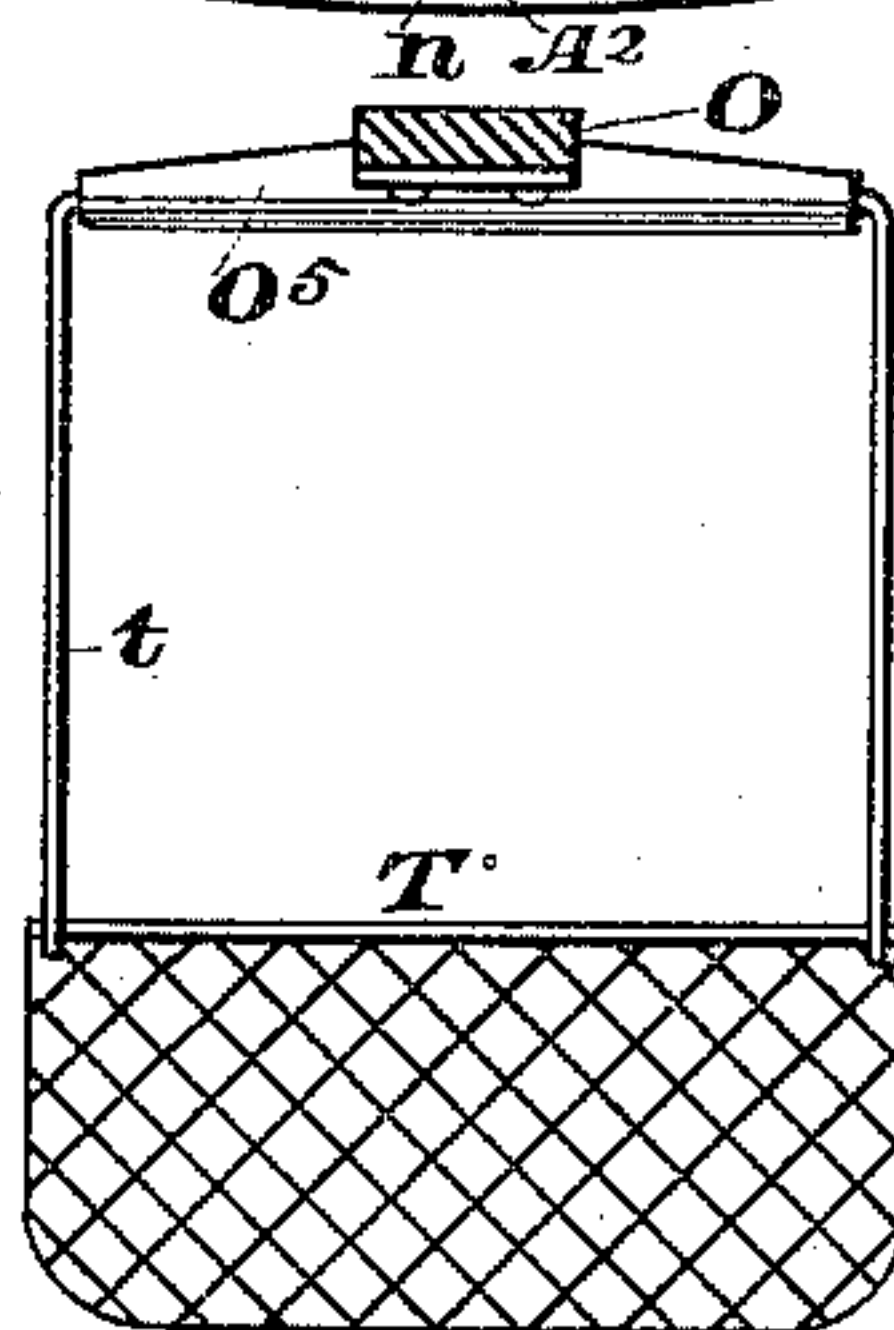
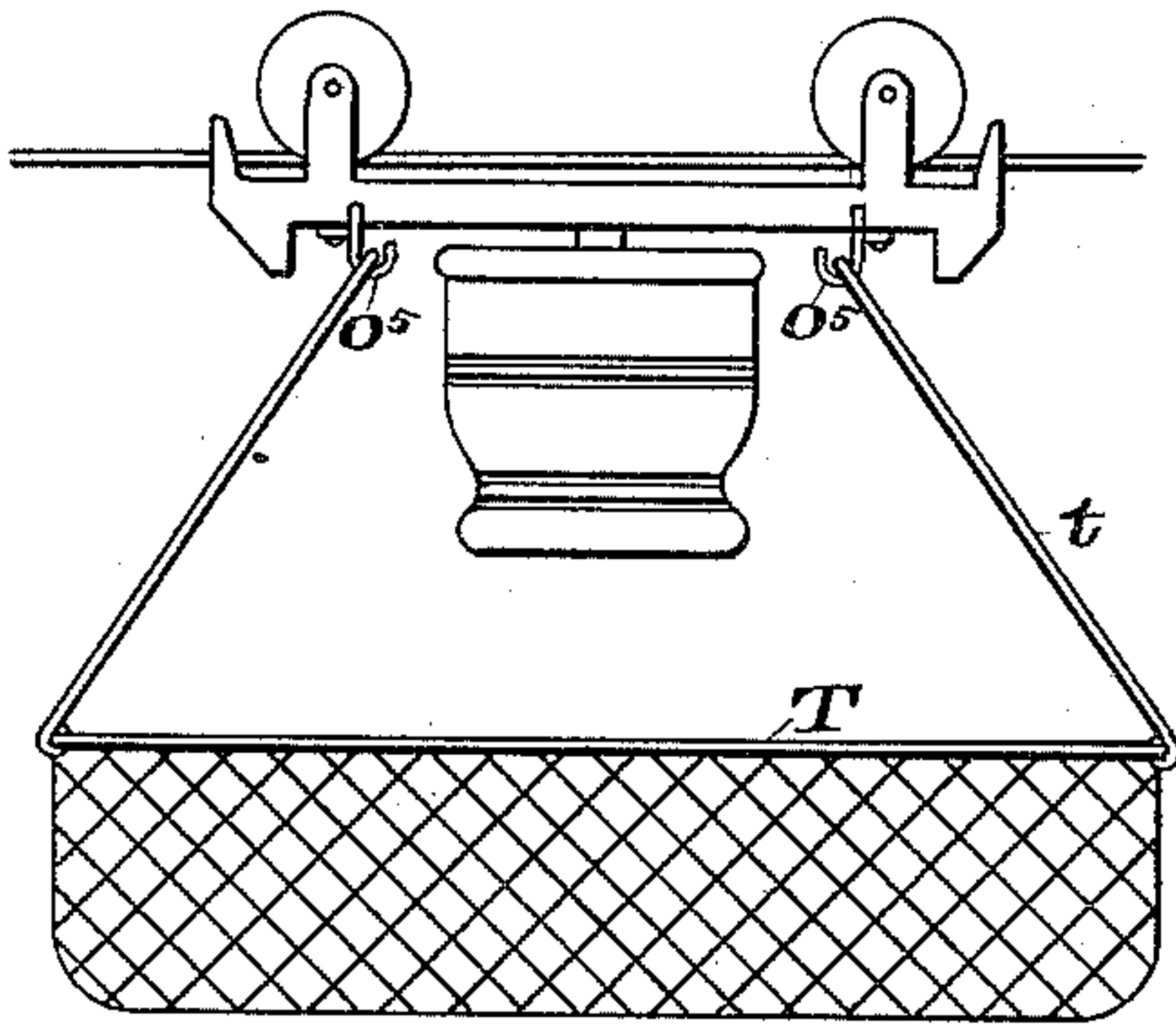
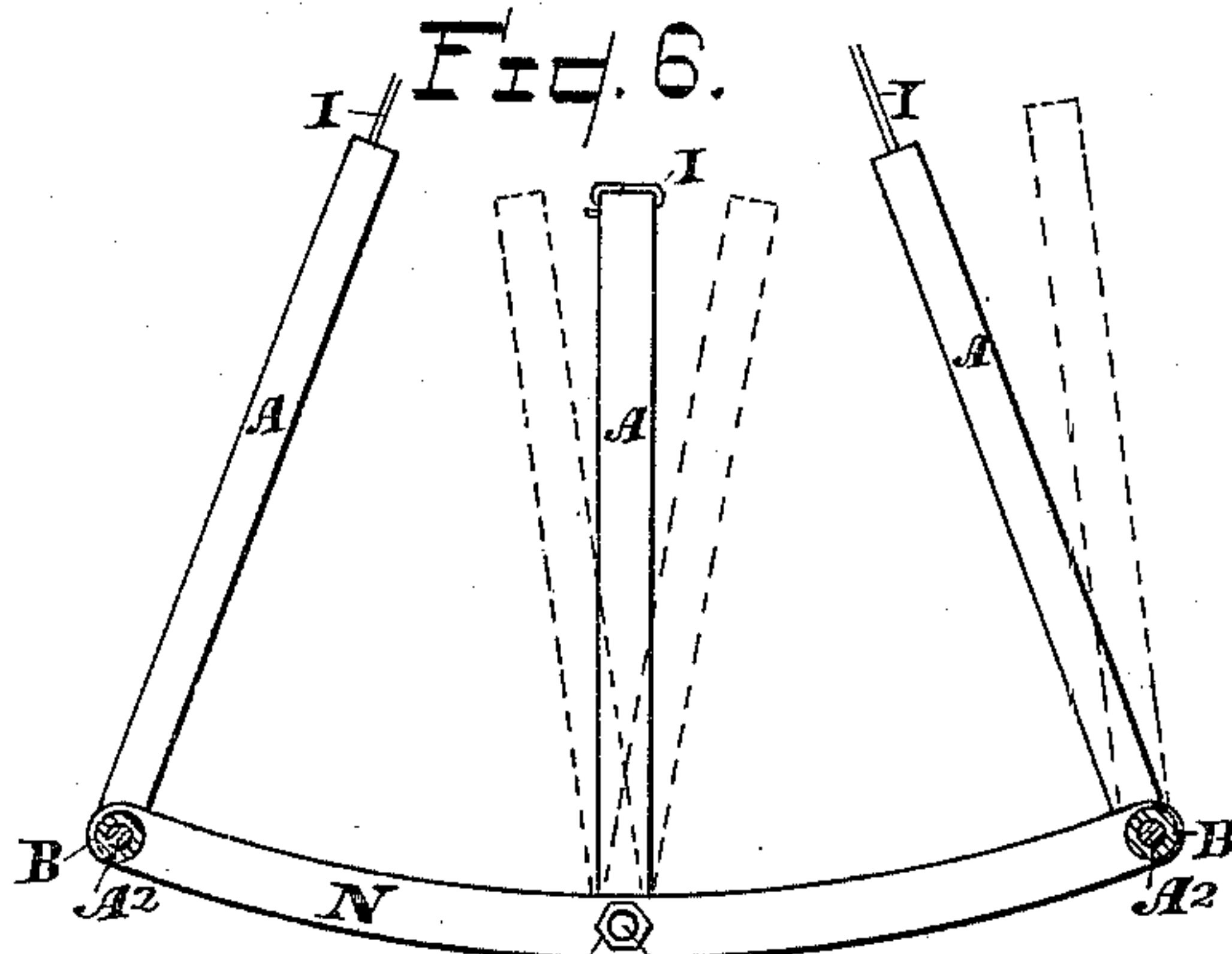
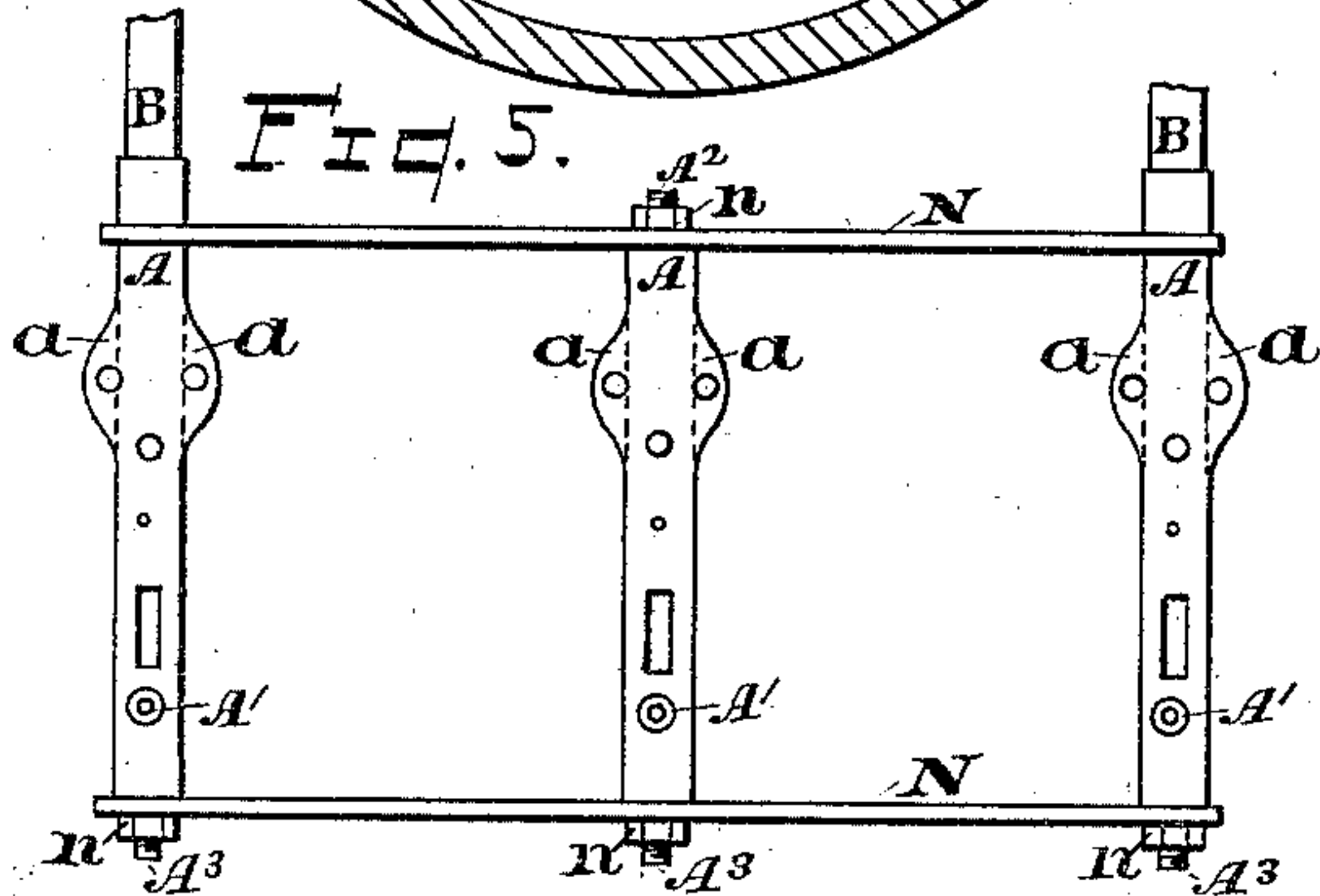
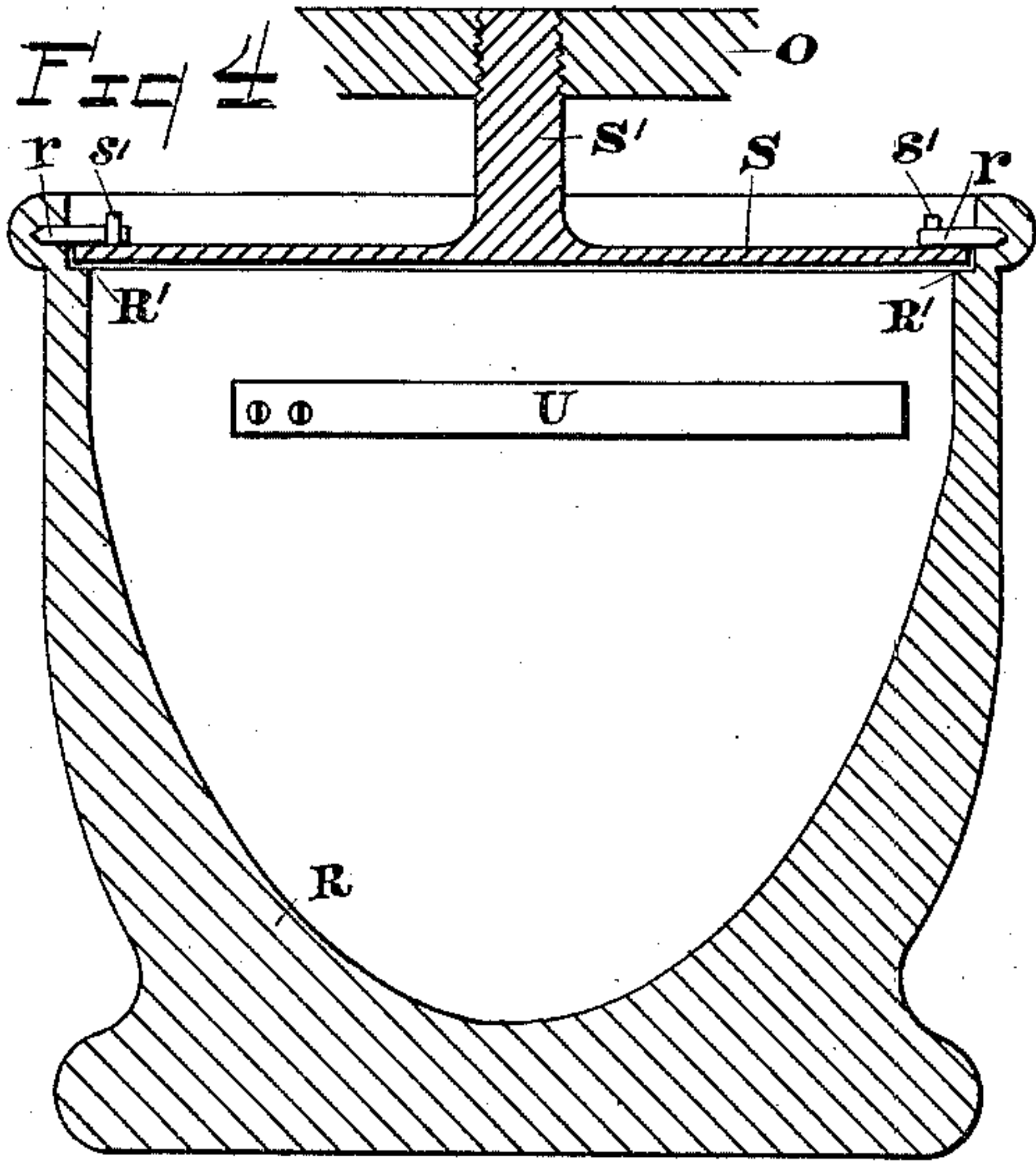
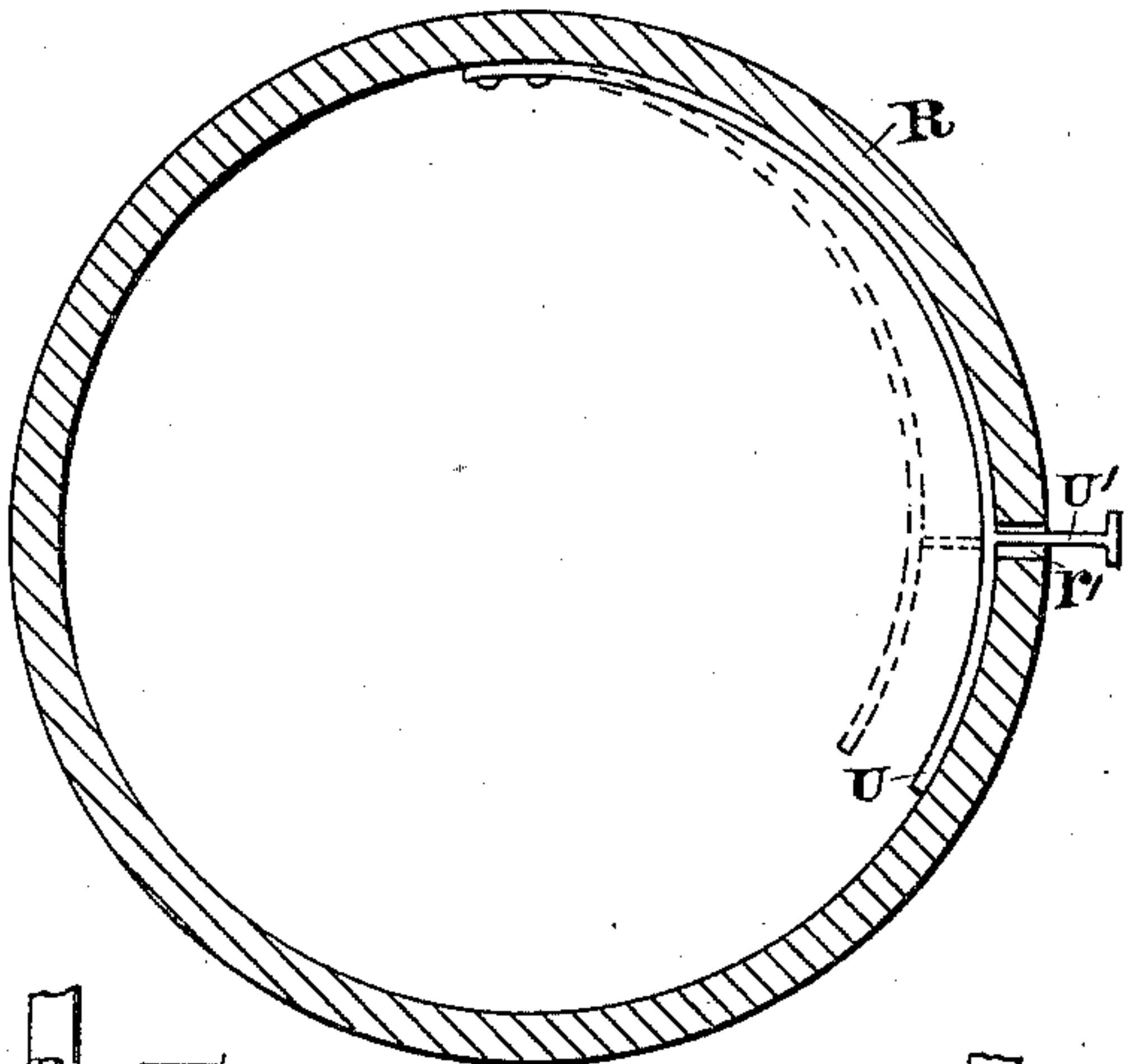


Fig. 7.

Fig. 8.

WITNESSES  
*W. S. Pluyette*  
*Samuel E. Thomas*

INVENTOR  
*John G. Davis*



# UNITED STATES PATENT OFFICE.

JOHN G. DAVIS, OF DETROIT, MICHIGAN.

## CASH-CARRIER APPARATUS.

SPECIFICATION forming part of Letters Patent No. 409,933, dated August 27, 1889.

Application filed March 21, 1889. Serial No. 304,225. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN G. DAVIS, residing in the city of Detroit, county of Wayne, and State of Michigan, have invented certain  
5 new and useful Improvements in Cash and Parcel Carrier Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to cash and parcel  
10 carriers for store service; and it consists in certain features of construction, hereinafter described, and particularly pointed out in the claims.

The objects in view are, first, to transmit  
15 cash and other articles from one station to another quickly and with very slight noise; second, to provide suitable stations for receiving and sending the cars, and, third, to easily and quickly increase or lessen the motive  
20 power for driving the cars. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a complete station and  
25 a car in side elevation constructed in accordance with my invention. Fig. 2 is a top plan view of a station and car, with a part of the frame cut away to show the spring arrangement. Fig. 3 is a sectional top plan view of the cash-cup, showing the clip device. Fig.  
30 4 is a sectional side view of the cup and body of the car, illustrating the means of attachment. Fig. 5 is a front elevation of a series of frames with the working parts removed. Fig. 6 is a top plan view of a series of frames,  
35 also without working parts. Figs. 7 and 8 show the method of hanging the package-receptacle to the car. Figs. 9 and 10 are views of detached parts, Fig. 9 showing a rear view of part of one of the vertical ears which extend from the draw-bar, and Fig. 10 a front  
40 view of the draw-bar with the movable catch inserted.

The apparatus proper consists of a plunger  
45 C, used as a means of acquiring and applying the motive power to the car; a propelling-spring D, which I prefer to make of rubber, and which is so represented in this instance, from which the motive force is obtained; the check-spring E, also preferably of rubber, and  
50 which automatically acts as a check or brake to the plunger; the draw-bar F, provided

with a movable or swinging catch G and also with a suitable operating-cord H and handle H'; a track I, with car mounted thereon  
55 adapted to be detachably connected with the forward end of the draw-bar, and a trip-rod K, by which the car is released.

The mechanism may be combined and supported in position for use in various ways, but preferably by a suitable frame which may  
60 be attached to hangers or standards, and it will be illustrated and described in connection with such preferred means, the frame being designated in the drawings as A A. It is adapted to be held in position and supported  
65 either from its upper or under side, in the first instance by a depending standard or hanger B, secured to the ceiling of a compartment and attached to a vertical screw A<sup>2</sup> on its upper side, and, in the second instance  
70 to a similar standard B', secured to the floor of a compartment, or to a counter or other suitable place within it, and attached to the screw A<sup>3</sup> on its under side. Both standards may be used, if desired, and are maintained  
75 in a vertical position.

The plunger C passes through a longitudinal aperture in the frame at a desired point and has sliding contact therewith. It is provided at its forward end with an oblong foot  
80 or plate c, securely fastened thereto. This plate extends downward and has a vertical face, to which is fastened a piece of rubber c'. A longitudinal aperture is made through the foot near its lower edge for a purpose  
85 hereinafter mentioned. The plunger is somewhat widened at its rear end and a lateral aperture or eye c<sup>2</sup> is made therein, through which the propelling and check springs are passed. Two lateral ears or lugs a project from the  
90 front part of the frame, one on each side, Figs. 1, 2, and 5. A longitudinal aperture is made in each, through which the ends of the propelling-spring are passed, the same being  
95 securely held therein by means of lateral binding-screws a<sup>3</sup>, Figs. 1 and 2. The ends of the check-spring are carried to the rear of the frame and through a longitudinal aperture made therein and are securely held by means of the lateral binding-screws a<sup>4</sup>, Figs.  
100 1 and 2. Longitudinal apertures are provided in the front and rear of the frame at



desired points below the plunger, through which and through the aperture in foot of plunger the track is passed. Binding-screws  $a^5$  and  $a^6$  secure it to the front and rear of the frame. The ends of the track are attached to the wall, ceiling, or other suitable place in a compartment, between which and the frame are arranged ordinary turn-buckles  $b$ . The draw-bar passes through a longitudinal aperture in the frame below the track. Vertical ears  $F^1$  and  $F^2$  rise from near the front and the rear of this bar, extending a little above the track. The tops of these ears are vertically slotted in line with the track and shaped to hold small grooved wheels  $f$ , loosely fitted therein and by which the draw-bar is supported, Figs. 1 and 9, the wheels resting on the track and are designed to roll easily thereon. A pair of ears  $a'$  extend longitudinally from the rear of the forward part of the frame, between which is fitted a grooved wheel or pulley  $h$ , held in place by a lateral pivot or pin, on which it is designed to revolve.

The cord  $H$  is attached to the under side of the draw-bar near its forward end. It is then carried back and through the same aperture made for the draw-bar (the aperture being sufficiently elongated for the purpose) over the pulley  $h$  and down through a vertical aperture in the frame at  $A^5$  and attached to the handle  $H'$ . The extreme forward end of the draw-bar is widened laterally and recessed or forked, as in Fig. 10, for the insertion of the movable catch  $G$ , which is pivoted therein. This catch is designed to be operated for releasing the car by being brought in contact with the trip-rod, preferably by means of a downwardly-extended finger  $g$ , which if forced forward depresses the upper part.

The catch  $G$  is of a uniform thickness except at its inner side and just below the draw-bar. At this point it is widened laterally, forming projections  $g'$ , which impinge against the under side of the draw-bar and hold it in position when using the apparatus, Figs. 1 and 10.

A small spring  $f'$  connects the inner and under side of the catch  $G$  to a lug  $F^4$  on the under side of the draw-bar. This prevents the catch from swinging and holds it in position when not in use.

A spring  $L$ , preferably of rubber, or an ordinary rubber band, as here shown, is slipped over suitable hooks  $F^3$  on the draw-bar and  $A^4$  on the frame, the use of which is to return the draw-bar to its proper position after using the apparatus and releasing the handle. The distance to which it may be drawn forward is regulated by the length of the cord or chain, and is prevented from going farther by reason of the handle  $H'$  being brought in contact with the lower side of the frame at  $A^5$ .

The trip-rod  $K$  is used in connection with a socket  $A'$ , which extends horizontally in front of and is a part of the frame and is in line with the track. The depth of this socket is indicated by dotted lines in Fig. 1. The

trip-rod is inserted therein as far as desired and held in place by the thumb-screw  $a^2$ . This rod is widened or chisel-shaped at its forward end, as shown at  $K$ , Fig. 2.

When necessary, I use a brace-rod  $M$ , carrying it from the rear upper side of the frame  $A$  to the standard  $B$ , securing it at points of contact with bolts or screws  $m$ . The apparatus is also braced laterally. Any slack in the track may be taken up by the turn-buckles  $b$ , first loosening the track-binding screws  $a^5$  and  $a^6$ , and tightening them afterward.

The receiving and dispatching mechanism is duplicated at each end of a track-line, and may be supported in position, as heretofore stated; or, when desired, as may be the case at the cashier's desk, the apparatus may be connected in a series or gang, as shown in Figs. 5 and 6, by the use of slightly-curved metal straps or bars  $N$ , with apertures made therein at desired points, through which the screws  $A^2$  and  $A^3$  on the top and bottom of frames are passed, and the center frames secured to these bars by nuts  $n$ , the lower side of the end frames being secured in the same manner, the upper side of the end frames being attached to standards and the entire series supported thereby. In a case of this kind the ends of the track to the center frames are wound around the rear of their respective frames, as shown in the center frame, Fig. 6, instead of being carried to the wall or ceiling, dispensing, as regards them, with the brace-rod  $M$  and the turn-buckles  $b$ . The frames may be adjusted laterally to bear in different directions, as indicated by dotted lines, Fig. 6, to connect with stations in various parts of the store or compartment. This completes a description of the mechanism used in receiving and sending the cars, and also the means of holding the apparatus in position.

Following is a description of the car or carrier designed to run on a track stretched taut between two opposite stations. The principal parts of the car are the platform or body  $O$ , the grooved wheels  $P$ , and the cup  $R$ . A pair of vertical ears  $O^4$  rise from the platform near each end, extending considerably above it. They are designed to hold the grooved wheels  $P$  in position, one of the latter being placed between each pair of ears and loosely pivoted therein to allow them to revolve in the usual manner. The ends of the platform are turned up or extended vertically above the track, forming abutments  $O'$ , against which the propelling force from the plunger is exerted and with which they come in contact. These abutments have vertical faces and are longitudinally bifurcated, forming branches, between which and under the grooved rollers  $P$ , the latter resting thereon, the track-cable  $I$  is passed. (See Figs. 1 and 2.)

Depending from the under side of each end of the platform of the car and being a part thereof are two downwardly-projecting lugs  $O^2$ , with vertical faces set in opposite direc-



tions and designed, when a running car reaches a station, to lock with the movable catch G at end of the draw-bar. Attached to and depending from the center and under side of the platform is a metal disk S, having a round shaft-like elevation S' rising from its center with a thread cut thereon, and by this means screwed to the platform, Figs. 1, 2, and 4. This disk has two notches S' cut in its edge on directly-opposite sides, and has also two short pins S' extending upward from its upper side and securely fastened thereto, for a purpose hereinafter mentioned, Figs. 2 and 4.

The cash-cup R is designed to fit over the disk S from the under side when the apparatus is in position for use. Two short pins *r* are attached to and near the upper edge of the cup and directly opposite each other, which extend in a horizontal direction toward its center. By pushing the cup upward over the disk and allowing the pins *r* to pass through the notches therein, it is evident that by now giving the cup a turn it will remain suspended thereon, Figs. 2 and 4. The shoulder R' inside of the cup prevents it from being thrust up too far, and also prevents it from swinging when attached. The cup may be turned until the pins *r* and S' come in contact. By reversing the operation the cup can be detached and withdrawn.

The wire parcel-receptacle T is simply suspended from suitable hooks O<sup>5</sup>, attached to and depending from the under side of the platform of the car, Figs. 7 and 8. The loops or hangers *t* are rigid and easily detached from or suspended to the hooks. The latter extend laterally from each side of the body of the car (see Fig. 8) to prevent the basket from swaying as much as possible. It may be used in connection with the cup, or either the cup or basket used separately, the hanging devices of each being detachably fastened to the platform or body of the car, so that either the cup or package receptacle may be removed entirely with its respective fittings, if desired.

Now, in order to dispatch the car to the opposite station, and when the apparatus is in the position as shown in Fig. 1 and attached to one of the standards B or B', or both, and the car ready for sending, it is evident that a pull on the handle H' will carry the draw-bar back, taking with it the car by means of the interlocked catch G and projection O<sup>2</sup>. The plunger being in contact with the car, that also is forced back and the propelling-spring D is stretched, plainly causing pressure against the abutment at the end of the car by the plunger, and the farther the car is drawn in that direction, while there is still elasticity in the spring, the more force or pressure is obtained. The operation draws the movable or swinging catch G, attached to the end of the draw-bar, up to the trip-rod K, the lower extension or finger finally coming in contact therewith, and the strain or pull being con-

tinued the finger of the movable catch is forced forward, thereby depressing the upper part sufficiently to become detached from the stationary catch O<sup>2</sup>, depending from the platform of the car, and releasing the latter, which from the force obtained through the plunger, and by reason of the sudden contraction of the propelling-spring, immediately starts on its way to the opposite station. The check-spring E becomes of use now by gradually stopping the plunger, drawing it back to its original position and preventing it from striking the frame A, which it would otherwise do, the result of which would be a disagreeable sound caused by the blow, and also danger of breakage. By the means employed the jar is very slight and the noise scarcely perceptible.

The motive force, it is evident, is applied to the car nearly on a line with the track I, and there is no probability that the car will be thrown up against the track when extra power is used, thus in a measure retarding it at starting; but it will start evenly and truly, and on reaching the opposite station the stationary and movable catches will become locked and the car held there. The contents of the cup or basket may now be removed, the foregoing operation repeated, and the car thereby returned to the starting-point.

In adjusting the apparatus for use the necessary power is obtained by shortening or lengthening the propelling-spring (before fastening the ends of same to the projecting ears *a* of the frame A) more or less, as required to drive the car over a long or short line. After the proper length of this spring has been determined by trial the opposite or check spring E is strained against it, if necessary, drawing the plunger back, if need be, the object being to have the foot C of the plunger the same distance in front of the frame whether the springs have been adjusted to send the car over a long or short line. By this means a perfect adjustment of the two springs with relation to each other is secured, for if the propelling-spring D is short and somewhat stretched to secure considerable power the resistance of the check-spring E is increased in the same proportion by being stretched against it. There is therefore no probability on releasing the car that the plunger C will strike the frame A from the sudden contraction of the propelling-spring, be the same long or short. The plunger is drawn back the same distance in either case, and it is plain that more force or power will be obtained from a short spring, being as it is already somewhat stretched before drawing on the handle. The adjustment may also be assisted by the use of springs of various sizes and strength, and also by the trip-rod K, if desired, by inserting it more or less within its socket, thereby regulating the distance that the draw-bar, the car, and thereby the plunger may be drawn back before the car is



released; but it is preferable that the trip-rod should extend out considerably when the adjustment is made, as in some cases extra power may be required, as might be the case when the car is heavily loaded. To obtain extra power immediately the operator loosens the thumb-screw A<sup>2</sup> and places the trip-rod farther into its socket, securing it therein with the screw, and by so doing increases the power of the propelling-spring considerably above its ordinary capacity, as the car will be drawn farther back before being released, thus stretching the propelling-spring more, and obtaining thereby additional force. A reverse of the above operation, or by drawing the rod out farther, lessens the propelling force. The arrangement and adjustability of the trip-rod are also convenient when quicker service is desired, as might be the case on busy days, as extra pressure applied to the car is equivalent to extra speed when the car carries but an ordinary load, and as the arrangement of the plunger C and the draw-bar F, each with horizontally-extended forward ends and with springs attached to the back of each, forms a perfect elastic buffer or cushion, no harm is caused by a swiftly-running car coming in contact with them. The car in all cases, without regard to its speed, will be gradually and easily stopped, almost noiselessly and with very slight jar, avoiding the disagreeable noise made by the car coming in violent contact with the standard or some part of the apparatus, and which is very annoying to nervous persons, as in many cash-carriers.

The trip-rod, after adjustment has been made, is a perfect speed-regulator for the car, as the speed can be increased or decreased at pleasure in a convenient manner and in a few seconds of time by inserting or withdrawing the rod more or less until the desired pressure, and therefore speed, is obtained.

From the foregoing it is evident that in the form of cash and parcel carrier herein presented the car will be received at and dispatched from a station with very slight noise or shock; that its speed is easily and conveniently regulated, and that the propelling force may be increased or lessened at pleasure and in a convenient manner.

Many slight changes might be made in the constructive details of this apparatus without departure from the spirit of my invention or exceeding its scope; hence I do not wish to be restricted to the exact forms herein shown; but,

Having thus fully described my invention and its operation, what I claim, and desire to secure by Letters Patent, is—

1. In a cash and parcel carrier apparatus, the combination, with a supporting-frame and a track with a car thereon, of a plunger, a propelling-spring, a check-spring connected to said plunger, said check-spring acting automatically as a check or brake to the plunger, substantially as set forth.

2. In a cash and parcel carrier apparatus,

the combination of a frame, a plunger, a propelling-spring, a check-spring, a track with car thereon, a wheeled draw-bar supported by the track and carrying the catch G, the cord H, and handle H', substantially as set forth.

3. In a cash and parcel carrier apparatus, the combination, with a supporting-frame and a track with car thereon, of a plunger adapted to slide through an aperture in said frame, and a propelling-spring and a check-spring attached to the frame and each connected to an eye in the plunger, substantially as set forth.

4. In a cash and parcel carrier apparatus, the combination of the supported frame A, the plunger C, the springs D and E, the track I, with car thereon, the draw-bar F, detachably connected to the car, means for releasing the car, the operating cord and handle, and the spring L, substantially as set forth.

5. In a cash and parcel carrier apparatus, the combination, with a supporting-frame, a plunger, a propelling-spring connected thereto, a track with a car thereon, and a draw-bar detachably connected to the car and provided with an operating cord and handle, of a check-spring connected to the plunger and to the frame, substantially as set forth.

6. In a cash and parcel carrier apparatus, the combination, with the frame A, the track I, with a car thereon, the wheeled draw-bar F, supporting the catch G and detachably connected to the car, the plunger C, the propelling-spring D, and the cord H, with handle H', of the check-spring E, connected to the plunger and to the frame, substantially as set forth.

7. The combination, with the frame A, the track I, with car thereon, the draw-bar F, the plunger C, the springs D and E, and the cord H and handle H', of the returning-spring L, substantially as set forth.

8. In a cash and parcel carrier apparatus, the combination, with a supported frame, a track with a car thereon, and a plunger to which is connected a propelling-spring, of a wheeled draw-bar adapted to ride on the track and provided with a returning-spring, the draw-bar and plunger being in the same vertical plane, one being above, the other below, the track, and together forming a spring buffer or cushion for the car to come in contact with, substantially as set forth.

9. A cash and parcel carrier apparatus comprising the following elements: a frame, a standard, a plunger, a propelling-spring and a check-spring, a track with a car thereon, a wheeled draw-bar supported by and designed to ride on the track, an operating cord and handle, and a returning-spring, substantially as set forth.

10. In a cash and parcel carrier apparatus, and in combination with the standard B, the frame A, carrying the grooved wheel h, the socket A', and the trip-rod K, the plunger C, the springs D and E, the wheeled draw-bar



F, carrying the catch G and spring L, and the cord H, attached to the draw-bar and passing over the wheel h and having the handle H', substantially as described.

- 5 11. In a cash and parcel carrier apparatus, the combination of the standard B, the frame A, carrying the socket A' and the trip-rod K, the plunger C, the springs D and E, the track I, with a car thereon, the wheeled draw-bar

F, carrying the catch G, the spring L, the cord H, and handle H', substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN G. DAVIS.

Witnesses:

GEO. W. HOVEY,  
FRED WARDELL.