(No Model.) 3 Sheets—Sheet 1.

J. SCHIEMER.

CASH CARRIER APPARATUS.

No. 484,248. Patented Oct. 11, 1892.

Fig. 1.

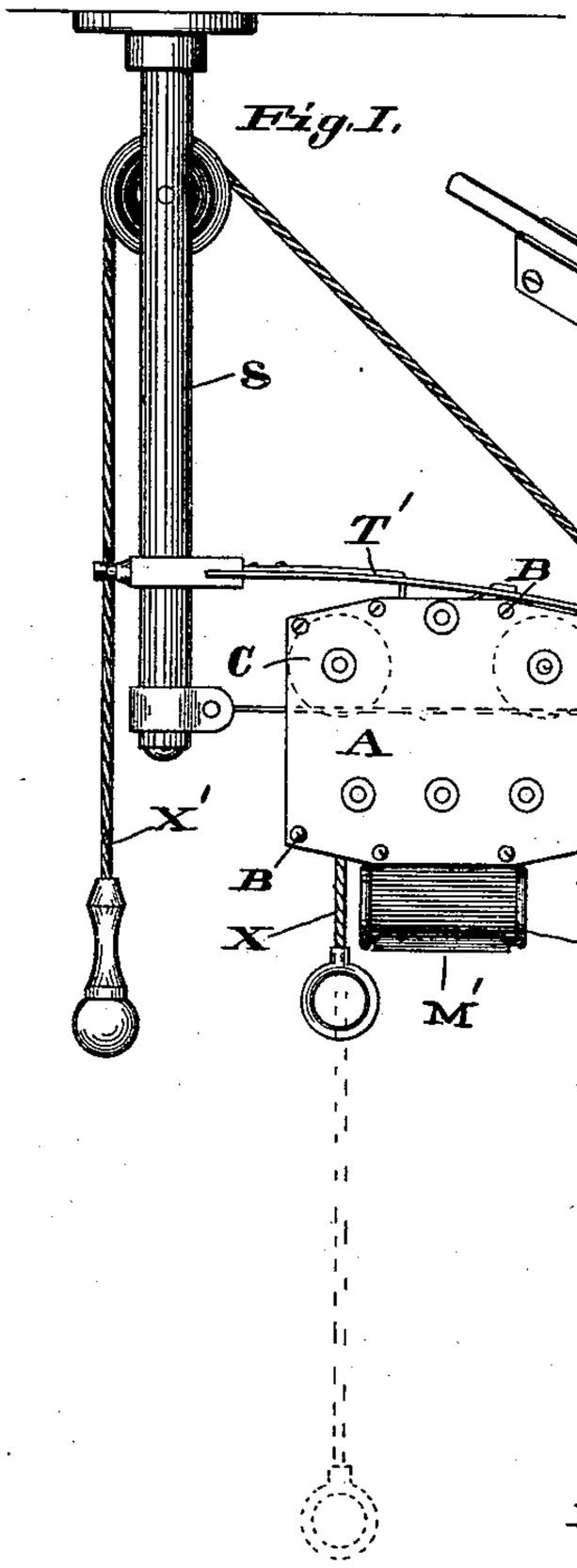


Fig. 6.

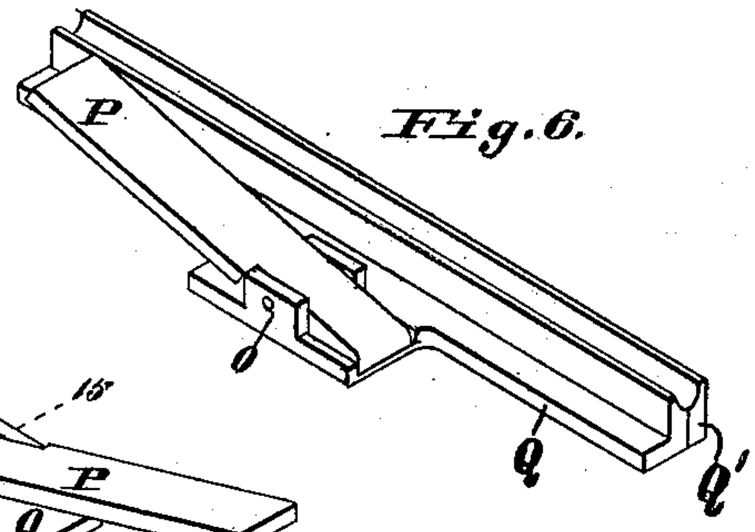


Fig. 8.

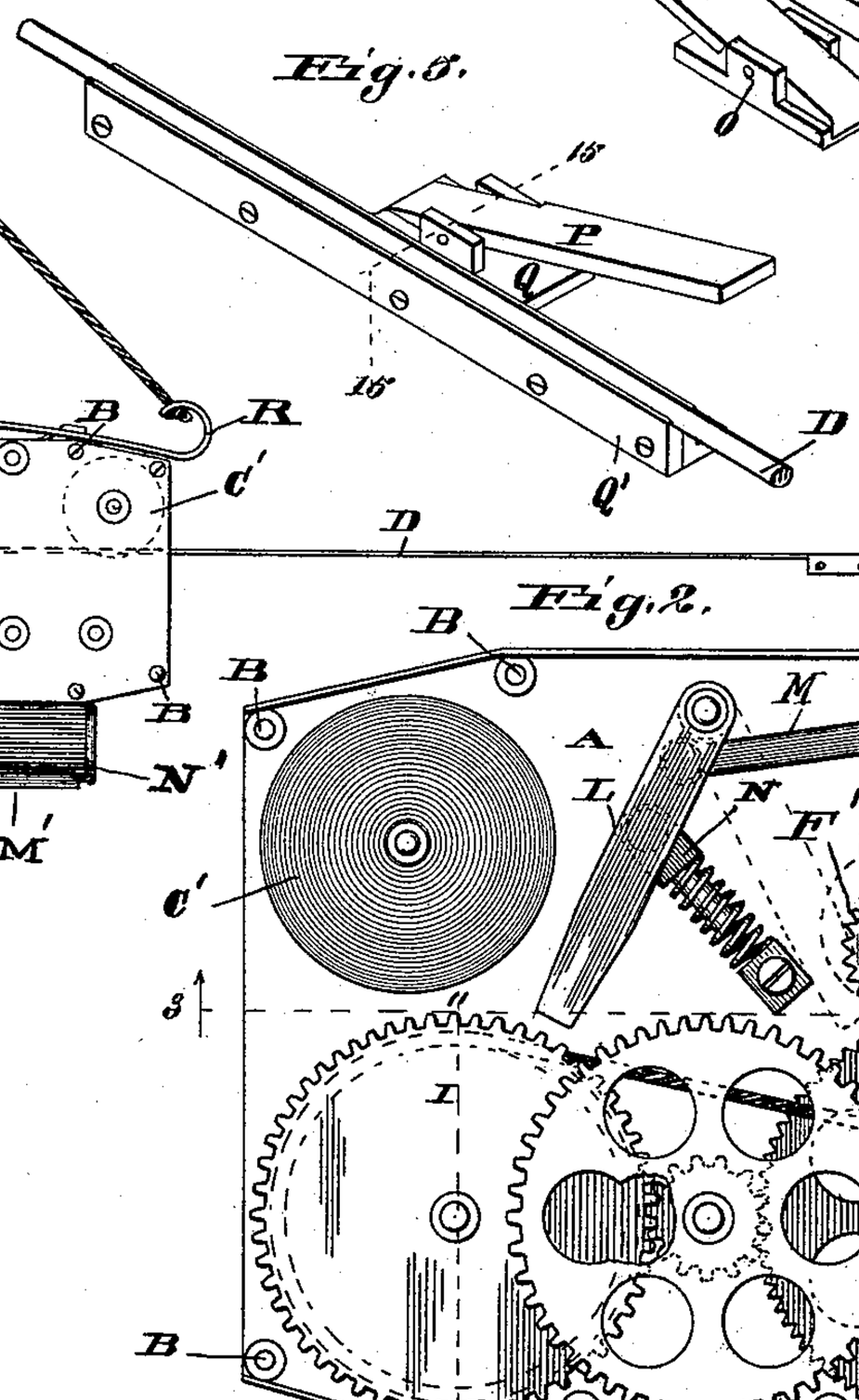
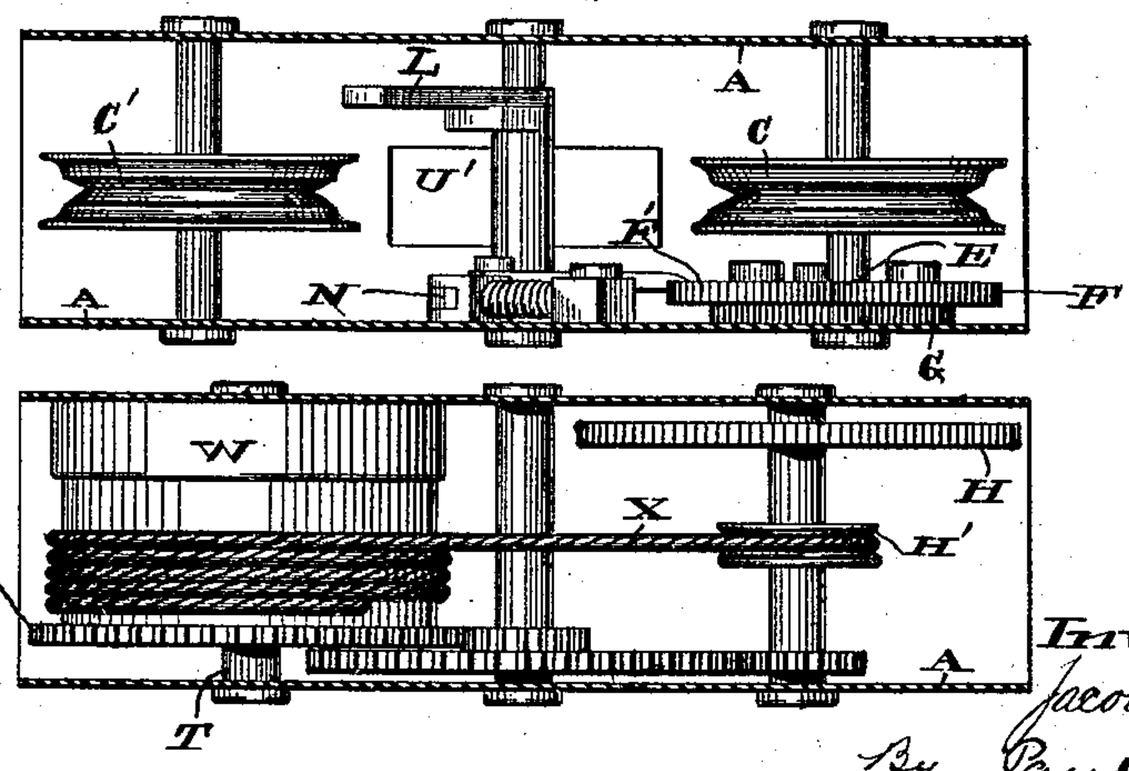


Fig. 2.

Fig. 3.

Fig. 4.



Attest;
J. W. Crooker.
W. M. Byrne.

Inventor;
Jacob Schiemer,
By Paul Bakewell
his attorney.

(No Model.) 3 Sheets—Sheet 2.

J. SCHIEMER.

CASH CARRIER APPARATUS.

No. 484,248. Patented Oct. 11, 1892.

Fig. 7.

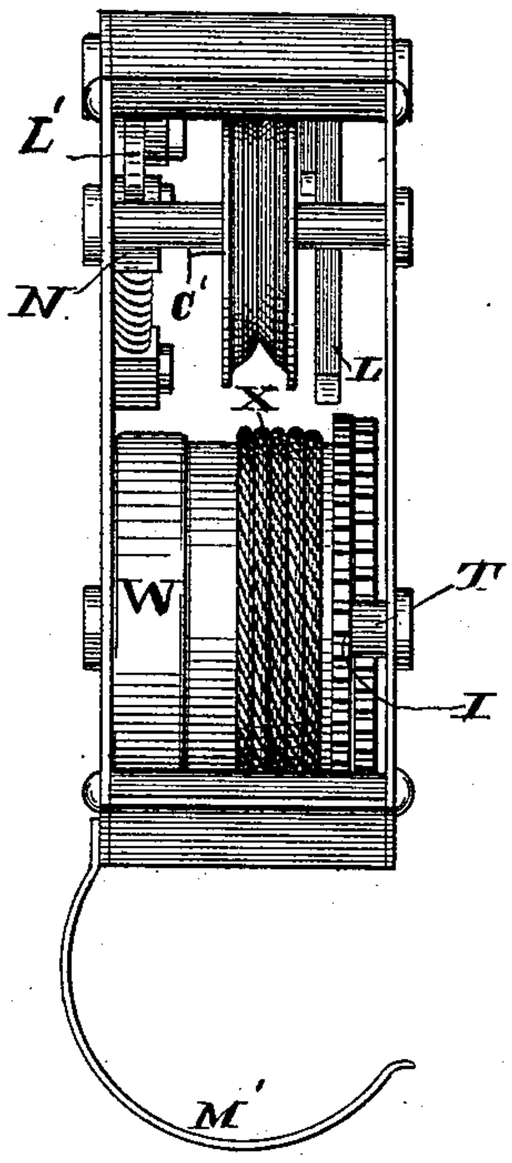


Fig. 8.

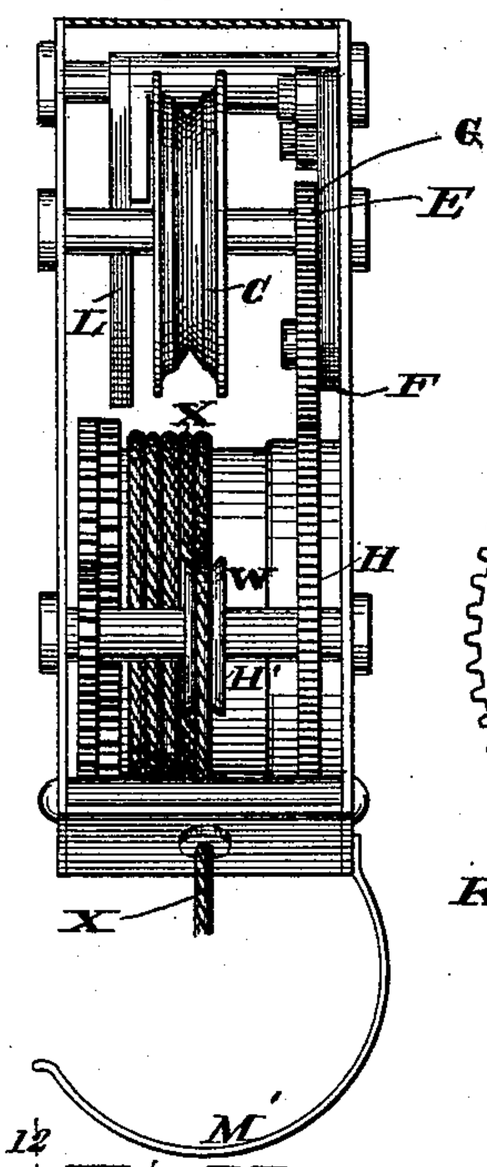


Fig. 9.

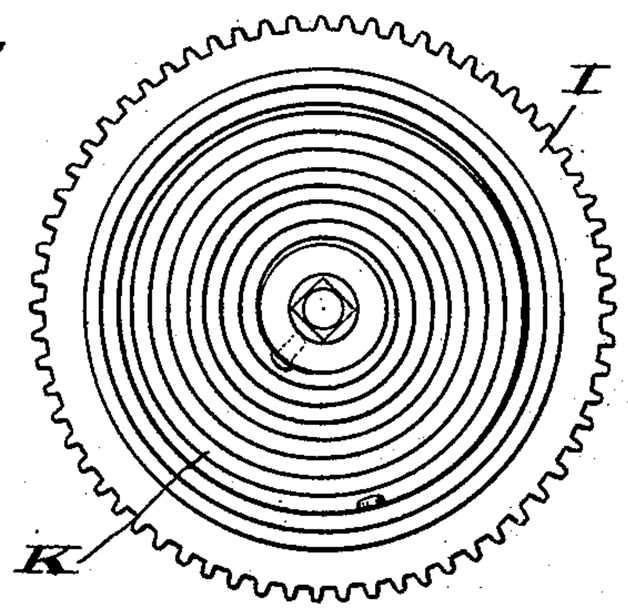


Fig. 10.

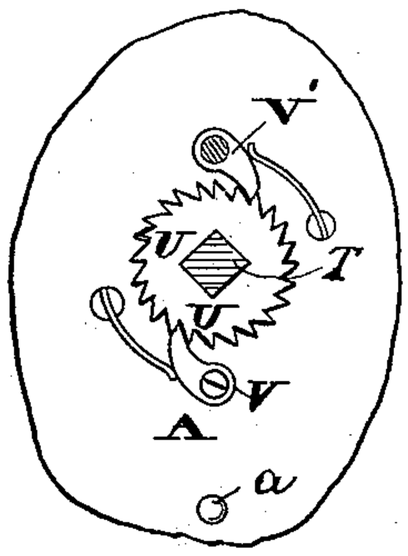


Fig. 11.

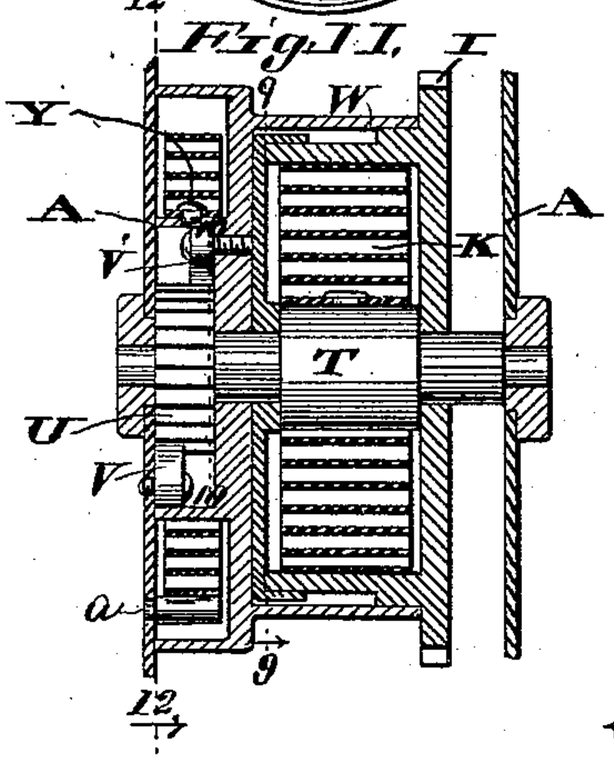


Fig. 12.

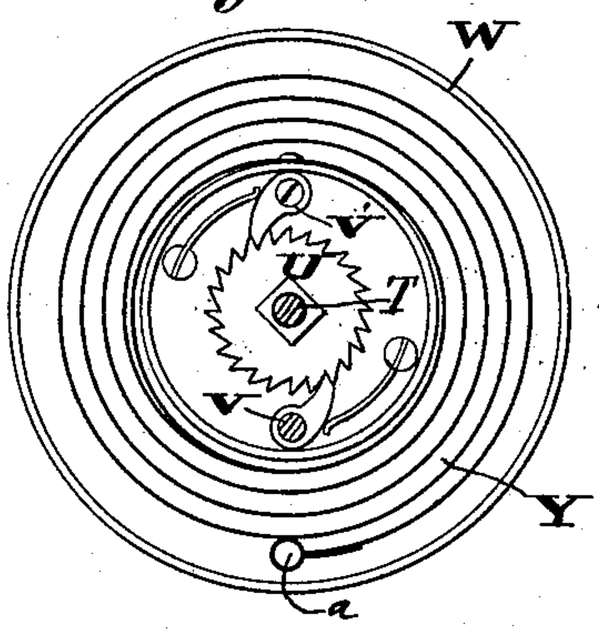


Fig. 13.

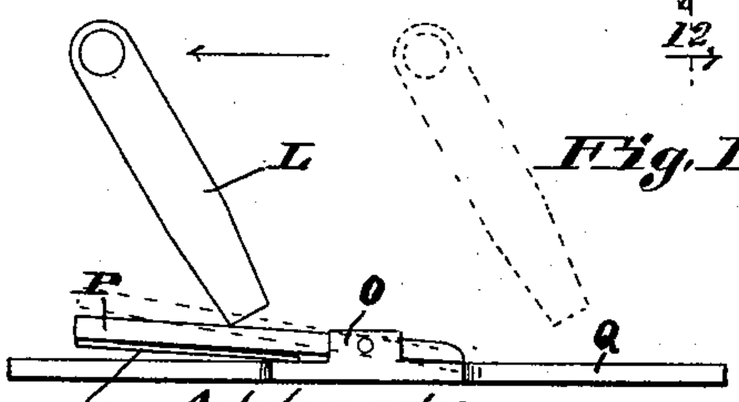
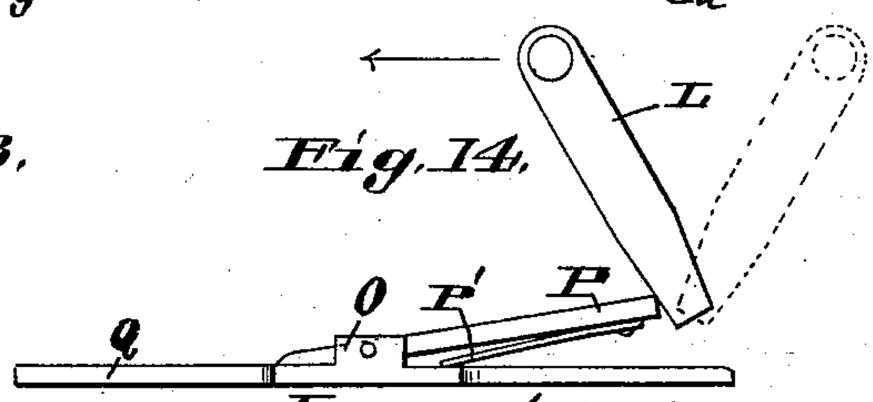


Fig. 14.

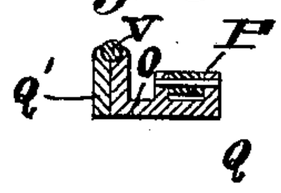


Attest;

J. W. Crookes.

W. W. Byrne.

Fig. 15.



Inventor;

Jacob Schiemer

By Paul Bakewell

his attorney.

(No Model.) 3 Sheets—Sheet 3.

J. SCHIEMER.

CASH CARRIER APPARATUS.

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Fig. 16.

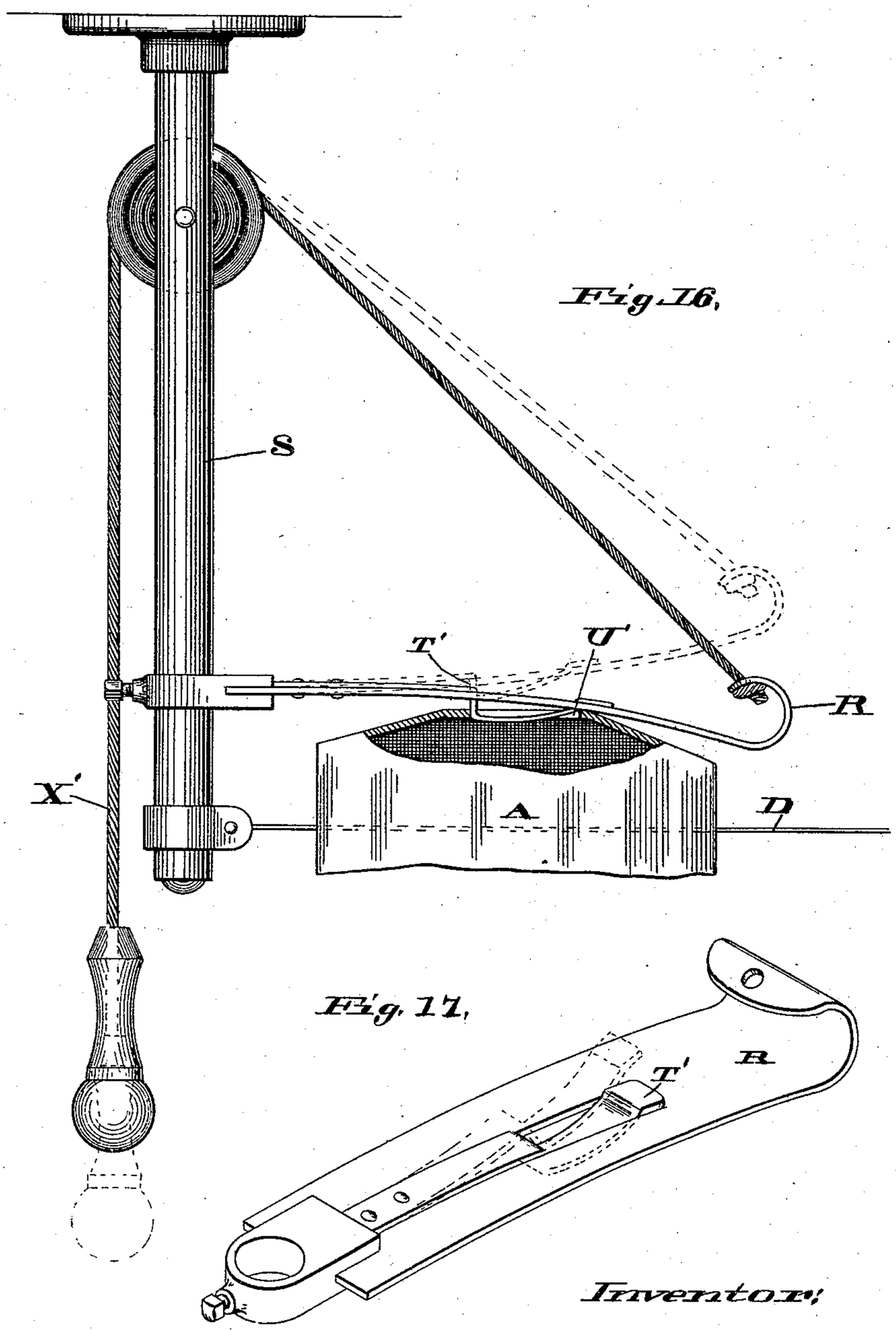

Fig. 17.

Inventor;

Jacob Schiemer

By Paul Bakewell

his attorney.

Attest!

J. N. Crooks.

W. W. Byrne.

UNITED STATES PATENT OFFICE.

JACOB SCHIEMER, OF DETROIT, MICHIGAN, ASSIGNOR OF TWO-THIRDS TO HENRY S. HOPKINS, OF ST. LOUIS, MISSOURI, AND WILLIAM H. PARMENTER, OF BOSTON, MASSACHUSETTS.

CASH-CARRIER APPARATUS.

SPECIFICATION forming part of Letters Patent No. 484,248, dated October 11, 1892.

Application filed January 7, 1892. Serial No. 417,254. (No model.)

To all whom it may concern:

Be it known that I, JACOB SCHIEMER, a citizen of the United States, residing in the city of Detroit, county of Wayne, and State of Michigan, have invented certain new and useful Improvements in Cash and Parcel Carriers, of which the following is a full, clear, and exact description.

My invention relates to store-service apparatus in which each carrier traverses upon a separate way consisting in a wire or other track supported in an elevated horizontal position and in which the carriers are caused to travel between the central station and the individual stations by a self-contained motor.

Its object is to make the carrier conveniently self-operative in transit, to make the motor automatically reversible, the provision of convenient means for retaining the car at either of the stations and releasing the same when it is desired to do so, and the provision of means conveniently attachable to the track itself for automatically reversing the motor for the return-trip.

My invention consists in the novel features of construction hereinafter set forth, in the hereinafter-described motor, in the novel mechanism for reversing the motor, in the novel spring-clip catch for retaining the carrier at the station, in the novel construction of the inclined spring-supported trip mechanism, and in the useful features of novelty hereinafter described inherent to the several features of constructional improvement and their consequent combinations.

In the accompanying drawings, in which like letters of reference denote like parts in the several views, Figure 1 is a side elevation of track-supporting standard at one end of the track with the carrier-retaining device secured thereto and the carrier at that station. Fig. 2 is a side elevation of the motor with one side of the containing case removed. Figs. 3 and 4 are sectional views taken as on the line 3 4 in Fig. 2, being viewed, respectively, as in the direction of the arrows at 3 and 4 in Fig. 2. Figs. 5 and 6 are respectively perspective views of a right and left reversing-switch, Fig. 5 showing a portion of the supporting-track wire clamped therein. Figs. 7 and 8 are respectively a left and right hand end elevation (the ends of the containing-case being generally removed) of the motor as viewed in Figs. 1 and 2. Fig. 9 is an elevational view of the main spring and drum of the motor, or as a sectional view taken at right angles to the main shaft, as on the line 9 9 in Fig. 11. Figs. 10 and 12 are elevational views showing, respectively, the stationary and rotating spring-governed pawls, or as sectional views taken on the line 10 10 and 12 12 in Fig. 11, viewed, respectively, in the direction of the arrows at 10 and 12 in Fig. 11. Fig. 11 is a diametrical cross-section of the main spring-drum and the parts immediately associated therewith, taken as on the line 11 11 in Fig. 2. Figs. 13 and 14 are views illustrating, respectively, the relative co-operation of the reversing-switch and the reversing-lever of the motor in leaving and in coming up to a station. Fig. 15 is a cross-section of the track-wire and switch secured thereto, taken as on the line 15 15 in Fig. 5. Figs. 16 and 17 are enlarged detail views of the carrier-retaining device, showing it in Fig. 16 as secured in place to the track-supporting standard and in Fig. 17 as an isolated perspective view.

The motor of my improved carrier as a whole consists, as illustrated in Figs. 2, 3, 4, 7, and 8, in a train of gear-wheels and pinions geared together and furnished with pivot-bearings in the side plates A of the inclosing case, which are secured together at the proper distance apart by the posts B. The motor in operation is supported as a whole by the grooved track-wheels C and C′, which ride on the track-wire D, as shown in dotted lines in Fig. 1. To the supporting-shaft of one of the traction-pulleys, preferably C, as shown in Figs. 2, 3, and 8, is rigidly secured the pinion E, which is permanently in engagement with the small gear-wheel F. The gear-wheel F is in permanent engagement with a similar gear-wheel F′. The gear-wheels F and F′ are pivotally mounted on the free end of the oscillating lever-bar G, which is fulcrumed on a point concentric with the center

of the pivot-bearing of the shaft of the traction-wheel C, to which the pinion E is secured. In this manner the two gear-wheels F and F′ when geared together can be moved about the pinion E circumferentially, the pinion E and the wheel F always being in engagement together. By this movement of the bar G either of the wheels F or F′ can be brought into a position of engagement with the gear-wheel H, which is the last of the train of wheels and coacting pinions driven in one direction by the master-wheel I, which itself is rotated by the driving-spring K. In this way the spring-driven motion of rotation of the gear-wheel H can be transmitted through the coacting small gear-wheels F and F′ either in a relatively forward or reverse direction, depending on which one of the wheels F or F′ is in operative engagement with the gear-wheel H, and this will depend on the position of the lever-bar G. The movement of the bar G is effected by a corresponding movement of the reversing-lever L, the two being connected by the connecting-bar M, which is pivotally connected at one end to the lever-bar G and the other end to a short lever-arm L′, (see Fig. 7,) which is rigidly secured on one end of a rocking shaft, to the other end of which is rigidly secured the reversing-lever L. As shown in Fig. 2, in which the extreme positions of the reversing-lever L and the consequent relative position of the gear-wheels F and F′ are shown, and in Fig. 3, the projecting end of the short lever-arm is connected with the pivoted spring-governed headpiece N, which together form a spring knuckle-joint, which when the reversing-lever is pushed to slightly beyond the position, bringing the coacting parts in line, will carry the reversing-lever L the rest of its stroke with a sudden clip-spring movement, always tending to hold it in one of its two extreme positions—*i.e.*, holding either the gear-wheel F or the gear-wheel F′ in engagement with the gear-wheel H. The normal position of the reversing-lever L is projecting forwardly relative to the movement of the carrier—that is, it is projecting in the forward direction when it is in a position to bring the one of the gear-wheels F or F′ in a position of engagement with the gear-wheel H, which will tend to impel the carriage in that direction. Now if the lever L is thrown over to the other side, as to the position shown in dotted lines in Fig. 2, the wheel F or F′ (F′ in this instance) which was in engagement with the gear-wheel H will be thrown out and the other small gear-wheel F thrown into engagement with the gear-wheel H, tending to reverse the movement of the carriage.

In operation the reversal of the motor is effected by the tripping devices O, (see Figs. 5 and 6,) which are secured to the track-wire D at a convenient distance from the station in such a position as to engage with the lever L on the motor when it passes over the wire, as shown in Fig. 14, the dotted lines showing the position of the lever before it is reversed, the carrier moving in the direction of the arrow. The tripping mechanism consists in a flat pivoted tongue P, normally held in an inclined position by a spring P′, (see Figs. 13 and 14,) and is pivotally supported in the base portion Q, to one side of which is removably secured the side bar Q′, (see Figs. 5 and 15,) having a groove formed in their lower adjacent edges somewhat smaller than the track-wire, so that when the trip is placed on the wire, as shown, and the two parts Q and Q′ secured tightly together they clamp the wire between the two parts, securing the tripping device on the wire, as shown in Figs. 1 and 5. The normal position of the tripping device, as shown in Fig. 1, is with the raised end of the spring-governed tongue P or the abrupt shoulder of the incline turned away from the station near which the switch is secured or to which the car is coming when it is desired to reverse the motor. The reversing-lever L, projecting forwardly, as shown in dotted lines in Fig. 14, will strike against the raised end of the tongue P and be thrown back, (to the position shown in full lines in Fig. 14,) reversing the motor. The distance from the station at which the tripping device O should be placed is a matter of experiment and should be such that although the motor has been reversed in passing the switch yet the momentum of the carrier will carry it in the rest of the trip until the car is caught in under the spring R of the retaining device secured to the supporting-standard S, as shown in Fig. 1.

The motor is operated by a flat coiled spring K, one end of which is secured to the shaft T, on one end of which is revolubly fitted the master-wheel I. The master-wheel I is formed with a laterally-projecting drum portion inclosing the spring K, and it is to this drum portion that the other end of the main or driving spring K is secured. (See Fig. 11.) To wind the spring K, the shaft T is rotated. To the shaft T is rigidly secured the wide inclined toothed ratchet-wheel U, which is adapted to engage, in the manner hereinafter described, with the spring-governed pawl V, pivotally secured to the side plate A and the spring-governed pawl V′, pivotally secured to the exterior cord-drum W. The winding-cord X being previously wound on the cord-drum W, as shown in Figs. 4, 7, and 8, and then the cord pulled down, as shown in dotted lines in Fig. 1, the drum W will be rotated, and the pawl V′, (see Fig. 12,) engaging with the ratchet-wheel U the shaft T, will be rotated thereby, (see Fig. 10,) winding up the spring K. The click-pawl V, (see Fig. 10,) secured to the framing-plate A, will hold the same at whatever position the same is left when the winding-cord is released.

Heretofore the rewinding of the winding-cord has been effected by the running down or recoil of the main spring when the carrier is allowed to travel on the track. In my motor

I put on an additional what I will call "retraction spring," by which the winding-cord is again recoiled after it has been pulled down to wind the main spring without any movement of the carrier being necessary. To the cord-drum W is secured one end of a flat coiled spring Y, the other end of which is secured by a pin *a* to the framing-plate A in such manner that when the cord is pulled down to wind the main spring, as described, it will also wind up the retracting-spring Y. The unwinding of this spring Y will draw the cord X up again, the pawl V′ slipping over the ratchet-teeth of the wheel U in this reverse movement. The cord X is preferably led from the drum W to and over the guide-sheave H′, secured on the shaft of the last wheel H and down through a hole formed therefor in the bottom part of the motor-casing.

As shown in Figs. 7 and 8, I have secured to the under side of the motor-casing a curved clip-spring M′, adapted to receive and removably retain the cash-box N′, as shown in Fig. 1.

It will be understood that I have illustrated only the motor part of my invention as embodying the essential features of improvement to which I lay claim and that any suitable parcel-carrier can be secured thereto or suspended therefrom by any of the well-known means.

It is obvious that if, as described, the motor is reversed before the carrier comes up to a station the tendency will be for the carrier to at once return and leave the station it has just come to. To make provision for this, I secure to the track-supporting standard S a flat spring R, (see Figs. 17 and 16,) projecting over the track in such a manner that the carrier when coming up to the station will slip in under it and raise up the secondary hook-spring T′, which engages in a recess U′ or corresponding shoulder formed therefor in the upper side of the motor-casing, to the position shown in dotted lines in Fig. 17. When the carrier has come home to the station, the spring T′ will retain it there until the spring R is raised by pulling down on the cord X′, as shown in dotted lines in Fig. 16, one end of which is secured to the projecting end of the spring R. The rising of the spring R will raise with it the hook-spring T′, releasing the carrier.

The principles of operation are as follows: The carrier is at a station—retained there by the hook-spring T′. When the article intended to be transported is placed in the carrier, as the cash-box N′ into the clip-spring receptacle M′, the cord X is pulled down, as shown in dotted lines in Fig. 1. This will wind up the main spring K ready to propel the carrier to the other station. Immediately the cord X is released the retraction-spring Y will draw up and rewind the cord X to the position shown in full lines in Fig. 1, ready to again wind the main spring K. The reversing-lever L is in the position to hold that one of the gear-wheels F or F′ in engagement with the last wheel H, that will tend to propel the motor away from the station at which the carrier is, having been reversed in coming up to the staion by the tripping device O in the manner shown in Fig. 14. When it is desired to start the carrier, the spring R will be raised by pulling down on the cord X′, withdrawing the hook-spring T′ from the recess U′, formed in the upper side of the motor-casing. Immediately this is done the main spring K, already wound, will, through the connecting wheels and pinions and the traction-wheel C, cause the carrier to travel to the other station, when the operation described will be repeated.

I claim—

1. In a motor for cash or parcel carriers, the combination of track-wheels, propelling mechanism therefor, reversing mechanism comprising an oscillating lever fulcrumed on a point concentric with the shaft of one of the track-wheels and provided with gear-wheels adapted to alternately engage the propelling mechanism, and means for actuating the oscillating lever from the track, substantially as and for the purposes specified.

2. In a cash or a parcel carrier, the combination, with the track-wire, of a carrier mounted thereon provided with track-wheels, propelling mechanism for the track-wheels, a reversing mechanism interposed between the propelling mechanism and the track-wheels, and a split clamp secured on the under side of the wire, provided with a lateral projection, a spring-supported tongue mounted in said projection, and a lever pivoted in the carrier controlling the reversing mechanism, placed in the path of said tongue and adapted to be actuated when the carrier is moving in one direction, substantially as and for the purposes described.

3. The combination, with the propelling mechanism and track-wheel adapted to be actuated thereby, of a track, a pinion on the shaft of the track-wheel, a rocking arm, pinions on said arm, adapted to alternately engage the propelling mechanism, and means on the track for alternately rocking said arm, substantially as and for the purposes described.

4. In a propelling mechanism for cash-carriers, a master-wheel provided with a projecting drum, a main spring within the drum, a cord-drum surrounding the drum and extending in an opposite direction to incase a retracting-spring, a retracting-spring within the casing, a winding-cord attached to the cord-drum, and a ratchet-and-pawl mechanism adapted to wind the main spring when the cord is unwound and permit the return of the cord when the cord-drum is actuated by the retracting-spring, substantially as and for the purposes described.

5. In a cash or parcel carrier, the combina-

tion, with the carrier and track, of a retaining device projecting over the track at a station, said device consisting of a yielding arm provided with a secondary spring adapted to engage and retain the carrier at the station, substantially as and for the purposes described.

In testimony whereof I have affixed my signature, in presence of two witnesses, this seventh day of December, 1891.

JACOB SCHIEMER.

Witnesses:

GERTRUDE GOODSON,

KENNETH M. SPARKS.