

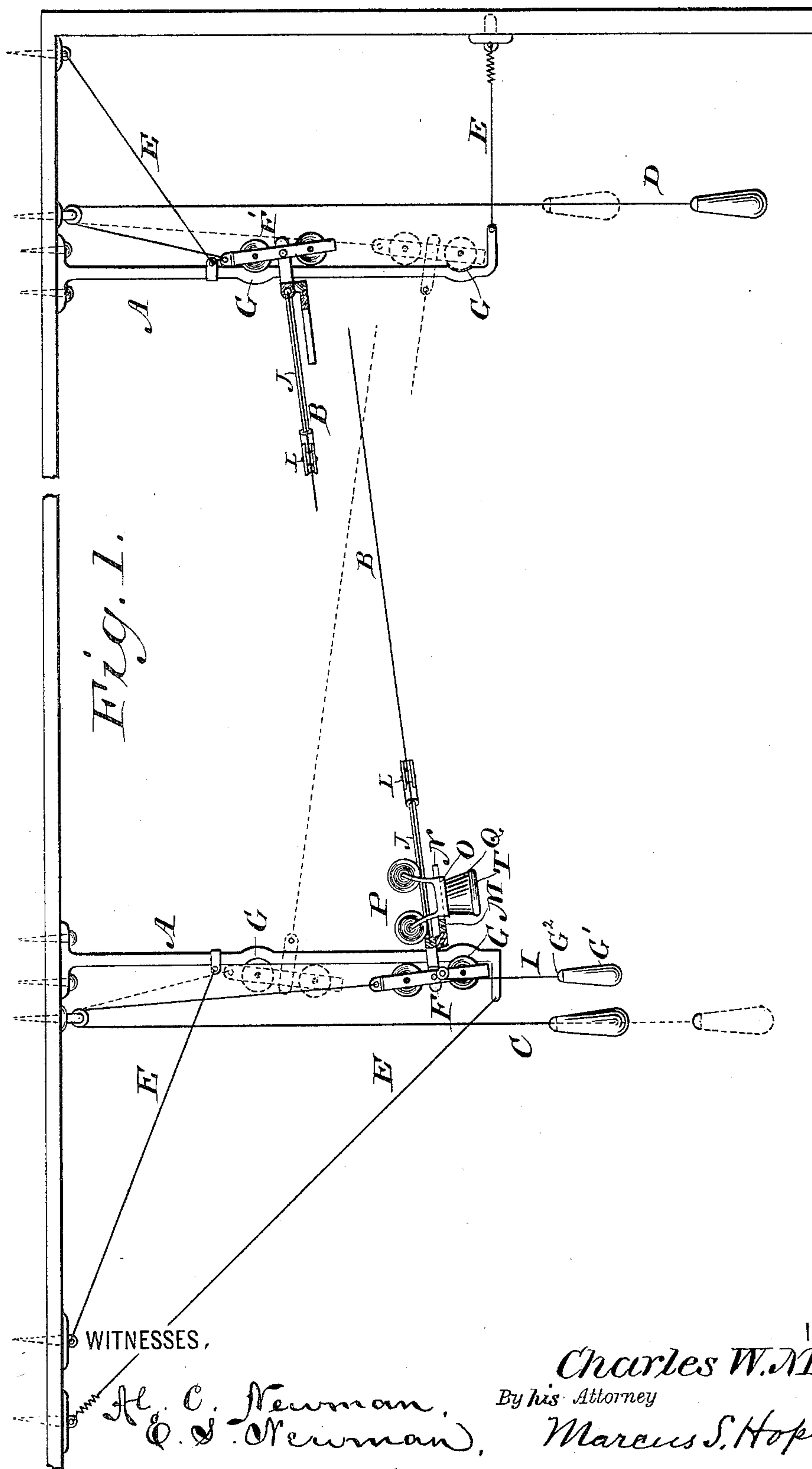
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4 Sheets—Sheet 1.

C. W. McCORMICK.  
CASH CARRIER APPARATUS.

No. 399,428.

Patented Mar. 12, 1889.



INVENTOR,

*Charles W. McCormick,*

By his Attorney

Marcus S. Hopkins.

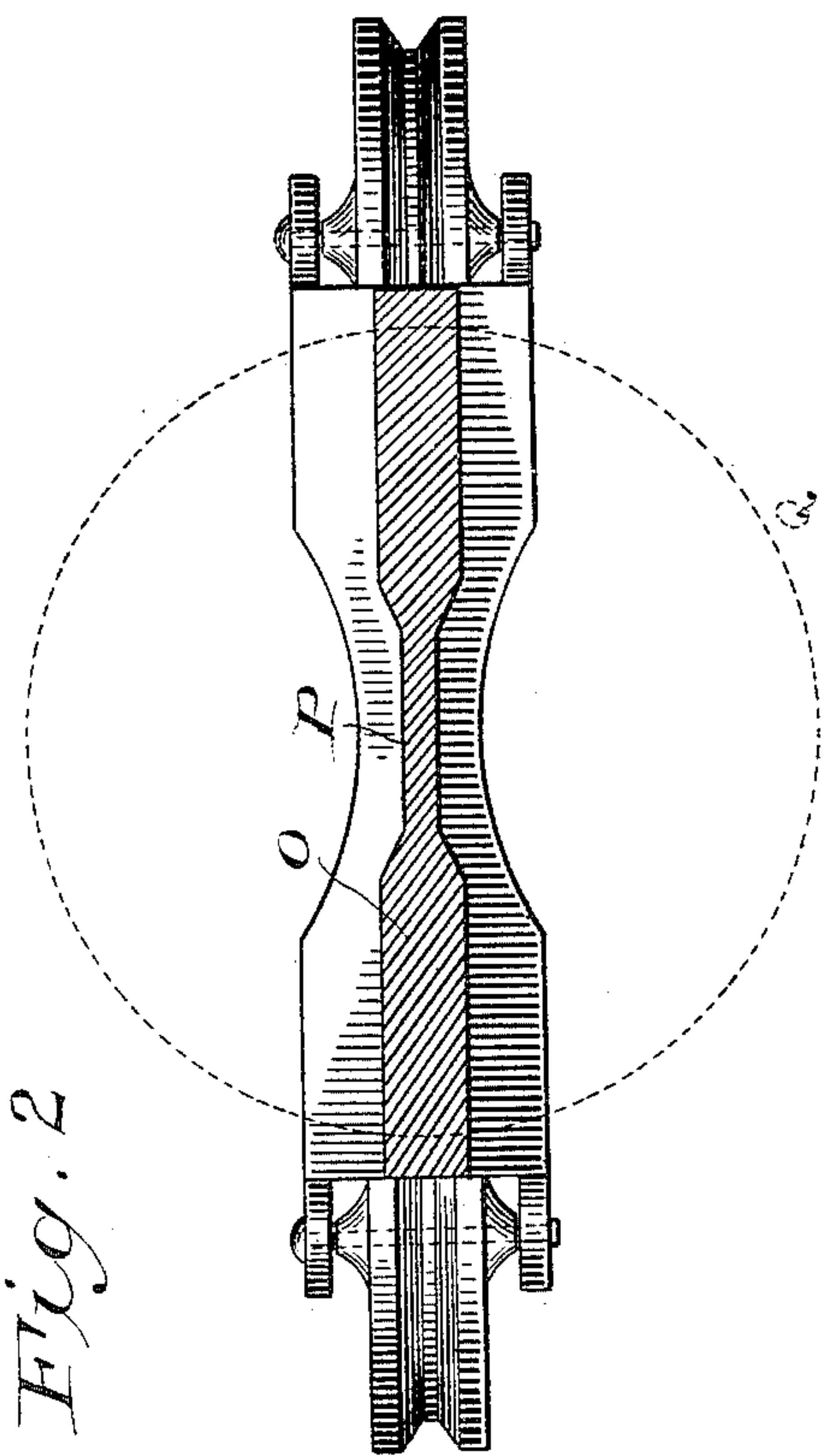
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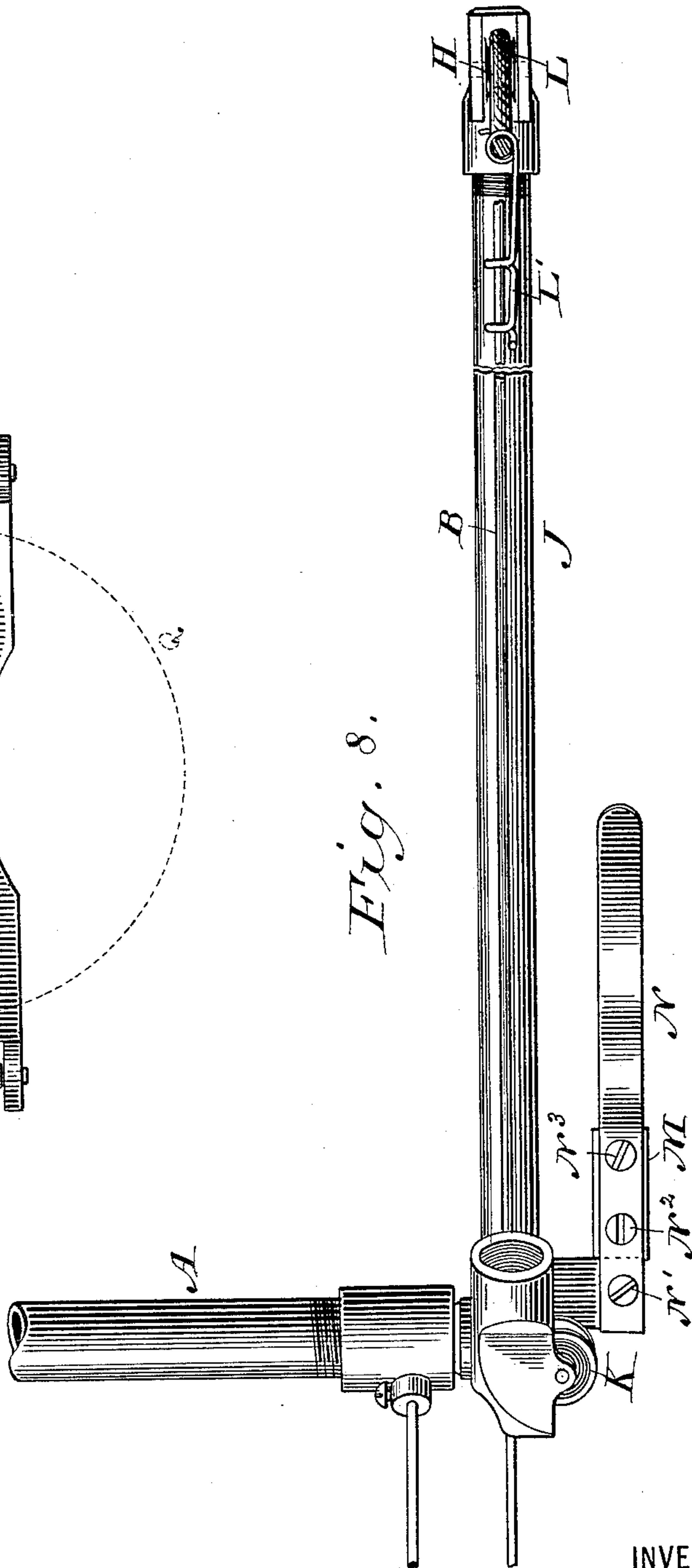
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*Fig. 8.*



WITNESSES.

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(No Model.)

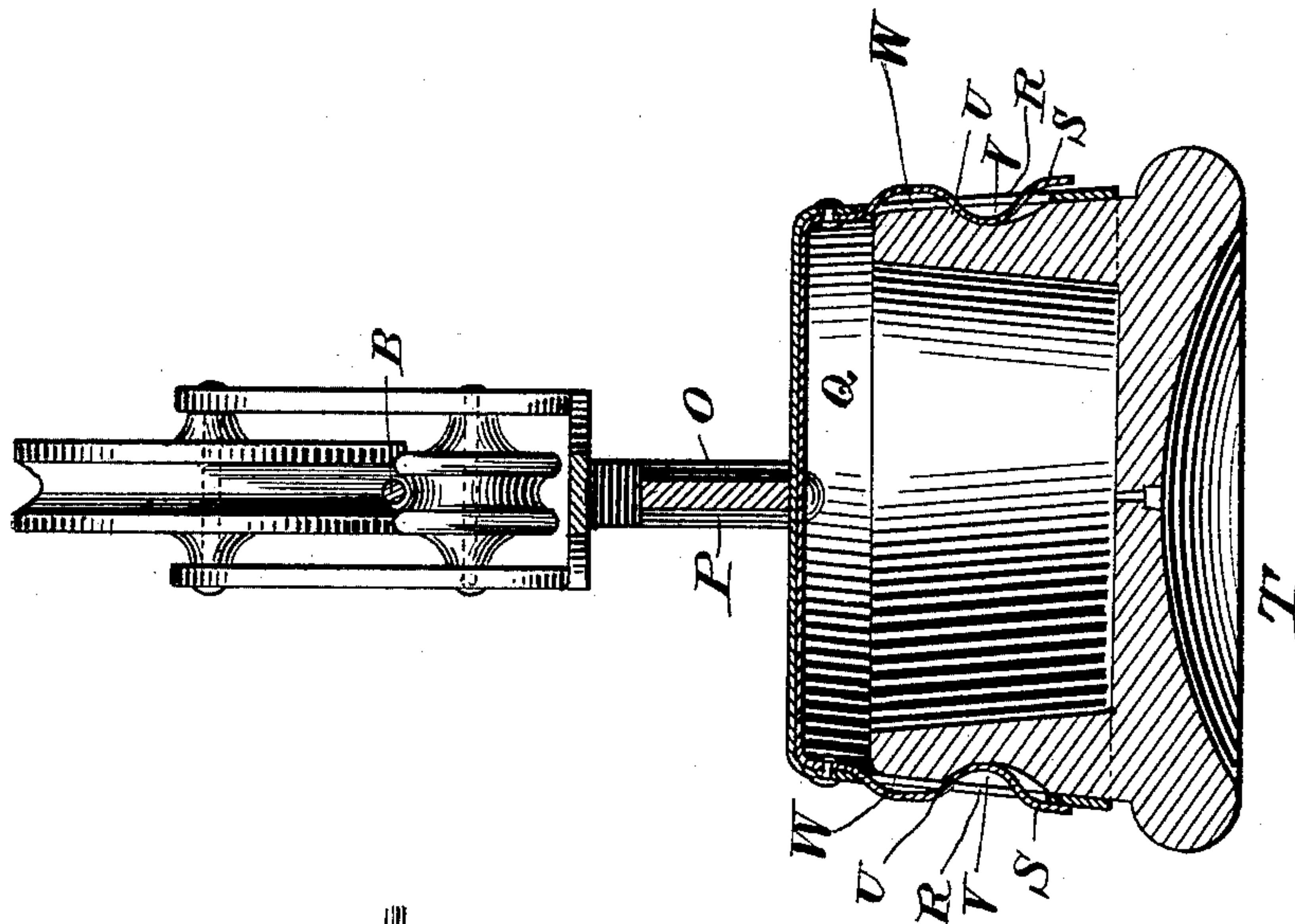
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C. W. McCORMICK.  
CASH CARRIER APPARATUS.

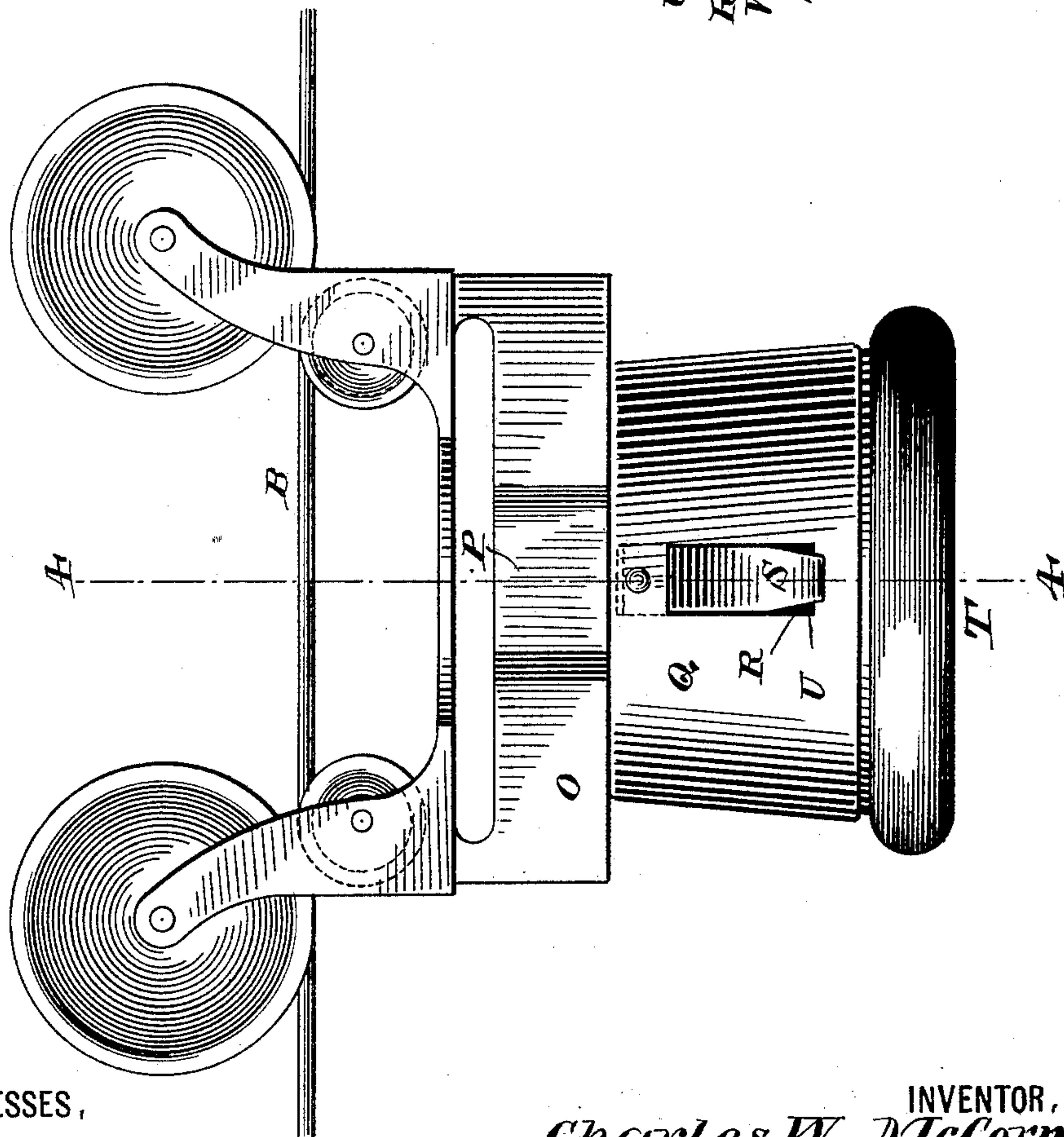
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*Fig. A.*



*Fig. 3.*



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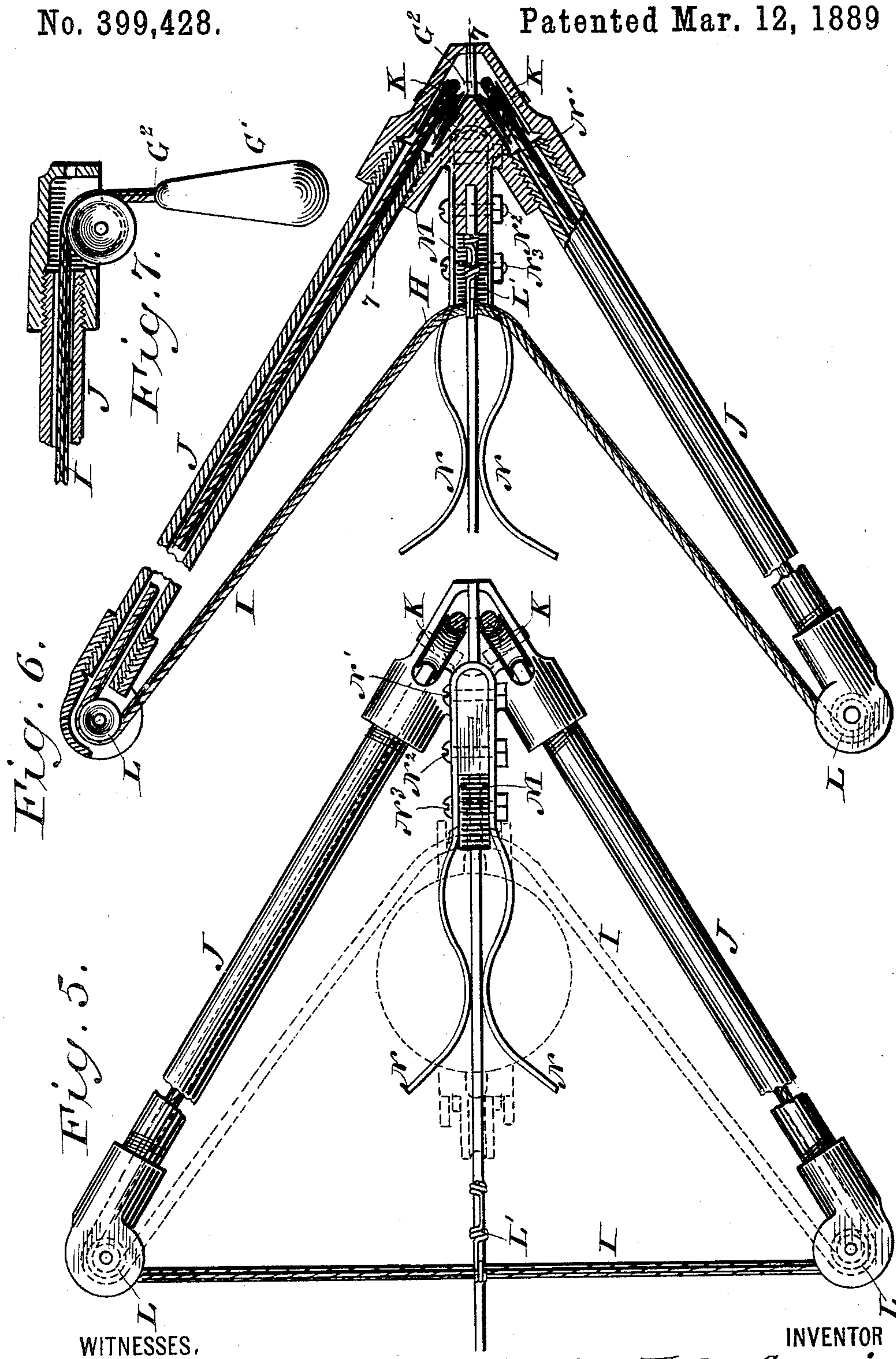
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# UNITED STATES PATENT OFFICE.

CHARLES W. McCORMICK, OF EMPORIA, KANSAS.

## CASH-CARRIER APPARATUS.

SPECIFICATION forming part of Letters Patent No. 399,428, dated March 12, 1889.

Application filed June 27, 1888. Serial No. 278,351. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. McCORMICK, of Emporia, in the county of Lyon and State of Kansas, have invented certain new and useful Improvements in Store-Service Apparatus, of which the following is a specification, reference being had to the accompanying drawings.

My improvements relate to that class of cash-carrier apparatus in which a single track is both raised and lowered alternately at its opposite ends.

One object of my improvements is to provide novel means for automatically lowering one end of the track by the act of raising the other end.

Another object of my invention is to improve the means for giving an impulse to a car to travel upon a wire track.

Another object is to provide means for stopping and retaining a car, which at the same time are adapted to release the car whenever my apparatus for impelling it is used.

Still another object of my improvements is to provide an improved car or cash and parcel carrier.

All my improvements are adapted to be used together, (although some of them may be used separately,) and to constitute an improved operative cash and parcel carrying apparatus.

My improvements consist in the organization of parts, which I will now proceed to describe in detail, and then succinctly specify in my appended claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a side elevation and outline view, partly in section, of my improvements applied. Fig. 2 is a horizontal section through the bar O, shown in Figs. 3 and 4. Fig. 3 is a side elevation, on an enlarged scale, of my improved car or cash-carrier in position on the wire track. Fig. 4 is a vertical section of the same on the line 4 4 of Fig. 3. Fig. 5 is a plan view of my improved car-impelling devices, looking upward from below. Fig. 6 is a similar view looking downward from above, partly in plan and partly in section; and Fig. 7 is a detail view of the pull-handle and connected parts in section. Fig.

8 is a side elevation of my car-impelling devices with one tube, J, removed.

Referring to the letters upon the drawings, A indicates any suitable support for the parts.

B indicates a wire or track, and C and D pull-cords for raising the ends of the track.

E indicates guys for steadying and adjusting the track-supports A.

F F' indicate trolleys to which the ends of the track-wire are directly secured. To these trolleys are attached the ends of the pull-cords, and they move up and down upon the supports A as vertical lifting-tracks. The wheels of the trolleys may, as usual, have flanges to keep them in place.

G indicates depressions or recesses in the vertical trolley-tracks located at the limits of their movement up and down, which operate as stops and holders for the trolleys.

It will be observed that but a single wire track is used, and in setting up the apparatus it is adjusted on an incline, one trolley being stopped in the upper depression and the opposite trolley being stopped in the lower depression. The wire is adjusted so that in such positions it will exert sufficient strain to keep the upper trolley—in fact each trolley—in place in its holder or stop. Now suppose, for example, that the trolley F is at the lower stop and the trolley F' is at the upper and the wire track is properly adjusted, as above explained, so as to exert the right strain. Then if the pull-cord C be pulled down the trolley F will be readily withdrawn from its depression and started upward. The result will be to diminish the strain upon the wire track, and the instant the slack becomes sufficient, which is generally when the trolley F is elevated to about half the height of its travel, the trolley F' will automatically, by force of gravity, drop from its upper holder to its lower holder, where it will be stopped. A continuation of the pull upon the pull-cord C will bring the trolley F into its upper stop or holder, where it will remain. Thus I provide means for automatically lowering one end of a track-wire by simply raising the other end. I also provide means for automatically stopping and fastening both trolleys in their proper places. If the trolley F' is at



its lowest position and the trolley F at its highest position, then by pulling upon the cord D to raise the trolley F' similar results will follow. In other words, I provide at both ends of a track means for simply raising it by hand, which when operated at one end cause the lowering and securing of the track automatically at the opposite end. The pull-cord which is operated by hand at one end has no connection whatever with the opposite pull-cord.

Various modifications of details are practicable in practicing the substance of my invention in relation to this matter, which in general terms consists in the provision of means for raising one end of a track by a pull-cord having no connection with the opposite end, and thus causing a slack in the track-wire, which causes the release of the opposite end of the track-wire, when it will descend by force of gravity to its lowest position simultaneously with the raising of the end first moved by hand.

It is often found in practice, not only upon horizontal tracks, but even upon inclined tracks where gravity is the main force relied upon, and where vertical space is limited, that some artificial impulse is necessary to start a cash car or carrier. Therefore I have provided an improved device for that purpose, which acts upon somewhat the same general principle as a bow-string.

I employ simply an endless propelling-cord, I, working over anti-friction pulleys, which, in practice, is doubled upon itself, as illustrated in Fig. 6. The pull-handle is applied to the cord at G<sup>2</sup>, and the corresponding angle H of the cord is placed immediately behind the car to be impelled.

J J indicate tubes, and K K L L pulleys of convenient form for practicing my invention; but these devices may be modified at pleasure, so long as the principle of the doubling of a cord upon itself, as described, and the use of a simple pull upon the cord is employed to operate it to impel a car. By pulling upon the hand-piece G' the portion of the cord between the pulleys L L will be thrown outward. It will at first begin to move slowly, the bend of the cord at H, however, progressing with an accelerating motion, rapidly increasing until the cord assumes a right line between the pulleys L L. Thus the car will be started gradually, but accelerated in its motion in a natural way until it is given a sufficient impulse by the hand of the operator to carry it to its destination. Where a spring is used in applying this principle, the greatest tension of the spring is exerted at the point of starting, and its force upon the car diminishes constantly until it is expended.

This is the reverse of the action of my device, and is practically much inferior to the operation of mine. But slight movement of the pull-handle G' is necessary to cause a long push or impulse upon the car, because the bend of the cord moves so much faster

and over so much greater space than is required of the pull-handle.

L' indicates a sliding holder for the endless pull-cord I. It consists of a bent wire, or any suitable device adapted to slide on the wire track and to engage with the cord I and hold it in position under the track, so that it may bear against the car most advantageously—that is to say, as nearly as practicable in line with its center of gravity—so that the push of the cord I shall not tend to tilt the car, which is a difficulty that has attended many other cash-carriers driven by artificial means. I thus secure not only the most desirable action of the impelling force, but I also apply it in the most advantageous position, where it is the most effective and least liable to cause the binding of the car upon the track, or its tilting so as to cause the wire track to shake or vibrate, which interferes with the proper travel of the car.

In order to stop and retain a car, I provide a rubber bumper, M, which is clamped between two resilient curved plates, N N, that may be formed by bending a single piece of metal, or of two pieces. These plates are close enough together to offer considerable frictional resistance to the bar O of the approaching car, which bar strikes the end of the bumper M and is stopped. The bar O is cut away on either side at P, so that the plates N clamp it at about the time its end strikes the bumper, which prevents the recoil of the car and holds it in position.

N' N<sup>2</sup> N<sup>3</sup> indicate holding-screws. The forward screw, N<sup>3</sup>, serves not only to hold the bumper, but also to clamp and adjust the plates N N nearer together or farther apart, as may be required for their proper action upon the bar O.

The propelling device illustrated in Figs. 5 and 6 of the drawings is not shown as attached to both ends of the track in Fig. 1, because the propelling devices at each end are duplicates in practice, and hence only one is shown.

I provide an improved car or carrier, which is secured to and pendent from the bar O. This improved car consists of the cap Q, provided on either side with openings R, into which project springs S, arranged to bear inward, and curve at their lower ends to form latches, as shown.

T indicates the cup, which is provided with recesses of any desired construction at V. The cup is thus adapted to slide into the cap, and the springs S latch and settle into the recess V, tending to draw the cup upward all the time. The cap is tapered and the cup is correspondingly tapered at W, so that it may be always drawn up into the cap tightly by the springs to prevent looseness or rattling.

On account of the tapering or flaring of the cap and cup the latter easily enters the cap and always fits it perfectly, so that the expansion and contraction of the wood can make no trouble in operating them and can never



cause any looseness or rattling, for the reason that there will always be a point, whatever the variation in dimensions, where the cup will fit snugly into the cap and the springs will always hold it there. Thus the spring-latches serve not only to fasten the cup up in place securely, but to adjust it to accommodate variations due to changes of temperature, wear, &c.

10 What I claim to be new, and desire to secure by Letters Patent of the United States, is—

1. In a store-service apparatus, the combination of a track movable vertically at each 15 end, so as alternately to incline in opposite directions, a vertically-movable trolley to which each end of the track is secured, a vertical track for each trolley, provided with stops and holders for the trolleys, and pull-cords 20 and pulleys to independently raise each end of the movable track, the length of the track being so regulated that the act of raising one end of it reduces its tension and releases the other end, which drops to place, substantially 25 as set forth.

2. In a store-service apparatus, a track movable vertically at both ends, so as to incline it in opposite directions, in combination with an independent pull-cord for elevating each 30 end of the track, a trolley at each end of the track, to which the pull-cords for elevating are attached, a vertical track for each trolley, provided with stops for automatically fastening both trolleys, one above and the other below, by lifting one trolley and shifting the 35 incline of the track, substantially as set forth.

3. The combination, with the wire track, of the car, the endless pull-cord I, doubled upon itself, as described, and the sliding holder L', 40 substantially as set forth.

4. In a store-service apparatus, the combination of a bumper, M, and the adjustable curved spring-plates N N with the adjusting-screw N<sup>3</sup>, substantially as set forth.

5. In a store-service apparatus, the combination, with a wire track and its car, of a lifting-trolley, an endless propelling-cord, I, and a car stopping and retaining mechanism, all adapted to be raised and lowered simultaneously with the wire track, substantially as set 45 forth. 50

6. The combination of a bumper and curved plates with the car having the bar O, cut away on each side, at P, to form curved recesses for the reception of the curved plates, substantially 55 as set forth.

7. In a propelling device of a store-service apparatus, the combination of the hollow arms J J, the pulleys L L K K, the wire track B, the propelling-cord I, and the sliding holder 60 L', with the bumper M and the plates N N, substantially as described.

8. In a car of a cash-carrier, the combination of the tapered cup T, cut away, as shown, to form recesses, with a reversely-tapered cap, 65 Q, having side openings, R, and springs S, curved, as described, and arranged to bear inwardly against the upper wall of the recesses, whereby the cup is tightly held and prevented from rattling, substantially as set 70 forth.

In testimony of all which I have hereunto subscribed my name.

CHARLES W. McCORMICK.

Witnesses:

MARCUS S. HOPKINS,  
C. P. ELWELL.