

(No Model.)

2 Sheets—Sheet 1.

H. C. HART.

STORE SERVICE APPARATUS.

No. 362,443.

Patented May 3, 1887.

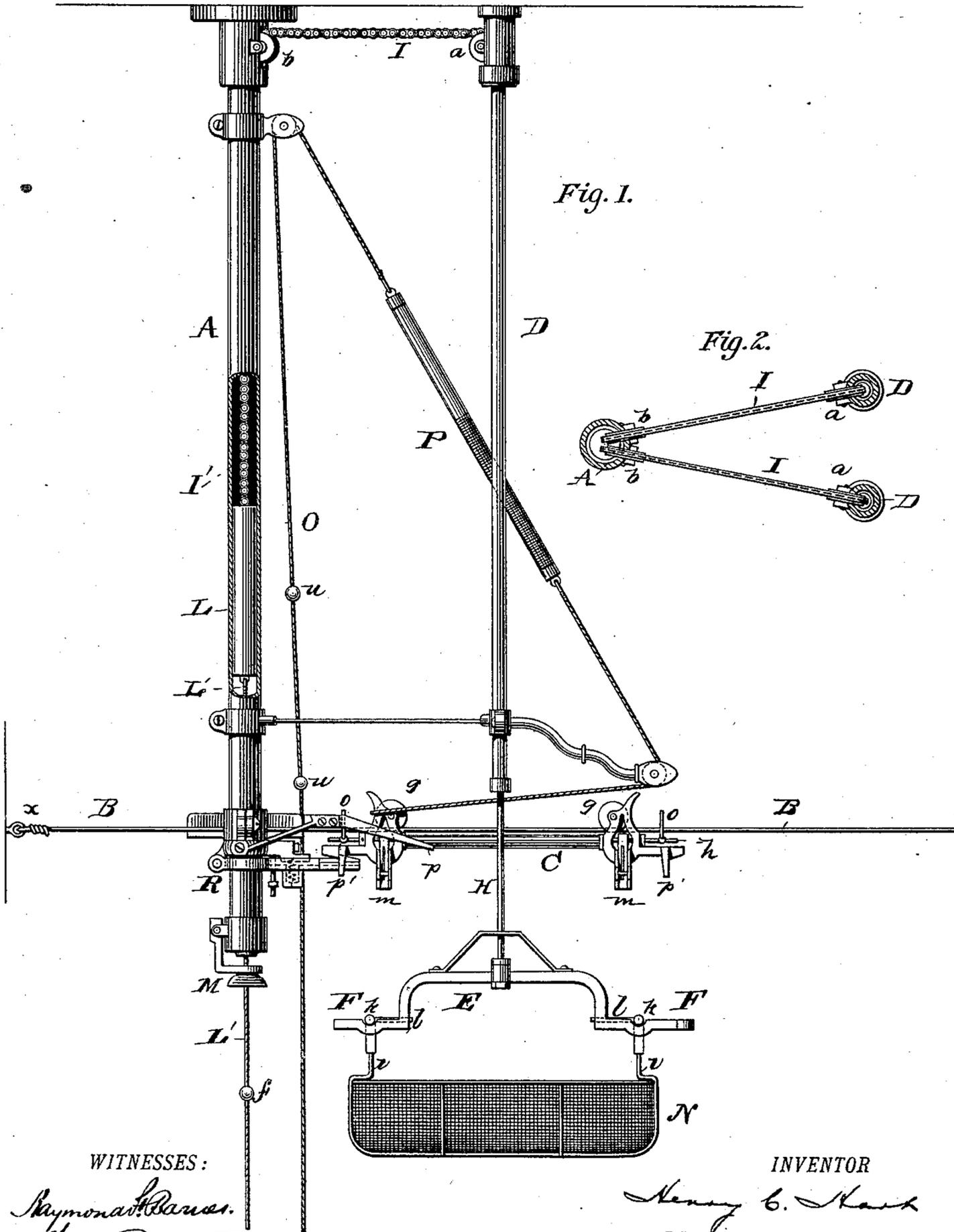


Fig. 1.

Fig. 2.

WITNESSES:

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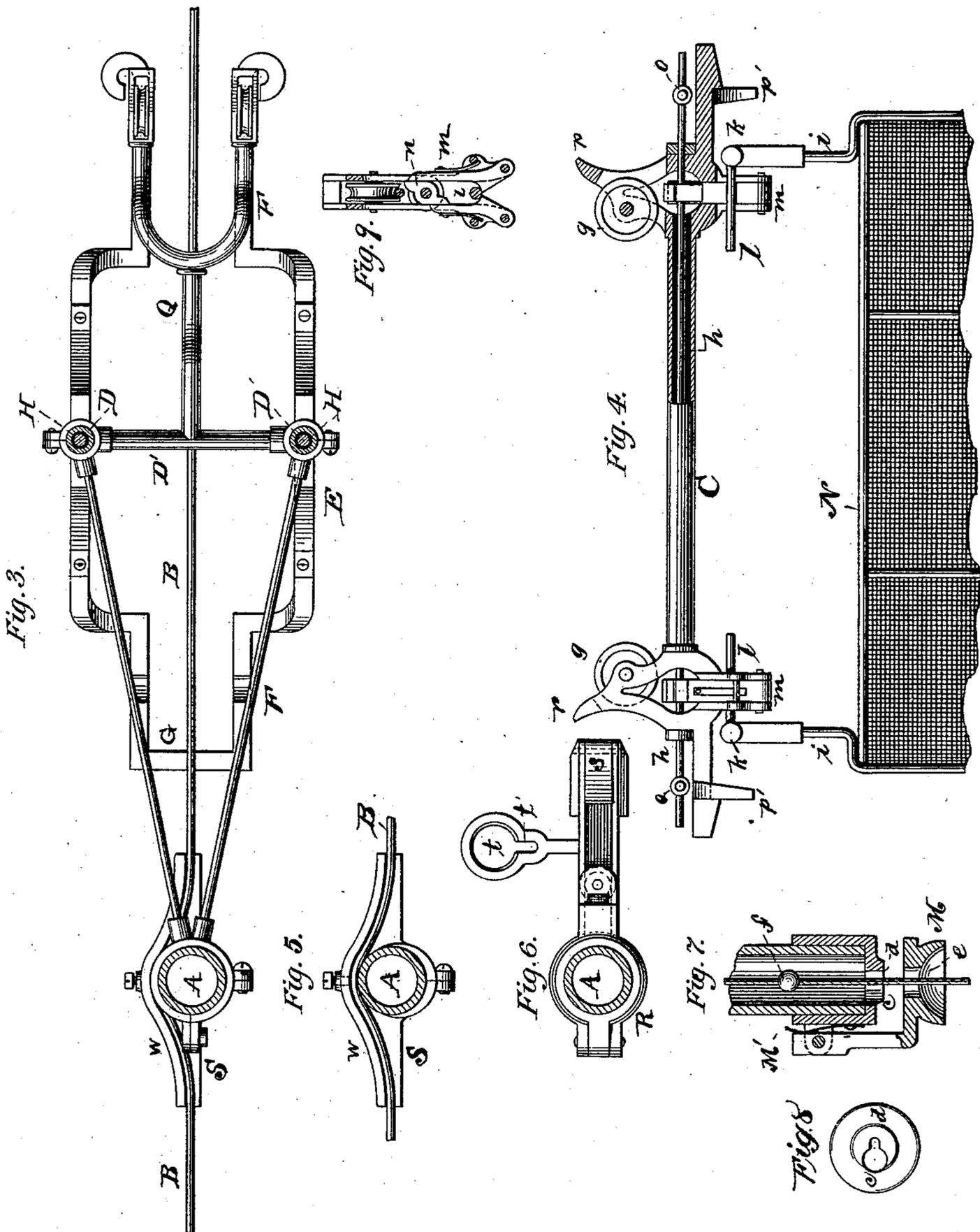
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# UNITED STATES PATENT OFFICE.

HENRY C. HART, OF DETROIT, MICHIGAN, ASSIGNOR TO THE RAPID SERVICE STORE RAILWAY COMPANY, OF SAME PLACE.

## STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 362,443, dated May 3, 1887.

Application filed October 21, 1886. Serial No. 216,881. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY C. HART, of Detroit, in the county of Wayne and State of Michigan, have invented a certain new and useful Improvement in Store-Service Apparatus, of which the following is a specification.

My invention relates, mainly, to that class of store-service apparatus in which a carrier travels upon a way, carrying beneath it a detachable receptacle for articles to be transported, and being propelled by a spring situated at the end of the way; and my object is to provide simple and efficient devices for raising and lowering the receptacle to and from the car, and attaching and detaching it automatically, and also to produce certain improvements in the way of operating the spring propelling device.

My invention consists in the novel devices and combinations of devices employed by me in accomplishing the above-named objects, as hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a view in elevation of the apparatus at one end of a store service line employing my invention; Fig. 2, a cross-section near the top of this apparatus; Fig. 3, a top view of the elevator for the receptacle, showing portions of the line and of the propelling device; Fig. 4, a view, partly in section, of the carrier and receptacle attached to it; Fig. 5, a top view of the wire-tightening device; Fig. 6, a top view of the catch for holding the carrier at the end of the way; Fig. 7, a section near the lower end of the main standard; Fig. 8, a bottom view of said standard, and Fig. 9 a view of one of the holding devices on the carrier for the receptacle.

A is a suitable hollow standard, preferably supported from the ceiling, as shown.

B is the wireway on which the carrier C runs.

D D' are two smaller standards or rods, also hollow, and extending down one on each side of the way.

The elevator for raising and lowering the parcel-receptacle consists of a frame, E, having supporting-arms F for the receptacle at its ends, the frame being closed at one end by a cross-piece, G, and open at the other. From each side of the frame a rod, H, extends

upwardly, and each of these rods extends up into one of the guiding-standards D D', and has attached to it within such standard a chain, I, or a cord. The two chains I pass out through slots near the tops of their respective standards over pulleys *a*, and extend to pulleys *b* in slots at the top of main standard A, within which standard they are joined and extend down as a single chain, I', to a weight, L, within the standard, which is a counterbalance-weight for the elevator, and from which a cord, L', extends downwardly through the lower end of the standard to within reach of the salesman, cashier, or other operator. The opening at the lower end of standard A is of the form shown in Figs. 7 and 8, consisting of two connected apertures, *c* and *d*, of different sizes. Hinged upon the sleeve at lower end of standard A is the plate M, having an aperture, *e*, through which the cord L' passes. Cord L' has a button, *f*, upon it of such size as to pass through *c* and *e*, but not through *d*.

The carrier consists of a tubular body, C, suspended from rollers *g*, which run on the wire B, and through said tubular body a rod, *h*, extends.

The receptacle for the conveyance of parcels or other articles consists of a basket, N, preferably of wire, from each end of which an arm, *i*, extends upwardly, having upon its end a lateral cross-piece, *k*, and a longitudinally-extending-pin, *l*. From each end of the carrier extends down a pair of spring-jaws, *m*, and between the jaws of each pair is a wiper, *n*, these wipers being placed upon the rod *h* and turning therewith, such turning in one direction serving to force the jaws apart. Near each end of the rod it has a projecting pin, *o*, such pins being adapted to meet an inclined finger, *p*, at the end of the way, whereby the rod is turned. The carrier has a finger, *p'*, to steady it when it strikes the finger *p*.

The propelling device is substantially as set forth in the patents of R. A. McCarty, dated September 1, 1885. A cord, O, passing over a pulley, *q*, on standard A, has interpolated in it a rubber spring, P, and then, passing over pulleys at ends of forked arm Q, which extends from cross-brace D', lies in a loop on wire B until it is caught by the horn *r* at the end of

the carrier. The catch-plate R, hinged upon standard A, has a spring-latch, *s*, which catches the hook at lower side of carrier, and from this plate an arm extends to one side, having an aperture, *t*, and a slot, *t'*. The propelling-cord O hangs down through *t*, and has upon it two or more buttons, *u*. Heretofore in this class of apparatus it has been usual to bring the wire through the main standard and attach it to the wall behind. When the standard contains a cord, as L', it is inconvenient to do this, and I therefore support the wire as seen in Figs. 3 and 5. A plate, S, is bolted around the standard, having a curved raised edge, *w*, and the wire is brought around the standard between it and this raised edge, so as to be brought into the same line behind the standard. It is then attached to the wall by a turnbuckle, *x*.

The operation of these devices is as follows: The receptacle N being in the elevator below the way, its cross-arms *k* resting in the notches in supporting-arms F of the elevator, as seen in Fig. 1, and it being desired to attach the same to the carrier and send it along the way, the operator draws down on the cord L', and thus raises the elevator and receptacle until the pins *l* pass between the spring-jaws *m*, which jaws close upon and hold such pins, as seen in Fig. 9, to support the receptacle. The elevator is then allowed to drop away from the carrier a short distance—far enough to clear the receptacle—and the cord L' is then moved so as to bring it into the slot *d*, with one of the buttons *f* directly beneath said slot, whereby the elevator is held in this position, the button having been adjusted to the right place on the cord to accomplish this. The hinged plate M is moved to one side by this movement of the cord, and afterward acts to return the cord to its central position, as will be explained. The carrier is now propelled along the way by drawing down on the cord O and extending the spring P until a button, *u*, strikes the plate R, whereupon the catch is released from the carrier and the spring acts to throw the carrier along the line to the other end thereof. To regulate the force with which the spring acts, according to whether the receptacle contains a light or heavy load, one of the buttons *u* is made to engage the catch-plate, the cord and buttons being drawn down through the aperture *t* until the right point is reached, when it is shifted into the slot *t'*, with which the button will engage. The farther the cord is drawn down the more will be the tension of the spring and the greater the propelling force. When the carrier is returned from the other end of the way, (at which a similar apparatus may be situated,) it is caught by the catch R *r*, and at the same time the pin *o* slides along the inclined finger *p*, and the rod *h* is thus turned so that the wipers *n* force apart both pairs of spring-jaws *m*, and the receptacle is thus allowed to drop from the carrier and falls upon the elevator-frame, which is immediately be-

low it, as above stated. By then drawing down slightly on the cord L the hinged plate M, by its spring M', throws the cord and button back into its central position and holds it there, guiding its ascent, and the elevator thus descends by its own weight, the buttons *f* passing through *c*. The counterbalance-weight L makes the descent slow, and it may be stopped at the desired point by again bringing the cord into *d*, with a button *f* under *d*. The articles in the receptacle may now be removed, or articles may be placed in the receptacle. If desired, however, the receptacle may be taken off the elevator by sliding it toward the open end of the elevator-frame and taking it off there first. The weight L, besides regulating the descent of the elevator, relieves the weight thereof in raising it.

What I claim is—

1. In store-service apparatus, the combination of the main standard, the guiding-standards, the elevator-rods sliding in said guiding-standards, and the counterbalance-weight attached to said rod, substantially as set forth.
2. In store-service apparatus, the combination of the hollow main standard, the guiding-standards, the elevator-rods sliding in said guiding-standards, and the counterbalance-weight connected with said rods and suspended within said main standard, substantially as set forth.
3. In store-service apparatus, the combination, with the cord for raising the elevator, said cord having one or more buttons upon it, of the hinged spring stop-plate for such cord, for holding the elevator in position, substantially as set forth.
4. In store-service apparatus, the combination, with the hollow standard having an aperture and slot in its lower end, of the elevator-cord passing through such standard, and the buttons on such cord, substantially as set forth.
5. In store-service apparatus, the combination of the hollow standard having an aperture and slot in its lower end and a spring-plate hinged thereon, the elevator-cord passing through such standard, and the buttons on such cord, substantially as set forth.
6. In store service apparatus, the combination of the way, the carrier thereon, the receptacle, detachable connections between said carrier and receptacle, the movable rod on said carrier having a projecting pin, and the inclined finger at the end of the way meeting said pin to move said rod, the rod then acting to disengage the receptacle from the carrier, substantially as set forth.
7. In store-service apparatus, the combination of the way, the carrier thereon having spring-jaws, the receptacle having parts adapted to engage with said jaws, the wiper between said jaws attached to a turning-rod on the carrier, said rod having a projecting pin, and the inclined finger at the end of the way adapted to meet said pin to turn said rod, substantially as set forth.

8. In store-service apparatus, the elevator  
consisting of a frame with outwardly-extend-  
ing arms open at one end, in combination  
with the receptacle having cross-pieces adapted  
5 to rest on said arms, and longitudinally-ex-  
tending pins for engagement with the carrier,  
substantially as set forth.

9. In store-service apparatus, the combina-  
tion, with the way and carrier, of the pro-  
10 pelling-spring, the cord attached to said spring,  
having two or more buttons upon it, the catch

for holding the carrier, and a part extending  
from said catch and having an aperture and  
a smaller connected slot, through which said  
cord passes, substantially as set forth. 15

This specification signed and witnessed this  
10th day of September, 1886.

HENRY C. HART.

Witnesses:

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