

(No Model.)

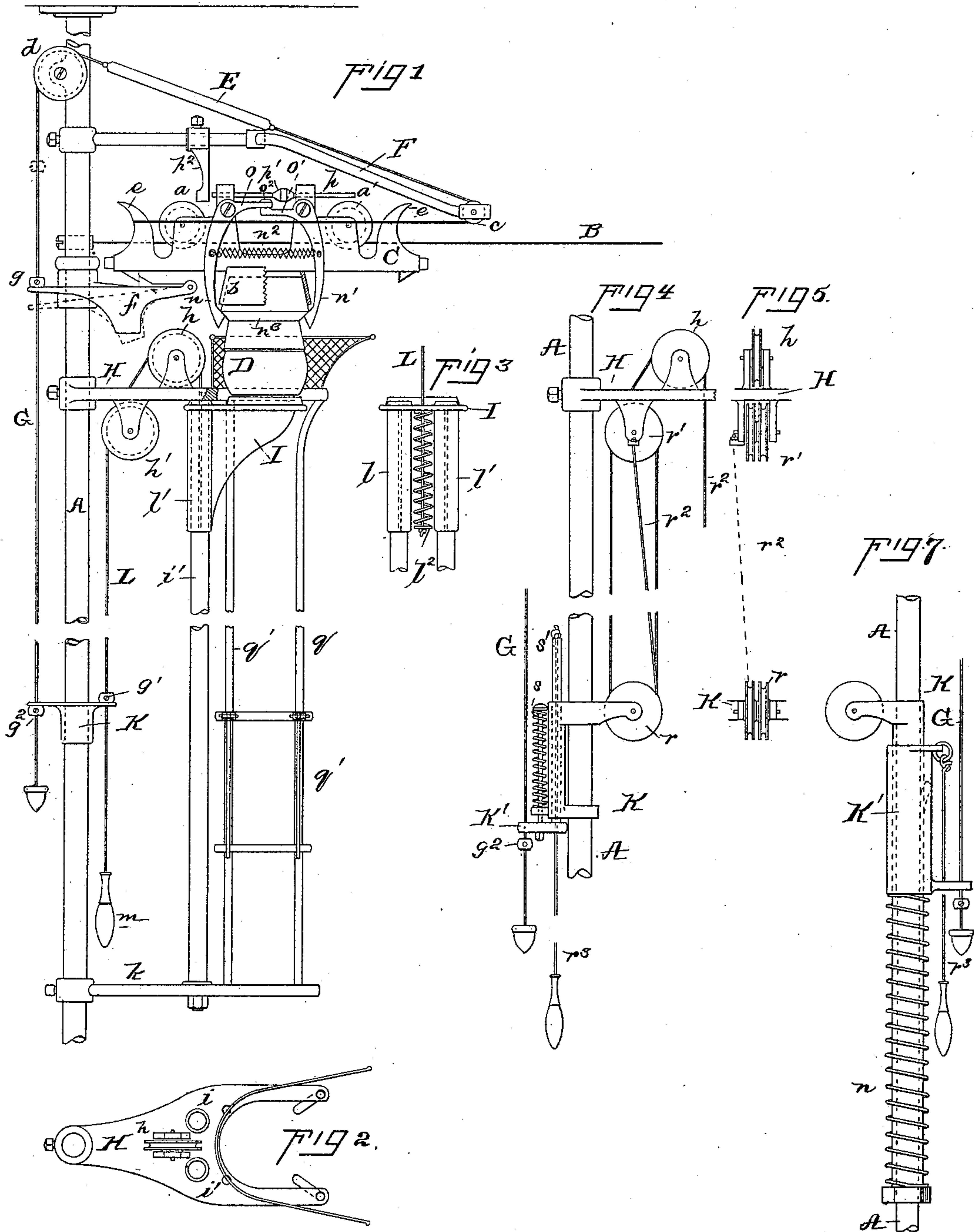
W. I. EICHBAUM.

2 Sheets—Sheet 1.

STORE SERVICE APPARATUS.

No. 465,964.

Patented Dec. 29, 1891.



WITNESSES.

Ed. Poulson
John A. P. P.

INVENTOR,

Walter I. Eichbaum

BY -

John A. P. P.

ATTORNEYS.

(No Model.)

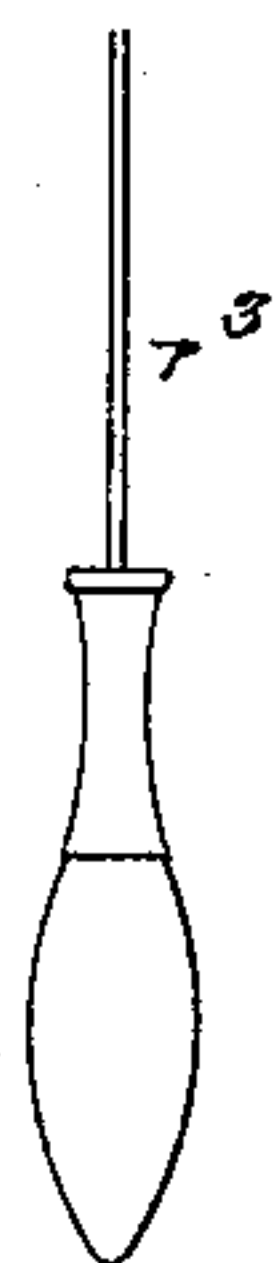
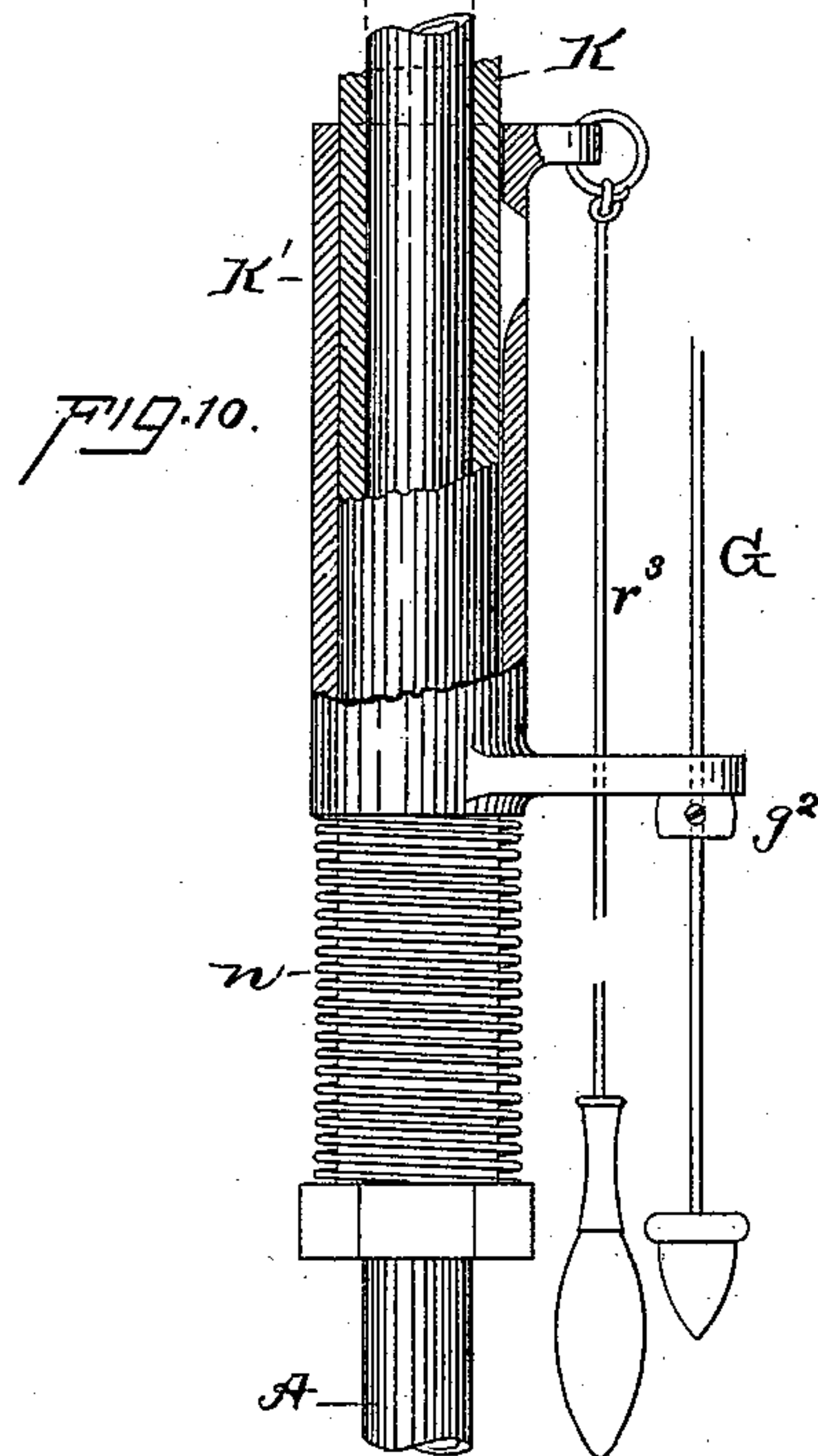
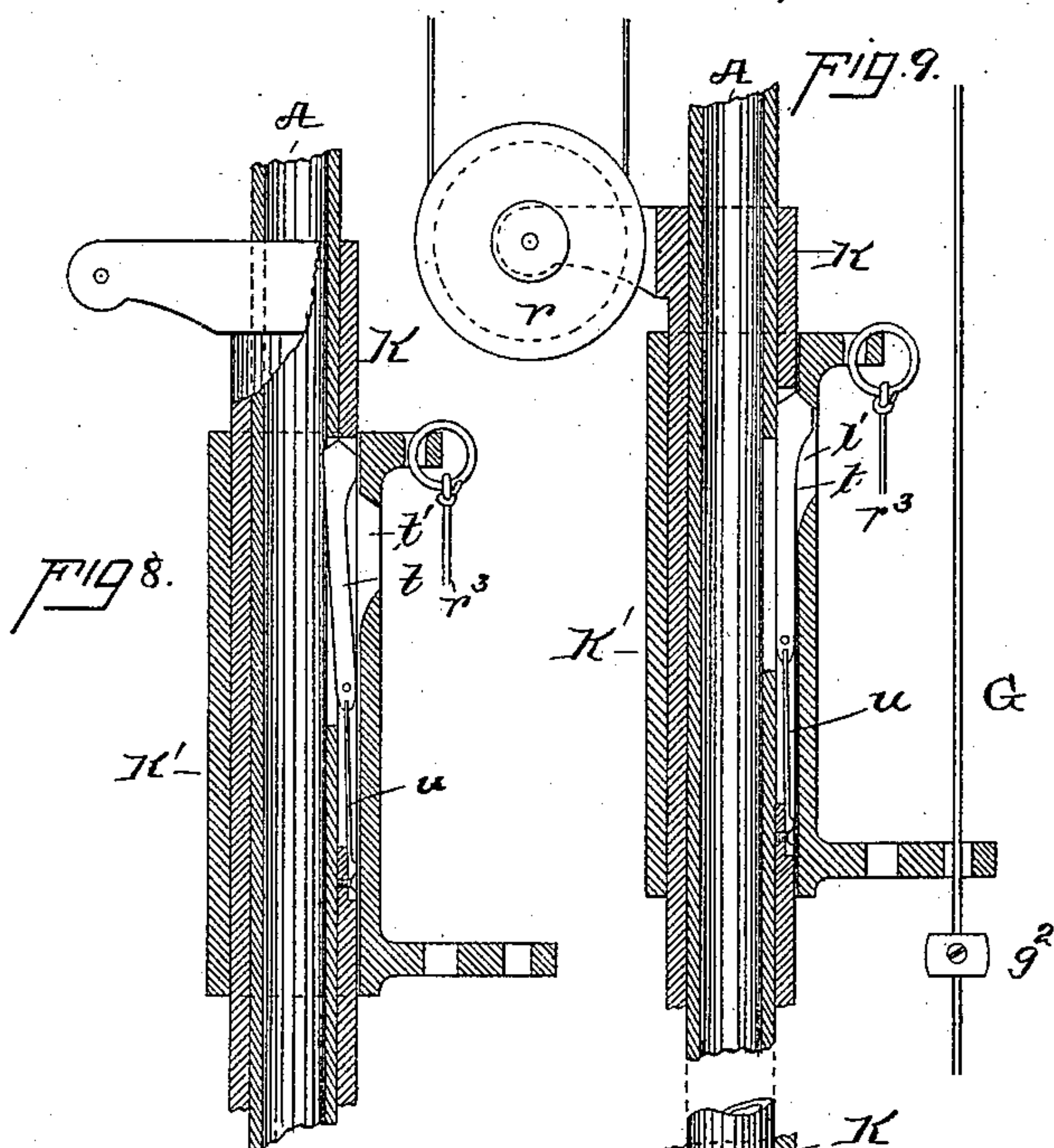
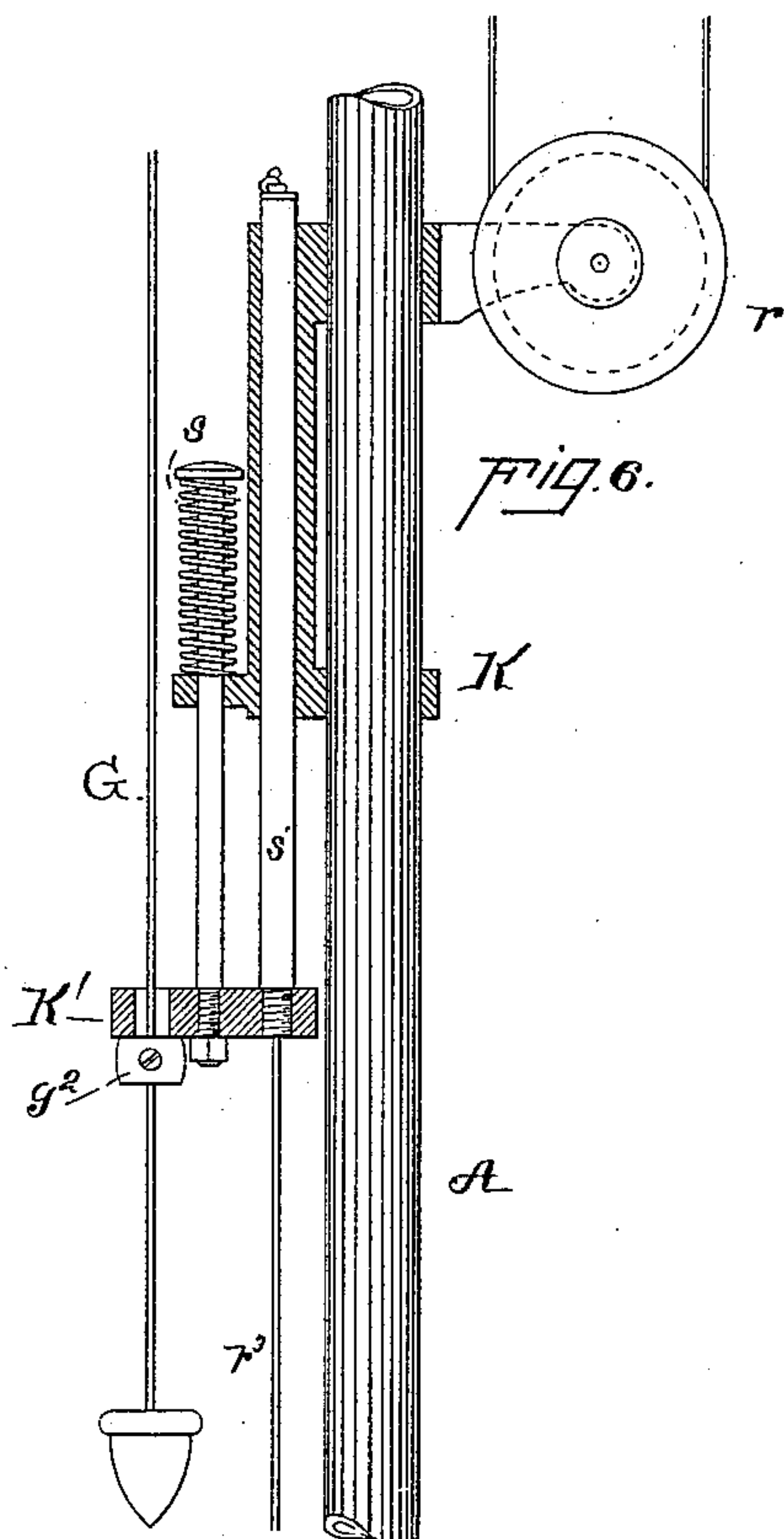
W. I. EICHBAUM.

2 Sheets—Sheet 2.

STORE SERVICE APPARATUS.

No. 465,964.

Patented Dec. 29, 1891.



WITNESSES

E. J. Howland
Wm. P. Ryan

INVENTOR

Walter I. Eichbaum

BY

Wm. P. Ryan

ATTORNEYS

UNITED STATES PATENT OFFICE.

WALTER I. EICHBAUM, OF MOUNT VERNON, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE LAMSON CONSOLIDATED STORE SERVICE COMPANY, OF BOSTON, MASSACHUSETTS.

STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 465,964, dated December 29, 1891.

Application filed April 23, 1887. Serial No. 235,832. (No model.)

To all whom it may concern:

Be it known that I, WALTER I. EICHBAUM, of Mount Vernon, in the county of Westchester and State of New York, have invented a new and useful Improvement in Store-Service Apparatus, of which the following is a specification.

My invention relates to store-service apparatus for transferring cash or parcels, or both, in stores and like locations, and more especially to that form of apparatus (covered by Letters Patent of McCarty, No. 325,425, September 21, 1885,) wherein the carrier is projected over the way by a spring or other means, imparting to the carrier an initial impetus.

The object I have in view is to provide such an apparatus with simple and efficient means for elevating the cash-box, parcel-basket, or other receptacle to the way, when the latter is located out of reach, as it is desirable it should be, for automatically attaching the receptacle to and detaching it from the car that always remains upon the way and for operating the projecting devices, the receptacle being elevated and attached to the car and the car-projecting devices being operated by one movement of the hand of the saleswoman, but preferably successively rather than simultaneously, so that the projecting devices are not operated by the movement of the elevator, but by a continued movement of the hand of the saleswoman after the elevator has come to rest at the upper limit of its movement.

The invention consists in the various combinations of parts for accomplishing this object, and in the several peculiar novel devices forming parts of the apparatus, as fully hereinafter explained, and pointed out by the claims.

In the accompanying drawings, forming a part hereof, Figure 1 is an elevation and partial section of one form of the complete apparatus; Fig. 2, a top view of the platform carrying the elevator-pulleys; Fig. 3, a rear elevation of the elevator-platform; Fig. 4, an elevation showing an arrangement of parts for multiplying the speed and extent of movement of the elevator; Fig. 5, a front elevation of the pulleys of the modified lifting devices;

Fig. 6, a sectional view through the slide of Fig. 4; Fig. 7, an elevation of a modified form of the operating-slide; Figs. 8, 9, and 10, sectional views of the slide of Fig. 7 in different positions.

Like letters denote corresponding parts in all the figures.

I will first describe those parts of the cash or parcel carrier which are in present use that are shown upon the drawings, and afterward describe the additions which are shown and which constitute my invention.

A is a standard, which is attached to the ceiling by a flange or other support, and which may be fastened to the counter or floor at the lower end.

B is a wire which, being fastened to the standard, extends to the cashier's desk, where the cash is to be received.

C is the car with wheels *a a'*, which run on the wire, which car is provided with a thimble *b* for holding the cash-box D, which is thus suspended from the car, being usually provided with pins, which are not shown on the drawings, as they are not needed with my device. For the purpose of propelling this car a rubber spring E is provided, from the lower end of which hangs a double cord, forming a loop. This loop passes around two small sheaves *c* in the ends of a forked arm F, which is fastened to the standard A, the other end of the spring having attached to it a cord G, which, passing over a sheave *d* on the standard, hangs down as far as may be desired, being kept in position by a small weight at its end. For the purpose of catching the cord-loop and a similar loop at the other end of the wire, the car C is provided at each end with a pair of horns *e*. When the car is not at the station, the cord-loop hangs lightly between the small sheaves *c*, being kept from falling by the weight at the other end of the cord; but when the car comes in the horns upon the car catch the loop, and by its momentum the car runs back nearly to the standard, where it is caught by spring-trigger *f*, which is fastened to the standard. In Fig. 1 the horns *e* are shown with the cord-loop upon them. If now it is desired to propel the car to the other station, the operator takes hold

of the end of the cord G and draws it down. The other end of the cord being held by the horns of the car, which is itself prevented from moving by the catch on the trigger *f*, the pull of the operator stretches the rubber spring, and this stretching-tension continues until the button *g* upon the cord, which started from the position where it is shown in dotted lines, is brought down upon the trigger, as shown in full lines. It is in the position described that all the parts hitherto enumerated are shown in Fig. 1 of the drawings, and if any further pull is made upon the cord G the trigger-catch will be drawn down into the dotted position shown, the catch on the car will be released, and the tension of the rubber spring will draw the car violently forward and it will run on the wire to the other end of the line, from which end, when it is desired to return the car, it is sent back by devices similar to those described.

The apparatus, as described, is usually placed upon the standard at such a height from the floor that the cash-box D may be attached to or detached from the car C by the hand of a person standing on the floor or a low stool; but this arrangement is often very inconvenient, as the wires take up valuable room, and the cash-box, being so near the floor, is within reach of strangers. For these and other reasons it is desirable that the car should run near the ceiling.

It is the object of my invention to furnish means to raise a cash-box or parcel-carrier from the hand of the attendant on the floor to the car above, even if the car is in a story above the sales-room.

I will now describe the parts and devices illustrating and constituting my invention.

H is a plate or platform, which is fastened to the standard A. It is forked or has a large hole in it, through which the cash-box D can pass, and it is provided with standards on the upper and lower sides for two sheaves *h h'*. Into this plate are fastened two guide-rods *i i'*, which extend downward to any distance required, their lower ends being fastened to a bracket *k* on the standard, or to any other support convenient. Upon these guides runs an elevator-platform I, which is provided with guide-tubes *l l'*, sliding easily upon guide-rods *i i'*. Attached to this platform is a spring *l²*, (shown in Fig. 3,) that stands between the guide-tubes on the underside of the platform. The purpose of this spring will be hereinafter explained. A small slide K, Fig. 1, slides easily upon the standard A, its upper plate having holes in it for cords to pass through, as shown. A cord L, fastened to the bottom of the spring *l²*, passes through a small hole in the plate of the elevator, passes over the sheaves *h h'*, then through a hole in slide K, and terminates in a handle *m*, within reach of the operator. By means of this cord the elevator I can be drawn from its lower position at the bottom of the guides *i i'* to its upper position, as shown in Fig. 1, it being there

effectually stopped by the plate II. The height of the plate II upon the standard A is so arranged that when the elevator I is stopped by it the cash-box is pushed up into the thimble *b* very nearly but not quite to the full extent. For holding the cash-box D when thus elevated, the car C is provided with four grips, two on each side of the car, marked *n n'*. These grips are levers pivoted at their upper corners upon screws shown in the drawings, and the grips of each pair are held together by a light spring *n²*, Fig. 1. The lower ends of these grips are arranged to hold the cash-box by the inclined shoulder *n³*, their ends being hooked at the same angle, which is about forty-five degrees. The action of these grips is such that when the upper part of the cash-box D pushes them apart as it enters the thimble *b*, they are drawn together by the springs *n²*, and, their inclined surfaces acting on the similarly-inclined shoulder *n³* on the cash-box, the latter is drawn up a little from the platform of the elevator, enough to release it from contact therewith, thereby becoming a part of the car, which would otherwise be disturbed in its forward movement by the dragging of the cash-box upon the platform of the elevator. The car, with the cash-box, is now ready to move forward when released from the trigger *f*. To accomplish this a button *g'* is fastened to the cord L in such a position that no matter what the play or rise of the elevator I may be it does not begin to act upon the slide K, which always rests on a button *g²* on the cord G, as shown, until the remaining upward movement of the elevator corresponds to that required to stretch the spring E to the required tension to shoot the car to the other end of the line. As shown in Fig. 1, the rubber spring E is thus stretched, and it is evident that a further pull on the handle *m* will, acting through the buttons on the cords L and G and the slide K, draw down the trigger and release the car. The elevator I cannot rise further, but the pull on the cord L compresses the spring *l²*, which allows sufficient movement of the cord to pull the trigger and release the car, which, under the impulse of the spring, runs off on the wire to its destination.

It is evident that the cash-box D is only held in place by the four grips *n n'*, and if these were opened the cash-box would fall. This opening is accomplished at each end of the line to release the box as follows: The upper ends of the grips are formed with horizontal arms, as shown on the drawings, the arm *o* resting on the arm *o'* of the other grip of each pair. The upper arms on each side are connected by a bridge-piece *o²*. At a suitable height above this bridge-piece is fitted, in the center of the car, a sliding rod *p*, having in the middle of its length a taper thimble *p'*. Whenever this rod is moved between its supports, the taper thimble passes over the bridge-piece and depresses the arms *o o'*, thereby opening the grips and releasing the

cash-box. At each end of the line is fixed upon the arm F a stop p^2 , which is so adjusted that as the car runs up to it the sliding rod p will be pushed over the bridge at the right time to release the cash-box, the rest of the movement of the slide p placing it in position to be operated upon at the other end of the line and allowing the grips to close ready to receive the box when pushed between them, as already described. The cash-box when thus released falls down between the forked arms of the platform H, being guided in its descent by light rods q and received by the platform of the elevator, which may be faced with a block of soft rubber to deaden the noise and prevent injury to the box.

The rods q are arranged to be opened at the point q' to enable the box to be removed from and placed on the elevator when at the lower limit of its movement.

If the spring l^2 is made long enough, the parts can be so adjusted that the button g' will not strike the slide K until the elevator has completed its upward movement, or, as otherwise described, the spring E may be put under tension during the last part of the movement of the elevator; but with either adjustment the spring l^2 will permit a further movement of the handle m after the elevator is stopped by the plate H, so that the projecting devices can be operated.

In case the distance through which the cash-box is desired to be raised and lowered is considerable the slide K may have one or more sheaves r attached to it, corresponding sheaves r' being placed on the under side of the platform H. A cord r^2 , attached to the elevator like the cord L, is passed over the sheave h and around the sheaves r and r' and secured at its other end to the platform H or the slide K. In this way the movement of the slide K will be multiplied at the elevator any number of times desired. With this arrangement for multiplying the motion the spring l^2 on the elevator is omitted, and, instead thereof, the slide K carries an auxiliary slide K' , connected with the slide K by a spring s , Figs. 4 and 6, which takes the place of the spring l^2 of the arrangement previously described. A guide-rod s' also connects the slides K and K' , and a cord r^3 for operating the parts is attached to the auxiliary slide K' . The cord G passes through the auxiliary slide K' , and the button g^2 on that cord is reached by the slide K' in its downward movement, preferably, just as the elevator reaches the upper limit of its movement and comes to rest against the plate H. The spring s is long enough to permit a sufficient movement of the auxiliary slide K' , independent of the slide K, to stretch the spring E and depress the trigger f , although the parts may be adjusted so that the spring E will be partly stretched before the elevator comes to rest.

The preferred way of connecting the slides K K' is shown in Figs. 7, 8, 9, and 10. By

the devices illustrated in these figures the main and auxiliary slides are locked positively together until the elevator reaches the top limit of its movement, when the auxiliary slide is automatically unlocked from the main slide and the additional movement necessary to operate the projecting devices then made. The slide K' is made as a tube surrounding the slide K. A spring-dog t , carried by a slot in the side of the tubular slide K, has an enlarged beveled head also entering a slot t' in the slide K' , locking the slides positively together so long as the surface of the tubular standard A is intact, as shown in Fig. 9. At a proper point to stop the slide K at the lower end of its movement the standard A is slotted, and into this slot springs the head of the dog t , it being forced out of the slot t' in the slide K by reason of its beveled head, as shown in Fig. 8. The movement of the slide K' can then be continued, Fig. 10, and the projecting spring E stretched and released. The slide K' is thrown up again by a light spring u until the slot t' is over the dog t , when the dog springs into the slot t' , and the slides K and K' can then rise together. Since the spring u is only required to lift the slide K' , it can be made very light, and it can also be long enough to permit the projecting spring E to remain unaffected until the elevator is stopped at the upper limit of its movement, when, by the continued movement of the slide K' , the spring E will be stretched and the trigger f tripped to release the car.

I do not claim the combination of an elevated way, a car mounted to travel on said way, a receptacle detachably suspended from said car, a catch device for locking the receptacle to the frame of the car in its suspended position, and a separate elevator situated stationarily at the end of the way in position to receive the receptacle and constructed to raise or lower the same to and from the car, substantially as described, as such subject-matter is embodied in the first claim of an application of Robert A. McCarty, filed October 21, 1886, Serial No. 216,886.

What I claim is—

1. In a store-service apparatus, the combination, with a way, a carrier having a detachable receptacle, and a propelling device, of an elevator for lifting the receptacle to the carrier, and devices for raising the elevator and operating the propelling device connected to move the latter after the elevator is raised, substantially as described.

2. In a store-service apparatus, the combination, with a way, a carrier having a detachable receptacle, and a propelling device and operating devices therefor, of an elevator for lifting the receptacle to the carrier and operating devices therefor, and connections between the two operating devices to move the propelling devices after the elevator is raised, substantially as described.

3. In a store-service apparatus, the combi-

nation, with a way, a carrier having a detach-
able receptacle, and a propelling device, of
an elevator for lifting the receptacle to the
carrier, cords for raising the elevator and op-
5 erating the propelling device, and a slide con-
necting such cords after the elevator has made
part or all of its movement, whereby the pro-
jecting device will be operated by a continu-
ation of the movement which lifts the elevator,
10 substantially as described.

4. In a store-service apparatus, the combi-
nation of a carrier having a detachable recep-
tacle, a propelling device, an elevator for lift-
ing the receptacle to the carrier, an operating-
15 handle, devices connecting the operating-han-

dle to the elevator and to the propelling de-
vice, arranged to successively raise the ele-
vator and operate the propelling device, and
a spring between the operating-handle and
the elevator for permitting a further move- 20
ment of such handle after the elevator has
reached the limit of its upward movement,
substantially as described.

This specification signed and witnessed this
21st day of April, 1887.

WALTER I. EICHBAUM.

Witnesses:

H. W. SEELY,
HENRY EICHBAUM.