

(No Model.)

2 Sheets—Sheet 1.

J. H. GOODFELLOW.
STORE SERVICE APPARATUS.

No. 541,742.

Patented June 25, 1895.

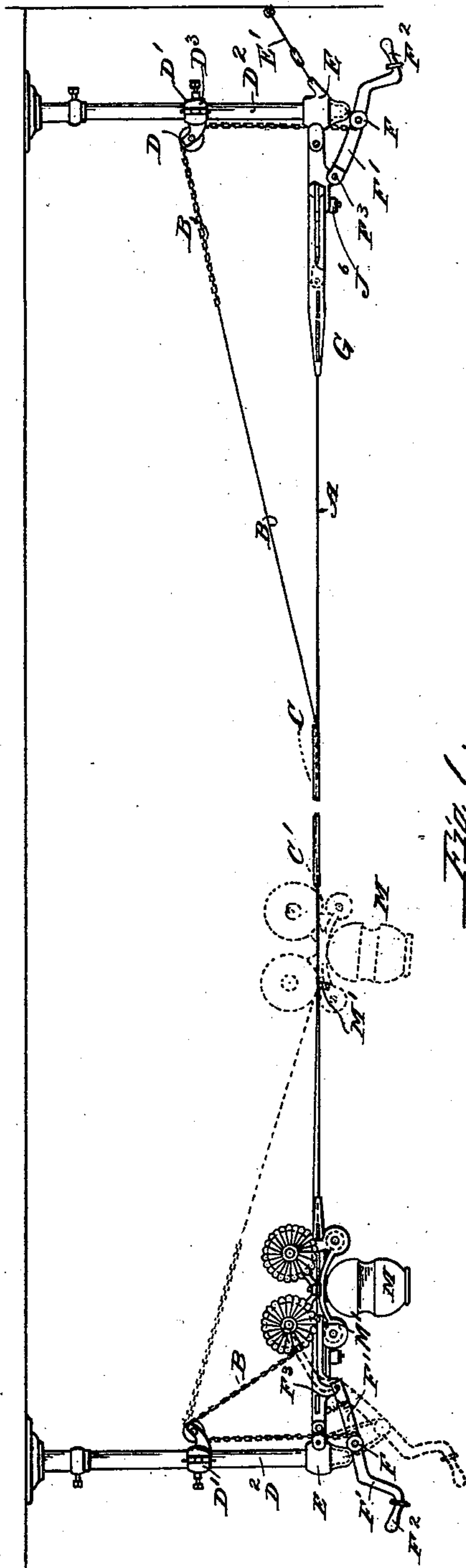


Fig. 1.

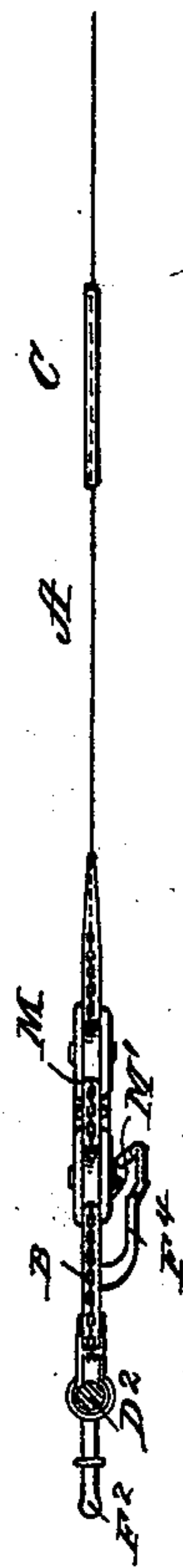


Fig. 2.

Witnesses
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E. L. Harlow.

Inventor.
John H. Goodfellow
My Atty.
J. H. K. K. K.

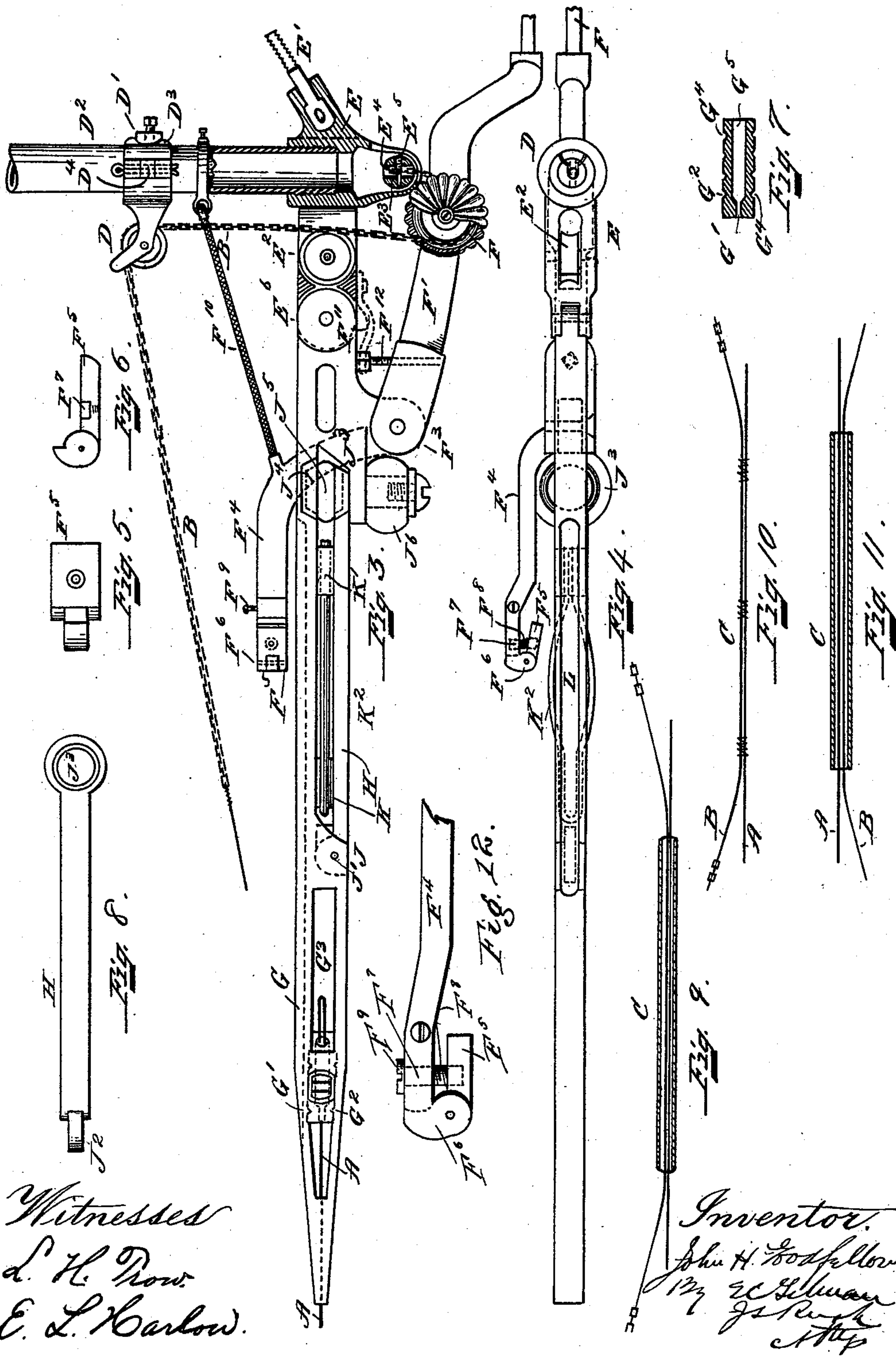
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

JOHN H. GOODFELLOW, OF LOWELL, ASSIGNOR TO THE LAMSON CONSOLIDATED STORE SERVICE COMPANY, OF BOSTON, MASSACHUSETTS.

STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 541,742, dated June 25, 1895.

Application filed September 22, 1893. Serial No. 486,178. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GOODFELLOW, of Lowell, county of Middlesex, State of Massachusetts, have invented certain new and useful Improvements in Store-Service Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

One object of my invention is to provide means for preventing the sagging of the propelling wire.

Another object is to provide means for preventing the return of the carrier from the cashier's station to the salesman's without the knowledge of the cashier.

These and other objects are accomplished by mechanisms hereinafter shown, described and claimed.

My invention consists of certain novel features, arrangements and combinations hereinafter described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side view of the apparatus, showing the salesman's and cashier's stations, the carrier being shown at the cashier's station. Fig. 2 is a plan view taken at the cashier's station. Fig. 3 is a side view partly in section of the cashier's station; taken on the opposite side to that shown in Fig. 1. Fig. 4 is a plan view of the apparatus at the cashier's station. Figs. 5 and 6 are detailed views of the latch hereinafter described. Fig. 7 is a sectional view of the metallic nut by which the way is secured to the horn. Fig. 8 is a plan view of an adjustable strip hereinafter referred to. Fig. 9 is a detailed sectional view showing the tube embracing the track-wire and propelling-wire at the center of the way. Fig. 10 is a modification of the construction shown in Fig. 9 by substituting rings for the tube shown in the previous figure. Fig. 11 is a detailed sectional view showing the tube embracing the track-wire and propelling wire at the center of the way with the propelling-wire below the track. Fig. 12 is a detached view showing the latch out of position.

Like letters of reference refer to like parts throughout the several views.

As the propelling mechanism and the supports for the same are identical at the salesman's and cashier's end a description of the cashier's end will answer for both.

The carrier M travels on the way A being propelled thereon by the propelling wire B which acts against the rear upper wheels of the carrier and propels it forward by the progressive separation of the propelling wire from the track wire. A tube C made of light metal is located midway between the salesman's and cashier's end, and its length is determined in accordance with the length of the way; the object of the tube being to prevent the sagging of the propelling wire and confine it in close proximity to the track, and also to allow a free movement of the propelling wire through it. As shown in Fig. 10 a series of rings or coiled wire could be substituted for the tube, and located at certain distances apart in order to occupy the same space as would be occupied by the tube. In order to maintain these rings in their proper places it will be necessary to secure them to the way or main track, and, if desired, the tube could be secured to the way; the functions of both constructions, however, being the same.

The propelling wire B extends from the tube C upwardly at each end and over the pulley D mounted in the sleeve D³ adjustable on the standard D² by an adjustable screw D'. This sleeve has on each side a hinged joint through which passes a suitable pin. The forward half of the sleeve supports the pulley and in the rear half the adjustable screw D' is located.

To the lower end of the standard D² is secured a bracket E provided with guy rods E' for holding it firmly in position. In the lower end of the bracket E is provided a cavity in which is located a small ball E³ having a pole E⁴ through its center. At right angles to this hole a needle pointed screw E⁵ passes through said ball and through a link of the chain B. By this arrangement the propelling chain may be taken up at will. This chain B, which is a continuation of the propelling wire B, before reaching the ball E³ contacts with the pulley E² in the bracket E and down and around the pulley F on the cashier's lever F' having a handle F². This lever is pivoted at

F³ to the horn G and has on the right hand side an upward and outward extension F⁴, which, at its forward end, has a latch F⁵ pivotally secured thereto by a pin F⁶. In the inner side of the lever and the latch is provided a recess F⁷ in which a spring F⁸ is placed and which tends normally to hold the latch in the position shown in Fig. 4.

The carrier M on reaching the cashier's end comes in contact with the latch F⁵ which slips over the projection M' on the carrier and holds said carrier at cashier's end against rebound. Without this provision of catching and holding the carrier the salesman, by operating the lever at his end of the way, could cause the propelling line B at the cashier's end to act on the carrier M and return it to his station, but by this latching arrangement the salesman cannot cause the propelling line at the cashier's end to throw the carrier back to the salesman's end. It will be observed that when the salesman moves the propelling lever at his end it causes the latch at the cashier's end to move into a position where it will lock the carrier against movement, so that he cannot cause it to return to him; but when the cashier operates the lever at his end the latch moves in the arc of a circle and permits the movement of the carrier when the propelling line acts against the carrier to throw it to the other end of the way. When the cashier has finished with the carrier he operates the lever F' at his end and returns the carrier to the salesman's station, the latch passing upwardly and away from the projection M' of the carrier. By this arrangement it will be seen that means are provided for preventing the salesman from returning the carrier at his end without the knowledge of the cashier. If at any time it should be desired to place this latch out of operation a screw F⁹ can be passed through the recess F⁷ in the lever and latch and by screwing it up the latch will be drawn inward toward the lever and thereby held out of contact with the projection M' of the carrier as shown in Fig. 12. This screw F⁹ when not in use is for convenience secured on the top of the lever F⁴ as shown in Figs. 3 and 4.

An elastic F¹⁰ is secured to the extension F⁴ of the lever F' at one end and at the other end to the standard D². The object of this elastic is to take up any slack of the propelling wire, after the lever has been released, by forcing down the lower end of said lever. A modification of this arrangement is shown in the spring F¹¹ secured to the under side of the bracket E. This spring bears on the screw F¹² and tends to force the lever downwardly and thereby take up the slack of the propelling wire B. This screw F¹² is for the purpose of setting the upper position of the lower end of the lever F' so as to prevent the lower end of the bracket E and the lever from coming in contact.

The horn G and the bracket E are pivotally secured at E⁶. This pivotal arrangement forms a vertical adjustment of the way, but,

although shown in this application, is not claimed herein as it forms a part of the subject matter in another application, Serial No. 486,179, filed in the Patent Office simultaneously with the present application. Through the forward end of the horn G the wire way A extends and passes through a small aperture G' in the metallic nut G² which is located in the aperture G³ of the horn. This nut is provided with a series of grooves G⁴ around its outer periphery, the object of which is to cause this metallic nut to tie itself within the aperture G³ of the horn when cast therein.

In connecting up the line the end of the wire way A is passed through this metallic nut and bent back upon itself as seen in Fig. 3, the free end entering into the large aperture G⁵ and thus forms a sufficient spring tie to retain the end of the wire.

Rearwardly of the metallic nut, and on the under side of the horn, is located a strip H which is pivoted to the horn at the point J by a pin J' passing through the horn and the lip J² of said strip. At the rear end of this strip there is a saucer-shaped cavity J³, and directly above on the under side of the horn a corresponding cavity J⁴. In these cavities a rubber cushion J⁵ is located, which is adapted to yield to the pressure of the wheels of the carrier as it is received on the horn, and thus steadies the carrier vertically, the cushion taking up the slight upward movement of the strip as the carrier runs on the horn.

J⁶ represents a rubber cushion secured to the under side of the horn and against it the carrier abuts in traveling upon the horn.

Between the upper part of the horn and the strip H there are two longitudinal lugs K, K', the former of which is adapted to receive upon it the loop of a bifurcated spring K². The free ends of this spring pass through apertures in the lug K', which allow a free movement of the terminating ends of the spring, but offer sufficient resistance to the incoming carrier to take up its momentum and hold it in proper position against rebound.

The operation briefly is as follows: The carrier being in position for use the clerk, by pulling down on the lever F² of the propelling line B, will first pull the carrier off the horn G and then pull and push it forward by the progressive separation of the propeller and track until it passes upon the opposite horn, where the carrier will bear down on the propeller line B and force it into the groove L formed in the upper side of each horn and will compress the bifurcated spring K² within the limits of the horn and prevent the rebound of the carrier, as the latch F⁴ passes over the lug M' and prevents the return of the carrier, as shown in the left hand Fig. 1. The return of the carrier by the cashier to the salesman is the same in operation, as, by pressing down on the lever F², the propeller line B will force the carrier off the horn on to the way, and it will then ride down on the propeller wire B

at the salesman's end and force it into the groove L formed in the upper side of the horn, and its momentum will be taken up by the bifurcated spring K², rubber cushion J⁶ and the adjustable strip H.

By varying the position of the adjustable sleeve D³ a greater or less throw can be given to the carrier by the propelling line B. If the sleeve D³ is adjusted below the position shown in the drawings a less throw will be given to the carrier than in the position shown in the drawings, but if the said sleeve is arranged above the position shown in the drawings a greater throw is given to the carrier; so that, by means of this adjustable sleeve D³, a greater or less throw can be given to the carrier by the propelling line. If the sleeve D³ is lowered the slack of the chain is taken up by the screw E⁵ in the pulley E³. If this said sleeve is raised an additional amount of chain can be had by readjusting the screw E⁵ in the ball E³.

Although I have not shown the latch device at the salesman's end for holding the carrier, yet, if it should be desired to use the same, it could be readily applied as at the cashier's end, but it is not usually required at the salesman's end, it being applied at the cashier's end for the especial purpose of preventing the salesman, after he has propelled the carrier with cash toward the cashier, from returning it to himself and changing the money and cash slip and then again returning it to the cashier without the cashier knowing of the operation by the salesman.

I do not limit myself to the exact arrangements and constructions shown as the same may be varied without departing from the spirit of my invention.

Having thus ascertained the nature and set forth the construction of my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a store service apparatus, a way, a carrier adapted to travel on said way, a horn located at the end of said way, a nut secured to said way and having an opening through which the end of the way is passed and firmly held therein by being bent upon itself, substantially as and for the purpose set forth.

2. In a store service apparatus, a way, a carrier adapted to travel thereon, a horn secured to the end of the way and having a longitudinal slot therein, lugs arranged in said slot, and a spring held in place in the slot by the lugs and extending normally beyond the sides of the horn.

3. In a store service apparatus, a way, a carrier adapted to travel thereon, a horn secured to the end of the way and having a lon-

gitudinal slot therein, lugs arranged in said slot, a bifurcated spring held in place in the slot by the lugs and extending normally beyond the sides of the horn, a yielding strip pivoted at one end to the way and provided at its free end with a cavity, and a cushion engaging the said cavity and a corresponding cavity in the horn.

4. In a store service apparatus, a way, a carrier adapted to travel on said way, a horn carrying a nut having an opening through which the end of the way is passed, said opening being larger at one end than at the other, the larger opening being adapted to receive the free end of the way, after the same has been bent upon itself, and thereby hold said way securely in place, substantially as set forth.

5. In a store service apparatus, a way, a carrier adapted to travel on said way, a propeller extending the length of the way and adapted to engage with said carrier and propel it along said way by the progressive separation of the propeller and the way, an operating lever carrying a pulley around which passes the propelling line, and means for engaging the free end of the said line to hold it under proper tension substantially as set forth.

6. In a store service apparatus, a way, a carrier adapted to travel on said way, a propeller adapted to engage with said carrier and propel it along said way by the progressive separation of the propeller and the way, an operating lever carrying a pulley around which passes the propelling line, a ball carried by the supporting bracket and having an opening through which passes the free end of the said line, and a pin for engaging the said free end to hold the said line under proper tension substantially as set forth.

7. In a store service apparatus, a way, a carrier adapted to travel thereon, a horn secured to the end of the way having a longitudinal slot therein, lugs in the said slot, and a spring held in place in said slot by the lugs, and extending normally beyond the sides of the horn, said spring comprising a single piece of wire, having straight portions lying within the sides of the horn and inwardly curved portions, extending beyond the sides of the horn.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 7th day of September, 1893.

JOHN H. GOODFELLOW.

Witnesses:

AUGUSTIN I. DAVIS,
MILLARD F. DAVIS.