

(No Model.)

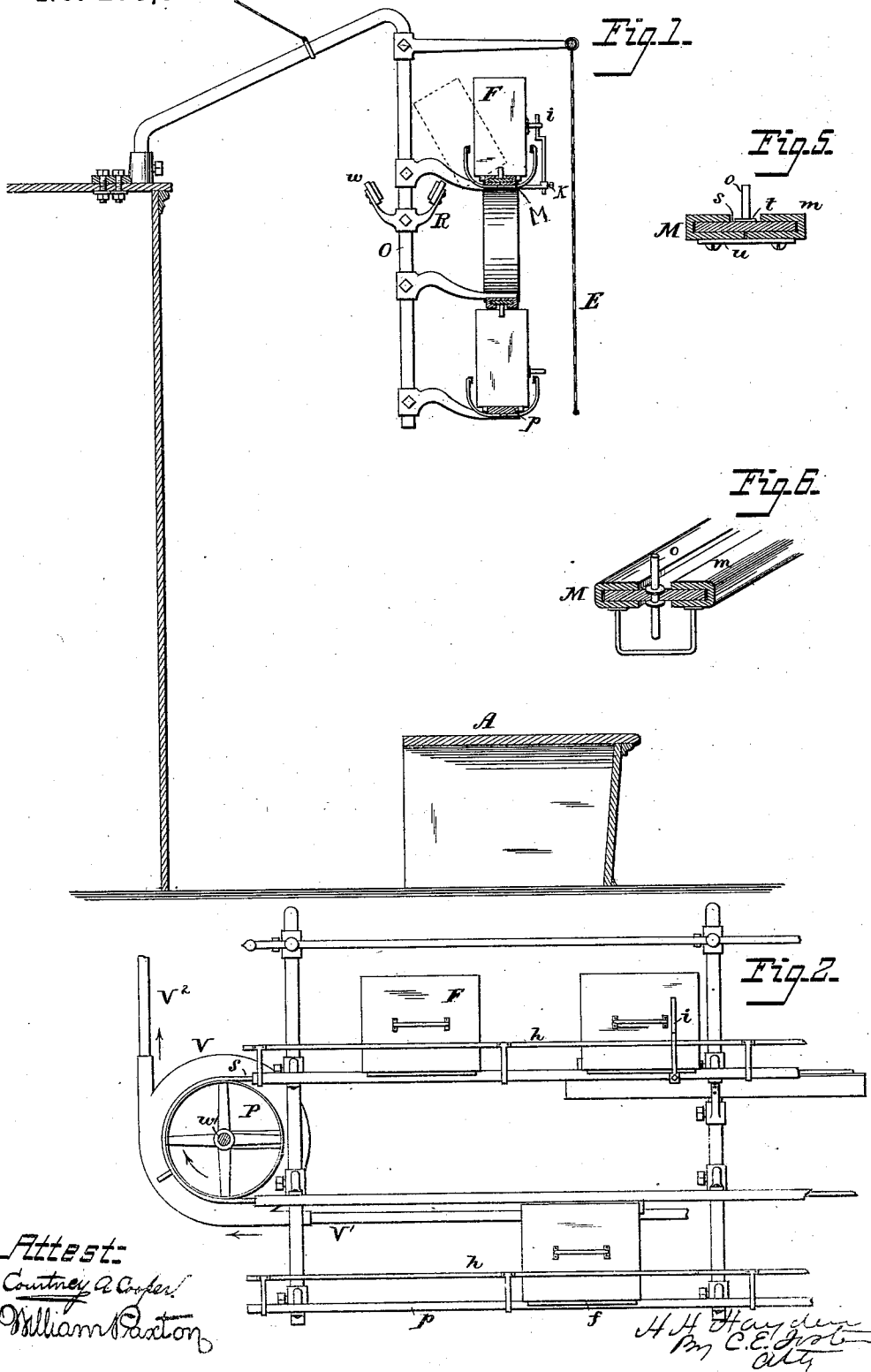
2 Sheets—Sheet 1.

H. H. HAYDEN.

## STORE SERVICE APPARATUS.

No. 273,525.

Patented Mar. 6, 1883.



(No Model.)

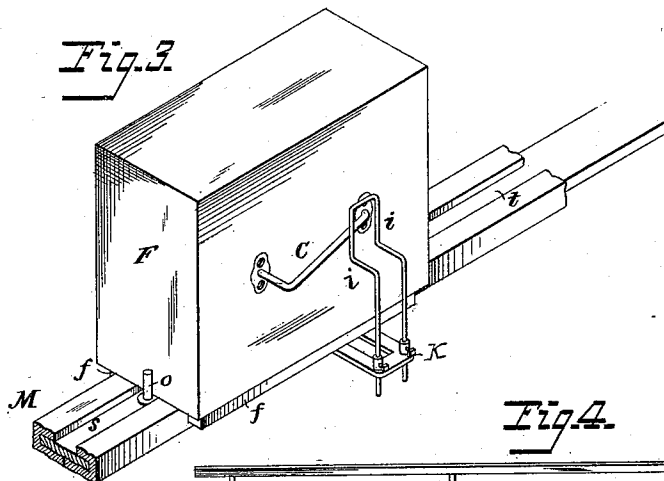
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STORE SERVICE APPARATUS.

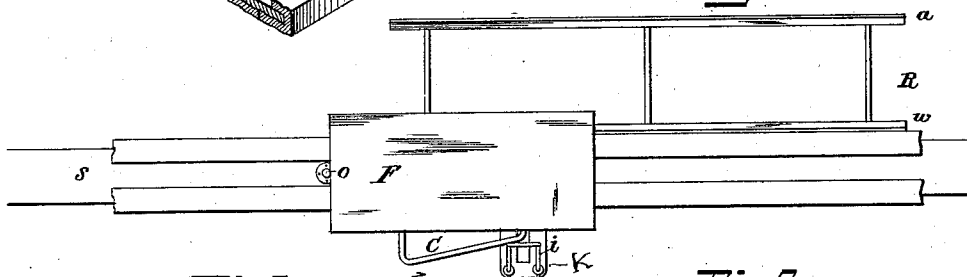
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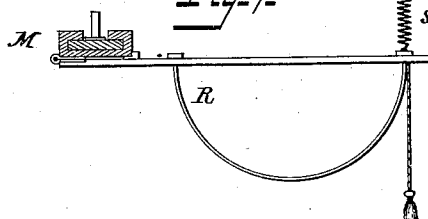
*Fig. 3.*



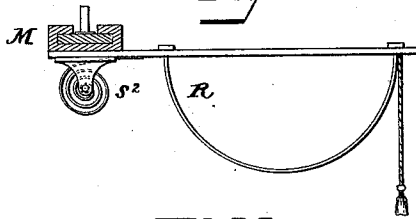
*Fig. 4.*



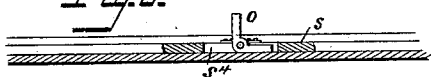
*Fig. 7.*



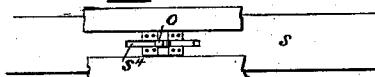
*Fig. 8.*



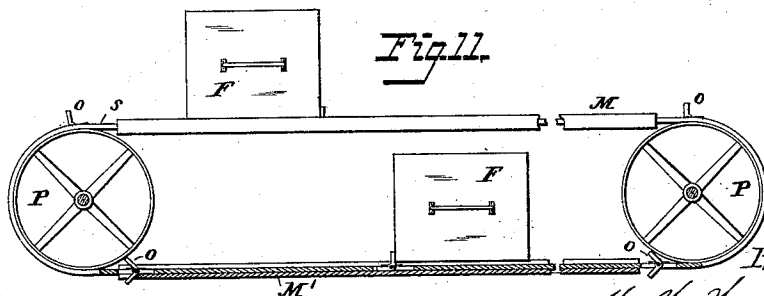
*Fig. 9.*



*Fig. 10.*



*Fig. 11.*



*Attest:*

*Courtney & Cooper.*

*A. E. S. Samsman.*

*Inventor.*

*H. H. Hayden*  
*By his attorney*  
*Charles G. Adler*

# UNITED STATES PATENT OFFICE.

HARRIS H. HAYDEN, OF NEW YORK, N. Y., ASSIGNOR TO THE AUTOMATIC  
PARCEL DELIVERY COMPANY, OF SAME PLACE.

## STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 273,525, dated March 6, 1883.

Application filed May 6, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, HARRIS H. HAYDEN, of the city, county, and State of New York, have invented certain new and useful Improvements in Store-Service Apparatus, of which the following is a specification.

My invention is an improvement in that class of store-service apparatus in which the carriers are moved on ways by a traveling belt or band; and the invention consists in the supporting, propelling, and detaching appliances, and in certain details of construction, fully described hereinafter, and illustrated in the accompanying drawings, in which—

Figure 1 is a transverse sectional elevation of a counter and store-service apparatus, showing my improvements. Fig. 2 is a side elevation of part of the apparatus. Fig. 3 is a perspective view of part of a way, belt, carrier, and detaching device. Fig. 4 is a plan of Fig. 3. Fig. 5 is a transverse section of the belt-guide. Fig. 6 is a modification. Fig. 7 is a perspective view of the movable rack; Fig. 8, the same with a spring-hinge. Fig. 9 is a longitudinal section of slotted belt-guideway, showing a pivoted push-pin. Fig. 10 is a plan view of Fig. 9; and Fig. 11 is an elevation of the two belt-guides arranged as ways, showing the positions of the pivoted push-pins.

The apparatus is supported by brackets O, or in any suitable manner, above the counter A, and a screen or curtain, E, of fabric or thin boards, not only conceals the apparatus from customers, but serves as a very desirable support on which to display fine goods, as laces, &c. From the vertical portion of the bracket O extend arms, which support the ways, belt-guide, and receptacles for the carriers.

The belt-guide M may be flat, but I prefer to make it grooved, as shown in Figs. 1 to 5, where it consists of two grooved moldings, *m*, arranged with their grooves opposite to each other to form a receptacle for the belt or band *s*, leaving a central slot, *t*, through which extend the push-pins *o*. The moldings are connected at one side by cross-strips *u*. This construction is simple, cheap, and very effective, the belt running smoothly and without noise, without kinking, and with the same efficiency whether the pins project upward or downward. The belt-guide may constitute the way, or it

may be above the way *p*, consisting of a flat strip of wood or metal, as shown in Figs. 1 and 2, where the upper belt-guide, M, constitutes the way from the cashier's desk past the counters, and the strip *p* the return-way, each way being provided with side guard-rails, *h h*. The belts passes through the upper and lower guides and round pulleys P, rotated by suitable appliances, the push-pins *o* extending upward through the slot *t* of the upper guide and pushing the carriers F placed thereon from the cashier's desk, the lower belt-guide having its slot below, so that the pendent pins may strike the carriers on the way *p* and move them toward the desk, a trough receiving the carriers as they are successively pushed off the end of the way *p* to a position in front of the packers or cashier. The carriers may be placed on the ways at any point with equal facility, and may consist of rectangular boxes, as shown, provided with parallel cleats *f f* at the bottom, separated sufficiently to receive the way between them. Carriers of this construction may be made of paper, metal, or wood, and possess decided advantages over those heretofore made, owing to the simplicity of their construction, their capacity, and cheapness. They may be open at the top or provided with sliding or flanged covers, kept closed by springs or other readily-acting device.

The detaching devices consist of a bracket, K, carrying L-shaped adjustable stop-rods *i*, so set as to be struck by inclined brackets O at the sides of the carriers. As a bracket O strikes one of the rods *i* the carrier is gradually tilted until it loses its balance and falls into a receptacle, R, arranged opposite the detaching device, and consisting of parallel felt-covered strips *w*, or it may be a flexible pouch or pocket of cloth, wire-cloth, or other strong and durable material, as in Figs. 7 and 8, supported by arms extending from the brackets O, or by the ways. The rods *i* are bent, and set at different heights, so that each is struck only by the carriers to be detached at that counter or station, this being effected either by making the rods *i* adjustable on the bracket K, as in Fig. 1, or by making the rods and bracket in one piece, and securing the latter adjustably, as in Fig. 3, where the take-off or stop is shown constructed with a double rod

and adjusting-holder to steady it in action. To facilitate the removal of the carrier from the track or pocket by persons who are unable to reach to the rack, I hinge the rack-frame to the way M, and provide it with cords, by which it may be drawn down, springs S' or S<sup>2</sup> serving to restore it to its position.

The guides M may be made of wood or metal, but the former is preferable in most instances on account of cheapness, and the belt s may be of leather, rubber, fabric, or of connected links of metal or other material.

Where it is desired to save room the lower way may consist of the lower belt-carrier, and the pins o may extend to both sides of the belt, in which case the pulley P must be divided or grooved to receive the inner pins, and the sections of both guides must be connected by U-shaped cross-braces, as shown in Fig. 6, to allow the passage of the projecting pins, one arm of each of which will always be below the line or way. Instead of this arrangement, I may use that shown in Figs. 9, 10, and 11, where the pins are L-shaped and pivoted at their corners in slots S<sup>4</sup> in the belt, so that on striking the guide M they may turn to the position shown at the top in Fig. 11 to move the upper carriers, and on striking the guide M' they may turn to the position shown at the bottom to run the lower carriers.

The pulleys P may be driven by belts or otherwise; but as the presence of gears, belts, and moving driving appliances is objectionable in a store-service system for many reasons, I secure a steady and uniform motion, and avoid the use of devices for transmitting motion, by connecting the pulley-shaft w' directly to the driving-wheel of an engine—for instance, the wheel-shaft of a Backus water-motor, V—to the case of which water is admitted by a pipe, V<sup>1</sup>, and from which it passes through a pipe, V<sup>2</sup>. This arrangement may be employed with the driving-wheels of different store-service systems, and steam or other motor-fluid may be employed, or an electro-motor.

It will be apparent that the pulleys P may be horizontal, in which case the carriers will travel on ways at the sides of the belt-guides. This arrangement will be serviceable when the ceiling is low, or where it is desirable to have one way in front of and another behind the salesman. Either one or both of the ways may be placed under the counter, if desired, or otherwise disposed of, by the use of suitable guide-pulleys to direct the course of the belt.

I do not claim, broadly, detaching the carrier

from the way and depositing it into a receptacle, nor carriers suspended from a slotted tube and moved by a belt therein; nor do I claim making such receptacle movable and counterbalancing it, nor driving the belt by an engine on the frame, as these features are or will be set forth in separate applications for Letters Patent.

I claim—

1. In a store-service apparatus, the combination of parallel stationary belt-guides arranged between the desk and counters, a continuous belt, supported by said guides, provided with pins projecting beyond the guides, and passing around pulleys, and carrier-detaching devices, substantially as set forth.

2. The carriers consisting of boxes each provided with cleats ff and with a bracket, C, substantially as set forth.

3. The belt-guide consisting of grooved moldings arranged to leave an intermediate slot, and connected as specified.

4. The combination of the slotted stationary guides M and the belt s, traveling round pulleys through said guides, and provided with pins o, substantially as set forth.

5. The combination, with the belt-guides and ways, of detaching devices consisting of rods supported by the ways in respect to brackets on the carriers, substantially as specified.

6. The combination, with a way supporting a carrier and with means for driving the latter, of a receptacle, R, at one side and a device arranged at the opposite side and constructed to tilt and upset the carrier, disconnect it from the driver, and deposit it in the receptacle, as specified.

7. The combination, with the traveling belt and way adjacent thereto adapted to receive and guide traveling carriers, of push-pins pivoted to the belt, substantially as and for the purpose set forth.

8. The combination of the guide and belt and tilting-rod i, adjustable vertically, and carriers and attachments, as specified.

9. A receptacle pivoted to swing at one side of the way, in combination with a spring to restore it to position after it is depressed, as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRIS H. HAYDEN.

Witnesses:

COLERIDGE A. HART,  
CONRAD R. SCHMITT.