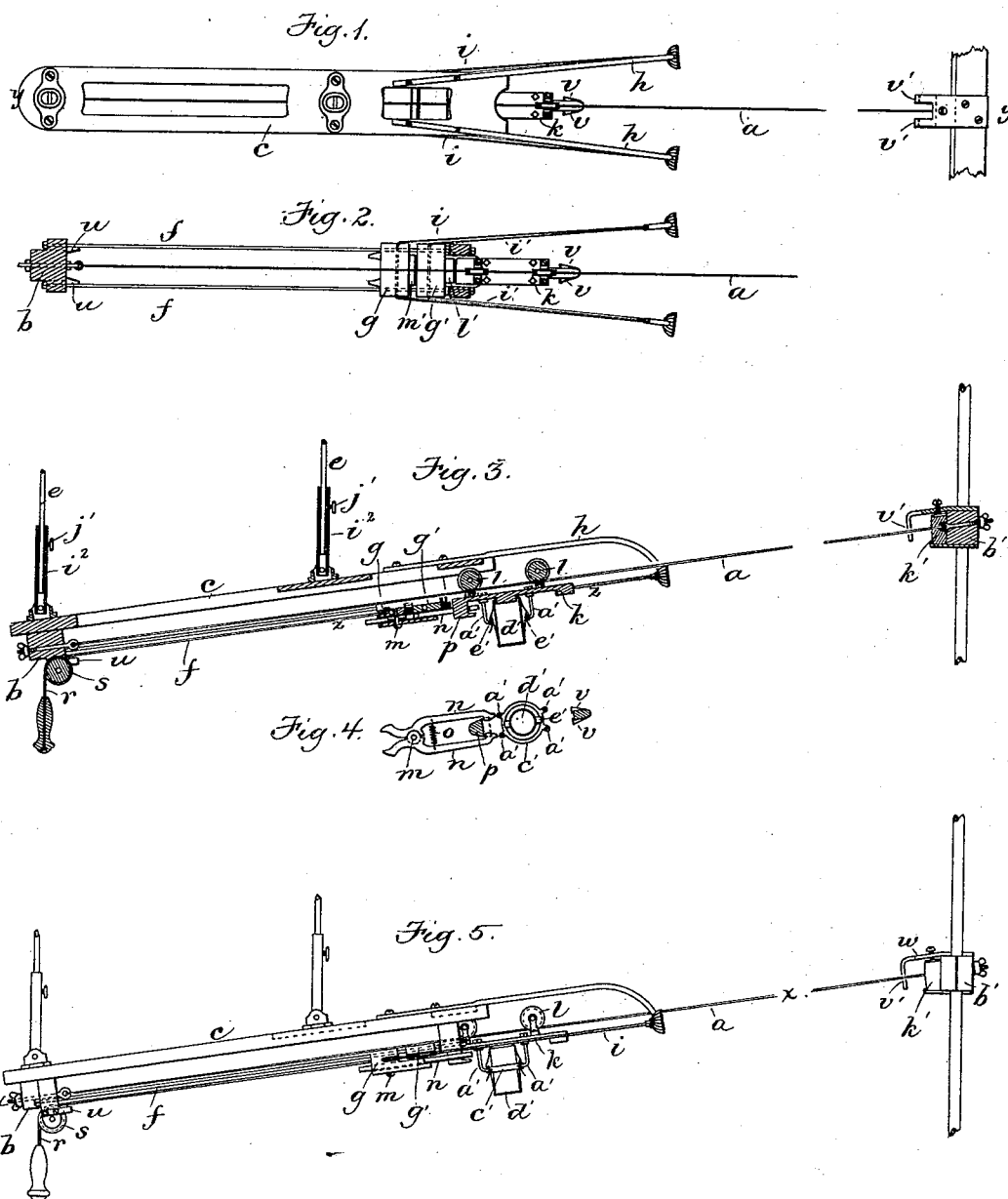


(No Model.)

C. W. SMITH.
STORE SERVICE APPARATUS.

No. 330,629.

Patented Nov. 17, 1885.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES WILLARD SMITH, OF WOBURN, MASSACHUSETTS.

STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 330,629, dated November 17, 1885.

Application filed April 20, 1885. Serial No. 162,799. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WILLARD SMITH, of Woburn, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Store-Service Apparatus, of which the following is a specification.

This invention has for its object to provide an improved store-service apparatus of the class in which wire tracks are employed, on which run cars having suitable receptacles.

The invention consists in the improved apparatus which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a top view of a track and motor and a part of the car embodying my improvements. Fig. 2 represents a section on line *x x*, Fig. 5, looking downwardly. Fig. 3 represents a section on line *y y*, Fig. 1. Fig. 4 represents a section on line *z z*, Fig. 3. Fig. 5 represents a side elevation.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents a wire track stretched between two supports, *b b'*, the former being near the salesman's station or counter, and the latter being in close proximity to a cashier's desk elevated above the counter, so that the track is inclined upwardly from the counter to the desk. At the salesman's station is a rigid frame, *c*, of suitable construction, suspended from the ceiling over the track by rods *e e*. Said frame supports two inclined guide-rods, *f f*, which are parallel with each other and with the track.

g g' represent two slides adapted to travel easily on the guide-rods *f f*, and located under the track. *h h* are metal arms rigidly attached to the frame and projecting beyond the same, as shown. To the outer ends of said arms are attached the ends of two springs, *i i'*, one of which is engaged with or passes through the slide *g*, while the other is engaged with or passes through the slide *g'*, the tendency of the springs being to pull the slides away from the lower end of the track. The springs may be of any suitable material, such as rubber or spiral wire; or, if preferred, the springs may be elastic bows or strips of metal, instead of extensible springs. The

two springs and their slides constitute two motors, each capable of operating independently, as hereinafter described. For convenience of description, I will term the spring *i'* and its slide *g'* the "primary motor," and the spring *i* and its slide *g* the "secondary motor."

k represents the car-body, the wheels *l l* of which are located over it, and are grooved to run upon the wire track.

To the slide *g* of the secondary motor are pivoted at *m* two levers, *n n*, having longer hooked arms or jaws, which are connected and drawn toward each other by a spring, *o*, Fig. 4. The hooked arms or jaws of the levers normally stand in position to grasp a lug or arm, *p*, on the car, said lug having beveled sides which open the jaws when the car running down the track nearly reaches the slides, the spring causing the jaws to engage with said lug when it is sufficiently inserted between the jaws, as shown in Fig. 4. When the car is thus engaged with the jaws, a downward pull on a cord, *r*, attached to the lower slide, *g*, and passing over a pulley, *s*, draws both slides with the car toward the lower extremity of the track, the slide *g'* of the primary motor, which has no connection with the slide *g*, being forced to move by the connection of the car with the slide *g* through the jaws. The springs *i i'* of the two motors are thus extended and put under increased tension. When the slide *g* nearly reaches the lower end of the track, the shorter arms of the levers *n n* strike studs or guides *u u*, attached to the lower support, *b*, or other fixed object, and are pressed inwardly by said studs. The hooked arms or jaws of the levers *n n* are thus forced apart and caused to release the car, whereupon the primary motor gives the car an impulse which sends it to the upper end of the track, where it is arrested by an automatic detent until the cashier is ready to release it and allow it to return to the counter. The cord *r* being released by the operator, the spring *i* restores the slide *g* to its normal position, so that the hooked arms *n n* are ready to again engage the car. It will be seen that the provision of the two independent motors and the devices for automatically releasing the car and the primary motor from the secondary motor, to which the pull-down cord is attached, enable the car to be quickly released

and impelled each time with the same degree of force, so that nothing is left to the judgment of the operator as to the degree of force required, and there is no necessity for the quick release of the pull-down cord, as there would be if the secondary motor were relied on to give the impulse. The forward end of the car is provided with two outwardly-projecting spring-catches, *v v*, which pass between and engage with two fingers, *v' v'*, on a plate, *w*, attached to the upper support, *b'*, when the car reaches the upper end of the track, and thus locks the car to the plate *w*. To the under side of the car are attached arms *a' a'*, which support a ring or band. *d'* represents a cylindrical cup or receptacle adapted to enter said ring, and provided with lantern-catches *e' e'*, which engage with the ring and hold the cup therein, the open upper end of the cup being covered by a boss projecting downwardly from the car into the cup.

It will be seen that there is nothing uncertain in the operation of the apparatus, the force that moves the car upwardly to the desk being definite and uniform in each case, while the downward inclination of the track from the desk makes the return of the car to the counter a matter of equal certainty. There is therefore no liability of failure of the car to reach its destination.

The lower end of the track is preferably attached to the frame *c*, and said frame is provided with pivoted sockets *i'*, which receive the supporting-rods *e*, said rods being connected to the sockets by set-screws *j'*, so that the frame *c* can be raised or lowered to vary the inclination of the track. The upper support, *b'*, has a yielding buffer, *k'*, to prevent concussion when the upward movement of the car is arrested. The slide *g'* has a buffer, *l'*, of felt or other yielding material, against which the car strikes in descending the track, and the slide *g* has a similar buffer, *m'*, to prevent concussion when it is returned to its place beside the slide *g'* by its spring *i*.

I claim—

1. In a store-service apparatus, the combination, with the wireway, of a primary and a secondary spring-motor at one end of the way, each capable of independent operation, a carrier constructed to run upon the way, devices, substantially as described, whereby a car in approaching said motors is automatically engaged with the secondary motor, a

pull-down cord extending from the secondary motor to the operator's station, and disengaging devices operated by a backward movement of the motors, whereby the car is released, the arrangement being such that a single pull on said cord adapts the two motors for action and releases the primary motor and car, while the release of the cord enables the secondary motor to return to position to be again engaged with an approaching car, as set forth.

2. In a store-service apparatus, the combination of the wireway, a carrier constructed to run thereon, and having a lug or arm, as *p*, a primary spring-motor arranged near one end of the way as a stop for a car approaching said end, a secondary motor located behind the primary motor and having spring-jaws, as *n n*, which engage automatically with the projection on the car, a pull-down cord attached to the secondary motor, and fixed studs, as *u u*, at the end of the track, which displace the jaws of the secondary motor when the motors and car are moved by the cord, and release the car and the primary motor, as set forth.

3. The combination of the inclined track, the frame having parallel guide-rods at the lower end of the track, the two springs affixed at their ends to fixed supports and engaged with independent slides on said guide-rods, each spring and its slide constituting a motor, the pivoted levers on the lower slide having jaws adapted to engage automatically with a car on the track, the pull-down cord attached to the lower slide, and devices whereby when the slides and car are pulled to the lower extremity of the track the car and the upper slide are released, as set forth.

4. The car composed of a body and suitable wheels above the same, formed to run upon a wire track, combined with the ring located below the car-body and rigidly attached thereto, and the cup having spring-catches adapted to engage with said ring, and thus detachably connect the cup to the car, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 17th day of April, 1885.

CHARLES WILLARD SMITH.

Witnesses:

GARVIN R. GAGE,
EDWARD E. THOMPSON.