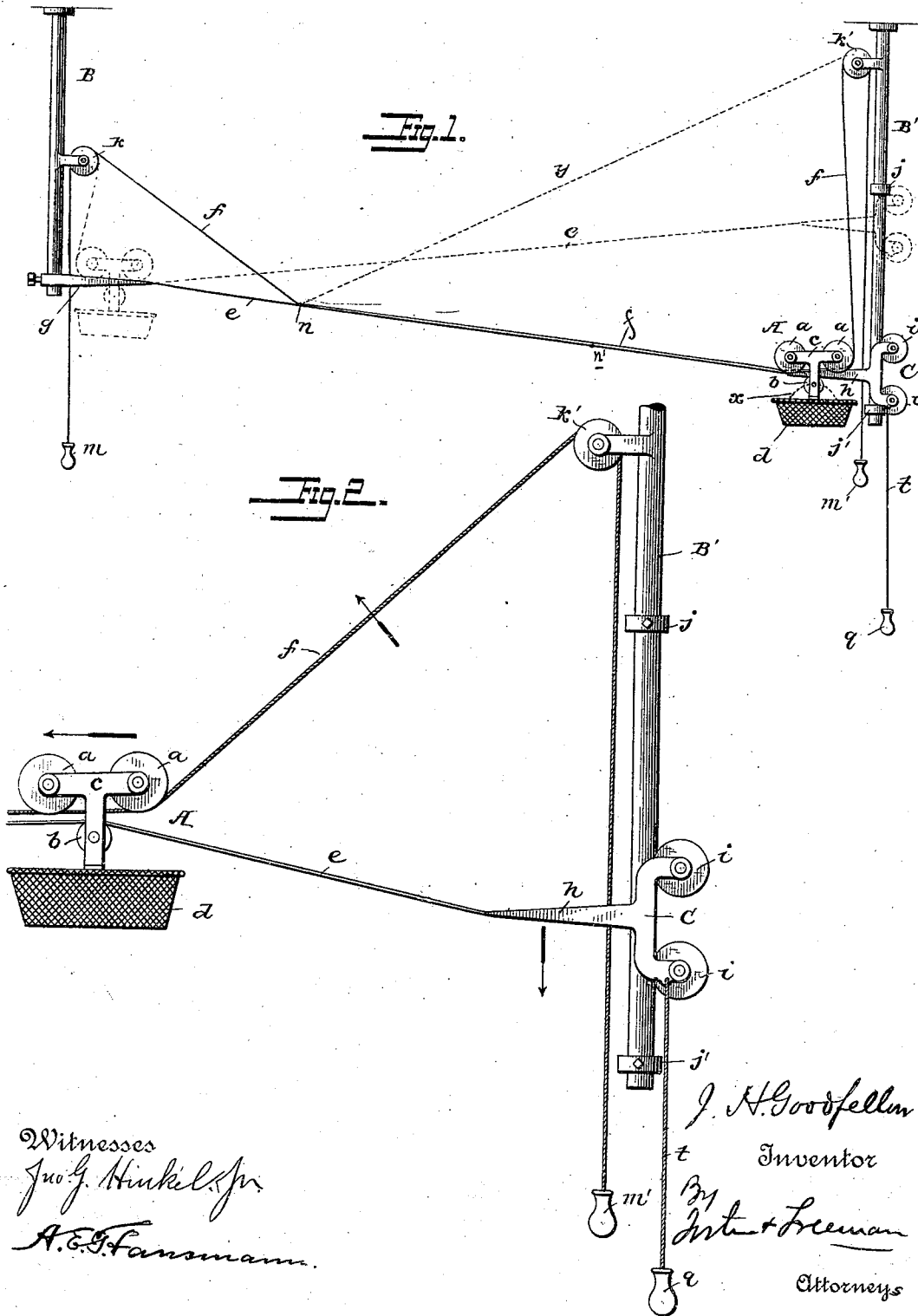


(No Model.)

J. H. GOODFELLOW.
STORE SERVICE APPARATUS.

No. 551,626.

Patented Dec. 17, 1895.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN H. GOODFELLOW, OF TROY, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE LAMSON CONSOLIDATED STORE SERVICE COMPANY, OF NEWARK, NEW JERSEY, AND BOSTON, MASSACHUSETTS.

STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 551,626, dated December 17, 1895.

Application filed January 25, 1888. Serial No. 261,891. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GOODFELLOW, a citizen of the United States, residing at Troy, Rensselaer county, New York, have invented certain new and useful Improvements in Store-Service Apparatus, of which the following is a specification.

My invention relates to that class of apparatus in which it is desired to propel a carrier back and forth between stations by power applied at the sending station, as fully set forth hereinafter, and as illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal elevation showing one line of a store-service apparatus embodying my invention. Fig. 2 is an enlarged view of that part of the apparatus at the right of Fig. 1, showing the parts in a different position.

For the purpose of illustrating the main feature of my invention—to wit, the propulsion of the carrier provided with two wheels or pair of wheels by the separation of two wires passing between the wheels—I have shown the same in the drawings in connection with but one arrangement for effecting the separation of the wires, although others may be used.

In the construction shown A represents the carrier provided with two upper grooved wheels *a a* and a lower grooved wheel *b*, supported to turn in bearings upon the frame *c*, from which hangs the basket or other receptacle *d*.

Between the wheels *a b* extends the track, which may for a part of its length consist of a single wire *e*, but as shown consists of two wires *e f*, which wires are suitably supported at their ends and connected with appliances whereby when the carrier is at the limit of its movement in either direction the wires may be separated from each other, so as to bear against the wheels of the carrier each in a direction oblique to the line of travel, with a resulting wedge-like action tending to drive the carrier forward toward the opposite end of the apparatus, from which it may be returned by separating the wires at the rear of the carrier-wheels at said end.

In the construction shown in said figures the wires are supported by two pendent hang-

ers B B', the wire *e* being secured to a tapering horn or arm *g*, extending from the hanger B, and the opposite end of the wire *e* being connected to a tapering horn *h*, constituting the part of the frame of a carriage C, having two rollers *i i*, bearing upon the hanger B', upon which the said carriage may travel vertically between stops *j j'*, so as to alter the angle of the wire *e*, which is a little slack. The wire *f* passes over two elevated pulleys *k k'*, one adjacent to each hanger and supported thereby, and the ends of the wire are provided with operating-handles *m m'*, and the wire is attached at any suitable point, as *n*, Fig. 1, to the wire *e*.

The carriage C is provided with a pendent cord *t* and operating-handle *q*, by means of which the carriage may be drawn down.

The roller *b* is either elastic or covered with elastic material, or is supported by a spring-support *x*, (as shown in dotted lines Fig. 1,) so that as the carrier passes quickly onto the horn *h* the contact of the yielding roller *b* with the under inclined edge of the horn will result in a gradual reduction in the speed of the carrier until it is arrested without a violent shock, while the pressure of the roller against the horn acts as a retaining device to hold the carrier frictionally in its position.

Assuming the carrier to be in the position shown in Fig. 1, with the carriage C in contact with the lower stop *j'*, a downward pull upon the cord *f*, resulting from pulling downward upon the handle *m'*, will first lift the carriage C, and the carrier A, and the adjacent ends of the wires until the carriage strikes the stop *j*. A further downward pull upon the handle *m'* will now cause the wire *f* to be drawn so forcibly against the adjacent wheel *a* as to overcome the frictional adhesion of the carrier to the horn and drive it toward the hanger B, and as soon as the said friction is overcome and the carrier released from the horn the weight of the carriage, which is no longer supported, will cause it to descend and the wire *e* will be caused to bear obliquely against the rear of the roller *b*. The effect of the separation of the two wires *e* and *f* at the rear of the wheels between which they pass and their oblique bearing against said wheels is a propulsive force tending to shoot the carrier for-

ward toward the opposite end of the line, where it will run upon that portion of the wire *f*, beyond the point *n*, and lay it beneath the wheels *a*, parallel to the wire *e*, until the carrier is upon the tapering arm or horn *g*. When the handle *m'* is released, after starting forward the carrier, said handle will exert its weight upon the wire *f* until the latter is in the position shown in dotted lines *y*, Fig. 1, while the wire *e* remains in an inclined position as at first. Upon pulling downward the handle *m'* the wire *f* is caused to bear against the rear of the adjacent wheel *a* until the friction between the carrier and the horn *g* is overcome, when the carrier will be shot backward toward its first position, the downward inclination of the wire *e* accelerating its movement.

In some cases the arrangement of parts shown at the right in Fig. 1 may be duplicated at the left, so that the car is shot forward from each position by the divergence of both the wires from the line of travel of the car.

When it is desired to give additional effect—as, for instance, when the carrier is heavily loaded or the track is a long one—the carriage *C* may be pulled down by means of the handle *q* and cord *t*, so as to supplement the weight of the carrier and cause the wire *f* to bear with additional force against the wheel *b*.

When the wire *f* extends the entire length of the wire *e*, the two wires together constitute what may be termed the “track-wires” or double track upon which the carrier travels. When, however, it is not desired to have the track double for its whole length, the wire *f* adjacent to each station may extend only a part of the length of the wire *e*, being attached thereto at the points *n n'*, the intermediate portion of the track consisting only of a single wire.

While I have referred only to the two lines by the term “wire,” it will be understood that the said lines may consist of cords or metallic bands, or of any suitable material.

From the foregoing it will be seen that the connections at the station for moving both

the wires and separating them to effect the propulsion of the carrier, as herein shown, consist of a movable carriage sustaining one end of one of the wires, a stop for limiting the upward movement of said carriage, a handle and a wire or cord connecting the latter with one of the wires, but it is to be understood that by the term “connections” is meant any equivalent means by which the separation of the wires is effected to propel the carrier.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. In a store service apparatus the combination, with suitable hangers, of a propelling wire, a track wire, means for raising said wires together, and means for automatically stopping the track wire during the ascent and allowing the propelling wire to continue to ascend and spread.

2. The combination in a store service apparatus, of two wires, one attached to a carriage having a limited vertical movement and the other passing over an elevated guide roller, and a carrier having upper and lower wheels between which the wires pass, and operating handles connected with said wires, substantially as set forth.

3. The combination in a store service apparatus, of a carriage *C*, and a wire connected at one end thereto, a vertical track for said carriage, and a separate wire passing over an elevated guide pulley, both wires passing between the wheels of a carrier, and an operating handle connected with the wire passing over said pulley said carriage *C* being provided with a retaining device for holding the carrier frictionally in connection with the carriage, substantially as set forth.

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

JOHN H. GOODFELLOW.

Witnesses:

J. S. BARKER,
CHARLES E. FOSTER.