(No Model.)

J. H. GOODFELLOW.

STORE SERVICE APPARATUS.

No. 479,503. Patented July 26, 1892.

Fig. 1.

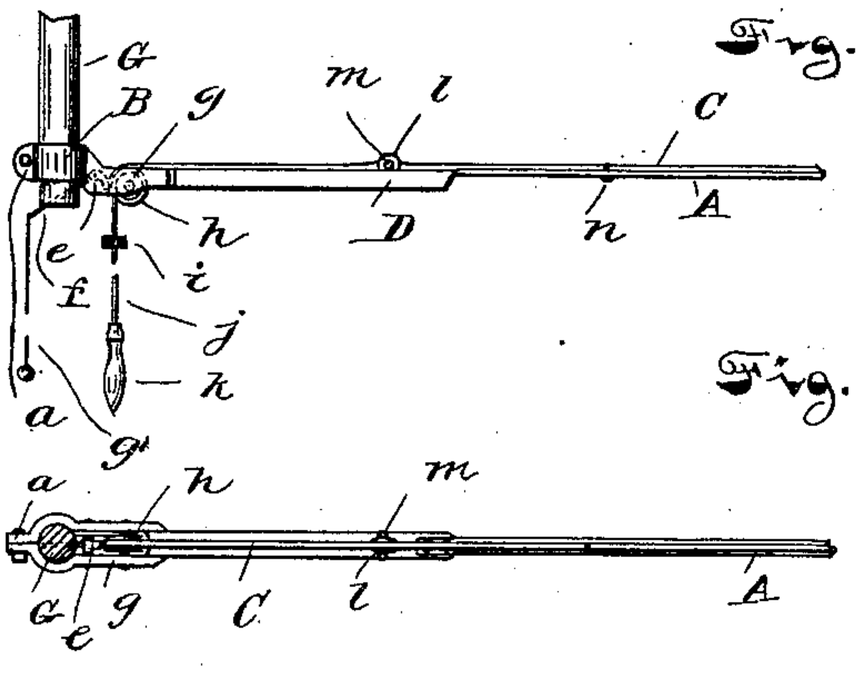


Fig. 2.

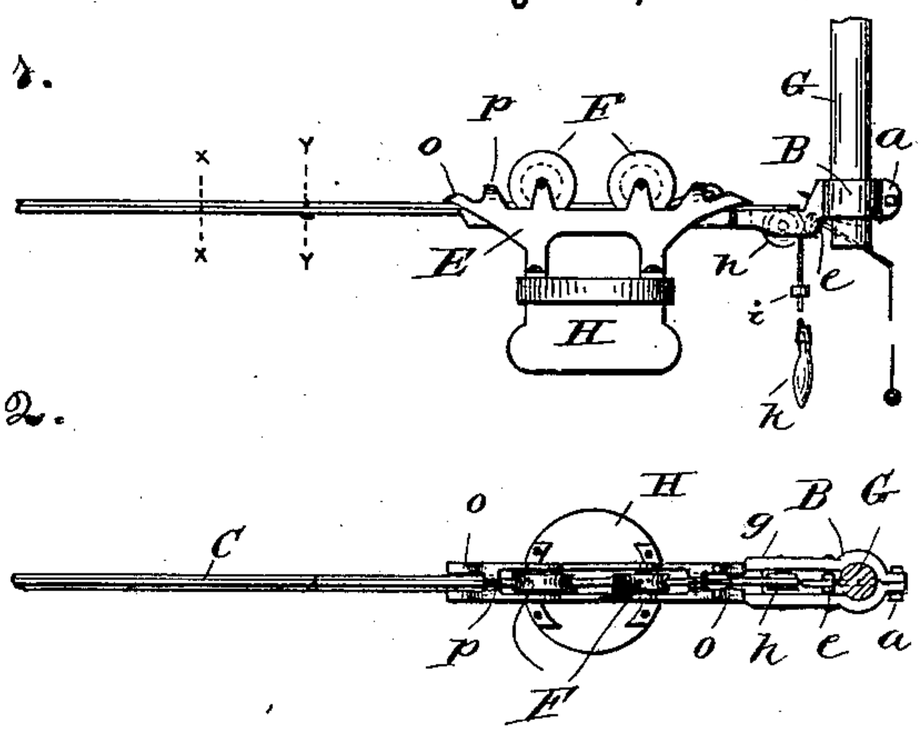


Fig. 5.

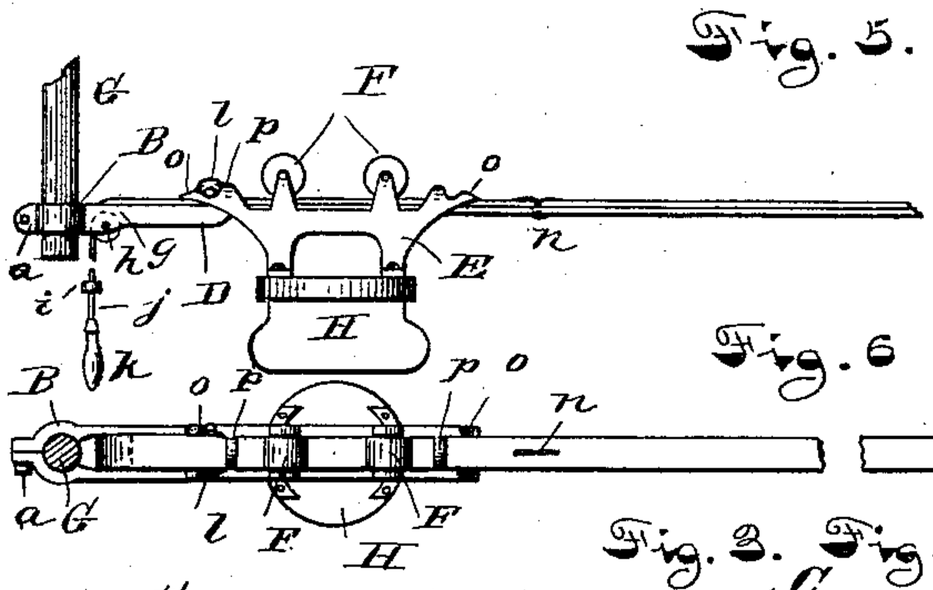


Fig. 6

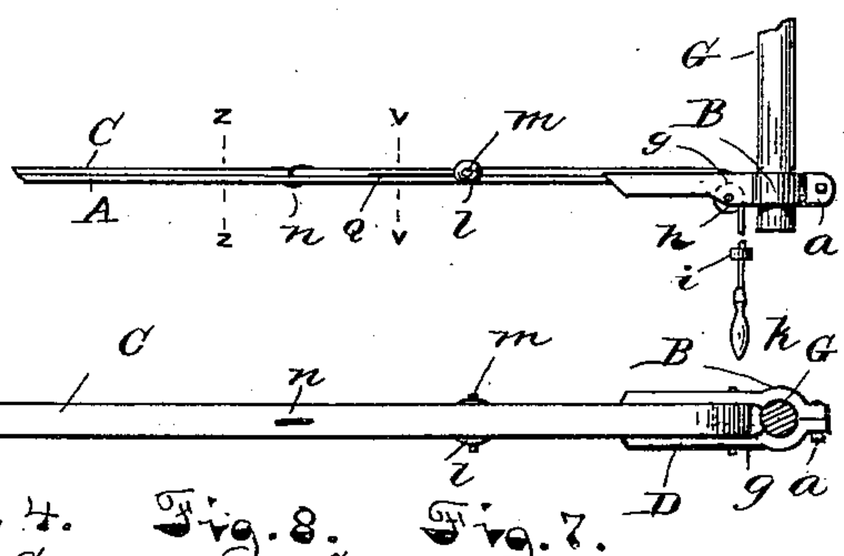


Fig. 3.

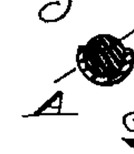


Fig. 4.

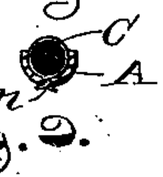


Fig. 8.

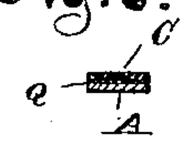


Fig. 7.

Fig. 9.

Fig. 10.

Fig. 11.

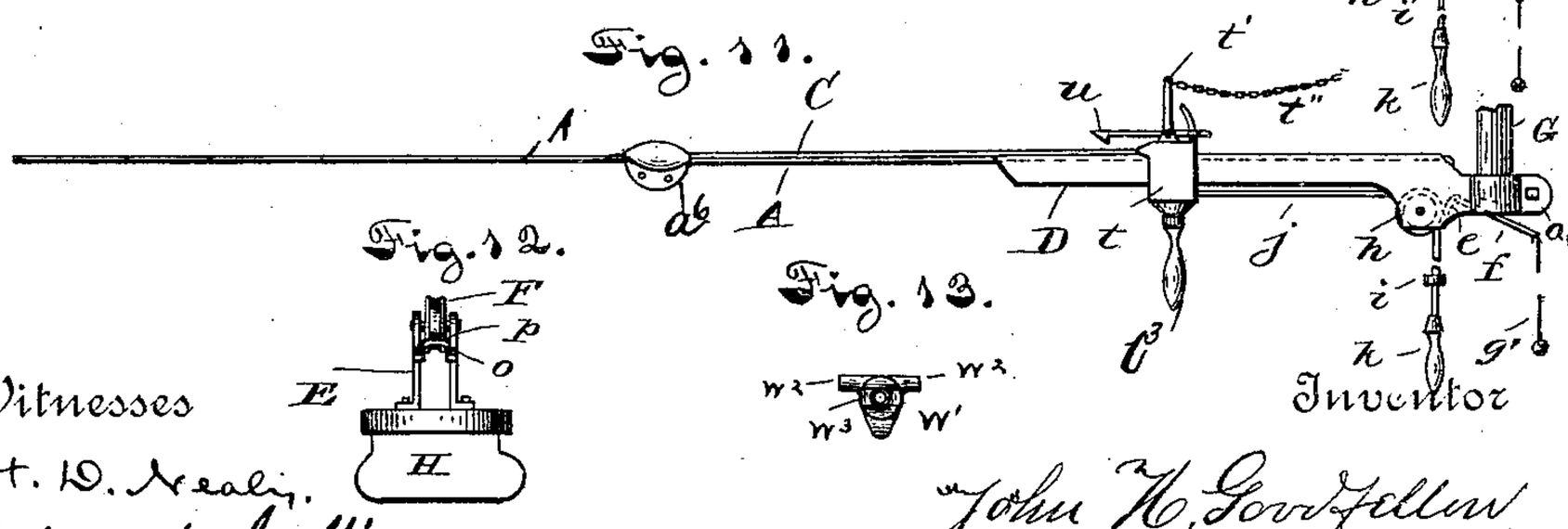
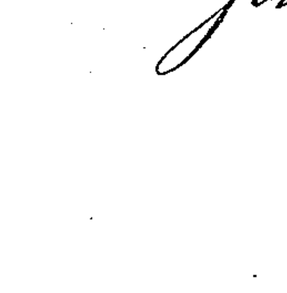


Fig. 12.

Fig. 13.



Witnesses

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UNITED STATES PATENT OFFICE.

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STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 479,503, dated July 26, 1892.

Application filed September 7, 1889. Serial No. 323,258. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GOODFELLOW, a citizen of the United States, residing at Lansingburg, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Store-Service Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention consists in certain improvements in apparatus for transporting cash or parcels, whereby a carrier is propelled along a track by means of an initial impulse given thereto by the contraction of an elastic band or its described equivalent in a line parallel to the track, the said band carrying means for engaging the carrier and having its one end secured to the track; and my invention also consists in the construction, arrangement, and combination of the several parts of which the said apparatus consists, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, in which corresponding parts are designated by corresponding letters, Figure 1 is a side elevation of one form of my improved apparatus. Fig. 2 is a top plan view of the same. Figs. 3 and 4 are detached sectional views taken on line *x x* and *y y*, respectively, of Fig. 1. Fig. 5 is a side elevation of another form of my improved apparatus, representing the treadway and the track composed of steel strips or bands. Fig. 6 is a top plan view of the same. Figs. 7 and 8 are detailed sectional views taken on lines 2 2 and *z z*, respectively, of Fig. 5. Figs. 9, 10, and 11 are modifications of my improved apparatus. Fig. 12 is an end elevation of the carrier. Fig. 13 is an end elevation of the combined grip and stop adapted to the coil-spring treadway shown in Fig. 10.

The pendants G extend downwardly from the ceiling or are attached to the floor and side walls and carry brackets D, provided with orifices B and bolt connections *a*, by which they may be rigidly secured to the pendants. Adjacent to the pendants each bracket is provided with a sheave-pulley *h*, pivotally mounted therein, the forward extended portions of the brackets being of various shapes in cross-section, as will best adapt them to receive and hold by any means known to the art the terminating ends of the track *a*, or may be otherwise modified to adapt them to enter the carrier and prevent it from a rocking or swinging motion by reason of its close contact with the interior side walls of the latter.

The track A may be of varied shapes and is stretched taut between the pendants, and is arranged in approximately a horizontal position, as shown in Figs. 1, 5, 10, and 11, or in an inclined position, as shown in Fig. 9, the carrier used being the same in all cases with the exception of a slight modification of the catch thereon, in which modification one end of the carrier engages the spring-controlled latch *n* on the arm *t'*, which is pivotally connected to the stop-block *t*, clamped or otherwise secured to the upper end of the track. As before stated, the track may be of various shapes, and it will be readily understood that it may be concaved in form, as shown in Fig. 3, in which case it is represented as adapted to partially inclose or hold therein the treadway hereinafter referred to.

The track A and treadway may be of strips or bands, as seen in Figs. 7 and 8 or as seen in Fig. 10. The said track may consist of wire stretched between the pendants G G and the treadway consist of spring-wire closely twisted therearound to form an expansible spring-motor, the outer ends of which may be provided with suitable carrier-driving stops adapted to check, stop, and hold the latter, which receives its impelling force by impulse transmitted to it through the active recoiling or retraction of the treadway after it has been distended or expanded with a lengthwise movement, thus giving the carrier an end-thrust sufficient to impel it over a part of all the track, said extensible means being extended the whole or part of the length of track.

The track proper is shown in Fig. 10 as

connected directly to the pendants G G, by which the sheave-pulleys *h* are supported through the medium of the brackets, the said pulleys being directly beneath the track, and thus the operating means (hereinafter fully described) connected to the stop may move in a line parallel with the said track. As shown in Fig. 9, the treadway is attached to the extended end of the bracket, while in Fig. 11 it is shown secured to the track by a clamping device a^6.

The treadway C, as shown in Figs. 1, 2, 3, and 4, consists of an elastic cord, which may rest in the concave track A and pass to either or both ends of the way and down through the brackets over the sheave-pulleys *h* to within convenient reach. *i* is a stop which may be securely fastened to the treadway, or the handle *k* may be connected with the stop, or an extending rope *j* may connect the said handle or stop. *g* is a lever having a controlling-pawl *e*, pivotally mounted in each bracket in the rear of the pulley *h*, and *g'* is a cord or rod connected therewith to operate the same, and it will be evident that these pawls can be used or not, as may be desired. The treadway, when the device is erected, may be slightly tensioned and the stop *i* normally kept in contact with the pulley *n*, which case the carrier will engage with one of the stops *l*, secured to the treadway near each end of the track, and the arm *m* upon the stop will rest in the notched seat of the carrier, while the stop *j* upon the carrier will straddle the track. The forward ends *o* of the carrier extend from the seat and project downward to permit the arm *m* to ride thereon and drop into said seat. To dispatch the carrier thus arranged, it is but necessary to pull down upon the handle *k*, which will expand the treadway and draw back with it the carrier, the treadway slipping over the track, when by releasing the handle the treadway contracts the car moving therewith, and having received its impulse the stop *i* comes in contact with the pulley *h*, causing the stop *l* and arm *m* to jump from the seat in the carrier, permitting the car to pass on its way to the other end. It is optional whether the treadway be secured to the track-support or not; but as a provision in desired cases I have provided means *n* therefor, which, as shown in Fig. 4, consist of a wire passing around the treadway and through holes in the track, and secured by twisting the ends about them to grip the track and treadway together, or they may be fastened by wrapping wire tightly around them.

When it is desired to construct the apparatus for heavy work, such as bundle-carrying, I employ the metallic plate Q adjacent to the stop *l* and in advance thereof beneath the treadway and track, thus providing means for reducing any friction of the contacting parts.

It will be understood that the concave or groove in the track A (see Figs. 3 and 4) may be of such a depth that when the treadway is distended or tensioned, making it smaller in diameter, a part of the tread of the wheels of the carrier will ride or travel upon the upper edges of said support, thus relieving the treadway *o* of any undue weight of the carrier while being propelled.

In Figs. 1, 2, 4, 10, and 11 is illustrated the hereinbefore-described pawl *e* and lever *f*, adapted to hold the carrier at the station after the treadway has been distended, this being necessary in very long ways where an extended impulse is desired.

It will be readily seen that the device as above constructed may be operated in three different ways: First, assuming that the pawl *e* is thrown out of engagement with the treadway, the treadway may impel the carrier by simply pulling the former back by the handle *k*, and when sufficiently tensioned releasing said handle; second, pull the carrier and treadway back, lock it with lever *f* and pawl *e*, and manipulate the carrier, after which by pressing the lever upward the treadway may be released, despatching the carrier; third, the treadway may be distended and locked by the pawl *e* prior to the arrival of the car, (the shock of which is taken up in all cases by the stop *l* upon the treadway,) and after the desired manipulation the treadway may be released as in the second case, and this last method of operation has been found to be convenient and expeditious.

In Fig. 9 the way is shown as inclined and the sides of the bracket cut away, which in cross-section, when completed, should be substantially as seen in Fig. 3, the end S holding the track and the fastener *r* securing the treadway to the bracket. The latch *t'* at the upper end of the track is provided with a starter V, which when used hastens the motion of the carrier when released.

In Fig. 10 the treadway is shown as closely spun upon the wire track, and may be continuous from end to end of the track or may be discontinuous, having its inner ends suitably clamped or soldered to the track. The stop (shown in detail in Fig. 3) at the end of the treadway may have the arms W^2 upon its sides near the top, and the operating-cord *j*, made fast thereto by being secured into the lug W' and the treadway secured in the chamber W^3. The operation of these combined parts is substantially the same as the other, with the exception that the bracket is omitted in front of the pulley *h*, and the operating-cord may be of a non-expansible material.

Referring to Fig. 11, the treadway C is shown extending out upon the track and secured by a suitable clamp a^6, the opposite end of the treadway being connected with the follower *t*, which latter is provided with a tilting catch *u*, having an extended arm *t'* and a tipping chain or cord t^2 or other equivalent means adapted to automatically lift the latch

from the carrier when the follower has reached the limit of its forward movement, to which point it is carried by the contraction of the treadway.

The follower is retracted in the construction shown in Fig. 11 by means of the non-elastic cord *j*, the arrangement of which has already been described, the said follower sliding to and fro upon the extended ends of the bracket G, or the follower may be retracted by the handle t^3 thereon.

The carrier shown in detail in Fig. 12 consists of a suitable receptacle H, carried in any approved manner by the frame F, in which is mounted the wheels F′, adapted to bear on the treadway and track, the said frame F having the depressed ends *o* and stops *p*, as has already been described.

Having thus described my invention, what I claim is—

1. In a store-service apparatus, the combination, with a fixed track extending from station to station, of an elastic treadway having its one end secured to the said track, means for distending the said treadway parallel to the said track, a carrier adapted to rest on the track and treadway, and means carried by the said treadway for engaging the carrier, substantially as described.

2. In a store-service apparatus, the combination, with a fixed track extending from station to station, of an elastic treadway secured to the said track, a carrier adapted to travel on the said track and treadway, means for distending the end of the said treadway in a line parallel with the track, a stop *i*, limiting the contraction thereof, and means carried by the end of the said treadway for engaging the carrier, substantially as described.

3. In a store-service apparatus, the combination, with a fixed track, of a carrier adapted to travel thereon, an elastic treadway supported by the said track and carrying the said carrier, means upon the end of the said treadway adapted to engage the said carrier, and a pulley over which a continuation of the said treadway passes in a line parallel to the line of the track, substantially as described.

4. In a store-service apparatus, the combination, with a fixed track extending from station to station, of an elastic treadway secured to and upon the said track and carrying means adapted to engage a carrier, a carrier adapted to rest on the said treadway, and means whereby the ends of the said treadway may be distended parallel to the line of the track, and a stop whereby the contraction of the said treadway will be suddenly limited, substantially as described.

5. In a store-service apparatus, the combination, with brackets, of a fixed track extending between the said brackets, an elastic treadway upon the said track and having means adapted to engage a carrier, a carrier adapted to travel over the said elastic treadway, a pulley mounted in each of the said brackets, over which the ends of the said treadway extend in a line parallel to the line of the track, stops *i*, whereby the contraction of the said treadway may be suddenly stopped, and pawls whereby the said ends may be retained in their extended position, substantially as described.

6. In a store-service apparatus, the combination, with a fixed track extending from station to station, of a carrier adapted to travel on the said track, an elastic treadway supported by the said track and carrying the said carrier, means for extending the end of the said elastic treadway in a line parallel to the line of the track, and a catch mounted upon the end of the said treadway and adapted to automatically engage the carrier and to become automatically disengaged therefrom upon the contraction of the elastic treadway, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN H. GOODFELLOW.

Witnesses:
J. R. NOTTINGHAM,
WM. H. DELACY.