

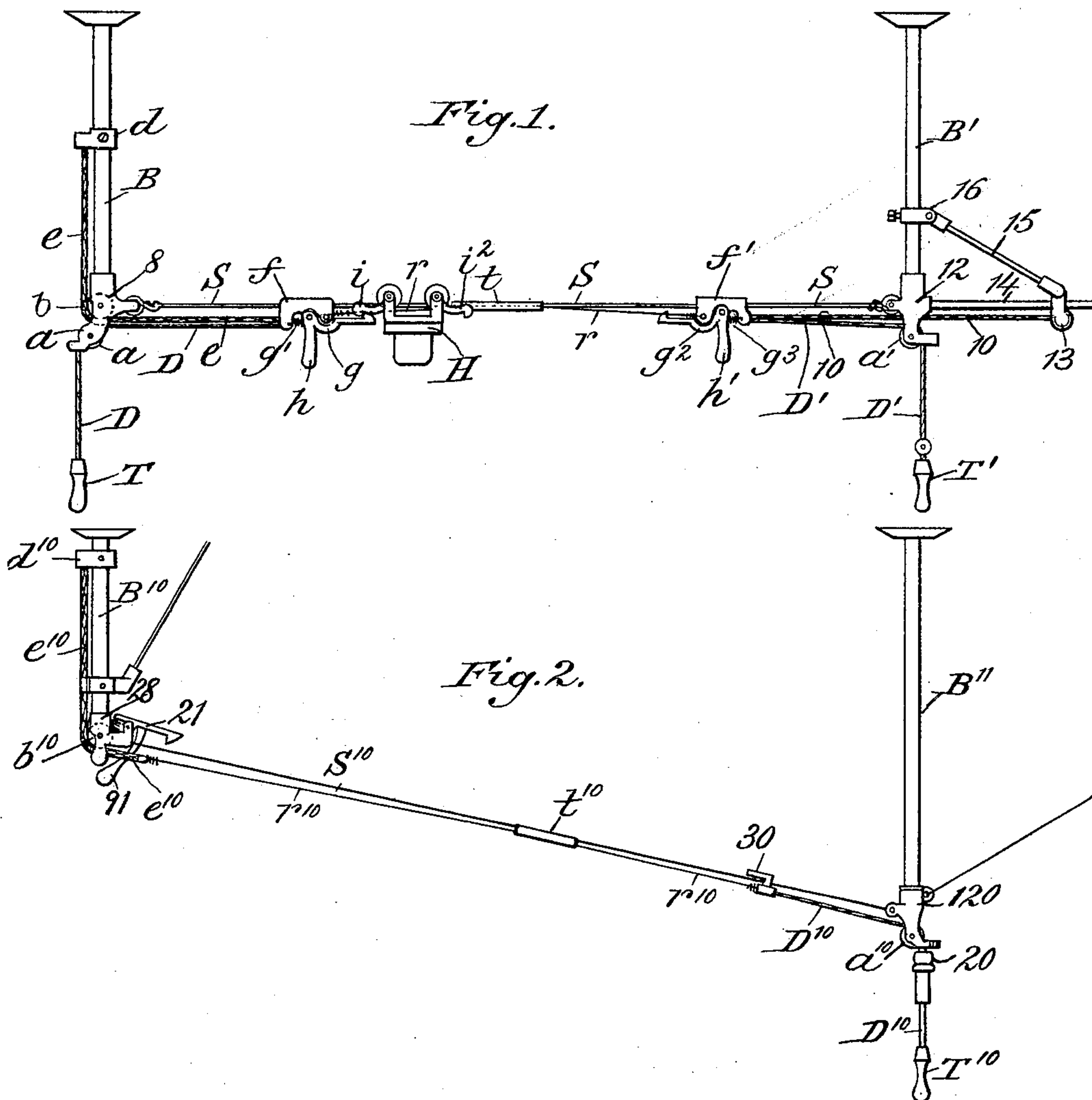
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J. H. GOODFELLOW.
STORE SERVICE APPARATUS.

(Application filed May 12, 1896. Renewed Dec. 7, 1897.)

(No Model.)



WITNESSES:

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STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 607,032, dated July 12, 1898.

Application filed May 12, 1896. Renewed December 7, 1897. Serial No. 661,090. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GOODFELLOW, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Store-Service Apparatus, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in that class of store-service apparatus in which a way is supported between stations and on which a carrier travels.

It relates more particularly to certain improvements in the mechanism for giving the carrier the impetus that propels it from one station to another.

The invention consists, primarily, of a wire extending from station to station substantially parallel with the way and connected at one end with a spring mechanism and provided at the other end with means for varying the tension of said spring mechanism, and thereby imparting an impetus to the carrier mounted on the way to propel the same.

The invention further consists in the novel construction, combination, and arrangement of parts, such as will be hereinafter more fully described, pointed out in the appended claims, and illustrated in the accompanying drawings.

In the accompanying drawings, in which similar letters and figures of reference designate corresponding parts, Figure 1 is a side elevation of a store-service apparatus embodying the invention. Fig. 2 is a similar view showing a modification of the same.

Referring to the drawings by letters and figures, B and B' respectively designate the supporting-brackets, which may be of any construction suitable in the premises. Between these brackets the way S is stretched. In the foot-bracket 8, on the lower end of the bracket B', a pulley *b* is journaled in line with the way. Over this pulley an elastic cord *e* passes and is secured at one end to the clamp-slide *d*, adjustably mounted on the bracket B. The other end of the cord is secured to the latch-body *f*, mounted on the way S, so as to move freely thereon.

On the way S, near its end connected with the bracket B', is mounted a second latch-

body *f'*, moving freely thereon. To this body is secured an end of the elastic cord 10. The other end of this cord passes through the bracket-step 12 and is connected with the dog 13, mounted on the arm 14. The dog is adjustable on the said arm and is held in position thereon by the rod 15, hinged to said dog at one end and pivoted at the other end to the sliding clamp 16, mounted on the bracket B'. The clamp is provided with a set-screw for securing it in its adjustments.

A wire *r*, running substantially parallel with the way S, connects the latch-bodies *f* and *f'*. This wire is held taut by the elastic cords *e* and 10, respectively connected with the latch-bodies *f* and *f'*. The tension exerted by these elastic cords on the wire can be regulated. By means of the slide-clamp *d* the elastic cord *e* can be stretched to any desired extent, as can the elastic cord 10, by the adjustable dog 13. By regulating the stretch of these elastic cords the tension exerted on the wire *r* and the cords themselves can be varied to any desired extent.

A thimble *t* is mounted on the way S, intermediate of its ends, and has an aperture formed therein through which the wire *r* passes and can freely move. This thimble serves to hold the wire in its proper position relatively to the way.

Pivoted to the under side of the latch-body *f* is a latch *g*. The free end of the latter is normally held in an elevated position by the spring *g'*. A weighted arm *h* is secured to the latch for a purpose that will be explained farther on. A latch *g*² is also pivoted to the body *f'*. Its free or engaging end is normally held in an operative position by the weighted arm *h'* and the spring *g*³.

A carrier H, provided with suitable wheels, is mounted on the way S. From opposite ends of the same catches *i* and *i*², respectively, project. The catch *i* is adapted to engage with the latch *g*, and the catch *i*² is adapted to engage with the latch *g*².

In the foot 8 of the bracket B a pulley *a* is journaled. Over this pulley a cord D passes and is attached at one end to the latch-body *f*. The other end of the cord is provided with a pull-handle T. In the foot 12 of the bracket

B a pulley a' is journaled. A cord D passes over this pulley and is secured at one end to the latch-body f' and has attached to its free end a pull-handle T' .

5 The operation of the device is as follows: Assuming the carrier H to be in the position shown in Fig. 1 and it is desired to send it to the other end of the way, the operator pulls down on the cord D, and thereby draws back
10 the latch-body f and also the carrier connected with the said body by means of the latch g and the catch i engaging. This movement of the latch-body f through the wire r stretches the elastic cord 10 through the in-
15 tervening mechanism. The cord D is then released by the operator and the elastic cord 10 allowed to contract. The contraction of the cord 10 through the intervening mechanism gives a sudden impulse to the latch-
20 body f . This movement of the latch-body causes the latch g to disengage from the catch i . As the weighted arm h is hinged to the latch-body, the momentum given to the latter will not be directly imparted to the said
25 arm, and consequently it will hang back to a considerable extent, and thereby move the latch to release the same from the catch i . The impulse given to the carrier will cause it to travel to the opposite end of the way,
30 where it will strike the latch-body f' . The force exerted by the carrier striking the latch-body f' will be taken up by the elastic cord e , connected with the wire r . On striking the body f' the latch g^2 will engage with the
35 catch i^2 , and thereby prevent the carrier from springing back. To send the carrier in the opposite direction, the operation is repeated through the cord D' and the intervening mechanism.

40 The construction shown in Fig. 2 is substantially the same as that shown in Fig. 1, except that there is only one propelling mechanism in the former. In this instance the way is inclined so that the carrier can travel
45 in one direction by gravity. In this construction B¹⁰ and B¹¹ respectively designate the supporting-brackets. In the bracket-foot 28 the pulley b^{10} is journaled and has passing over the same the elastic cord e^{10} . The latter
50 is secured at one end to the sliding clamp d^{10} , mounted on the bracket B¹⁰. The other end of the cord is attached to an end of the wire r^{10} , supported substantially parallel with the way S¹⁰. A thimble t^{10} is mounted on the way
55 and has an aperture formed therein for the free passage of the said wire. The other end of the wire r^{10} is connected with the operating-cord D¹⁰, passing over the pulley a^{10} , journaled in the bracket-foot 120. The cord is
60 provided with a buffer 20.

A spring-pressed latch 21 is pivoted to the bracket B¹⁰ for engaging with the carrier and holding the same. A handle 91 is provided for moving the latch to release the carrier.
65 A stop 30 is provided for receiving the carrier at the lower end of the way.

To send the carrier up the incline, supposing it to be resting against the stop 30, the cord D¹⁰ is pulled and stretches the cord e^{10} . When the cord is released, an impulse is given
70 to the carrier that will carry it up the inclined way, where it will be caught by the latch 21 and held. The force exerted by the carrier striking against the catch will be taken up by the buffer 20 on the operating-cord. 75

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a store-service apparatus, the combination of the brackets, a way supported between said brackets, a wire extending between said brackets and substantially parallel with said way, a spring mechanism connected with the bracket at one end of the wire, and means connected with the bracket at the other end of
80 the wire for varying the tension of said spring, and a carrier mounted on said way and adapted to be moved by the action of said spring. 85

2. In a store-service apparatus, the combination of the brackets, a way supported between said brackets, a wire extending between said brackets and substantially parallel with said way, a thimble connecting said wire with said way intermediate of its ends and allowing the said wire to freely pass through the
90 same, a spring mechanism connected with the bracket at one end of the wire, and means connected with the bracket at the other end of the wire for varying the tension of said spring, and a carrier mounted on said way and adapted
95 to be moved by the action of said spring. 100

3. In a store-service apparatus, the combination of a way, a wire running therewith substantially parallel with the same, a spring attached to each end of said wire and to a
105 fixed point, means connected with each end of said wire for varying the tension of said springs, the means attached to one end of said wire operating through the wire to vary the tension of the spring attached to the other
110 end of said wire, and a carrier mounted on said way and adapted to be propelled by said springs.

4. In a store-service apparatus, the combination of the supports, a way stretched between said supports, a wire extending between said supports and substantially parallel with said way, springs connecting the ends of said wire with said supports, means connected with the ends of said wire for varying the tension
115 of said springs, so that the means at one end of the wire will operate on the spring at the other end, and a carrier mounted on said way and adapted to be moved by said springs. 120

In testimony whereof I have signed my
125 name to this specification, in the presence of two subscribing witnesses, on this 4th day of May, A. D. 1896.

JOHN H. GOODFELLOW.

Witnesses:

W. E. BARNARD,
WM. ROBINSON.