(No Model.)

# D. LIPPY.

## STORE SERVICE APPARATUS.

No. 501,480. Patented July 11, 1893.

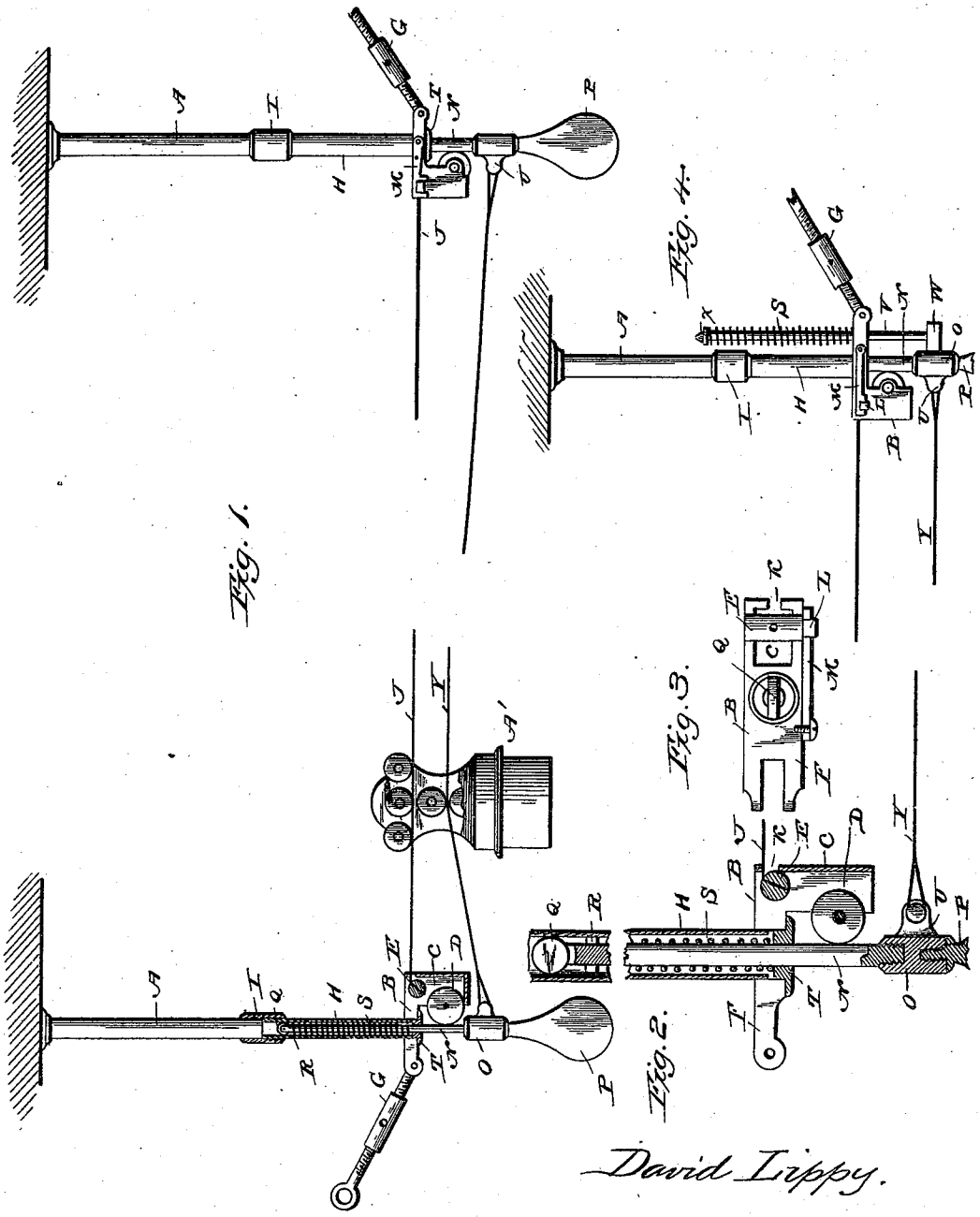

Fig. 1.

Fig. 4.

Fig. 3.

Fig. 2.

Witnesses:

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# UNITED STATES PATENT OFFICE

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## STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 501,480, dated July 11, 1893.

Application filed March 8, 1892. Serial No. 424,146. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID LIPPY, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, 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 relates to improvements in store-service apparatus, in which two wires are used, a stationary track wire and a propelling wire, and the objects of the invention are first, to provide a means by which a car can be propelled from station to station, along a stationary track wire, by a slack propelling wire placed below the track wire. A further object is to so construct the mechanism by which the propelling wire is operated, that it will be easy of operation, cheap in construction, durable and artistic in design. This I accomplish by the mechanism illustrated in the accompanying drawings in which—

Figure 1 is a side elevation of a line complete showing both stations, one in longitudinal section. Fig. 2 is a sectional view of one of the feet and portion of the vertical tube, "enlarged" showing its general construction. Fig. 3 is a top view of same. Fig. 4 is a view showing a modification of one of the stations as shown in Fig. 1 which will be fully explained hereinafter.

Similar letters refer to similar parts throughout the several views.

In the accompanying drawings A represents the hangers or supports movably secured to the ceiling each being provided at its lower end with a tube H carrying the cast foot B. The front portions of these feet as at C are hollow and in each is journaled the rollers D and E. The outer end of each shoe B is bifurcated and it is attached to the turnbuckle G. The roller E is for the purpose of attaching or securing the stationary track wire J and stretching the same, the wire passing through the opening K in front of the foot B, then through a hole in the roller E. One end of the said roller is provided with a square end L so that the roller can be easily turned, which takes up the slack of the wire and giving it sufficient tension to support the car. The roller is held rigid by the notched pivoted bar M, the notch engaging the square end of the roller.

N indicates vertical rods, which are provided upon their lower ends with the wire connections O and handles P. The upper ends of these rods are bifurcated and provided with the rollers Q. A collar R is formed upon the said rods below the roller Q. The rods N are placed within the tubes H and are surrounded by the coil-springs S the upper ends bearing against the collar R and the lower ends being guided by the parts T and B. The spring S is for the purpose of raising the vertical rod N and retaining the same in position when not in operation. The sleeve roller D is for the purpose of holding the rod N central in the tube H and at the same time to overcome friction. The roller Q pivoted in the bifurcated end of the vertical slide rod N is also to overcome friction when sliding in the tube.

The lower or propelling wire Y is secured by pivoted clips U to the connection O secured upon the lower end of the rod N the said wire extending from station to station. The full construction I have shown in Figs. 1, 2 and 3.

Fig. 4 illustrates a modification of one station in Fig. 1, the only difference between the two constructions being in the position of the coil spring S. In Fig. 1, the spring is within tube H while in Fig. 4 the said spring is placed over an independent vertical rod V which is secured at its lower end to a projection W forming part of the wire connection O then passing upward through a guide in the bifurcated end of the foot B the spring having a tension between the cap X and top of the foot B.

The stationary track wire J is secured at each end to the rollers E journaled in the feet B and by rotating the said rollers the wire is stretched to a sufficient tension. The lower or propelling wire Y is secured to the connections O by the clips. It is not necessary to place much tension upon the propelling wire as it is only necessary to take up

the sag or slack. A car A′ is placed upon the track wire, the upper wheels carrying the car, the propelling wire passing over the lower wheel.

It will be readily seen that when the operator pulls downward upon the handle P, the distance between the upper and lower wires is increased, forming a wedge at the rear of the car which propels the car from station. After the car has received sufficient velocity the wire by the action of the spring S drawing upon the rod N by its expansion upward returns the same to its place of rest.

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

1. The combination, with a hanger and track-wire supported thereby, of a rod having sliding connection with the hanger and a propelling wire connected with the rod.

2. In a store service apparatus, the combination with hangers or supports having tubular lower ends, a track wire extending from one support to the other, a coil spring located within the tubular end of each support, a rod passing through each spring, a roller carried by the upper end of each rod, and a propelling wire connecting said rods near the lower ends of the latter, substantially as set forth.

3. In a store service apparatus, the combination with hangers or supports having tubular lower ends, a track wire extending from one support to the other, a sliding rod mounted in the tubular end of each support, a spring for forcing each rod upwardly, a propelling wire secured at its ends to the sliding rods, and a foot secured to each hanger and provided with a roller adapted to steady its respective sliding rod.

4. The combination with the vertical tubes and means for supporting said tubes, of a suitably supported track-wire, a spring controlled propelling wire, vertically sliding rods, handles connected to the ends of said propelling wire and to the said rods, and guides for said vertically sliding rods.

5. In a store service apparatus the combination of hangers or supports having tubular lower ends, a track wire connecting the tubular ends, spring controlled rods movable in the tubular ends of the hangers, a propelling wire connecting said rods and guide rollers for guiding the rods, substantially as set forth.

6. In a store service apparatus the combination of tubular hangers, feet formed on or carried by said hangers, a track wire connected to said feet, rods movable in the hangers and provided with handles, a guide or roller carried by each of the rods and movable in the tubular hangers, springs surrounding the rods, rollers arranged in the feet for guiding the rods, and a propelling wire connecting the rods, substantially as set forth.

7. The combination with a hanger and track wire secured thereto, of a rod having sliding connection with the hanger, said rod bearing at or near one end upon the hanger and a propelling wire connected to the rod.

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

DAVID LIPPY.

Witnesses:
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