(No Model.)

C. ST. ONGE.

STORE SERVICE APPARATUS.

No. 438,201. Patented Oct. 14, 1890.

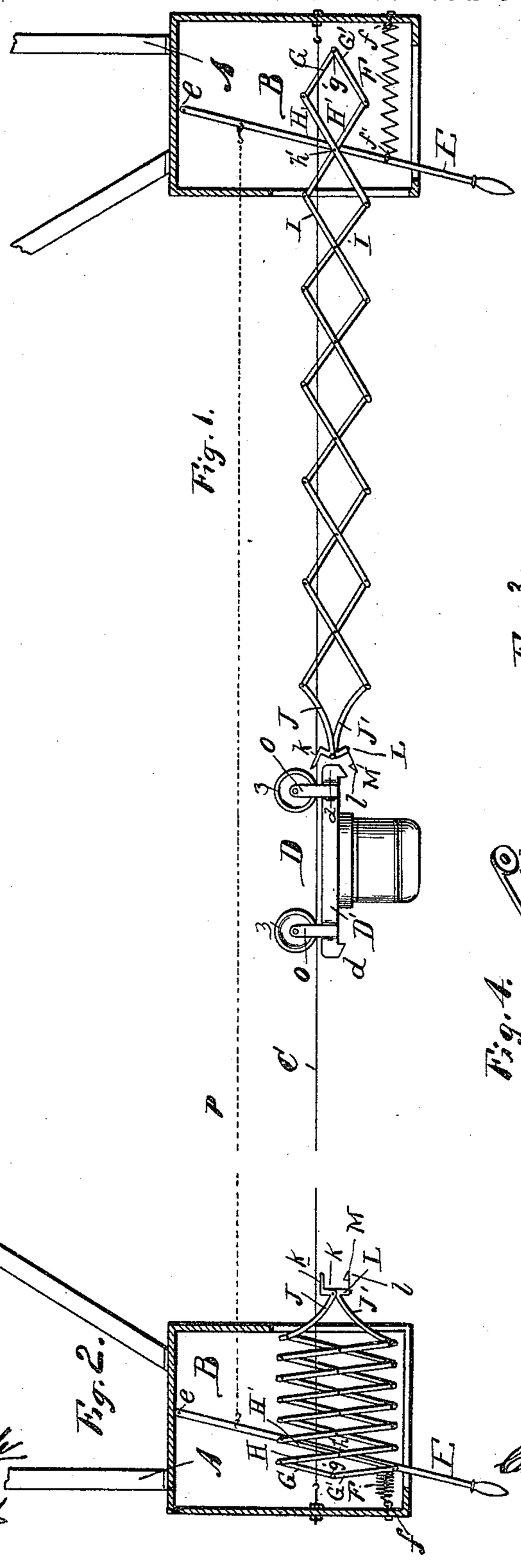

Fig. 1.

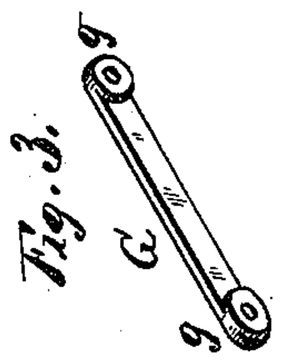

Fig. 3.

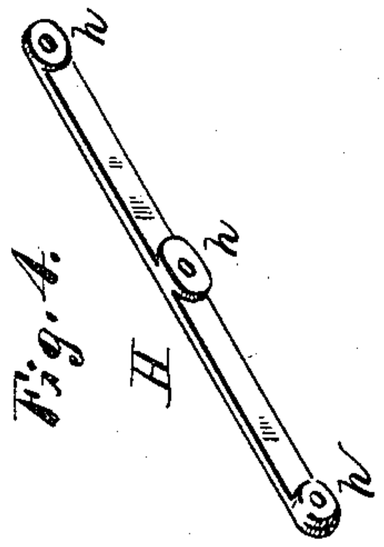

Fig. 4.

Fig. 2.

WITNESSES

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STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 438,201, dated October 14, 1890.

Application filed June 20, 1890. Serial No. 356,119. (No model.)

To all whom it may concern:

Be it known that I, CLIFFORD ST. ONGE, a citizen of the United States, and a resident of Negaunee, in the county of Marquette and State of Michigan, have invented new and useful Improvements in Store-Service Apparatus; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to that class of store-service apparatus in which the carrier running on a wire is propelled by mechanical means.

The object of my invention is to provide mechanical means which may be operated by hand for propelling the carrier on the wire or ways; and it consists in an actuating-lever fulcrumed to a fixed support and pivoted to and supporting a system of levers also fulcrumed on the fixed support and provided with means for holding the carriage until its full momentum is obtained and then releasing it, and in the peculiar construction, arrangement, and combination of the several parts, as hereinafter more particularly described and claimed.

Figure 1 is a front view of my invention with the levers extended and the front of the box removed. Fig. 2 is front view showing the levers retracted. Fig. 3 is a perspective view of one of the short levers. Fig. 4 is a perspective view of one of the long levers of the system.

In the drawings, A represents the fixed support on which the apparatus is suspended. In this case it is a hanger suspended from the ceiling of the store; but any other convenient support may be used.

B is a box firmly attached to the fixed support, in which the operating machinery is placed, with suitable openings for the lever and other operating parts which pass out of the box when in operation.

C is the taut wire on which the store-service carrier runs, which is attached to the rear side of the box somewhat below the vertical center of the box in any convenient manner. The wire is attached to a like box at its other end and drawn taut for the passage of the carrier to and fro. The carrier D runs on wheels and is of any common construction used for this purpose.

E is a lever pivoted to the back of the box on the inside by the pivot *e* and extending below the lower side of the box far enough to furnish sufficient leverage to actuate the system of levers to which it is connected by the pivot *h'*, on which the system of levers is supported.

F is a coiled spring attached to the rear end of the box at *f* and at the other end to the lower arm of the lever E at *f'* for the purpose of retracting the lever and the system of levers after the carrier has been sent over the wire by the forward movement of the lever.

G G' are two short levers having the projection *g g* on the inner side at their ends pivoted to the back side of the box and to each other by the pivot *g'* at a point near the rear end of the box and just below the wire C, the lever G being next to the back side of the box and behind the wire.

H H' are levers having on their inner sides a slight projection *h*, at their ends and centers pivoted to the free ends of the short levers G G'. These levers are twice the length of the levers G G', and the lever H is so pivoted to the lever G that it is in front of the wire C, and the lever H' is so pivoted to the lever G' that it is behind the wire C. The levers H H' are pivoted to each other and to the lever E at their centers by the pivot *h'*.

I I' are levers of the same construction as the levers H H' and are pivoted to these levers at their free ends and to each other at the centers, the lever I being in front of the wire and the lever I' behind it. The projections *h* on the inner sides of the levers at their ends and centers set the arms of the levers far enough apart to allow the interposition of the wire between them without interfering with their action. By this construction and the method of supporting the operating-levers on the pivot by which they are attached to the fixed support, and on the actuating-lever by the pivot which connects them to it, their support and action are entirely independent of the wire on which the carrier travels. A series of these levers of a sufficient number to give the necessary action

are pivoted together and terminate in the short levers J J′ at the outer end of the series. These levers are of the same construction as the others, except that they may be slightly curved outward in the arm pivoted to the inner levers and are cut off just beyond the center pivot.

K is an arm of the lever J projecting upward at such an angle that its outer face is vertical or at right angles with the wire C.

k is a finger projecting outward from the upper end of the arm K and parallel with the wire C, for the purpose of receiving and holding the end of the carrier D.

L is an arm of the lever J similar to the arm K on the lever J.

M is a spring suitably attached to the outer end of the arm L and extending outwardly and parallel with the finger *k* on the arm K.

l is a catch at the end of the spring M and on its upper side, its outer end being beveled to enable it to slide easily over the inclined plane in front of the catch *d* on the carrier, with which it engages when holding the carrier at rest. The system of levers is supported by the actuating-lever E by the pivot *h′*. A like system of levers is used at the other end of the wire.

D′ is a bar extending the whole length of the carrier and firmly attached to the hangers O O, which support the wheels which run on the wire.

d d are catches at each end of the bar D′, the outer end being an inclined plane to engage with the catch *l* on the spring M. The ends of the bar D′ should be just the thickness to enter between the finger *k* and the spring *l*. The other parts of the carrier may be of any convenient form or construction.

If it is desired to operate this device from only one end, the levers E of the two systems are connected by a cord or wire, as shown at P.

The operation of my device is as follows: The carrier being held by the spring-catch *l* and the finger *k*, is in position to be started on its journey, the system of levers being retracted and within the box. The operating-lever E, extending through the lower edge of the box, is moved quickly forward. This moves the pivot *h′* forward and brings the outer ends of all the levers of the system nearer the line of their centers and throws their outer ends forward. This motion is transmitted from one pair of levers to the next and constantly increases in speed as far as the system extends. As the carrier is held by the outer levers of the system, it is propelled forward at the same speed with which they move. As the outer ends of the levers approach each other, and as the elongation of the line approaches its utmost limit, the finger *k* and the spring *l* open and release the carrier, which is free to proceed on its journey.

It is evident that the speed of the carrier depends upon the number of levers in the system and in the quickness with which the operating-lever is actuated.

In practice it will be found that a very small system of levers and a slight expenditure of force will do all the work required in any ordinary store-service.

This device may be used with any system of ways or carriage.

What I claim as my invention is—

1. In a store-service apparatus, the combination of the wire on which the carrier travels, with the carrier running on the wire, the system of levers to propel the carrier, supported independently of the wire, and the actuating-lever attached to a fixed support and supporting the free end of the system of levers, all substantially as described.

2. In a store-service apparatus, the combination of the wire on which the carrier moves, with the carrier traveling on the wire, the system of operating-levers to propel the carrier pivoted to a fixed support and supported by the actuating-lever, and the actuating-lever pivoted to the fixed support of the operating-levers, all substantially as described.

3. In a store-service apparatus, the combination of the wire upon which the carrier travels, with a system of propelling-levers suspended from a fixed support and supported by the actuating-lever independently of the wire on which the carrier travels, all substantially as described.

4. In a store-service apparatus, the combination of the wire upon which the carrier travels, with a system of propelling-levers pivoted to a fixed support and supported by the actuating-lever, the finger and spring-catch on the outer levers of the system to receive and hold the carrier, the carrier adapted to engage with the finger and spring-catch on the levers, and the actuating-lever, all substantially as described.

5. In a store-service apparatus, the combination of the wire on which the carrier travels, with a system of propelling-levers pivoted to a fixed support and supported independently of the wire on which the carrier travels by the actuating-lever, the actuating-lever fulcrumed on a fixed support and pivoted to and supporting the propelling-levers, the finger and spring-catch on the outer levers of the system to engage with the carrier, and the carrier on the wire adapted to be propelled by the system of levers, all substantially as described.

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