

(No Model.)

R. A. PARKER.
STORE SERVICE APPARATUS.

No. 393,785.

Patented Dec. 4, 1888.

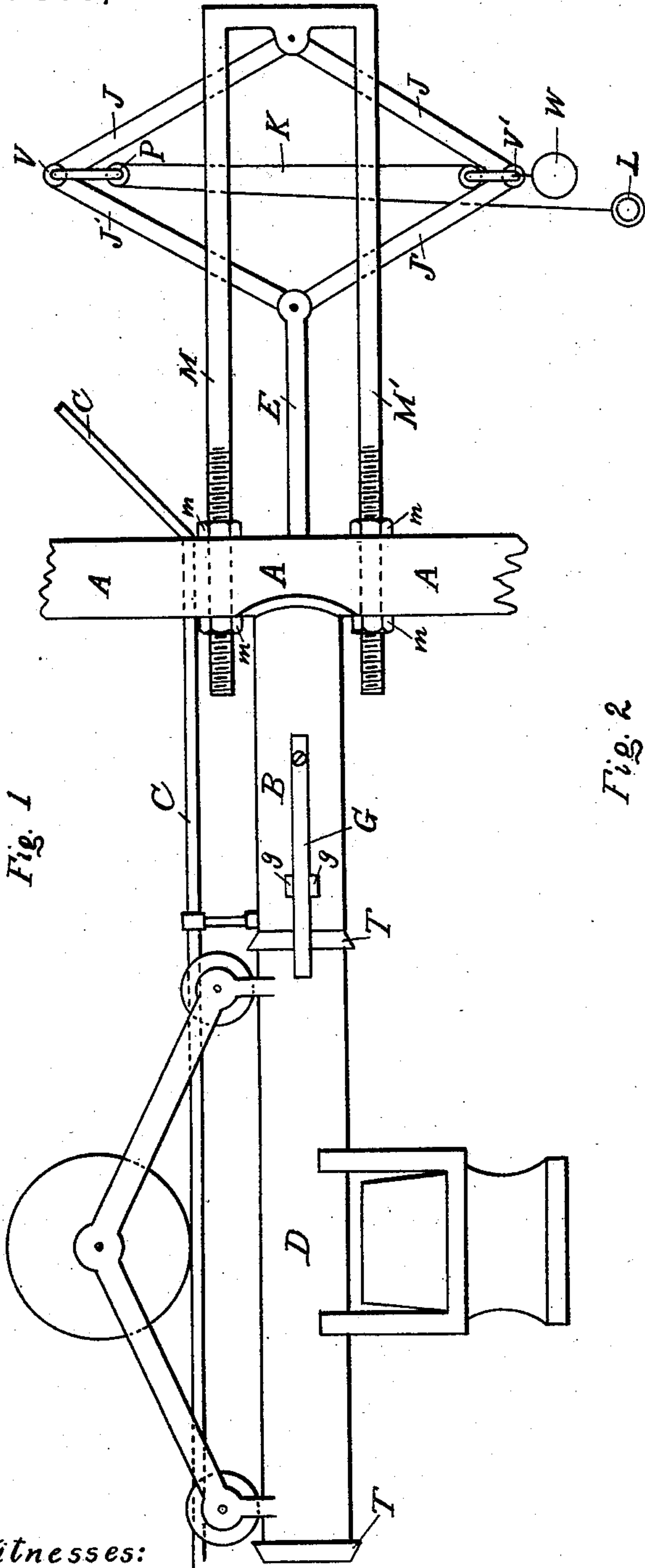


Fig. 1

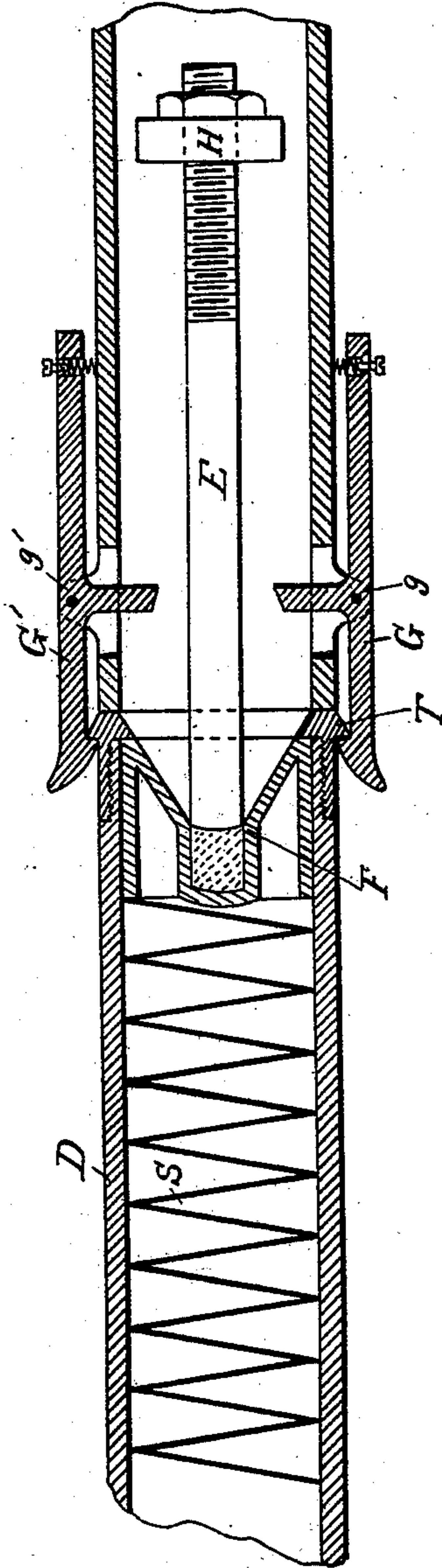


Fig. 2

Witnesses:

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UNITED STATES PATENT OFFICE.

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STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 393,785, dated December 4, 1888.

Application filed July 5, 1887. Serial No. 243,329. (No model.)

To all whom it may concern:

Be it known that I, RALZEMOND A. PARKER, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Store-Service Apparatus, of which the following is a specification.

My invention relates to that class of store-service apparatus denominated "cash or parcel carriers," in which the carrier traveling on a wire way is propelled by the action of a spring; and the object of my improvement is to furnish a device which shall be simple, cheap, and durable in construction, direct in its action, and operate with greater ease and certainty than those now in use. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the entire machine, including the carrier; and Fig. 2 is a sectional view of one end of the carrier and interior mechanism thereof and connecting parts, drawn on a horizontal plane.

Similar letters refer to similar parts in the respective figures.

In Figure 1, A represents a tubular standard or bracket, which may be supported at the top and bottom, in any convenient manner, to the ceiling or side of the store. To this standard is attached by a flange attachment a tube, B, within which operates a plunger, E, the same being guided by holes through the side of the tube A.

C C is the wire upon which the carrier D travels, it being passed through the tube A and extended to any convenient point in the store, where it may be rigidly attached. The carriage D is constructed with suitable rollers and guides for traversing the wire C in any of the usual forms. Its body consists, preferably, of a tube of the same size as the tube D. Attached to this tube is the box or receptacle in which cash or parcels are to be carried, and about which there is nothing new. Within the tube D is placed a strong spiral spring, S. At either end of the tube this spring engages in a loosely-fitting piston, F, (shown in section in Fig. 2,) and as both of these pistons are alike and the manner of confining them in the carriage-tube is the same at either end

I show but one of them in the drawings, Fig. 2. These pistons are confined and the spring compressed between them by means of adjustable screw-thimbles having both an exterior and an interior flange, the interior flange forming the abutment against which the piston F rests when the apparatus is not in operation, and the outer flange forming a catch in which the spring-latches G G' engage.

The spring-latches are pivoted to ears or projections *g g*, formed upon the tube D. Upon these latches are formed lugs, which project through apertures into the tube B, approaching the plunger E. Upon the plunger E there is adjustably attached by means of a screw-thread the nut H, the office of which is to engage the lugs upon the latches G G' when the plunger E is thrown forward, thereby compelling the release of the carriage D. The piston F is concave and so formed that at its bottom may be placed a cushion of felt, leather, or rubber, against which the plunger E will impinge, the concavity serving to guide and center the carriage and the plunger E.

Adjustably attached to the standard A is a frame-work, M M, projecting to the rear of the tube B. This frame is adjustably attached by screw-threads and the jam-nuts *m m m m*, whereby the distance from its extreme point to the tube A may be adjusted. At the farther end from tube A of this frame-work there is pivoted the bars J J, and at the extreme rear end of the plunger E there is also pivoted the two bars J' J'. These bars J and J' are pivoted together at their ends at V V', all of these bars being practically of an equal length. At the pivot V' is attached a cord, which passes over a pulley, *p*, attached to the upper joint, V, and thence downward to a handle, L. To the lower joint, V', is also attached a weight, W, the office of which is to return the bars J J' substantially in the position shown in the drawings, thus retracting the plunger E.

The operation of this device is as follows: The car D, being against the mouth of the tube B, is engaged by the spring-latches G G' and firmly held in that position. The spring S in the car D separates the pistons F F, compelling them to press with any assignable

pressure upon the abutment of the thimbles forming the ends of the tube D of the car. The operator by pulling upon the handle L brings toward each other the pivoted points V V' of the bars J J and J' J'. As the result of this the plunger E is forced forward toward and into the tube of the carriage D, and as such carriage is held by the spring-latches G G' the spring S therein is necessarily compressed until the adjustable nut II upon the plunger E engages with the lugs of the spring-latches G G', thereby compelling a release of the carriage, whereupon the reaction of the spring S against the plunger E forces the carriage D along the wire with a force proportioned to the strength of the spring and the adjustment of the apparatus.

It is obvious that the effect of the operation of the bars J J and J' J' as the points V V' are brought together is to compress the spring S with a constantly-increasing power, depending upon the varying angularity of the bars. It is also obvious that as the spring S is compressed its resistance increases in proportion to the compression, and that also some resistance is experienced in unlatching the spring-latches G G', and the object of the arrangement of the bars J J and J' J', together with the pulleys and cord K, is to furnish an increasing leverage, which shall in a great degree be adjustably proportioned to the increasing resistance of the spring, so that more strength will be required of the operator to commence the operation of compressing the spring than would be required to finish that compression and trip the spring-latches. Heretofore in all devices of this character, when operated by a spring of metal, rubber, or compressed air, the difficulty inherent to the nature of motive power of requiring a constantly-increased strain on the part of the operator to operate the motor has existed. The consequence is that many times the operator would be compelled to make several pulls upon the cord or lever or other means of operation before he would finally succeed in setting the carriage in motion. With my improvement the greatest power is required in overcoming the first strain of the spring. Thereupon the leverage increases so rapidly over the increasing tension of the spring that the subsequent operation, when the first resistance is once over-

come, is far easier, pleasanter, and more certain than with the ordinary form heretofore used. It is also obvious that the same effect could be produced with but one pair of the bars J J', provided the point of attachment with the plunger E was suitably guided. It is also obvious that the form of the levers J' J J might be varied; also, a different mode of operating them, as by attaching the cord to the end of one of the bars extended beyond the fixed pivot, without departing from the spirit of my invention. I prefer, however, the form shown.

After the plunger E has been extended and the work performed of compressing the spring S, the weight W will tend to draw the point V downward, and thus retract the plunger E. On the return of the carriage D, should the plunger E not be retracted, it will be engaged by and guided into the thimble F, when the slight stroke of the carriage against the plunger, aided by the weight W, will at once place the parts in their original position and the carriage D will impinge against the mouth of the tube B and be engaged by the latches G G', when the operation of propelling it along the wire way can be repeated.

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

1. The combination of the latches G G', having the lugs thereon, with the plunger E, having the adjustable nut, whereby the movement of the plunger operates to loose the latches, substantially as described.

2. In a store-service apparatus, the combination of the carriage adapted to travel on a way, carrying the propelling-spring for driving said carriage, spring-latches for holding said carriage in position while said propelling-spring is being compressed, a plunger located at either end of said way to actuate said propelling-spring, an adjustable nut thereon to loose said latches, and the levers, substantially as described, for overcoming the resistance of said spring and spring-latches, all constructed and operating substantially as described and shown.

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Witnesses:

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