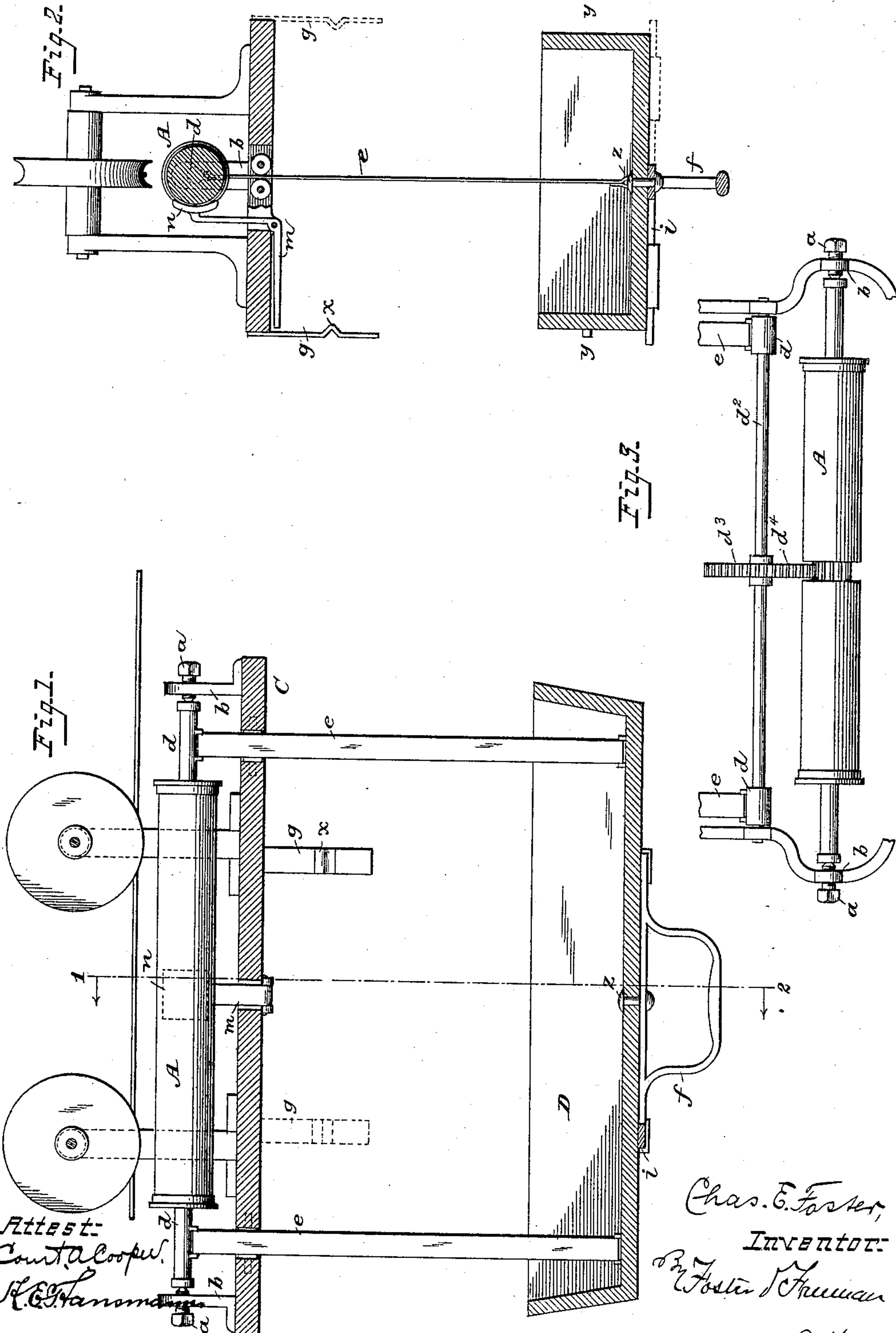


2 Sheets—Sheet 1.

No. 452,476.

Patented May 19, 1891.



Attest:
Court. Cooper.
H. E. Hanford

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Inventor:
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(No Model.)

2 Sheets—Sheet 2.

C. E. FOSTER.
STORE SERVICE APPARATUS.

No. 452,476.

Patented May 19, 1891.

Fig. 4.

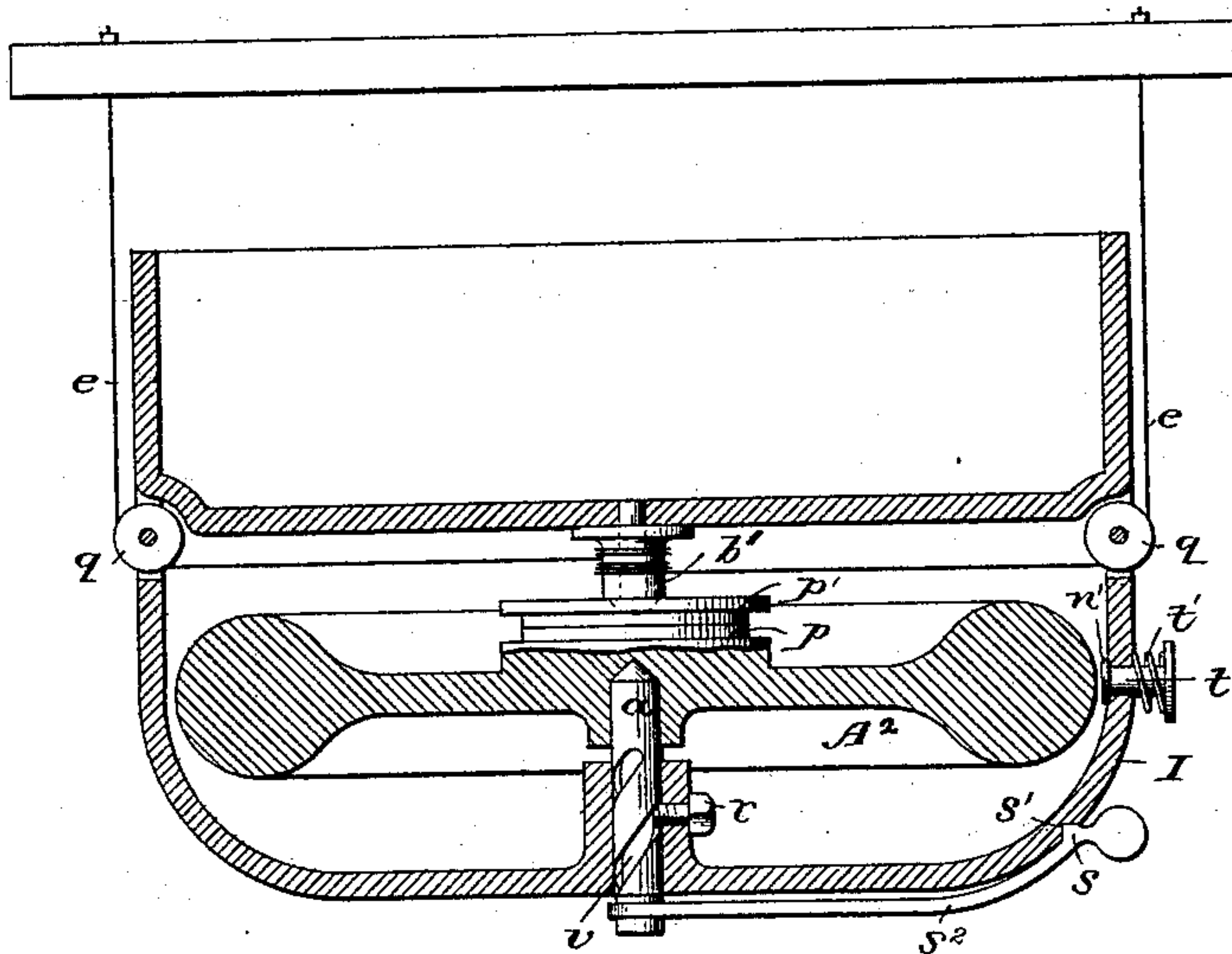
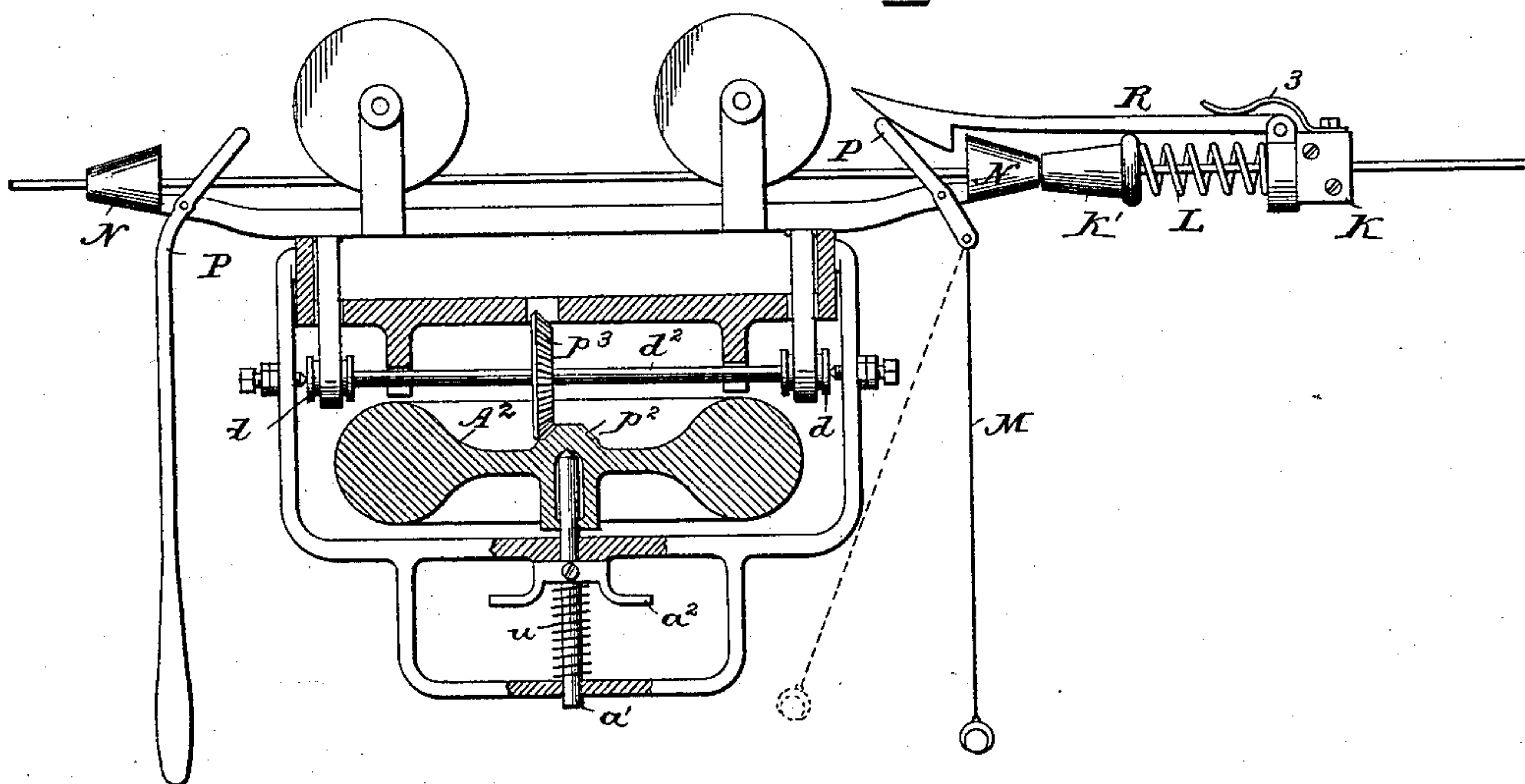


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES E. FOSTER, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR,
BY MESNE ASSIGNMENTS, TO THE LAMSON CONSOLIDATED STORE SERVICE COMPANY, OF NEW JERSEY.

STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 452,476, dated May 19, 1891.

Application filed September 25, 1885. Serial No. 178,145. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. FOSTER, a citizen of the United States, and a resident of Washington, in the District of Columbia, have invented certain new and useful Improvements in Store-Service Apparatus, of which the following is a specification.

My invention relates to that class of store-service apparatus in which cash and parcels are carried by a traveling car; and my invention consists in means, fully set forth hereinafter, for permitting the receptacle to be pulled down and for lifting it automatically without the use of springs, and for stopping the car and facilitating the disengagement of the car from the stop.

In the drawings, Figure 1 is a side elevation, in part section, of a car illustrating my improvements thereon. Fig. 2 is a cross-section on the line 1-2, Fig. 1. Fig. 3 is an elevation of part of a car, showing a modification of the arrangement shown in Fig. 1. Fig. 4 is a sectional view showing a modification in which the motor-body is carried by the receptacle. Fig. 5 is a sectional view illustrating a modification of the car and a buffer or stop.

In that class of store-service apparatus in which each car travels back and forth on its own way—generally a wire—it is common to provide the car with a receptacle for money, light parcels, &c., so connected to the car-body that it can be pulled down within easy reach of the attendant and against the action of a spring, the reaction of which restores the receptacle to its elevated position when the said receptacle is released. While this arrangement is effective in many instances, it is objectionable when heavy parcels must be carried, because the elevating-spring must be strong enough to lift the heaviest parcel to be carried, and the spring must be compressed or wound every time the receptacle is pulled down, whether a parcel is to be carried or not, the strain upon the supporting-wire of course being very great. To avoid such strains in pulling down the receptacle and at the same time store up sufficient

power to lift the receptacle with the heaviest package it is required to contain, I provide means whereby the pulling down of the receptacle is caused to put a heavy body in rapid motion, the revolution of said body being continued for such a length of time by momentum that the power can be utilized to lift the receptacle. Different means will occur to any skilled mechanic for carrying into practice this mode of raising the receptacle.

In Fig. 1 I have shown the motor-body A as consisting of a heavy cylinder, supported at the ends, to revolve with little friction, by pointed screw-bearings *a*, extending through brackets *b*, secured to the platform or frame C of the car. Secured to or connected with the cylinder A are two bobbins or drums *d*, to each of which is secured one end of a strap, band, or other flexible strip *e*, the lower end of which is attached to some part of the receptacle D, having a pendent handle or pull *f*. From either the fixed or movable part of the car extend catches or springs *g*, adapted to engage with the other part when the two are together and to hold them together until sufficient force is applied to separate them. Thus the retaining springs or catches *g* may be secured to the frame of the car and have shoulders *x* to engage with shoulders *y* on the receptacle and extended ends, against which may be brought push-bars *z*, Fig. 2, the outward action of the latter carrying the catches or springs *g* outward and unlocking the retaining-shoulders. The pulling down of the handle *f* may be the means of releasing the catches; or the handle may be centrally pivoted at *z* to the receptacle and connected at each end to one of the bars *z*, so that the latter can be pushed out by slightly turning the handle as it is seized. When the car is traveling on the wire, the bands are wound upon the drums *d* and the receptacle is retained in contact with the platform or frame. As the receptacle is pulled down by the salesman the bands *e* are unwound from the drums *d* and a rapid revolution is imparted to the heavy cylinder or motor-body A, and as soon as the bands *e* are completely unwound from

the drums the continued revolution of the cylinder winds them up in the opposite direction and lifts the receptacle until it is locked to the frame. To stop the revolution of the cylinder after the receptacle is lifted, a brake is brought to bear against the same as the receptacle terminates its movement. Different brake arrangements may be used. Thus a shoe n may be secured to a lever m , arranged to be struck by the receptacle as it terminates its movement, so as to be tilted and bring the shoe against the cylinder.

It will be evident that while but little exertion is required to pull down the receptacle, which in fact will fall by its own weight, and thereby set the motor-body A in motion, and while there is practically no increased strain upon the wire from the descent of the receptacle the momentum of the heavy cylinder or motor-body, when sufficient impetus is given thereto, is sufficient to lift heavy packages.

It will be evident that with the construction above set forth it is necessary for the salesman or cashier to insert or remove the parcel very quickly, just as the receptacle reaches its lowest position, and that it cannot remain in this position more than an instant. To obviate this objection, I provide means for either reducing the speed of the drums or for temporarily disconnecting the winding-drums and the heavy cylinder or rotating motor-body when it is required to hold the receptacle in its lower position and for throwing them into connection with said body when the receptacle is to be raised.

The speed of the drums may be reduced by using a counter-shaft d^2 , Fig. 3, carrying the drums and using gears d^3 and d^4 , whereby the rapid revolution of the heavy cylinder or motor-body imparts a comparatively slow motion to the shaft.

Different appliances may be used for disconnecting the drum and the motor-body. In Figs. 4 and 5 I have shown the motor-body A^2 in the form of a disk carried by the receptacle attached to the car upon a vertical screw-bearing a , which may be adjusted to carry a friction-pad p upon the disk into and out of contact with a similar pad p' upon the single drum b' , upon which both connecting cords, strips, or bands e are wound, said cords, strips, or bands passing around guide-pulleys q .

The screw-bearing a is carried by a frame or yoke I , constituting the pendent handle, and has a quick-thread v , receiving a pin r , extending from the frame, so that a partial revolution of the screw will raise or lower the disk sufficiently to make or break the contact of the friction-surfaces. To retain the screw when the disk is in its elevated position, it is provided at the lower end with a spring-arm s^2 , having a lug s , adapted to enter a notch s'

in the frame I , but easily removed therefrom by the application of a slight pressure to the end of the arm. To arrest the movement of the disk by hand when necessary, a shoe n' is carried by a rod t , sliding in the frame I , moved outward by a spring t' , and capable of being pressed in to bring the shoe against the rim of the disk.

In Fig. 5 the disk or motor-body A^2 is supported on a bearing on a vertical rod a' , which slides in the frame, and is lifted by a spring u , the rod being provided with a cross-bar a^2 , by which it may be depressed. In this modification the disk carries a toothed pinion p^2 , adapted to gear with a bevel toothed wheel p^3 on a shaft d^2 , carrying the drums d , the action being the same as when friction-gears are used.

To prevent the shocks resulting from the sudden stoppage of the car, any suitable buffer or stop may be used. In Fig. 5 I have shown a stopper consisting of a part K , fixed to the wire, a part K' , sliding on the wire, and intervening spring L , inclosing the wire. To the part K is hung a catch R , depressed by a spring 3 and having a beveled end and a shoulder adapted to engage with a curved shoulder upon a conical block N , carried by the frame of the car. To lift the catch when the car is to be moved, I provide the car with a movable rod or arm P , which is pivoted so that when one end is moved by the salesman or cashier the other end will make contact with the lever and lift the latter from engagement with the shoulder of the car. The arm P may be a short arm, provided with a pendent cord M , as shown at the right, Fig. 5, or it may be a long lever, as shown at the left. In either case the attendant by pulling on the cord or pushing on the pendent handle of the lever in the direction in which the car is to move both releases the catch and propels the car.

In the form of stop represented in Fig. 5 the spring surrounds the wire, as do the two parts K K' , rendering it necessary to take down the wire whenever a stop is put on the wire or taken therefrom.

It will be evident that some of the features above described may be used in connection with parts constructed differently from those illustrated.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. A store-service car provided with a heavy motor-body and bearings for rotating said body, a receptacle, bands connecting thereto and to one or more drums, and means between the drums and said body, substantially as described.

2. The combination, with the pull-down receptacle of a store-service car, of flexible bands, one or more drums, and a heavy mo-

tor-body supported to revolve freely, and means for connecting it to and disconnecting it from said drums, substantially as described.

3. The combination, in a car, of a pull-down
5 receptacle, bands, one or more drums, a heavy motor-body arranged to rotate, and an adjustable bearing, whereby said body may be put into and out of connection with the drum, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES E. FOSTER.

Witnesses:

JOSEPHINE CAMPBELL,
A. E. T. HANSMANN.