

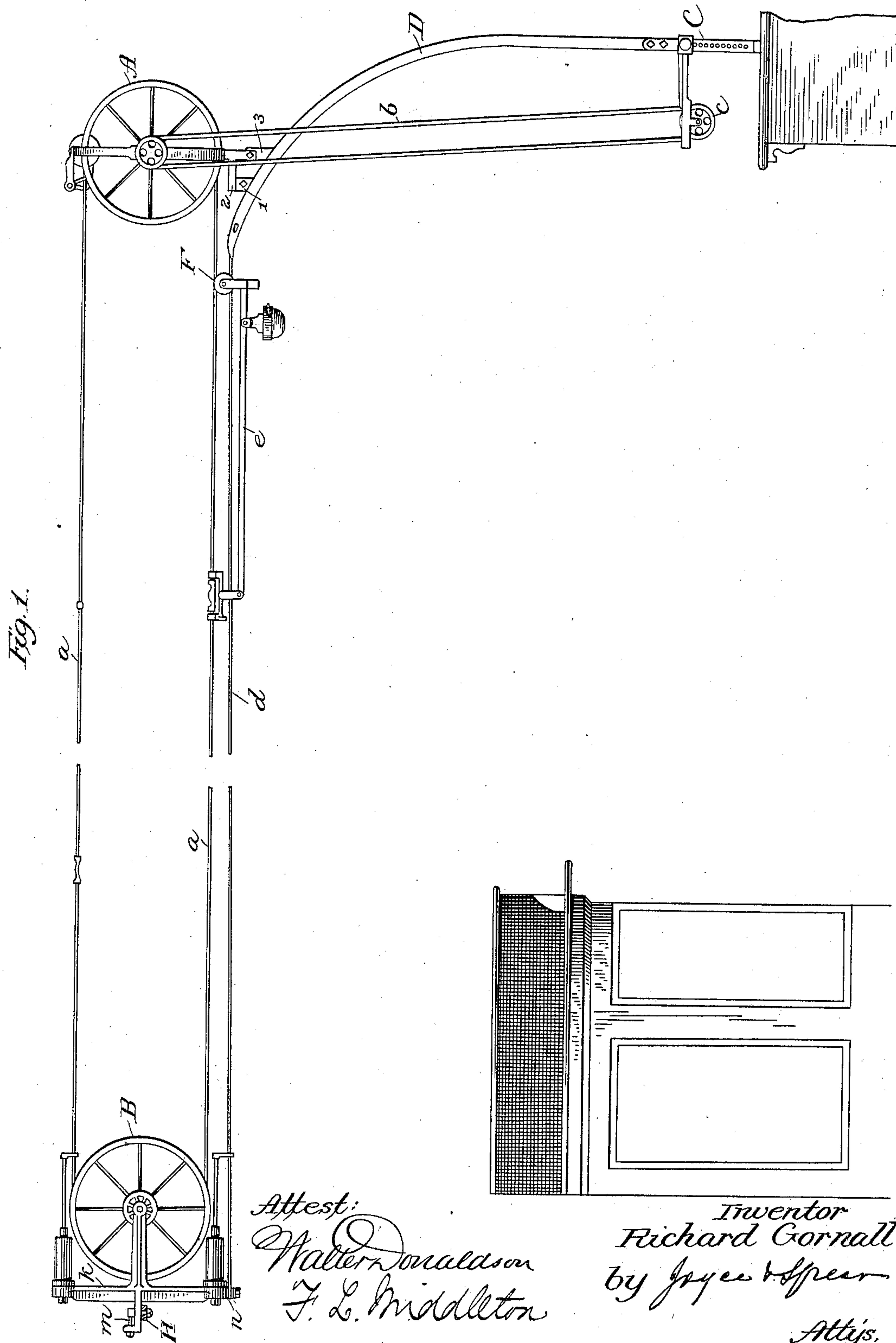
(No Model.)

4 Sheets—Sheet 1.

R. GORNALL.
STORE SERVICE APPARATUS.

No. 319,403.

Patented June 2, 1885.



N. PETERS, Photo-Lithographer, Washington, D.C.

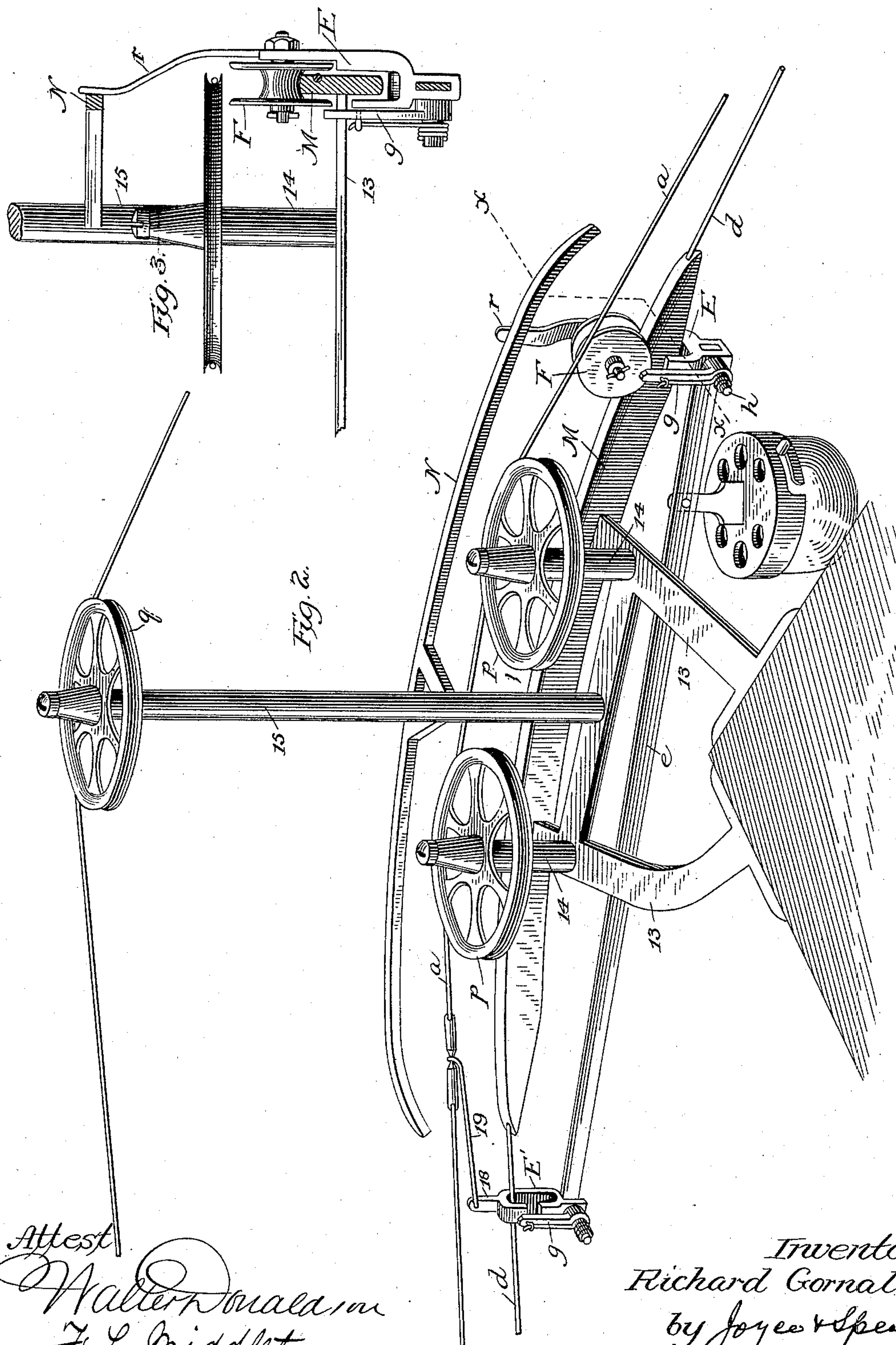
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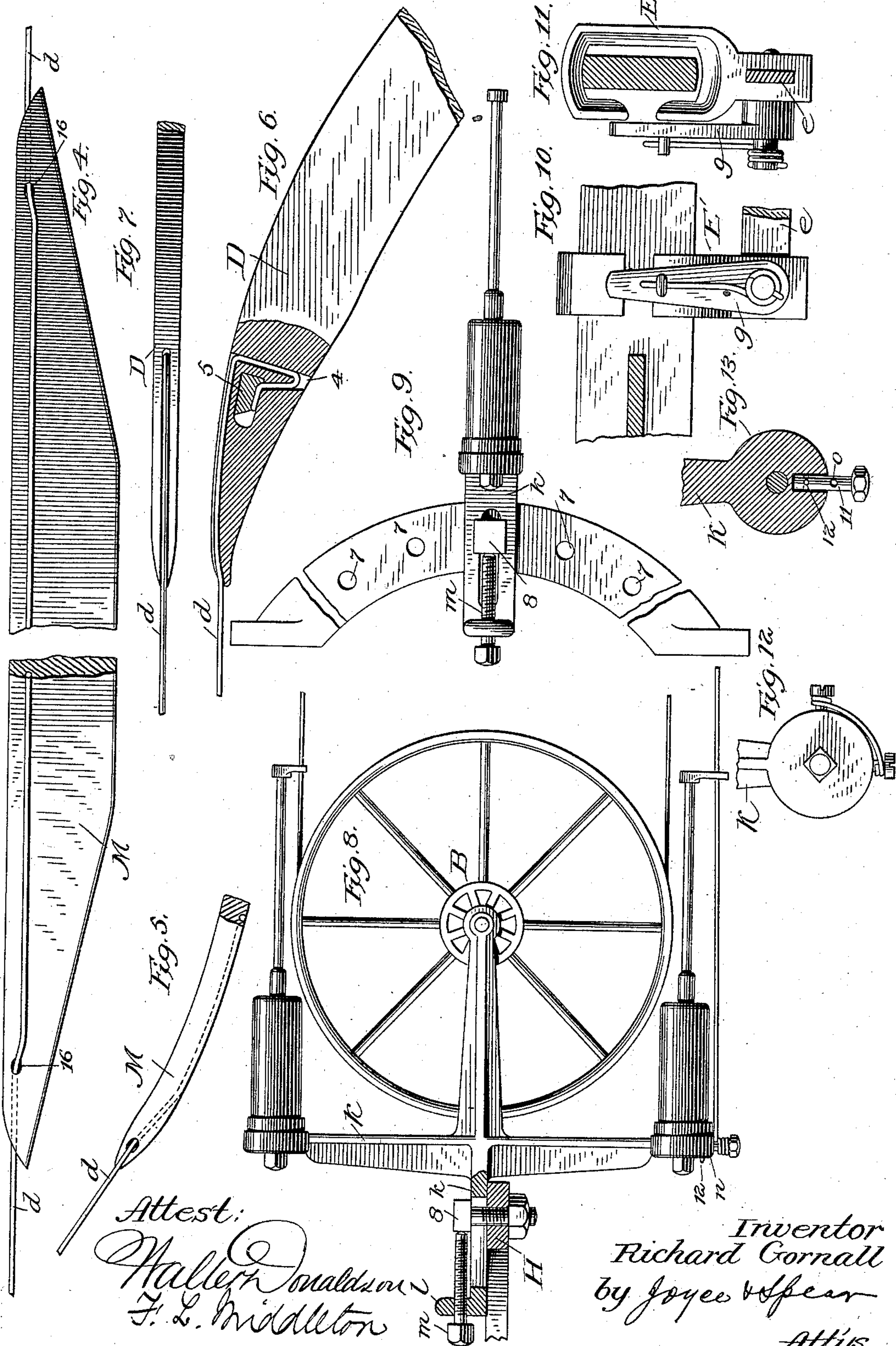
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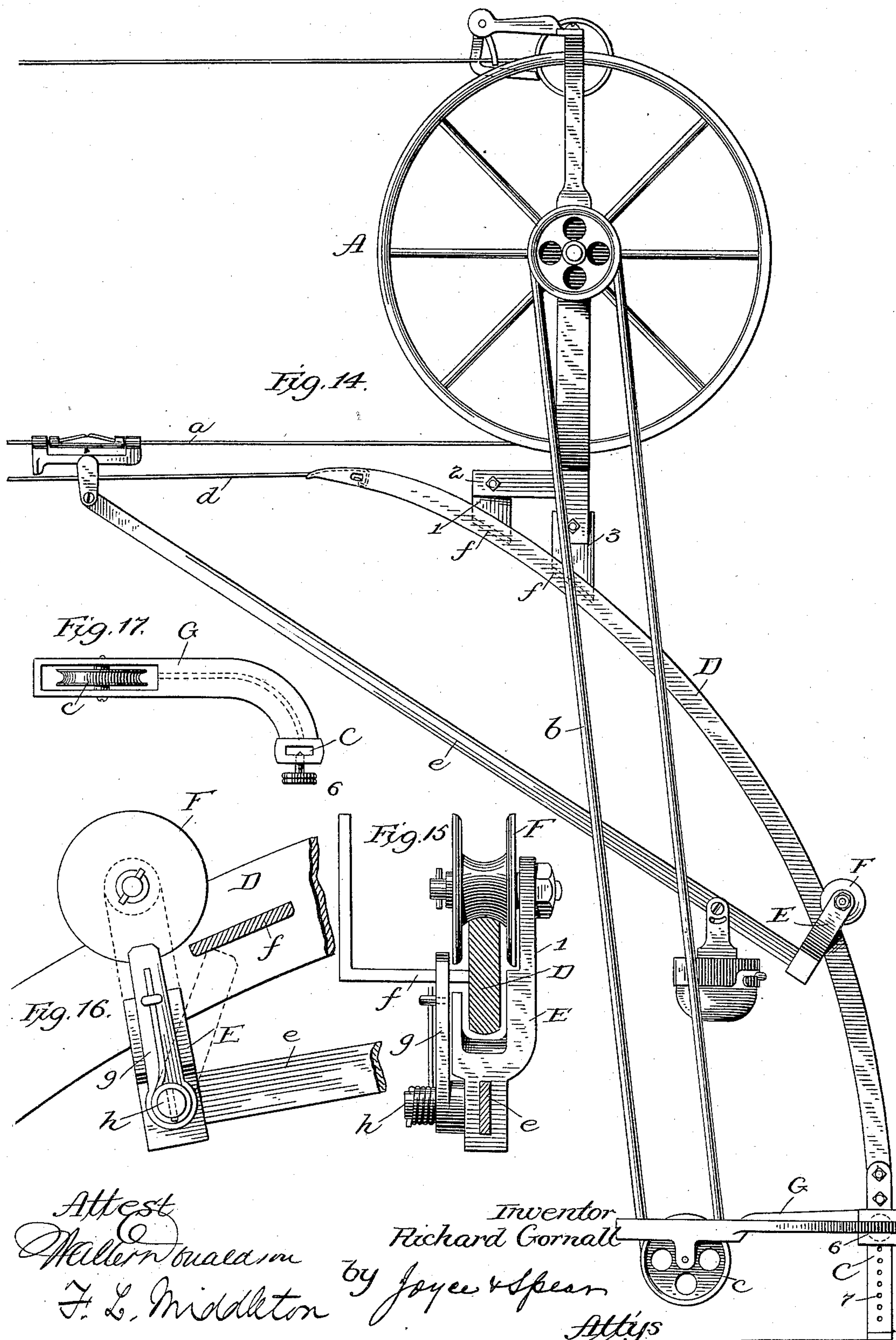
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UNITED STATES PATENT OFFICE.

RICHARD GORNALL, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF
TO GEORGE A. DUBREUIL, OF SAME PLACE.

STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 319,403, dated June 2, 1885.

Application filed April 30, 1885. (No model.)

To all whom it may concern:

Be it known that I, RICHARD GORNALL, of Baltimore, in the State of Maryland, have invented a new and useful Improvement in Store-Service Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improvement upon cash-carrier apparatus for store-service of that class in which an endless wire is used in connection with a supporting-wire, and a car or box is connected to the endless wire and moves upon the supporting-wire.

My invention, set forth hereinafter, includes in somewhat modified form a feature shown in another application filed in the United States Patent Office of even date herewith. The main feature shown in said application and included in the present is a pivoted arm to which the cash-box is attached and the curved terminal track, whereby the cash-box or parcel-basket, if the latter be used, is brought down to a convenient reach of the salesman.

In this application I have shown the same elements combined with a supporting-wire, and in connection with this I have shown also improved details of construction, part of these details relating to the bracket which supports the wheel at the cashier's end of the line, and part relating to devices for conducting the cash-box around corners.

In the accompanying drawings, Figure 1 shows the apparatus in side elevation. Fig. 2 shows the apparatus for conducting the box around the corners. Fig. 3 is a section on line *xx* of Fig. 2. Fig. 4 shows the outside face of the curved bar connected to the wire at the corners. Fig. 5 shows an edge view of one end of the said bar. Fig. 6 represents in side elevation and partly in section a detail view of the end of the track leading to the salesman's counter. Fig. 7 is a plan view of the same. Fig. 8 is a side elevation, enlarged, of the wheel at the cashier's desk. Fig. 9 represents in plan the bar for holding a series of such wheels. Figs. 10 and 11 represent details connected with the arm that carries the cash-box. Figs. 12 and 13 are details of the devices for holding the ends of the wire at the cashier's desk. Fig. 14 shows in side elevation an enlarged

view of the wheel and track at the salesman's end of the way. Fig. 15 is an enlarged view of a section of the upper end of the track, showing the pulley and standard which supports the forward end of the box-carrying arm. Fig. 16 is a side view of a part of the track, showing the position of the pulley and standard when passing the end of the supporting-bracket, which is connected to the side of the curved track. Fig. 17 represents a bottom view of the arm fixed to the standard to carry the lower wheel to the band.

In these drawings, A represents the wheel at the salesman's end of the line; B, that at the cashier's end, which wheels support the endless wire *a*. Motion is communicated to the wheels and endless wire by means of a band, *b*, running over the pulley *c*, and within reach of the salesman.

Upon the standard C, fixed to the counter, is a curved track, D, formed of a bar bent over, as shown in Fig. 1, with its broader sides in vertical planes. Its upper end is connected at 1, 2, and 3 to the lower part of the bracket or frame which supports the driving-wheel A. The upper end projects forward directly underneath the endless wire *a*, and to it is connected the supporting-wire *d*. The arm *e*, which carries the cash-box, is the same as that shown in my aforesaid application, and is similarly connected to the endless wire *a* when used in a straight line. The front end is supported upon a frame, E, which is provided with a pulley, F, that runs upon the wire *d*. It incloses a space below the pulley sufficiently large for the arm D to pass through, and also sufficient for the curved guides at the corners. It is open on one side to pass the bracket-arms which support the ways and guides, said arms being shown in Fig. 15 at *f*. This opening is covered by the arm *g*, pivoted upon a stud, *h*, on the lower end of the frame, and provided with a spring which holds it normally in vertical position to cover the opening in the frame, but which allows it to be turned aside when passing the bracket-arm *f*, as shown in Fig. 16. This arm prevents the frame from being displaced from the track by any accidental jolting. The wire is attached to the track at the upper

end, as shown in Fig. 6, being carried into a groove in the upper end of the track a short distance, where it is drawn down into a hole, 4, and upward into a chamber in the end of the track, where it is held by a key, 5. The wheel F runs upon the wire *d* until it reaches the curved track at the end, when it runs off the wire and down the curved track, as shown in Fig. 14, from which position it is drawn up by reverse movement of the endless wire. An arm, G, (shown in Fig. 17,) is attached to the standard C by means of a square socket slipped over the said standard, and it is held adjustably by means of a set-screw, 6, which enters any one of the series of indentations, 7, in said standard. By this means the arm may be moved down to give any amount of tension to the band *b*. The lower end of the curved way or track D is bolted to the upper end of the standard C. The frame which supports the wheel B is in general form like that shown in my aforesaid application, having upper and lower buffers, as in that application. A curved bar, H, is fixed to the wall, or to any suitable support, at a little distance back of the cashier's desk, and is provided with holes 7 for as many of the brackets as may be required where several wire ways are used. The frame K, which supports the wheel B, has an arm, *k*, slotted vertically and adapted to rest upon the curved bar H. A bolt, 8, connects the arm to the bar. The arm is turned up, as shown at L, and has an adjustable screw, *m*, adapted to bear against the head of the bolt 8, being threaded through the upturned end *l*. By loosening the end of the bolt 8 and by turning the screw *m* forward the arm may be drawn back to tighten the endless wire on the wheels A B. The fixed wire *d* is at this end attached to the frame K at *n*. The attachment may be formed by means of a stout straining-bolt, *o*, fitting snugly in a hole bored in the bottom of the frame. The straining-bolt has a square or polygonal head for the wrench, and the wire is attached by passing it through a hole, 11, in the straining-bolt, when the pin may be turned. When turned, the straining-bolt may be held by a pin, 12, inserted in a small hole, or any one of a series of holes in the bolt. Instead of this I may use two bolts, as shown in Fig. 12, about which the wire may be twisted.

In order to carry the cash-box around corners, I have provided an apparatus (shown in position in Fig. 2,) in which the bracket is fixed to the corner on arms 13 13. On these arms standards 14 carry horizontal pulleys *p p* for the lower part of the endless wire. On the taller standard 15 is a pulley, *q*, for the upper wire. On the ends of the arms 13 is a curved bar, M. This has a groove to receive the wire on its outside, and holes 16 at the ends in line with the groove. The wire passes through the holes and lies in the groove, so that it is connected and kept in line with the curved bar without interfering with the proper strain-

ing of the wire. The ends of the curved bar are turned down and beveled upwardly, so as to properly receive the arm E. A second curved bar, N, having the same curve and length, is fixed above the bar M, and serves as a guide for the finger *r*, which is attached to the frame E. The lower curved bar forms a supporting-track, and the upper bar, N, simply serves as a guide, in connection with the finger *r*, to keep the moving parts in proper position. This part may be dispensed with without interfering with the working of the apparatus.

As before explained, the frame E is fitted to run upon the curved guideway M. A similar frame, E', but preferably without a pulley, is provided for the other end of the arm *e*. This has a spring-gate, *g*, same as that heretofore described in connection with the frame E, and it covers the opening which passes the brackets 13 and the bracket *f*. A small stud, 18, on the top of the frame E', is connected to the endless wire by a flexible link, 19, the ends of the wire being spliced at this point, as shown in Fig. 2.

It will be understood that the frame E' is necessary only where the apparatus is put up around curves.

The parts herein shown but not claimed are claimed in the application above mentioned. Having thus described my invention, what I claim is—

1. In a store-service apparatus, a curved track, D, combined with the wire way *d*, and an arm, *e*, carrying the cash-box, connected at one end to an impelling-wire and supported at the other end on the fixed way, this end of the arm *e* being adapted to run down the curved track, substantially as described.

2. In a store-service apparatus, the combination, with an impelling-wire and a supporting-way, *d*, of the curved track D, having a groove and opening to receive and hold the end of the way *d*, and the arm *e*, secured to the impelling-wire and carrying the cash or parcel carrier, substantially as described.

3. In a store-service apparatus, the combination, with the arm *e*, adapted to the way *d*, and the curved track D, of the frame connected to the said arm, provided with a gate adapted to pass the supporting-brackets of the said curved way, substantially as described.

4. In a store-service apparatus, the combination of the standard C, fixed to the counter, the curved track D, the frame supporting the wheel, the brackets *f*, fixed to the sides of the curved track, the pivoted arm *e*, the frame E, and the spring-gate *g*, the parts being arranged and operating substantially as described.

5. In a store-service apparatus, the combination, with an endless wire and the supporting-wheels therefor, of the bracket K, having an arm, *k*, the bar H, bolt 8, the upward extension *l*, and the adjusting-screw *m*, substantially as described.

6. In a store-service apparatus, the combi-

nation, with a supporting-wire and bracket, K, of the straining-bolt *a* and fastening-pin 12, substantially as described.

7. In a store-service apparatus, a corner bracket consisting of a curved track, M, adapted to support the wire *d* of the way, combined with the impelling-wire, the arm carrying the cash or parcel carrier, and the frame or frames supporting said arm, substantially as described.

8. In a store-service apparatus, the combination, with the curved track M, supporting the wire *d* of the way, and with the arm *e*, carrying the cash or parcel carrier, of the guideway N, frame E, and finger *r*, all substantially as described.

9. In a store-service apparatus, the combination, with the curved track M, supporting the wire *d*, of the guide N, pulleys *p p* and *q*, supporting the endless wire, the arm *e*, attached to the endless wire, and the frame E, provided with the finger *r*, substantially as described.

10. In a store-service apparatus, the combination, with the arm *e*, adapted to the way *d* and the curved track D, of the frame E, connected to said arm and carrying the pulley F, and the spring-gate *g*, the parts being arranged and operating substantially as described.

11. In a store-service apparatus, the combination of the driving-wheel A, suitably supported, the band-pulley fixed thereto, the curved track D, and the bracket G, supporting the lower band-pulley, *c*, the said bracket G fitting over the standard C, and adapted to

be held thereto at the desired height by means of a set-screw and indentation, substantially as described.

12. In a store-service apparatus, the combination, with the endless impelling-wire and the fixed way *d*, of the arm *e*, carrying the cash or parcel carrier, and having the frames E E', and the flexible connection 19 between the frame E and the endless wire, substantially as described.

13. A store-service system consisting of an endless impelling-wire, supporting-wheels therefor, a fixed supporting-wire beneath the impelling-wire, secured at one end to a wall-bracket and at the other end to a curved track, D, extending downward toward the salesman's counter, an arm, *e*, pivoted at one end to the impelling-wire, with its opposite end carrying the cash or parcel carrier supported upon the fixed way *d*, and adapted to be lowered to the salesman on the curved track D, suitable buffers at the cashier's desk adapted to stop the carrier, whether going in one direction or the other, by acting upon suitable stops on the upper and lower wire of the endless way, and means for imparting motion to the driving-wheel, substantially as described.

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

RICHARD GORNALL.

Witnesses:

PH. H. HOFFMAN,

THOS. IRELAND ELLIOTT.