

(No Model.)

J. H. GOODFELLOW.
STORE SERVICE APPARATUS.

No. 551,627.

Patented Dec. 17, 1895.

Fig. 1.

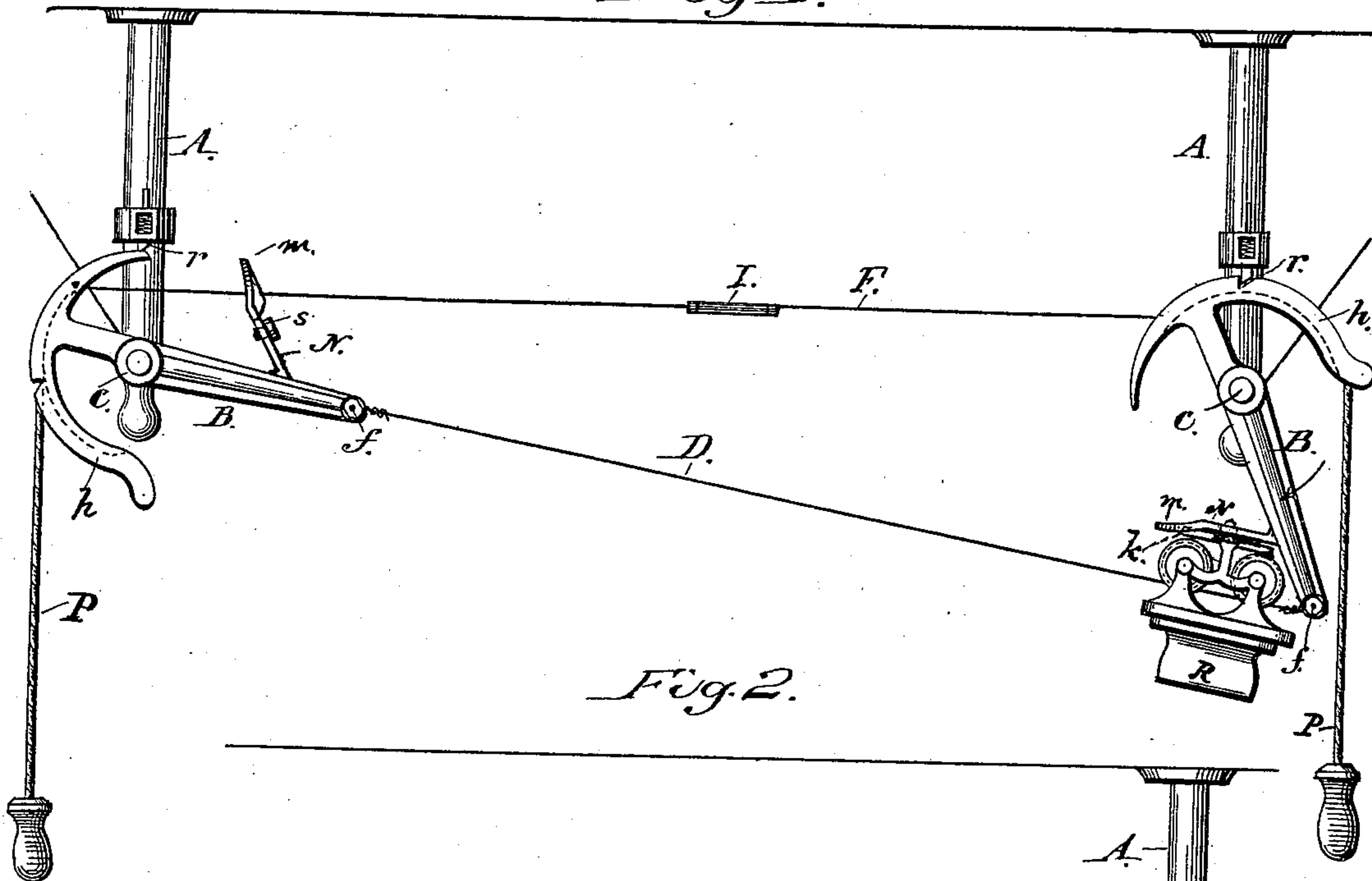


Fig. 2.

Fig. 3.

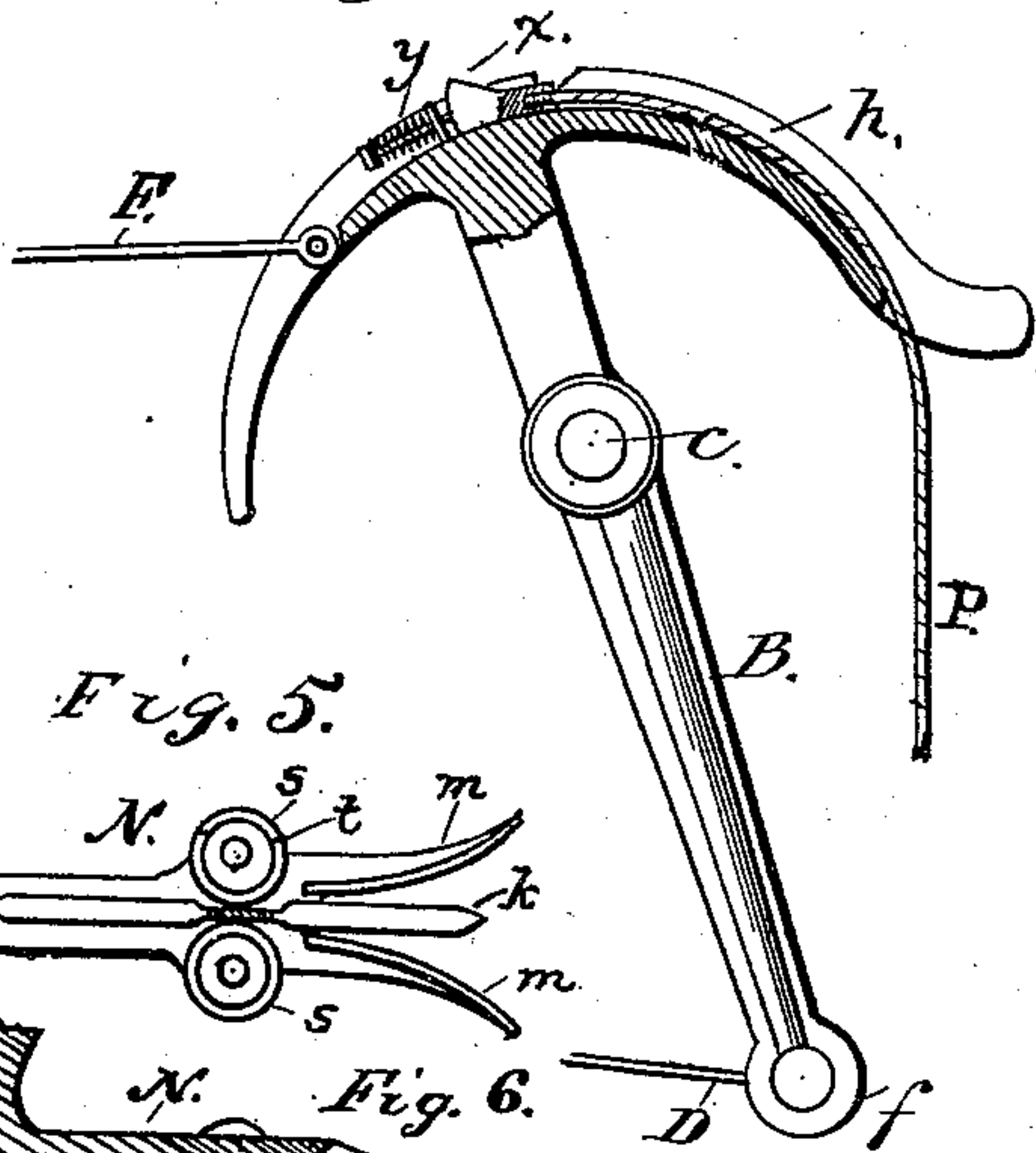


Fig. 4.

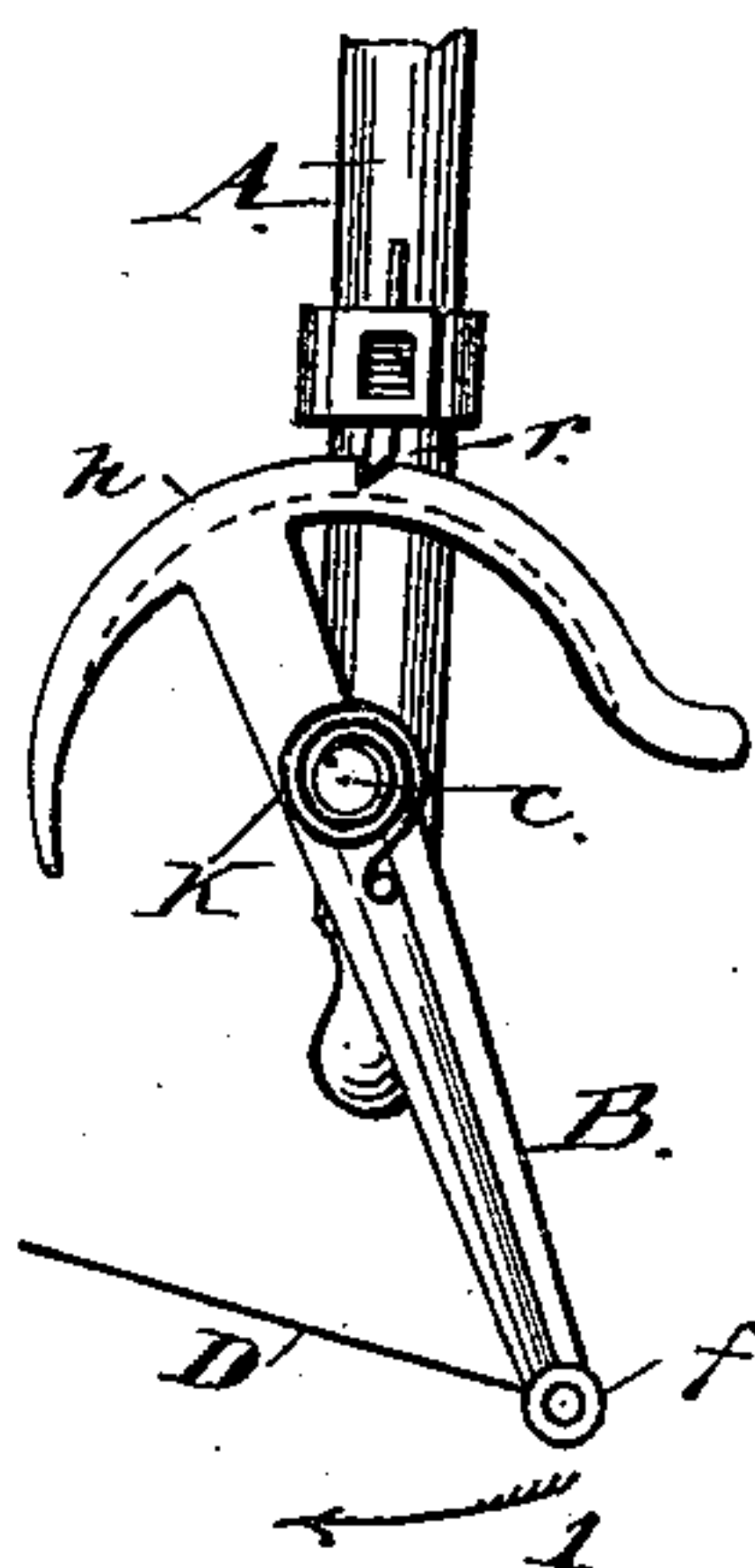


Fig. 5.

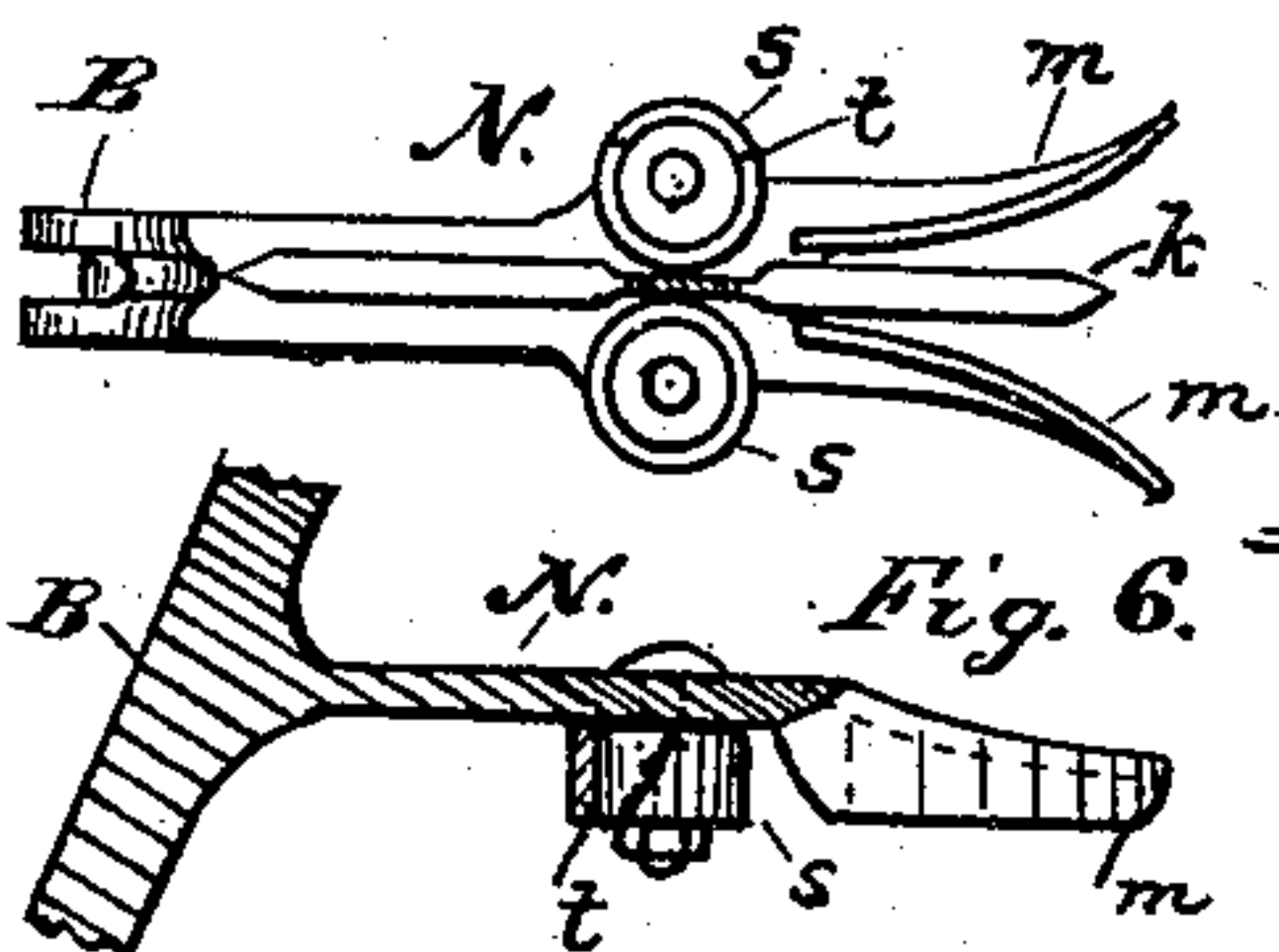
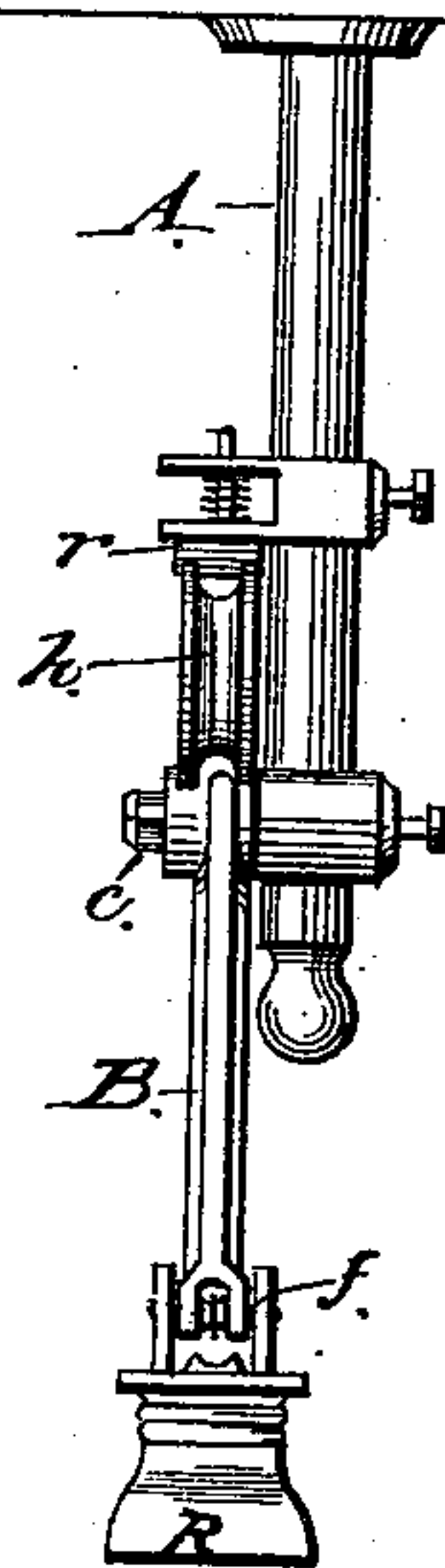
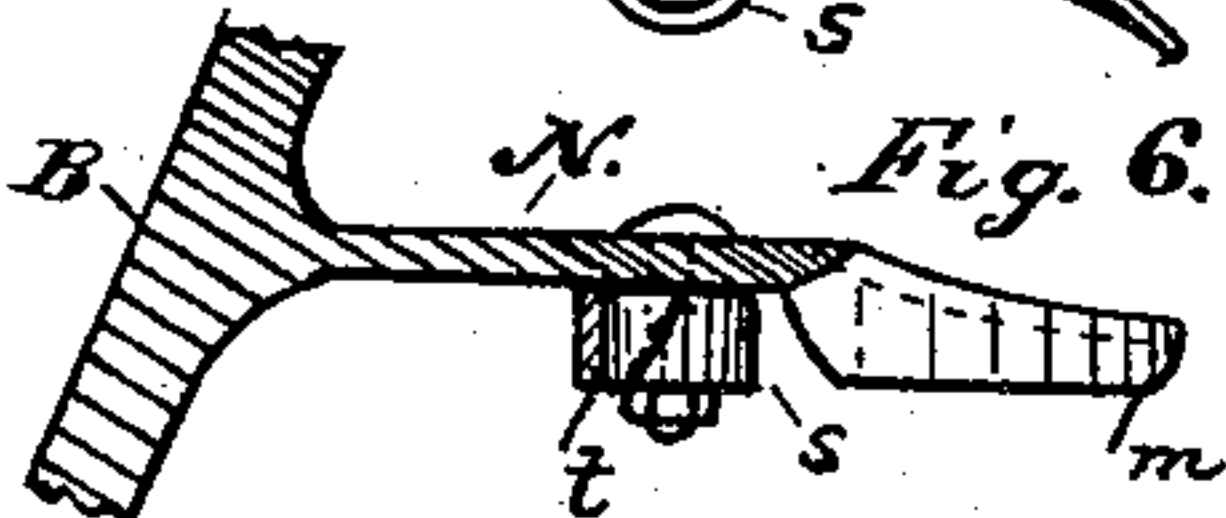


Fig. 6.



WITNESSES

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STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 551,627, dated December 17, 1895.

Application filed December 2, 1889. Serial No. 332,171. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GOODFELLOW, a citizen of the United States, residing at Troy, Rensselaer county, State of New York, have
5 invented certain new and useful Improvements in Store-Service Apparatus, fully set forth in the following description, and represented in the accompanying drawings.

This invention relates to that class of store-
10 service apparatus wherein the carrier travels from one station to another by gravity caused by inclining the track; and it consists in the novel construction, arrangement, and combination of parts hereinafter fully set forth.

15 In the drawings, Figure 1 is a side elevation of the improved apparatus. Fig. 2 is an end elevation of one end of the apparatus, the operating cord and handle being omitted. Fig. 3 is a detail sectional elevation of the
20 throwing and track-sustaining lever. Fig. 4 is an elevation of said lever, illustrating a modification. Fig. 5 is a plan view looking at the under side of the catch or stop for the carrier that may be located at one or both
25 ends of the track, the bearing carried by the carrier being shown in position; and Fig. 6 is a sectional elevation of the catch or stop.

The improved apparatus consists essentially of a pair of throwing and track-sustaining
30 levers B at each station. Between one end of each lever and connected thereto is stretched a track *d* for the carrier, the levers being so mounted that by moving one lever the other lever is simultaneously moved, so
35 that the track may be inclined bodily in either direction. Each lever B is mounted on a pivot *c* carried by a standard A depending from the ceiling of a store, warehouse or the like. To the lower end of each lever the track
40 D is pivotally connected at *f* so as to permit the free movement of the lever with respect to the track. The opposite end of each lever is provided with a segment *h*, substantially concentric with the pivot thereof, and may
45 be grooved, as shown, to receive a portion of an operating-cord P, by means of which the lever may be conveniently rocked from a position considerably below it.

To cause the simultaneous movement of the
50 two levers each end opposite to that connected to the track is connected together by

a connection F, which may have interposed in its length an extending or contracting portion, whereby the connection is kept taut at all times.

The track-sustaining levers B are so mounted
55 with respect to each other that when one is in its nominal position, as shown at the right hand of Fig. 1, with its end back of a vertical line drawn through its pivot, the other stands
60 with its end extended in the direction of the track nearly horizontal with its pivot, so that the strain of the track is in a direct line with the pivot. When the inclination of the track is to be reversed and the car sent to the other
65 station, one of the levers—for instance, the one at the right hand of Fig. 1—is rocked in the direction of the arrow thereon until it assumes a position similar to that occupied by the lever
70 at the opposite end of the track. In so doing said last-named lever will be simultaneously moved until it occupies a position corresponding to that previously occupied by the first-named lever. In this simultaneous movement of both levers, the track is kept taut
75 while its inclination is being reversed.

To hold either one or both of the levers B in one position, there is provided a latch *r* (spring-pressed or weighted) carried by a
80 bracket on the standard that takes into a notch provided in the lever, thus holding the latter in one position until the latch is disengaged. A convenient mode for disengaging said latch is through the operating-cord for changing the position of the lever. Thus the
85 end of the cord P is connected to the lever B (see Fig. 3) by an extensible connection *y*, and having in proper relation to the notch in the lever an inclined releaser *x*, adapted when the cord is pulled to first contact with the
90 latch *r* and raise it out of the notch, thus freeing the lever, and upon a further pull upon the cord rocking the lever to its changed position.

Instead of the connection F for causing the
95 simultaneous movement of the two levers, a spring K (see Fig. 4) may be provided, the tendency of which is to throw the lever in one direction. Thus, as shown, the spring K is coiled about the pivot *c*, one end of it
100 fastened thereto and the other to the lever B, so that when the lever is rocked in the direc-

tion of the arrow 1 the spring will be compressed ready to rock the lever back to the position shown in Fig. 4, which, if the latch *r* be employed with the other lever, will be effected when the latter is operated to release it. In such an arrangement, one of the springs *K* will always be under compression ready to aid in returning its lever back to the nominal position shown in Fig. 4. The tendency of the springs will be to counteract each other, but in practice this action will be rendered *nil* by the operator positively moving one of the levers, depending upon the spring connected with the other lever to move the latter.

The carrier *R* employed may be of any of the well-known forms. In order, however, to adapt it to the peculiar stop now to be described, it is provided with a stop-engaging bearing *k*. Each lever is preferably provided with an arm *N* projecting substantially parallel with the track when it is in the position shown at the right hand of Fig. 1. The outer ends *m* of the arm are flared to properly guide the bearing carried by the carrier between a pair of holding-wheels *s* mounted either fixed or movable upon the arm. The bearing *k* has pointed ends, as shown, and its center is somewhat reduced in diameter or thickness, so that as the larger part of the bearing is passing between the two wheels *s* they will retard the speed of the car and will have finally stopped it by the time the reduced portion of the bearing arrives between the wheels. These wheels may be covered with leather or rubber *t* to increase the frictional contact between them and the bearing *k*. The arrangement of the arm *N* with respect to the lever and the track is such that when the lever is moved to reverse the inclination of the track the said arm with its wheels *s* will be lifted away from the bearing carried by the carrier so that the latter will be entirely free to travel along the track. As the inclination of the track will have been accomplished before the carrier can arrive at the opposite end, the stop-bearing arm at that end will be in position to guide the bearing on the carrier between its wheels and properly retard its motion and hold it until the lever at that end is moved to return the carrier. The action of the lever being operated to change or reverse the inclination of the track is such that its

end moving in the direction the carrier is to travel tends to throw the carrier forward and hasten it down the incline.

So far as certain features of the invention are concerned, the latch *r* or an equivalent detent may be operated by hand to release the lever or levers. So, too, the operating-cord may be entirely omitted and a handle be secured to the levers to conveniently rock them. Other stops for the carrier may also be employed, and the arrangement of parts may be modified without departing from the spirit of the invention.

What is claimed is—

1. The combination in a store service apparatus of a pair of levers, a track stretched between one end of each lever, an arm carried by one or both of the levers and carrying wheels and a carrier mounted on said track and having a bearing co-acting with said wheels to stop the carrier, substantially as described.

2. The combination in a store service apparatus, of a pair of pivotally mounted levers, a track stretched between like ends of the levers and a spring acting upon each lever to cause either of said levers to move simultaneously with the movement of the other, substantially as described.

3. The combination in a store service apparatus, of a pair of pivotally mounted levers, a track stretched between like ends of the levers, a spring acting upon each lever to cause either of said levers to move simultaneously with the movement of the other, a latch for holding the levers in position, and a releaser co-acting with the latch to free the levers, substantially as described.

4. The combination in a store service apparatus, of a pair of levers, a track stretched between one end of each lever, an arm secured to one of the levers and carrying bearing wheels, and a carrier having a bearing with a reduced portion for engagement with the bearing-wheels, substantially as described.

In testimony whereof I have set my hand, this 17th day October, 1889, in the presence of two witnesses.

JOHN H. GOODFELLOW.

Witnesses:

EDW. K. ANDERTON,
GEO. H. GRAHAM.