(No Model.)

# G. M. THOMPSON.

## STORE SERVICE APPARATUS.

No. 308,641. Patented Dec. 2, 1884.

Fig. 1.

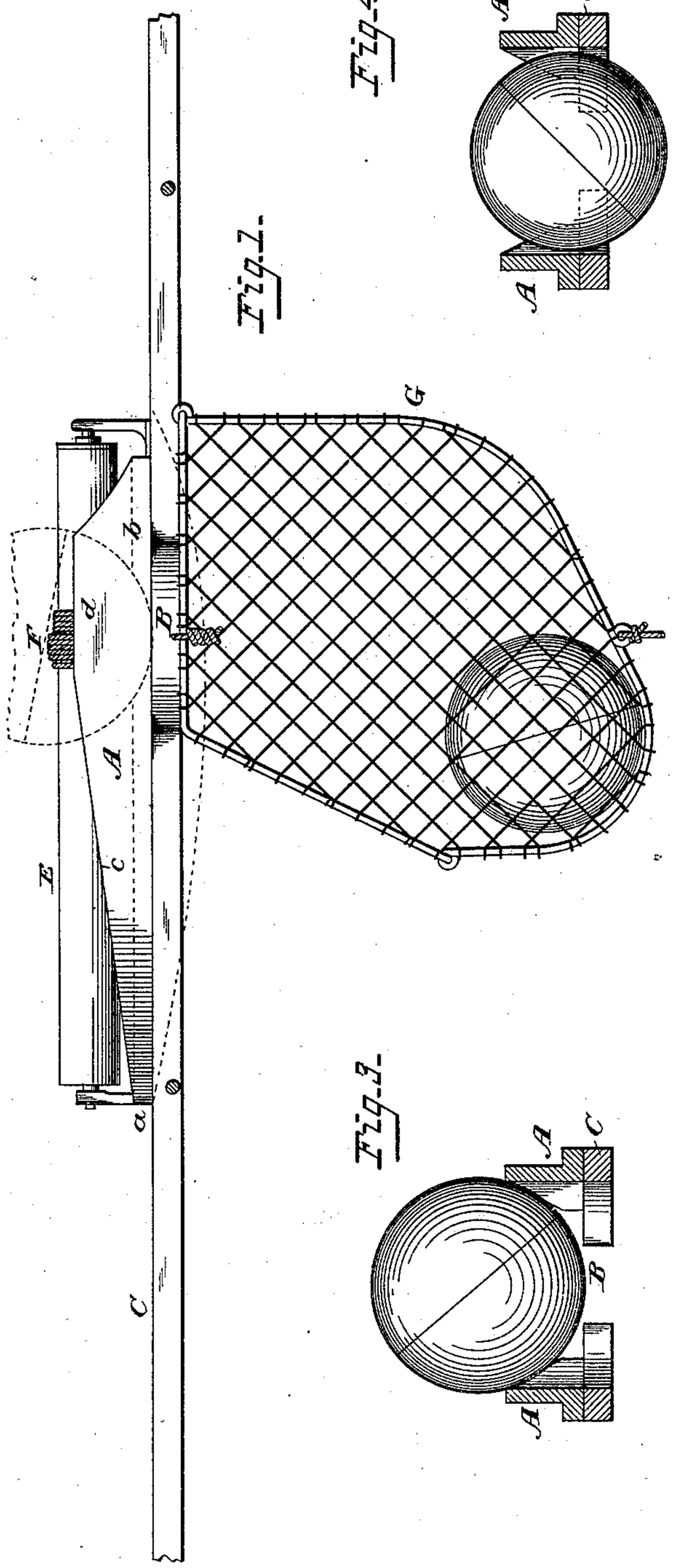


Fig. 2.

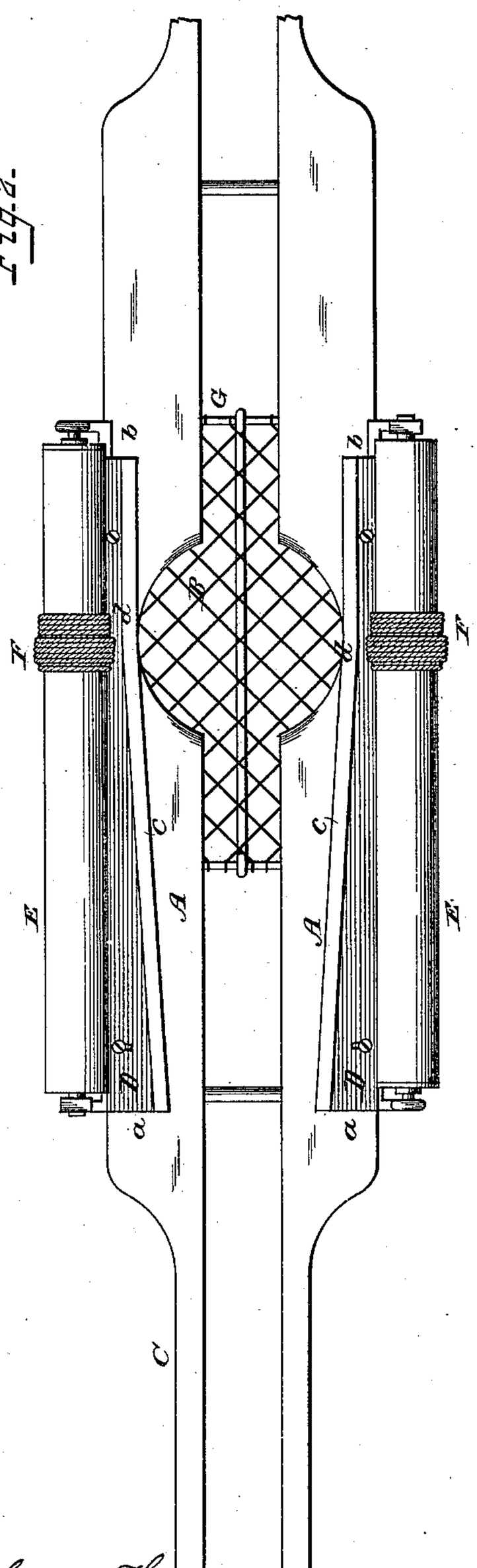


Fig. 3.




Fig. 4.




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# UNITED STATES PATENT OFFICE.

GEORGE M. THOMPSON, OF LOWELL, ASSIGNOR TO THE LAMSON CASH RAILWAY COMPANY, OF BOSTON, MASSACHUSETTS.

## STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 308,641, dated December 2, 1884.

Application filed September 26, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE M. THOMPSON, a citizen of the United States, residing in the city of Lowell, in the county of Middlesex and State of Massachusetts, 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 traveling hollow carriers move upon ways extending between the main or cashier's desk and the counters or stations occupied by salesmen, and more particularly to that class in which the distribution of the carriers is effected by means of graduated openings in the outward track, through which the graduated balls fall into some suitable receptacle. Such systems have been found to have some defects which interfere with their practical operation, to overcome which is the object of my invention. It is desirable that the carriers preserve a uniform rate of speed while passing over the track, especially where a number of carriers are used varying little in size, for if they travel too fast they are liable to jump the opening in the track through which they are intended to pass; or if going too slow they are liable to stop or hang in some opening over which they are intended to pass, as the opening next in size to the opening through which they should drop.

My present invention is intended to overcome both these objections; and it consists in providing means which will assist the larger carriers to pass over an opening through which they are not intended to drop, and to retard or lessen the speed of the carrier at its dropping station, to insure its delivery at the proper point, and prevent its jumping the opening.

Referring to the accompanying drawings, forming a part of this specification, for a more particular description of my invention, Figure 1 is a side view of a section of track or way provided with my improvement. Fig. 2 is a plan view, and Figs. 3 and 4 are cross-sections showing two sizes of carriers as used with my improvement.

Without describing the details of the system of store-service apparatus to which my invention more particularly relates, as that is well known to those skilled in the art, it may be said to consist, essentially, of two or more tracks or ways of any suitable construction, in one of which openings of various sizes are made, the smallest being nearest the distributing-station, and graduated carriers adapted to travel upon the track and pass to the various stations, where they are delivered by dropping or passing through the proper openings.

In order that the traveling carriers may have a uniform speed and be delivered at the proper stations, I provide a supplemental track, or sort of a bridge, adjacent to the main track, which serves to support the larger carriers and aid in their passage over the various openings until the desired one is reached, and that also serves to retard or lessen the speed of the carrier at the opening through which it is intended to pass, and thus insure its proper delivery and avoid all danger of jumping. This bridge or guide may be variously constructed so as to accomplish the results desired, and I have shown one that is very simple and effective, consisting of two pieces or track-strips, A A, of any suitable material, placed one on each side of the opening B in the track C. These strips A are placed at an inclination to each other, and the ends *a a*, which are the parts nearest the distributing-station, are nearer together than the ends *b b*. The bearing-surfaces *c c* of the strips are inclined upward from the points *a a* until near the portions *d d*, or where the carrier is about directly over the opening B, and then they incline downward to the ends *b b*.

The strips A A are held in position in any suitable manner, and I have shown side flanges, D, which are secured to the track by screws or other means, whereby the relations of the two strips may be controlled by adjusting them upon the track, and the spring rollers or drums E, carrying the cords F of the baskets G, or other receptacles for the carriers, may be conveniently secured to the flanges of the strips, or to the track or other support.

Any other suitable arrangement may be adopted, but I have found the above to be cheap and practical, as the strips forming the bridges for the various openings may all be

made alike, and it is only necessary to properly adjust them the required distance apart to suit the various sizes of carriers and passages.

The operation of the bridge will be readily understood from the above. If a carrier too large to pass through the opening approaches the bridge, it will naturally pass from the bearing-surface of the tracks onto the lowest part of the strips, where the ends are nearest together, and as the carrier rolls up the inclined surface the strips gradually spread apart, so that the carrier is supported just above the track, but without really mounting the incline, for the proportions of the incline are such, as compared with the spread of the strips, that while the bearing-surface of the carrier or ball constantly changes the center remains practically on the same right line in the direction of travel, and the carrier passes safely and smoothly over the opening without practical interference from the edges of the opening, as shown in Fig. 3. When a carrier approaches the bridge at the opening through which it is intended to drop, it passes onto the inclined strips, as before, and its speed is somewhat checked as it approaches the wide part of the bridge, the bearing-surface of the carrier gradually approaching the axis of rotation of the carrier, and when it is in proper position over the opening through which it is intended to pass the adjustment of the strips of the bridge is such that the carrier will just pass off the bearing-surface of the strips and drop through the proper opening, as shown in Fig. 4.

It will be obvious that the bridge or supplemental track may be made of inclined wires or rods or light wood rails, suitably supported to afford the desired bearings, and that the rails of the supplemental track may be horizontal and the main-track rails may be sunk below the supplemental rails, as shown in dotted lines, Fig. 1.

Without limiting myself to the specific construction shown, which may be varied without departing from the spirit of my invention, what I claim is—

1. The combination, with a way or track of a store-service system, having openings for the passage of the carriers at the stations, of a bridge for controlling the passage of the carriers over and through the openings, substantially as described.

2. The combination, with a way or track of a store-service system, having graduated openings for the passage of the carriers, of a bridge consisting of a supplemental track arranged adjacent to each opening, substantially as described.

3. The combination, in a store-service way having graduated openings for the distribution of graduated carriers, of main and supplemental contiguous tracks arranged on different levels adjacent to said openings, substantially as and for the purpose described.

4. The combination, with a way or track of a store-service system, having openings for the passage of the carriers, of the inclined strips arranged adjacent to the way, substantially as described.

5. A bridge for the carriers adjacent to the opening, consisting of two inclined strips arranged at an inclination to each other, substantially as described.

6. The combination, with the main and supplemental tracks, adjacent to the openings B, of a store-service apparatus, of the spring drums or rollers and the basket or receptacle secured to the drums, substantially as described.

7. The combination, with a track or way for the carriers, of a bridge across an opening in the way, arranged to insure the passage of the larger carriers over the opening, and to retard the carriers and deliver the smaller carriers to the openings to which they are adapted, substantially as described.

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

GEORGE M. THOMPSON.

Witnesses:
ALBERT M. MOORE,
HERBERT R. WHITE.