

(No Model.)

J. W. FLAGG.
AUTOMATIC CASH CARRIER.

No. 306,474.

Patented Oct. 14, 1884.

FIG. 1-

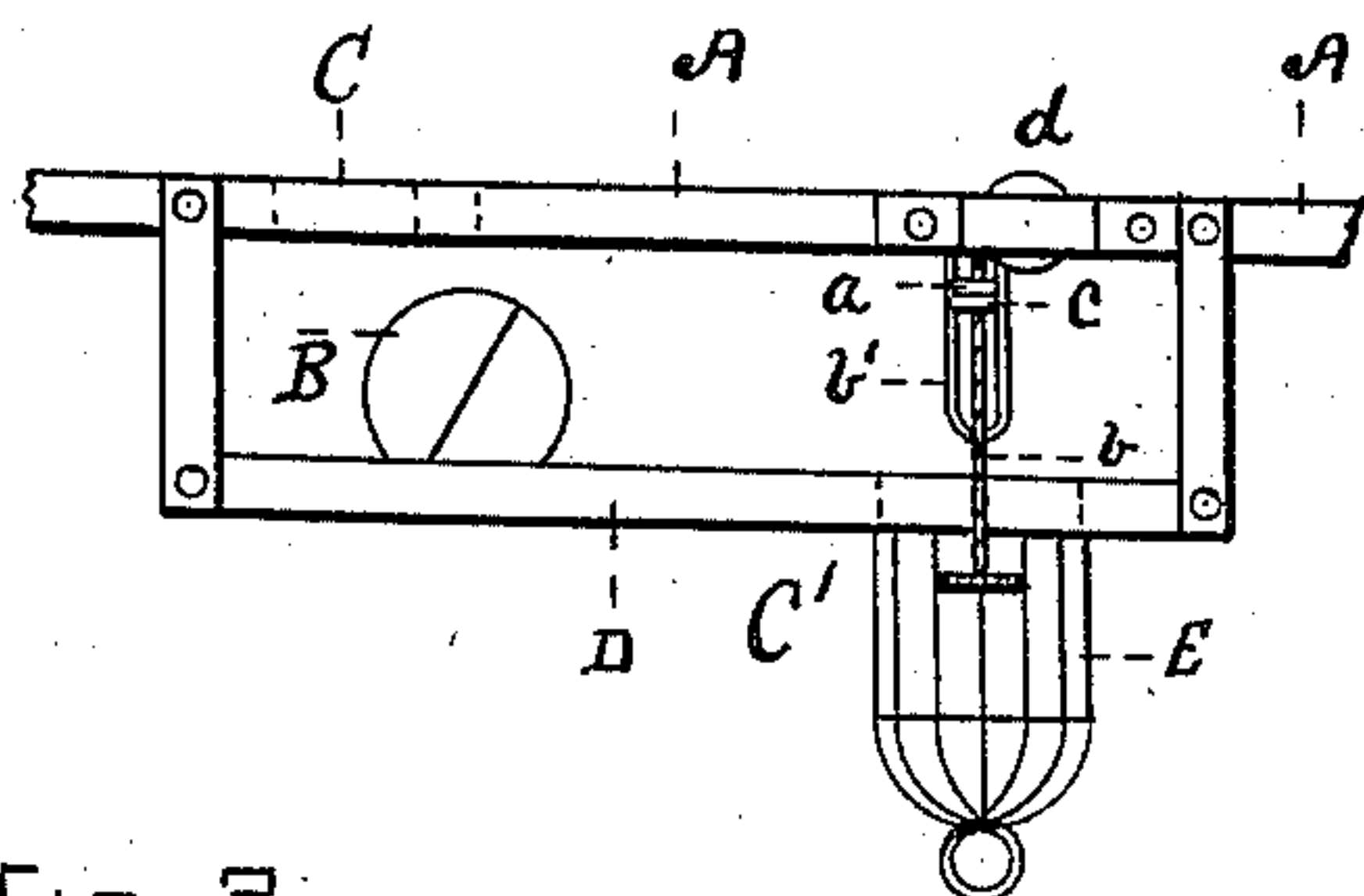


FIG. 2-

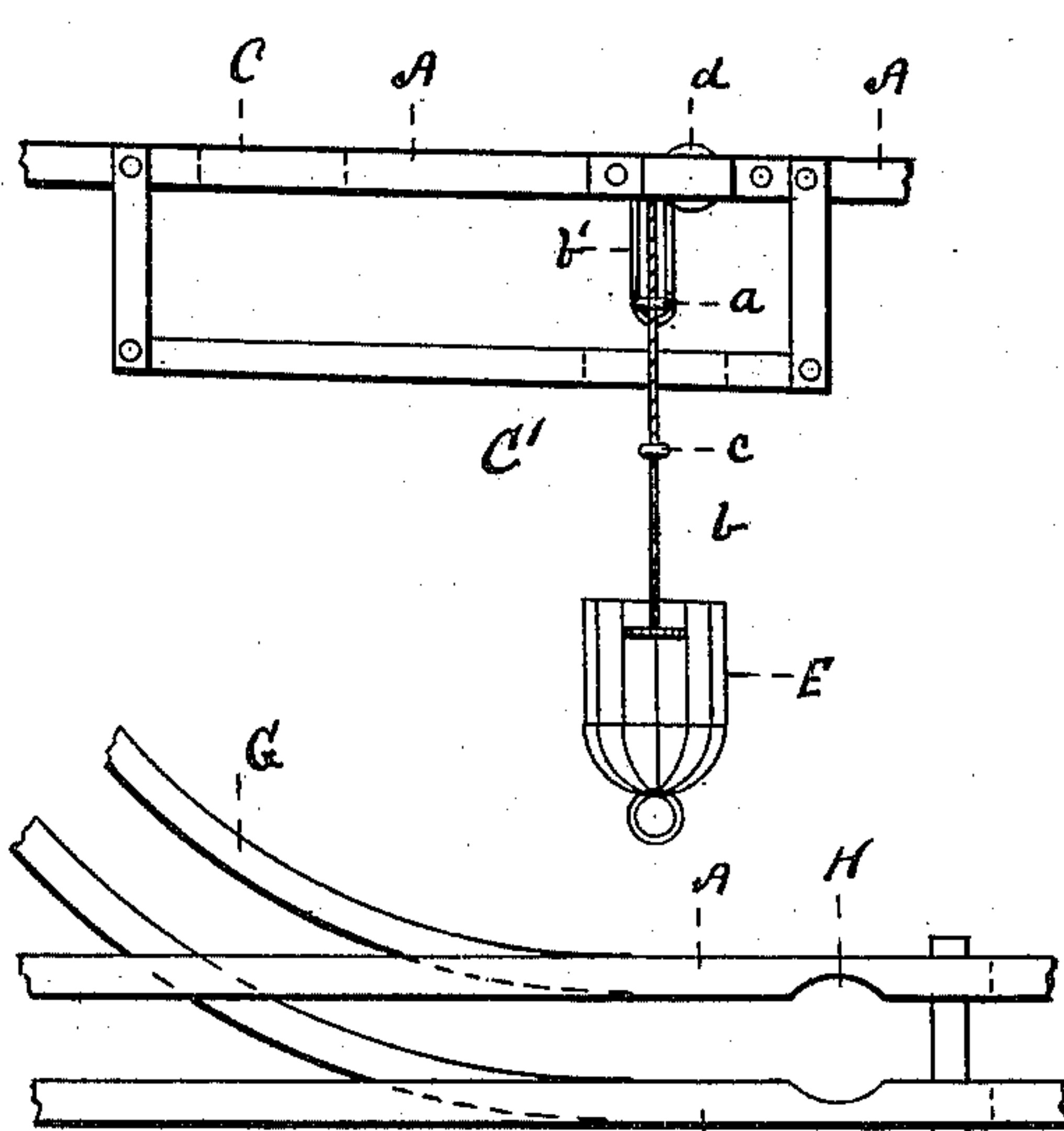


FIG. 3-

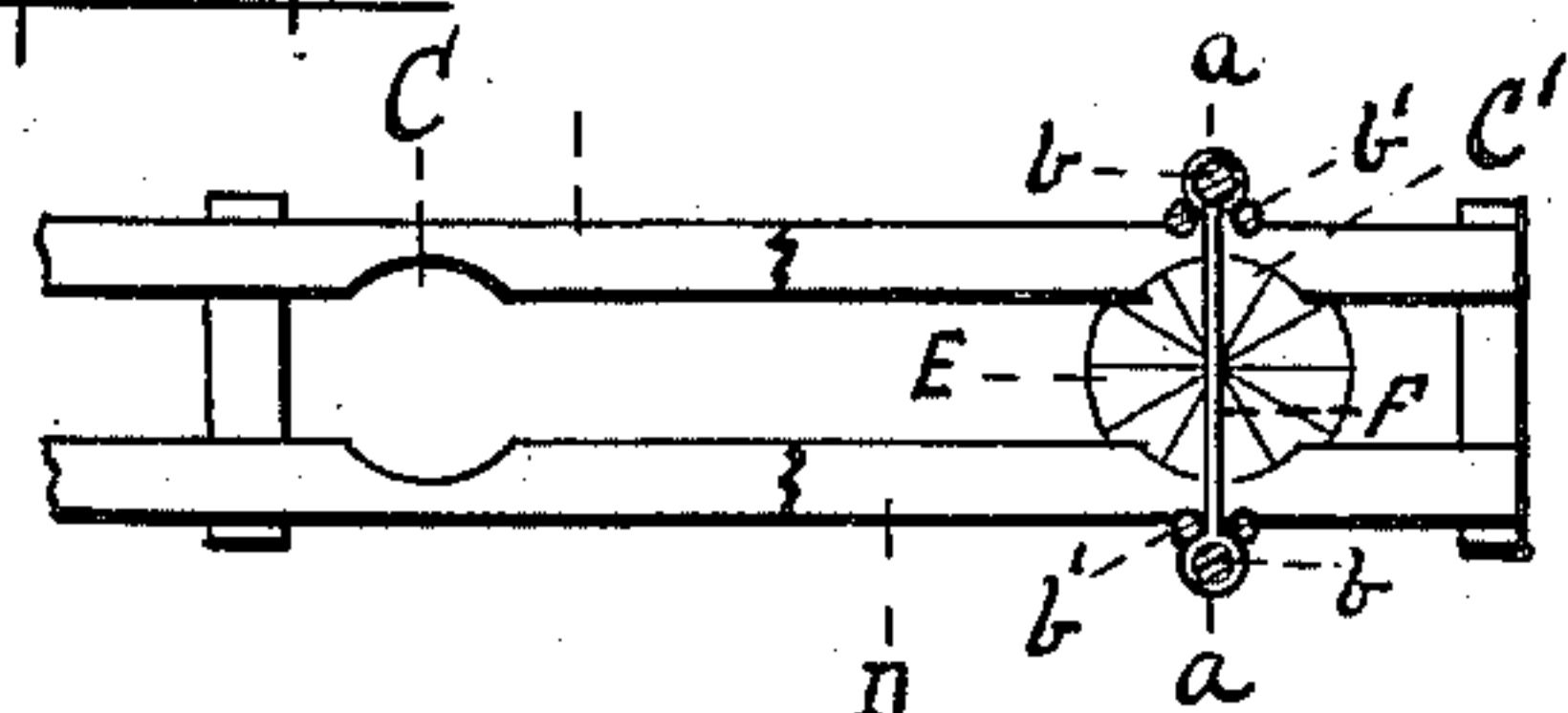


FIG. 4-

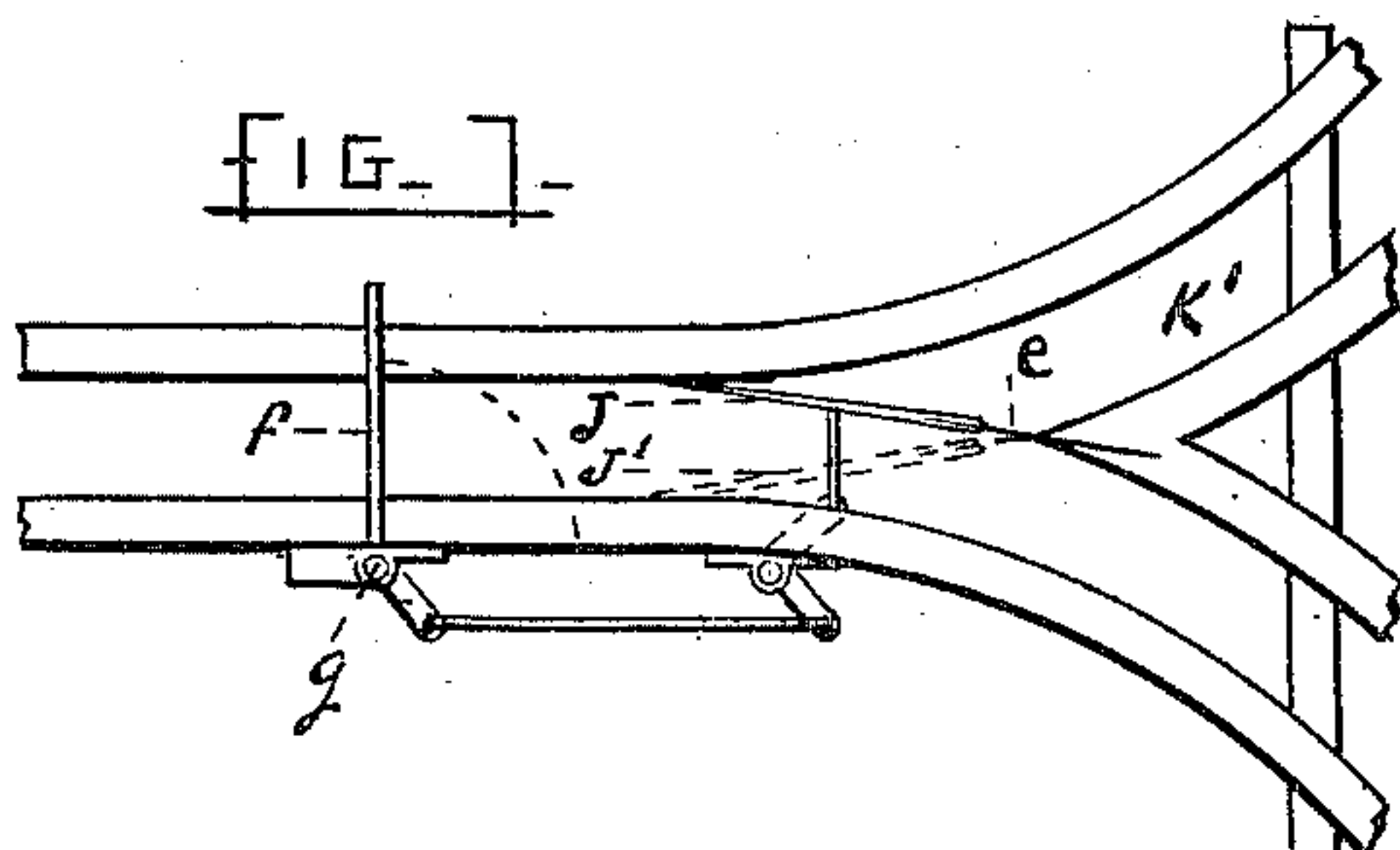


FIG. 5-

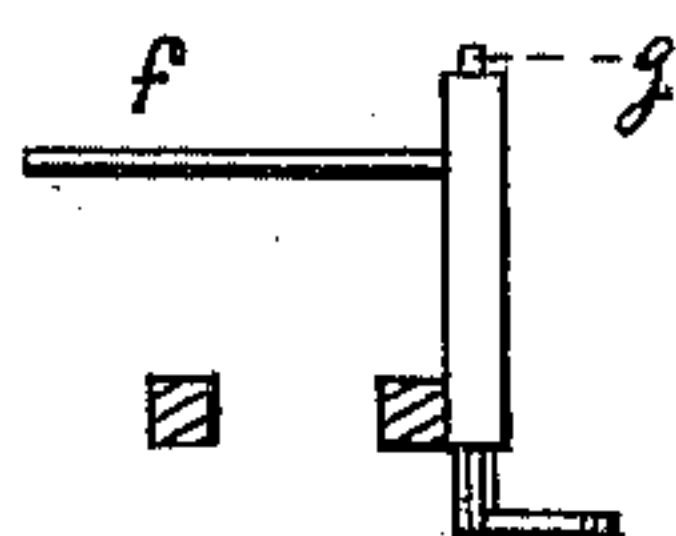
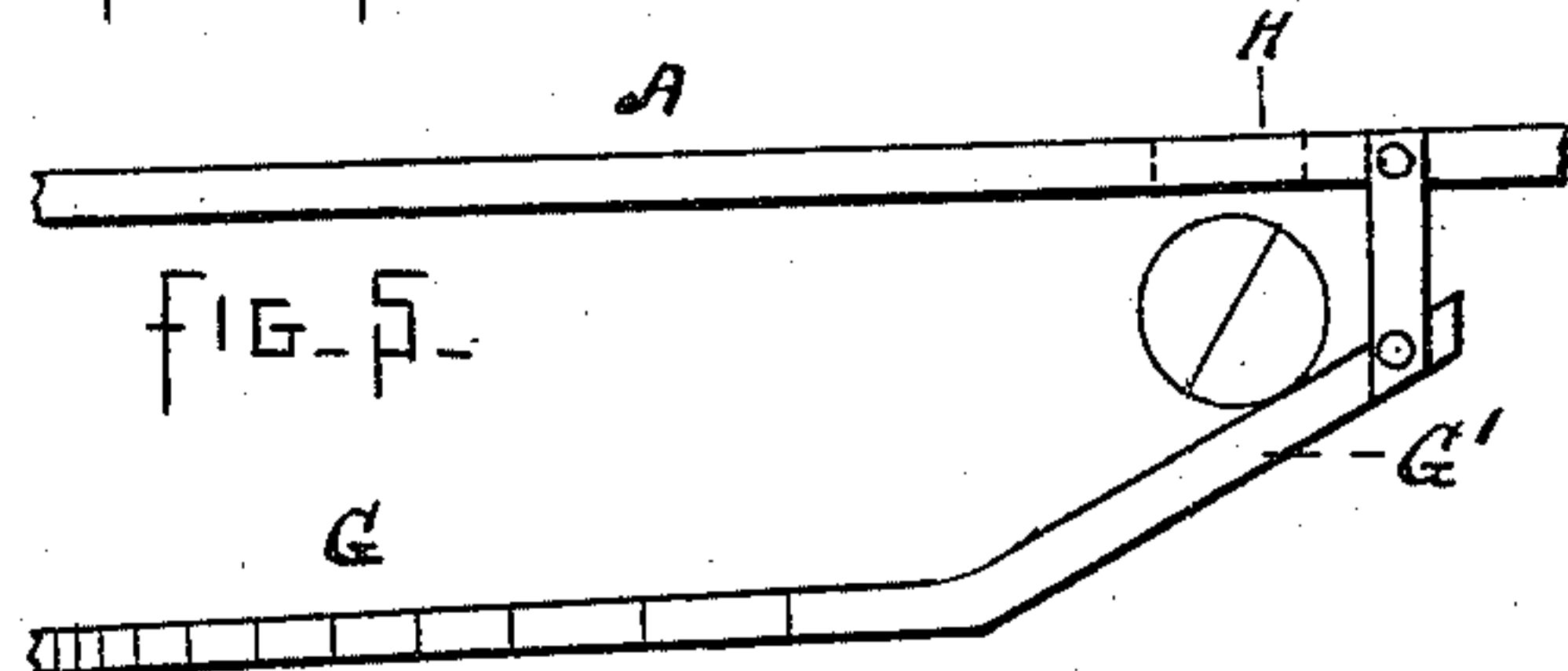


FIG. 7-

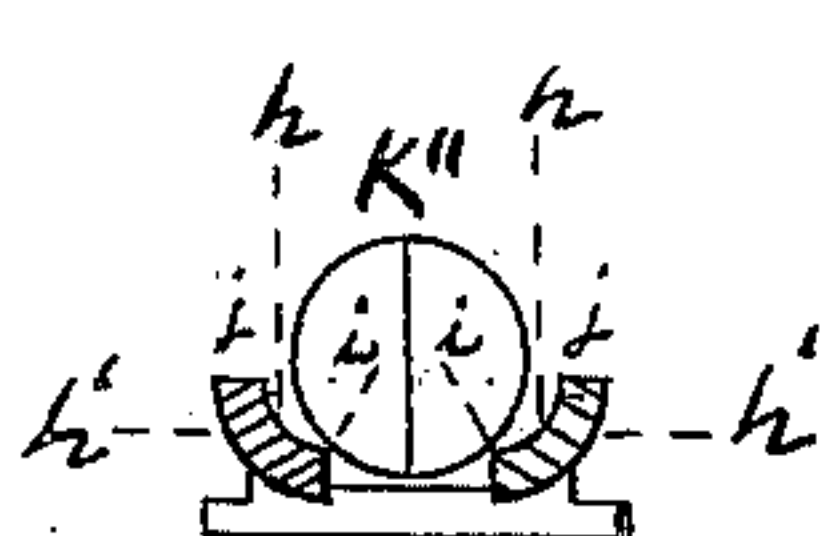


FIG. 8-

FIG. 9-

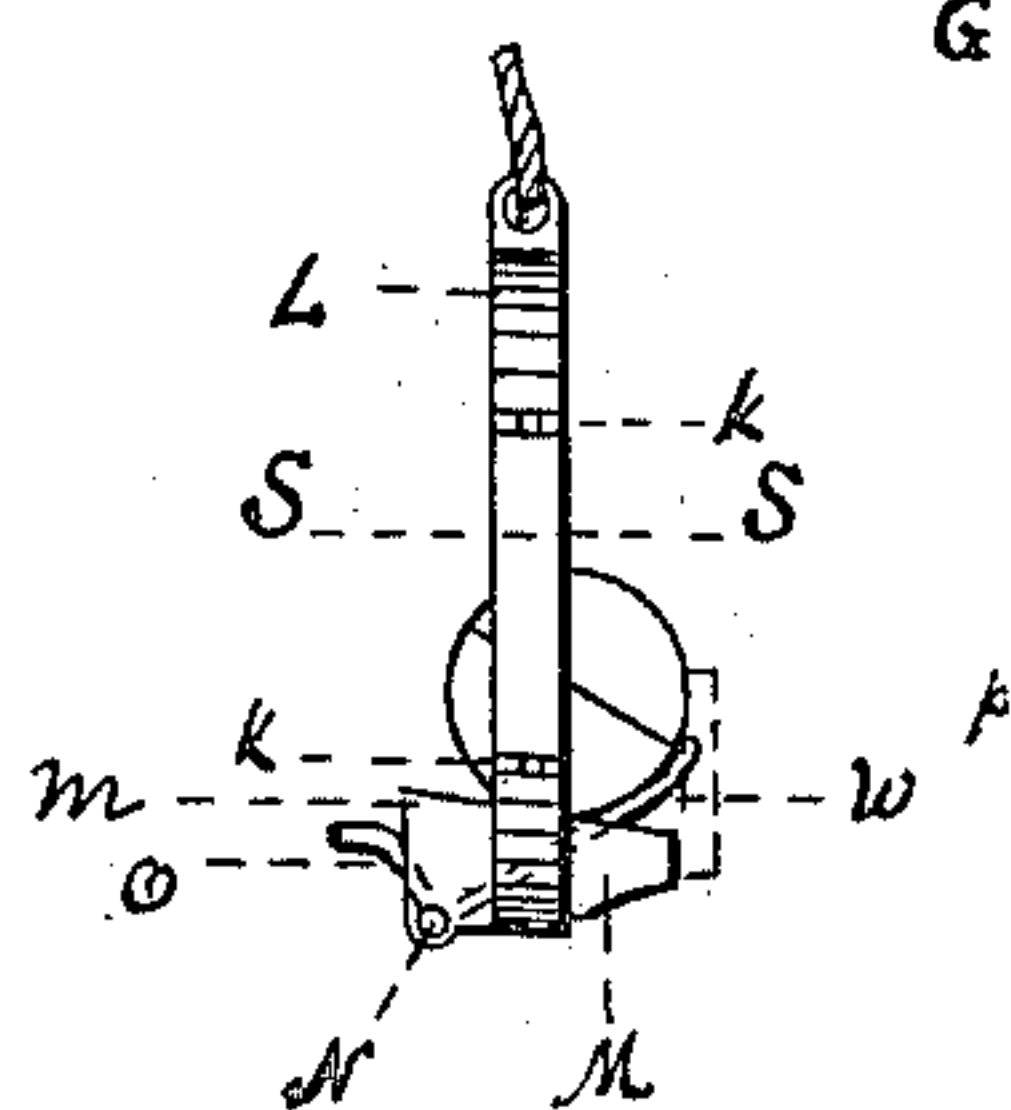
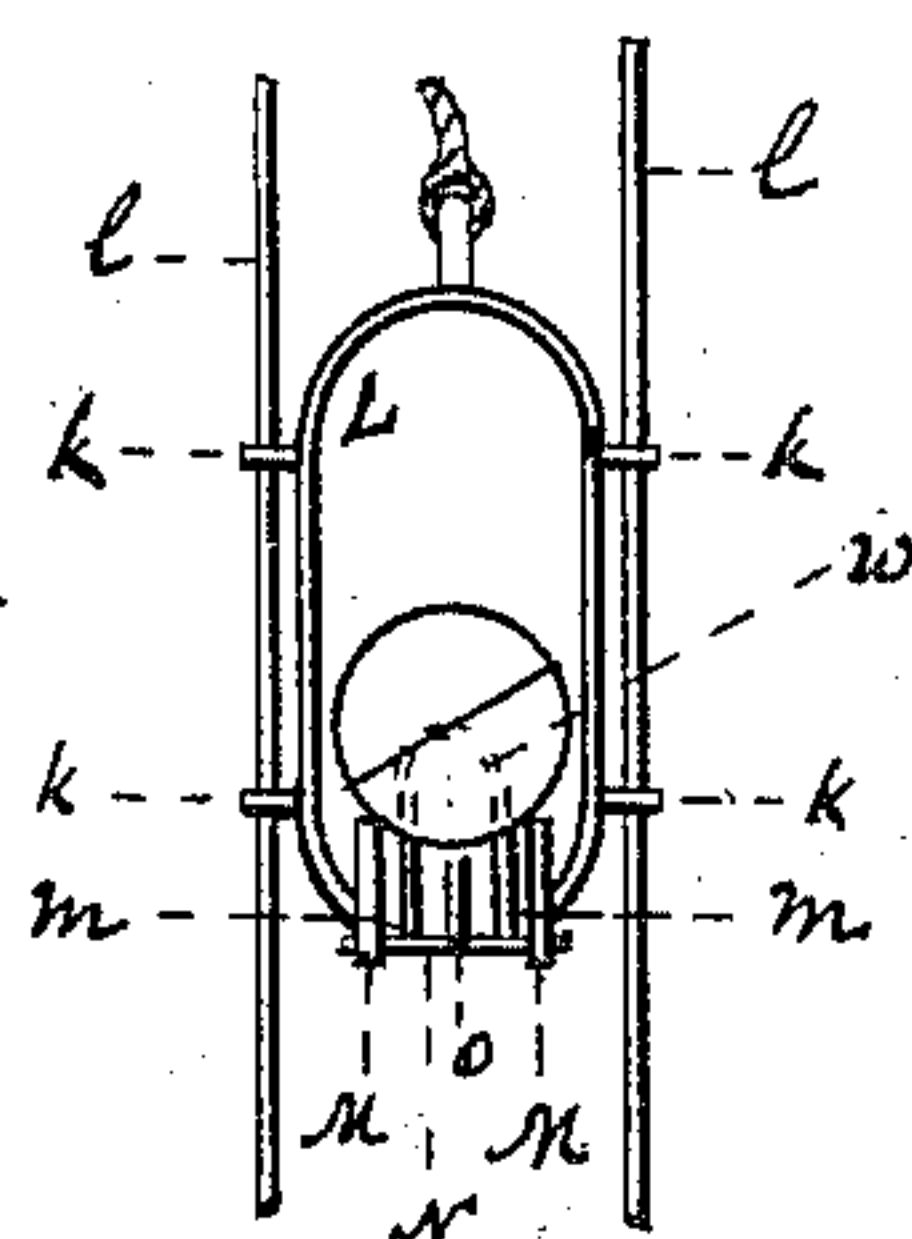


FIG. 11-

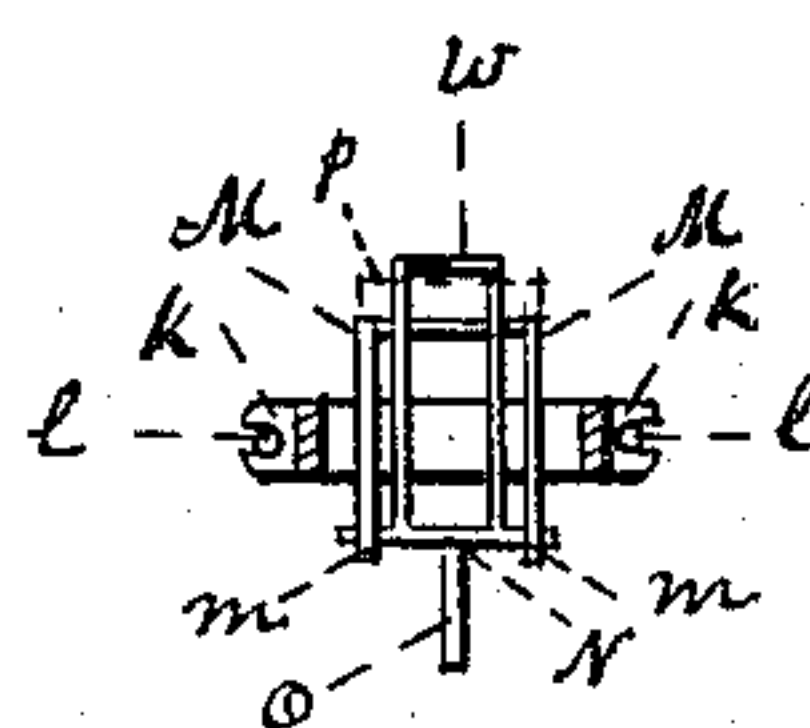


FIG. 12-

WITNESSES

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AUTOMATIC CASH-CARRIER.

SPECIFICATION forming part of Letters Patent No. 306,474, dated October 14, 1884.

Application filed May 29, 1884. (No model.)

To all whom it may concern.

Be it known that I, JOSEPH WALTER FLAGG, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Automatic Cash-Carriers, of which the following is a specification, setting forth a full, clear, and exact description of the same, illustrated by the accompanying drawings, in which—

Figure 1 represents a section of one of the outward or distributing tracks of a cash system, showing one of the intermediate chambers and delivery-baskets. Fig. 2 is a view of the same with the delivery-basket partly drawn down. Fig. 3 shows a top view of the same with a portion of the upper or main track removed. Figs. 4 and 5 show, respectively, top and side views of a section of the outward distributing-track and a diverging branch track. Fig. 6 shows a side view of the same with springs to check the fall of the carrier. Fig. 7 is a top view of a switching device when the main and branch tracks are in the same horizontal plane. Fig. 8 is a sectional view on line X X, Fig. 7. Fig. 9 is a sectional view of the rails forming the track. Figs. 10 and 11 are front and side elevations of my improved elevator; and Fig. 12 is a sectional view on line S S, Fig. 10.

Similar letters refer to similar parts in the several views.

My invention relates to that class of cash-carrying systems in which inclined tracks and rolling carriers are used; and it consists in an improved mode of operating the gate between the intermediate chambers and the delivery-basket, in the method of distributing the carriers upon branch tracks, in improvements in the switching device when the branch and main tracks are upon the same horizontal plane, in the form of the rails of the tracks, and in certain improvements in the elevators.

A A indicates a section of an outward-inclined track, upon which rolling carriers B are conducted from the cashier's desk to the several stations occupied by salesmen. At different points along its length openings C are made, of varying diameters, corresponding with the size of the several carriers in use. Beneath each of these openings are short sec-

tions of track D, parallel to the main track A. One end of these tracks is placed directly beneath the opening C in the main track, and through the opposite end of the track D is a similar opening, C', communicating with a delivery-basket, E, held against the under side of the track D. Sliding between suitable guides is a transverse bar, F, having an eye, a a, at each end, through which pass the cords b b, attached to the delivery-basket E. The bar F, when the basket is drawn down, is held in its guides b' b' about midway between the tracks A and D and over the opening C' in the track D, closing the opening to the passage of carriers from the track D into the basket E. As the basket E is drawn up against the track D, the buttons c c, attached to the cords b b, being too large to pass through the eyes a a, raise the bar F in the position shown in Fig. 1, allowing any carriers which may have been retained in the intermediate track D to roll into the delivery-basket E. The basket E may be attached by the cords b b to winding-drums d d on the main track A; or they may pass over pulleys and weights, employed to raise the basket, as may be deemed desirable.

Along the line of the outward distributing-track A, as may be required, are branch tracks, one of which is shown in Figs. 4 and 5, by which certain of the carriers may be diverted from the main track and carried to other sections of the store. The branch track G is placed below the main track A, and has its end G' brought beneath it. An opening, H, with its diameter corresponding with the size of those carriers intended to be carried on the branch track, allows such carriers to fall through, while larger carriers will roll over the opening and continue upon the main track. The end G' of the branch track has a greater inclination, forming an angle with the branch track G, for the purpose of imparting a greater velocity to the carriers, and also of partially checking the force of the blow of the carrier as it strikes the branch track. In some cases, where the branch track is too near the main track to allow of the proper inclination at G', I use a spring, as at I, Fig. 6, attached to the under side of the track A and extending beneath the opening H in the track A, of sufficient tension to partially sustain the carrier

K, but yielding to its weight as it rolls off the springs, as shown by the broken lines I'. The spring I may be elastic throughout its entire length; but I prefer to make the short section I" near its attached end of greater elasticity, so it will only bend at this point by the weight of the carrier.

In cases where the main and branch tracks are of necessity in the same horizontal plane I use a switching device, (shown in Fig. 7,) in which J indicates a frog rigidly attached to the intersecting rails, and either made elastic its entire length, or preferably having an elastic section, *e*, near its attached end. The normal position of the frog J closes the branch track K' until the passage of a carrier on the main track large enough to actuate the horizontal arm *f* extending across the track and attached to the vertical post *g*, which, by means of the connecting mechanism, withdraws the frog J to the position shown by the broken lines J', the frog bending at its elastic section *e*, its elasticity causing the frog to assume its normal position as soon as the carrier has passed.

I form the rails as shown in sectional view in Fig. 9, the upper and inner side, *h*, of the rail being concave and the outer and lower side, *h'*, being convex.

I usually form the rails of the longitudinal sections of a tube, each rail consisting of about one-quarter or one-third of a tube, and the rails are so placed upon ties or other supports that the carrier K" shall roll upon the corners *i i*, the upper sides, *j j*, serving as a guard to prevent the carriers from leaving the track. This form of rail is easily made, and affords a great degree of strength and stiffness with a small weight of material.

My improved elevator, in which the carriers are raised to the inward inclined track, consists of a metallic rim, L, of nearly elliptical form, having at its sides the projecting lugs *k k*, which inclose the vertical guiding-rods *l l*.

Upon the lower side of the rim L are rails M M, with their front ends, *m m*, the highest. A spindle, N, turns in bearings in the lower edges of the rails, having a wire, *w*, extending rearward and upward, and a curved arm or prong, *o*, extending forward, the angle formed by the inclined surface of the rails and the upturned wire retaining the carrier in position. As the elevator is raised the prong or arm *o* strikes against a bar or pin at the end of the inward track, rotating the spindle N, causing the bent wire *w* to press against the rear side of the carrier and force it forward on the rails M M, giving it an impetus in the direction of its course along the track.

If desired, a back to the elevator may be used, as shown by broken lines *p p*, and the bent wire *w* not carried up as far as would be required to sustain the carrier; or other support than the rails M M may be used for the carrier, the essential feature of my invention being embodied in an arm or wire, *w*, acting

against the rear side of the carrier, as described, tending to push the carrier forward without raising it, as is the case in those elevators using a tilting shelf.

The several improvements herein described are adapted to that cash-carrying system set forth in the Letters Patent granted to me March 20, 1883, No. 274,302; but they may be applied to and form a part of any system in which rolling carriers are employed to roll upon two-railed inclined ways.

The apparatus by which the carriers may be drawn up to the elevated tracks are not herein shown, as it forms no part of my present invention, and any well-known means may be employed for that purpose.

The use of a bar, pin, or stop on the track, by which a tilting shelf in the elevator is operated, is well known, and such was shown in the patent to me above referred to. I have therefore not deemed it necessary to show or more fully describe the same in this specification.

What I claim as my present invention, and desire to secure by Letters Patent, is—

1. The combination, with the main track of a cash-carrying system, having openings to allow the proper distribution of the carriers, of a secondary receiving-track arranged beneath each opening in the main track, said receiving-track having an opening through which the carrier falls into a movable delivery-basket, a movable delivery-basket and a transverse bar closing the opening in the receiving-track, said bar being removable, so as to allow carriers to pass from the receiving-track into the delivery-basket, as and for the purpose set forth.

2. The combination, with the receiving-track arranged beneath the openings in the outward or distributing track, of a cash-carrying system, said receiving-track having an opening through which carriers fall into a movable delivery-basket, and a movable delivery-basket suspended by cords, of a transverse bar closing the opening in the receiving-track, and having eyes at the ends through which the cords of the delivery-basket pass, said cords being connected with means by which the baskets may be raised, and buttons on said cords by which the transverse bar may be raised by the upward motion of the cords, as and for the purpose set forth.

3. The combination, with the main track A, having openings C, of the receiving-track D, having an opening, C', transverse bar F, closing the opening C' and having eyes *a a*, cords *b b*, passing through said eyes, attached to winding-drums, winding-drums *d d*, buttons *c c*, attached to the cords *b b*, arranged and operating as described, and for the purpose set forth.

4. The combination, with the main track of a cash-carrying system and graduated carriers adapted to roll thereon, of graduated openings in the main track, and a branch track arranged below the main track, having one end beneath the openings in the main track,

whereby certain of the carriers on the main track are diverted to the branch tracks, as and for the purpose set forth.

5 5. The combination, with the main track of a cash-carrying system having openings H and a branch track arranged below the main track, of an inclined section in the branch track beneath the openings in the main track to receive the carrier, as and for the purpose set forth.

10 6. The combination, with the main track of a cash-carrying system having openings in the bottom to allow the passage of carriers and branch tracks arranged below the main track and beneath said openings, of receiving-springs between the two tracks to receive the force of the carrier as it falls through the opening and deliver the same to the branch track, as and for the purpose set forth.

20 7. The combination, in a switching device, with the way of a cash-carrying system, of an elastic frog, J, rigidly attached to the intersecting rails and arranged in its normal position with its free end resting against one of the rails of the track, said frog having connected means for bending the frog and carrying its free end against the opposite rail, as and for the purpose set forth.

30 8. In a cash-carrying system, the way or track consisting of rails formed of the longitudinal sections, of tubes arranged upon ties or other supports with their convex sides outward and downward so the carriers roll upon the lower edges of the concave sides, as and for the purpose set forth.

9. In a cash-carrying system, the rail having its inner and upper side concave and its lower and outer side convex, substantially as and for the purpose set forth.

10. The combination, in an elevator of a cash-carrying system, having a rigid support for the carrier, of a vibrating wire or arm pivoted near the front of the elevator, and extending rearward and upward behind the carrier, so the forward motion of the said vibrating arm will force the carrier forward, as and for the purpose set forth.

11. The combination, in an elevator of a cash-carrying system, of a rigid support for the carrier, having its upper surface inclined with the front side the highest, and a pivoted wire or arm extending rearward and upward beyond the inclined surface so as to form a back to hold the carrier from rolling off its support, as and for the purpose set forth.

12. The elevator consisting of a metallic elliptical rim, L, having guides k and rails M M to support the carrier, and a pivoted wire or arm extending upward and rearward for the purpose of forcing the carrier off the rails M M, as and for the purpose set forth.

13. The combination, in the elevator of a cash-carrying system, of rails M M, pivoted vibrating arm w, and tripping-prong o, as and for the purpose set forth.

JOSEPH WALTER FLAGG.

Witnesses:

RUFUS B. FOWLER,
GEO. E. SMITH.