

(No Model.)

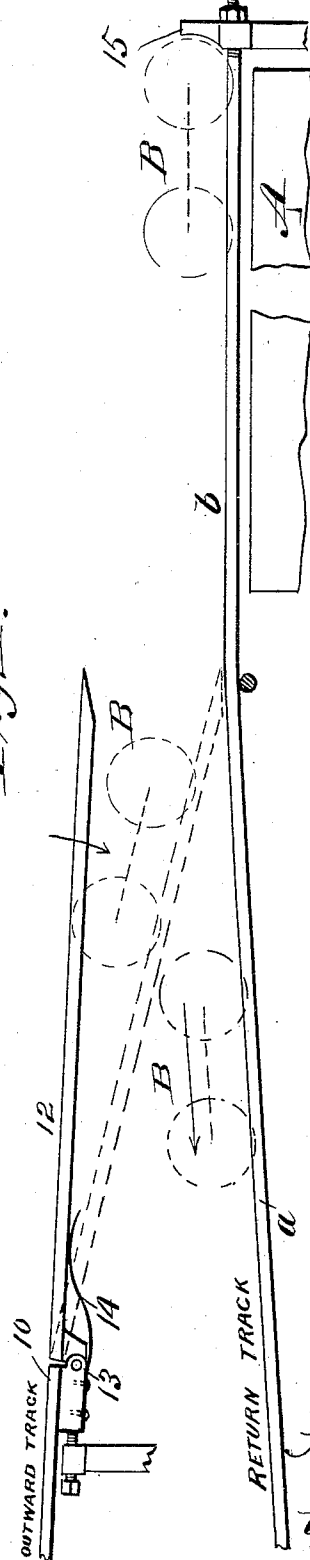
H. L. WALBRIDGE.
CASH CARRIER.

5 Sheets—Sheet 1.

No. 467,666.

Patented Jan. 26, 1892.

Fig. 1.



Witnesses:

J. D. Gasfield
W. H. Lowe

Inventor

Henry L. Walbridge

by *Chapin & Co.*
Attorneys

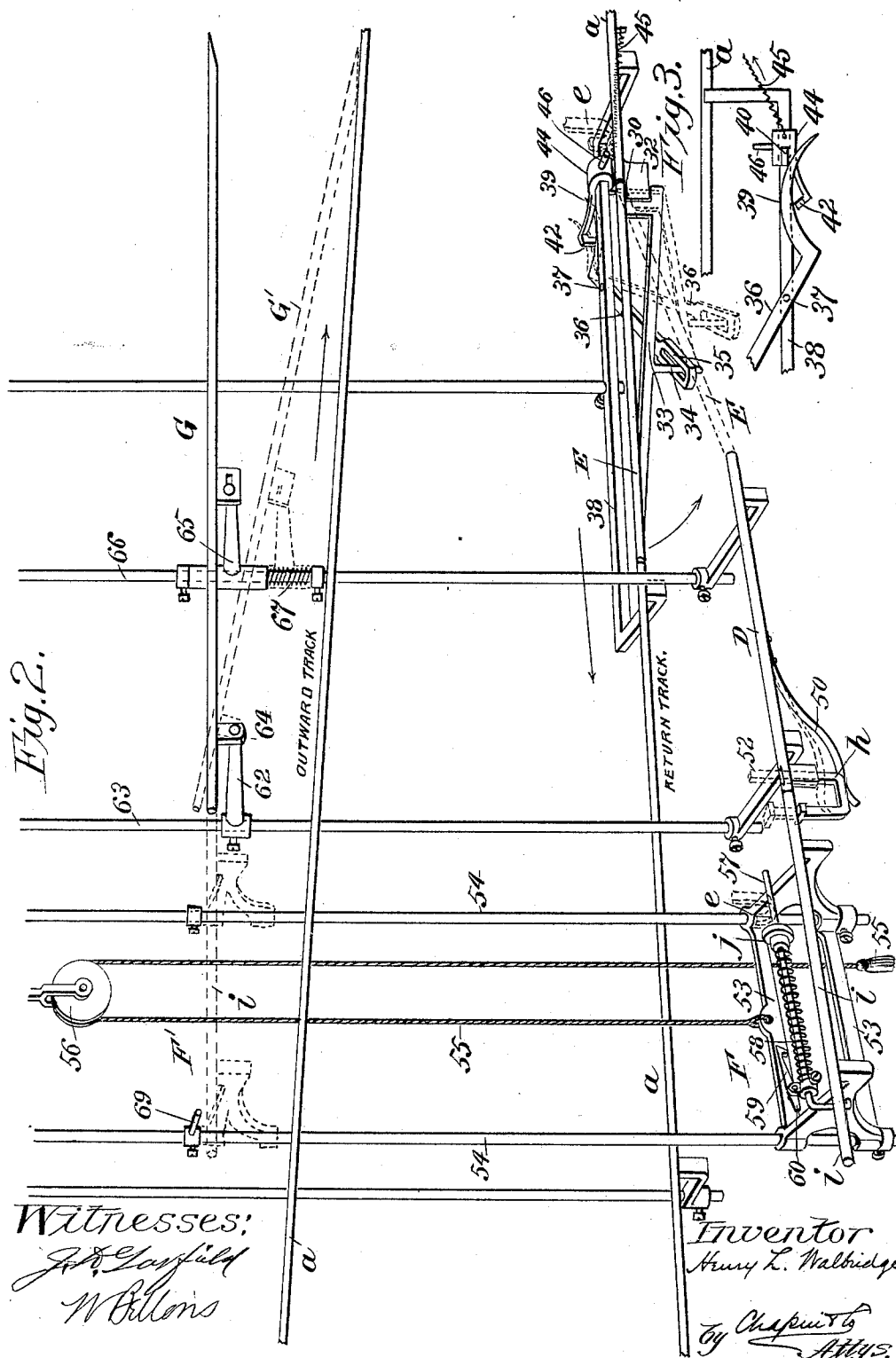
(No Model.)

5 Sheets—Sheet 2.

H. L. WALBRIDGE.
CASH CARRIER.

No. 467,666.

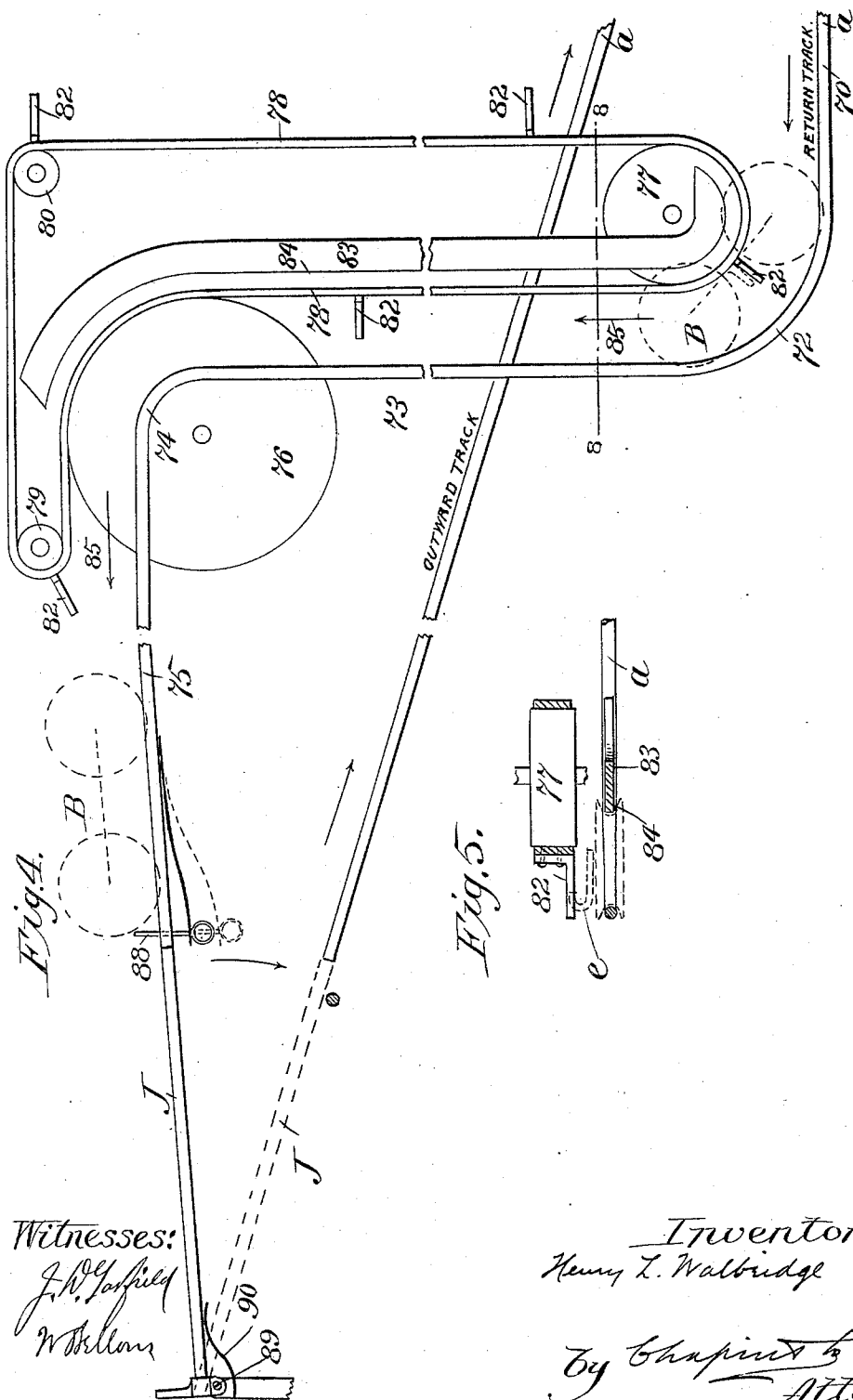
Patented Jan. 26, 1892.



H. L. WALBRIDGE.
CASH CARRIER.

No. 467,666.

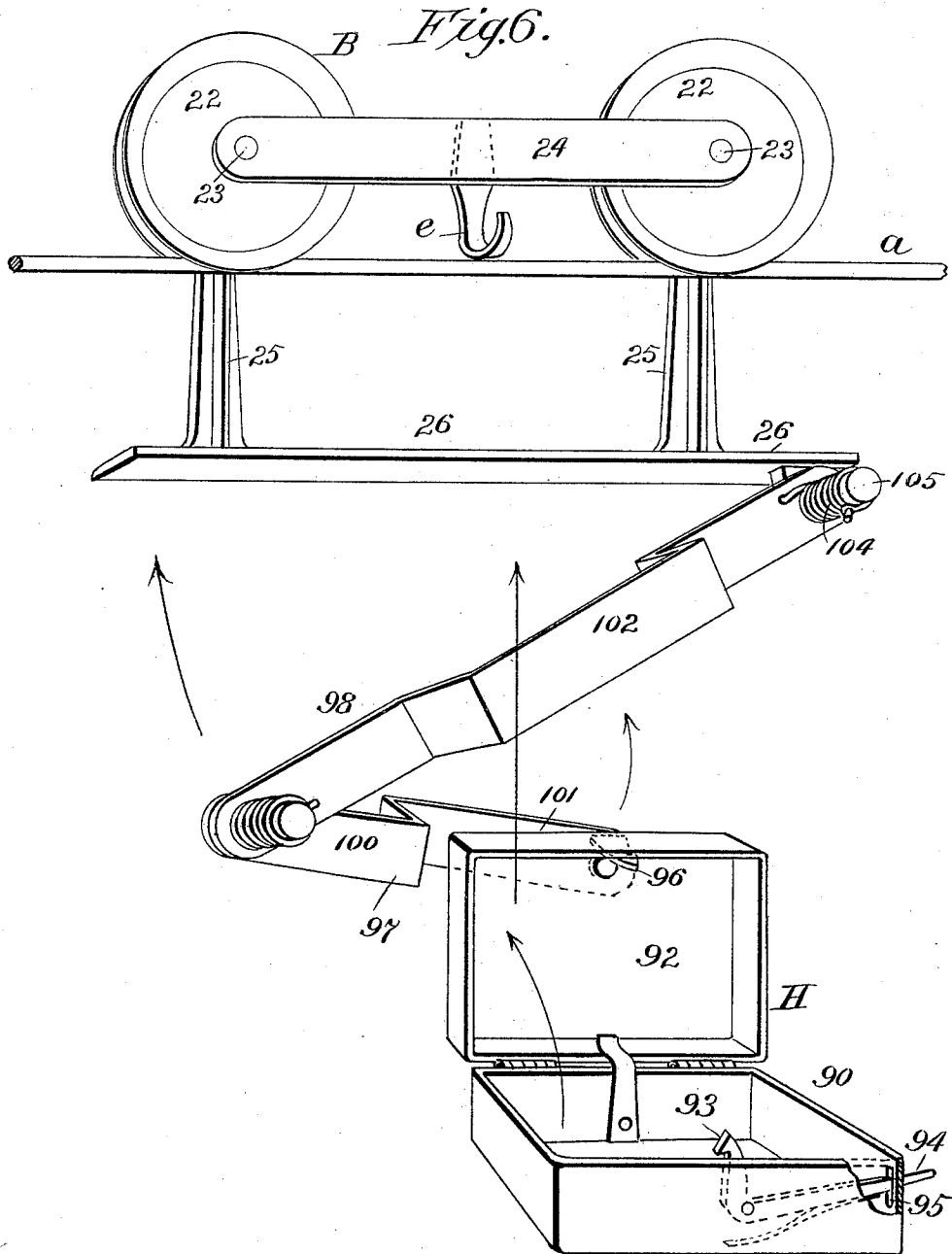
Patented Jan. 26, 1892.



H. L. WALBRIDGE.
CASH CARRIER.

No. 467,666.

Patented Jan. 26, 1892.



Witnesses:

J. H. Garfield
W. Bellows

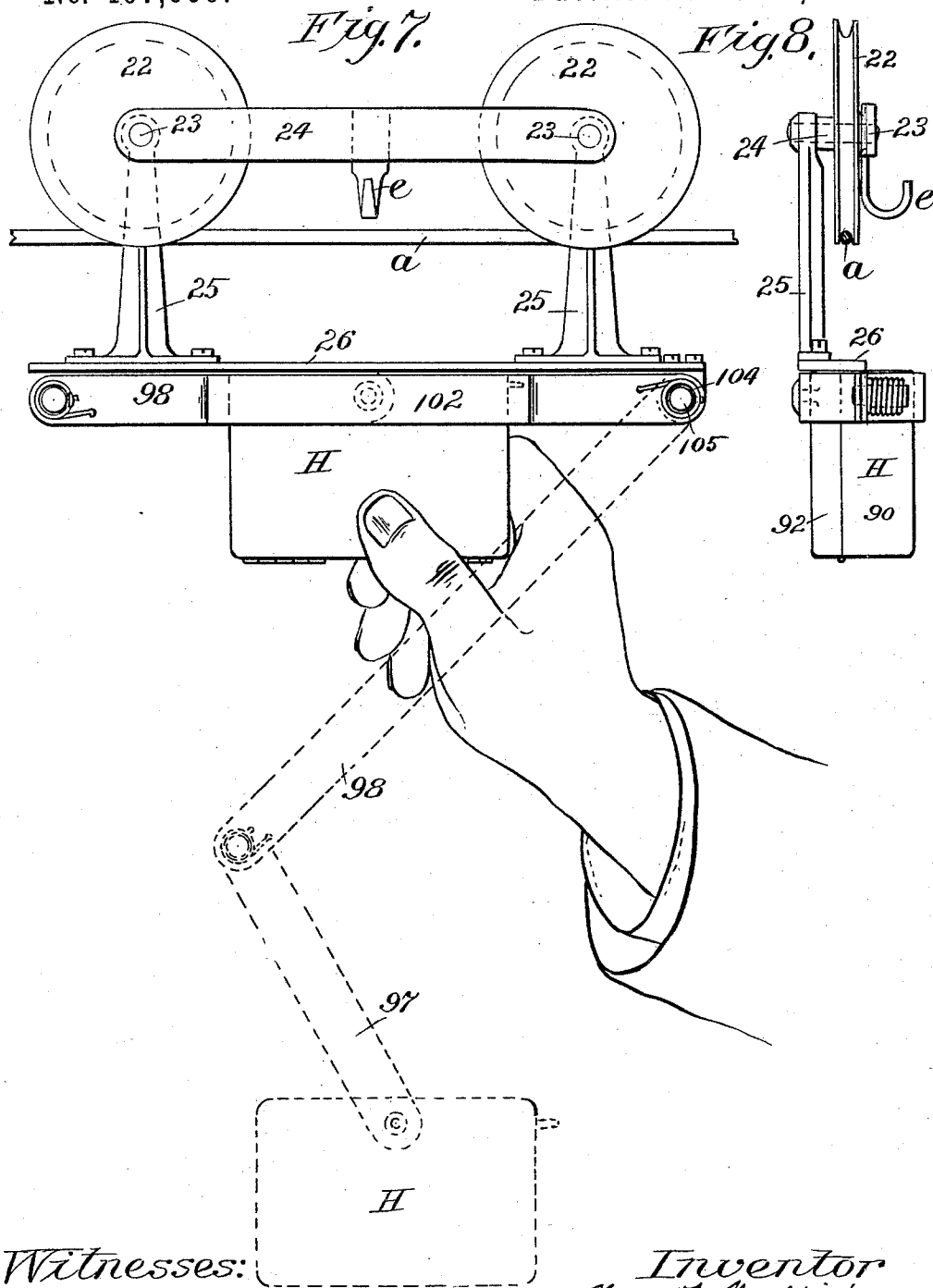
Inventor
Henry L. Walbridge

by Chapman & Co.
Attorneys

H. L. WALBRIDGE.
CASH CARRIER.

No. 467,666.

Patented Jan. 26, 1892.



Witnesses:

J. W. Garfield
W. H. Williams

Inventor
Henry L. Walbridge

by Cuspid G.
Attorneys.

UNITED STATES PATENT OFFICE.

HENRY L. WALBRIDGE, OF SPRINGFIELD, MASSACHUSETTS.

CASH-CARRIER.

SPECIFICATION forming part of Letters Patent No. 467,666, dated January 26, 1892.

Application filed April 2, 1891. Serial No. 387,347. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. WALBRIDGE, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Cash-Carriers, of which the following is a specification.

The object of this invention is to improve the construction of cash-carriers and tracks or ways therefor, the aim being to provide novel devices and appliances which are of simple and durable construction and correspondingly inexpensive and which are effective and practically automatic in action.

More particularly the invention relates to improvements in the trackways near the cash-desk, whereby the cash-car coming thereat may be automatically transferred from the track leading thereto onto the track for the returning of the car to the station whence it came; to improvements in automatic switches for guiding each particular car from the return-track onto the side track at the station for which such car is provided; to improvements in the apparatus at the station, notably the combination or arrangement of the car-elevator with the side track, the construction of the car-elevator and its adaptability for correlation with the outward or transmission track; to improvements in portions of the system which have the capability of automatically conveying the car to a station on an upper floor, from which station a track runs to the desk or into the main-line track of the system; to improvements in the construction of the car whereby it may successfully run over the trackway and on certain occasions exert a co-operative action with relation thereto, and to improvements in the construction of the cash-box and its combination with the car and otherwise, all substantially as will hereinafter appear.

To the ends above set forth the invention consists in the construction and combination of parts, all substantially as will hereinafter more fully appear, and be set forth in the claims.

In this specification, for the purposes of brevity and uniformity, the track or way which runs toward the desk and from the sending station will be termed the "outward

track," while the way for conveying the car toward the station will be termed the "return-track."

Referring to the accompanying drawings, the various features of improvement are illustrated.

Figure 1 is a view in elevation in illustration of portions of the outward and return trackways at the desk. Fig. 2 is a perspective view of portions of the outward and return main-line trackways, showing a sub or side track for the station, the automatic switch applied between the same and the return-track, the elevator, and automatic devices for switching the car, under the proper conditions, from the elevator onto the outward track. Fig. 3 is an under side plan view of portions of the switch between the return-track and the side or station track, to be hereinafter referred to. Fig. 4 is an elevation illustrative of the portion of the tracks at and leading to an upper floor or location. Fig. 5 is a horizontal section taken on the line 5 5, Fig. 4. Fig. 6 is a perspective view of the car and the cash-box, the connections between the latter and the car being shown as in their distended or unfolded relations and the box opened. Fig. 7 is a side elevation of the same parts, the cash-box and the parts connecting same being shown in full lines as in their most compact relations; and Fig. 8 is an end view of the same.

Similar characters of reference indicate corresponding parts in all the views.

In the illustrations given the trackways are inclined for insuring the propulsion of the cars by gravity, and the invention has particular reference to a gravity apparatus, although, as will be apparent, certain features of the constructions are not limited to any particular means for insuring the propulsion of the car.

The apparatus comprises an outward trackway, which passes in proximity to and is common to various forwarding-stations, and also a corresponding return-track, and in the drawings the outward track and also the return-track are indicated, these terms being placed upon such portions of said respective trackways as are shown.

The letter *a* refers, generally, to the track, whether the outward or return, and the track-

ways and various appliances combined or connected therewith are to be supported in any suitable manner, the same often varying in different stores and under different circumstances and in any case involving merely the exercise of mechanical or engineering skill, and for the purposes of simplicity and clearness supporting structures for the trackway are not given prominence in the present illustrations.

Describing now the improvements in the trackways near the cash-desk, whereby the cash-car coming thereat will be automatically transferred from the outward track onto a portion or extension of the return-track, A indicates the position of the cash-desk, and b represents a section of the return-track adjacent the desk, which, however, is level, or in any event is not inclined, as is the said return-track throughout the major part of its course. The outward track terminates, as at 10, at a suitable distance from the terminal section b of the return-track, and 12 represents a switch-section, which by its one end is pivoted, as at 13, on a suitable fixture or support next to the end 10 of the outward track, the said switch-section being normally sustained by a spring 14 in the position shown in full lines in Fig. 1, so that the free end of the said switch-section 12 will be held away from proximity to the track-section b, the said switch-section being in line with and forming, as it were, a continuation of the said terminal portion of the outward track. The car B, however, coming to the desk, will, on reaching the switch-section 12, by its weight cause the depression of said section, as indicated in the dotted lines in Fig. 1, uniting the outward track with the horizontal track-section b, when the car under its impetus will continue along such latter portion of the track and to the stop or abutment 15. The cashier on desiring to return the car pushes same along the horizontal section b in a direction away from said abutment 15 and onto the inclined portion of the return-track, when of course the necessary force for the propulsion of the car is developed, it of course being understood that immediately the car has run off from the switch-section 12 in coming to the desk said section rises under the reaction of its retracting-spring and forms no impediment to the departure of the car from the desk.

The car B, as shown in Figs. 6, 7, and 8, consists of the pair of widely-flanged wheels 22 22, having at one side suitably-extended axles 23 23, united by the longitudinal bar 24 at one side of said wheels, and hangers 25 25 extend downwardly at the same side below the rims of the wheels, having secured thereto the horizontal support 26 for the cash-box, the construction of which will be hereinafter more fully described, as will also be the connection of the cash-box with said supporting part of the carriage.

e represents an abutment member sup-

ported on the car so as to be in a plane near the track, and, as shown in the drawings, is in the form of a hook, the relation of the same being indicated in Fig. 2 as to its capability for bearing with relation to an operating part of the switch and other parts of the apparatus, as will hereinafter appear.

The outward track of the cash-carrier system is ranged higher than the return-track, and at each sender's station there is a side track D, as indicated in Fig. 2, and a switch-section E, which normally lies as a continuation of the main return-track, but which on the proper occasion is adapted to be automatically shifted to switch the returning car from the main return-trackway onto said side track D. The switch-section E is in substance pivoted at its rear end, as at 30, on a suitable supporting part 32, so that the section E may swing into the position indicated by the dotted lines in Fig. 2, and the said section E is trussed or otherwise suitably formed on its under side, as at 33, and is provided with the downwardly-extended stud 34, which passes through the slotted extremity 35 of the lever 36, which is pivoted at 37 on the horizontal fixed frame or support 38. Said lever 36 is provided with the angularly-extended and cam-formed arm 39, which is extended between two lugs 40 and 42, that are formed as downward projections from the collar or yoke 44, which embraces and is adapted to slide in a direction parallel with the course of the track on the said supporting-frame 38. These parts last described are most particularly illustrated in the under side plan view, Fig. 3. The said yoke or collar 44 is normally held in a rearward position by the spring 45, and the said collar has thereon a stud 46, which is in the line of movement of the abutment-hook e on the car. As the car returning toward the station reaches the switch-section E the hook e forces the yoke 44 forwardly, swinging the lever 36, so that through its connection with the switch-section E the latter will be shifted to side-track the car at its station, and the car being given, as it diverges from the common return-track, a lateral movement relative to the position of the stud 46 the abutment-hook e is permitted suitably, after the switching has been effected, to pass out of engagement with stud 46 and to proceed in its forward course.

h represents a stop for limiting the travel of the car in its return run in case the elevator F has not been restored to its normal position, as indicated at the lower left-hand part of Fig. 2. The said stop consists of a U-shaped device, one leg member of which is guided to play vertically with relation to the extremity of the side track D, and by the spring 50 to be sustained in the elevated position, as indicated by the dotted lines in Fig. 2, so as to form an abutment against the running of the car off the side track when the stop is in its upper position.

The elevator F embodies a suitable frame

53, movable and vertically guided on the rods or ways 54 and adapted to be raised by the cord 55 and pulley 56 into the position indicated by the dotted lines F', Fig. 2.

5 *i* represents a short section of track on the elevator-frame, the same extending beyond the ends of said frame and adapted, when the elevator is in its normal or usual and lowermost position, to be in line with and form a continuation of the station side track D and to bear downwardly upon one leg of the U-shaped stop device *h*, depressing the same against its spring, so that the car coming onto the side track when these conditions are established will run upon the track-section *i* of the elevator.

15 *j* represents a buffer movable in a line parallel with the direction of the track-section *i*, the same being supported and sliding on the horizontal rod 57 against the spring 58, which normally sustains the buffer *j* well rearwardly or toward the side track D, and 59 represents a hook-lever suitably supported and pivotally mounted upon the elevator F, the same having an arm 60 at its end, which is the other side of the pivot from the hook end of said lever. Now the car running onto the side track and track-section *i* would be brought by its hook-abutment *e* to contact with the said 30 buffer *j*, and then by further forcing the car bodily by hand, the buffer receding against the compression of its spring, the hook-lever will engage the said abutment-hook of the car, confining the car upon the elevator, which 35 latter may then be lifted to convey the car to be switched upon the outward track.

G represents the switch-section, which is supported and suitably movable above and in relation to the outward track, substantially 40 as indicated in Fig. 2. As shown, two supports are provided for the switch G, one 62, which is in the form of a bracket-arm, confined on the vertical supporting-rod 63 and to which the switch-section is pivoted, as at 64, 45 and the other support is also in the form of a bracket-arm 65, having a hub, which encircles the vertical supporting-rod 66, being held supported by the spring 67. The weight of the car being brought upon the switch-section G forward of the rear portion thereof, 50 which is pivoted, as at 64, will cause the tilting down of said switch, as indicated by the dotted lines G', Fig. 2, so that the car will then run forward upon the outward track. 55 It will be noted that the rear end of the switch-section G remains normally horizontally and in the line and as a continuation of the track-section *i* on the elevator when the latter is raised, and also that there is a pin 69 horizontally projecting from one of the guide-rods 54, against which the arm 60 of the car-engaging hook-lever 59 on the elevator may come in contact as the elevator is brought to the proper height, so that the car will be automatically released from its confinement, the 60 spring-pressed buffer at this time also being freed to impart a forward movement to the

car, sending it out on the switch G, when the weight of the car will insure the downward swinging or depression of the switch, as already mentioned. 70

The improvements in the apparatus which relate to the mechanism for automatically conveying the car to a station upon an upper floor or place, and from which station a track 75 runs downwardly in the opposite direction, will be now described.

70 represents a portion of a track in Fig. 4, which may be understood as a continuation of the common return-track shown in Fig. 2, 80 the same having a bend comprising a quarter of a circle, as at 72, thence extending vertically, as at 73, to lead to the proper height, and then having another arc bend 74, thence continuing in the more or less nearly horizontal though preferably slightly downwardly 85 inclined section 75.

76 represents a pulley mounted concentrically with relation to the bend 74 on the trackway, and 77 represents a pulley which 90 is mounted concentrically with relation to the bend 72 in the trackway, although each of said pulleys is, as indicated in Fig. 5, in an offset plane from that comprising said pulleys 76 and 77. An endless drive-belt 78 passes 95 around the pulley 77, around and with a bearing upon a portion of the periphery of the pulley 76, and over and around supporting and idler sheaves 79 and 80, and said drive-belt has at suitable intervals along its 100 outer face lugs or projections 82, substantially as shown.

83 represents a stationary runner-rail having a bearing-edge 84, which is toward the trackway and at all portions thereof at a distance 105 therefrom corresponding to the dimension of the car-wheels at their most contracted diameter—that is, between the opposite peripheral portions thereof at the bottom of their flanges. One of the pulleys—say the one 77—is continuously rotated in any suitable manner and 110 imparts to the drive-belt a progressive movement in a direction corresponding to that indicated by the arrows 85 in Fig. 4; and so a car coming into the portion 70 of the return-track adjacent the bend will have its abutment-hook *e* contacted upon by one of the 115 lugs 82, movable on and with the drive-belt, when of course the car will be bodily lifted, sliding up the vertical track-section 73 and carried round the bend 74, and, being disengaged by the drive-belt lug, which then has a divergent course, the car runs onto the portion of the track 75 and is restrained by the 120 vertically-movable and spring-sustained stop 88. A terminal portion of the outward track is under and in proximity with the portion 75 of the return-track, and J represents a switch-section which is normally adapted to form an inclined continuation of the track-section 75, the same being sustained in its 125 upwardly-swung position on its pivotal support 89 by the spring 90.

On desiring to transmit the car from the

station at and for which the track-section 75 is provided and located the stop 88 is drawn downwardly, when the car will run upon the switch J, which latter, under the weight of the car, will downwardly swing, switching onto the outward track.

The cash-box H, as shown, is of rectangular form, consisting of the main box 90 and the cover 92, hinged thereto and provided with the spring-pressed catch 93, having the extended arm 94, which protrudes through an aperture 95 in the side of the box for swinging the catch, so that it may be disengaged from the catch part 96 of the cover, a spring being interposed between the box and its cover, so as to swing the one away from the other to open the box when the catch is disengaged. The cover is pivotally connected on a bar 97, which in turn is pivotally connected or linked to another bar 98 at its outer end, the inner end of said bar 98 being pivoted to the supporting part 26 of the car. The bar 97 is of step form or formed with the offset member 100 and 101, as indicated in Fig. 6, while the bar 98 is intermediately stepped or provided with the middle offset portion 102, which is disposed reversely to the offset part 101 of the bar 97, and all so that when the cash-box is closed and the link-bars folded or disposed in their most compact relations the box may be located within the opening formed by the opposing offset-bar portions 101 102. The normal position of the bar 98 is as indicated in the full lines in Fig. 7, a retaining device being provided therefor, and the said retaining device is here shown as consisting in the spring 104, which is coiled around the stud 105, that is provided on the supporting part 26 of the car, one end of the spring being secured to the stud and the other to the bar 98. A similar provision is made at the pivotal connection between the said bar 98 and the one 97, whereby normally the latter bar will be held alongside of the one 98 for insuring the most compact disposition of all the laterally-described parts relative to the car. The car ever remaining on some portion of the trackway, the cash-box, nevertheless, at the proper times is easily accessible, for on reaching and drawing down the same, as may readily be done on the unfolding of said linked carrying-bars against their springs, the box may be brought to the most convenient position and opened. On closing the box and releasing it it is immediately drawn up to occupy its position within the link-bars closely under the car.

What I claim as my invention is—

1. In a cash-carrier railway, the combination, with a terminal portion of one track downwardly and forwardly inclined and the terminal portion of another track inclined downwardly and rearwardly relative to said first track and located thereunder and having a section, as *b*, extending beyond the end of the upper track, of a switch-section hinged at and provided as a continuation of the up-

per track-terminal and adapted to swing to connect same with said extended section of the lower track, and a spring for normally maintaining said switch-section in its upwardly-swung disposition, substantially as described.

2. In a cash-carrier apparatus, in combination, a common or main trackway and a side or station trackway, a switch-section in the main trackway adapted to swing to connect the side with the main trackway, a lever pivoted adjacent the main trackway and engaging by its arm a part of the said switch-section, and a slide member movable longitudinally with relation to the main trackway and adapted to be forwardly forced by the traveling car and provided with an abutment for acting on said switch-operating lever to shift the switch, substantially as described.

3. In a cash-carrier apparatus, in combination, a common or main trackway and a side or station trackway, a switch-section in the said main trackway adapted to swing to connect the side with the main track, a lever pivoted adjacent the said trackway and engaging by its arm a part of the said switch-section and having the cam-formed arm 39, the slide, member 44, provided with the lugs 40 and 42, and the spring 45, substantially as and for the purpose set forth.

4. In a cash-carrier apparatus, in combination, a common or main trackway and the side or station trackway, a switch-section E, having provided therefor the stud 34, the intermediately-pivoted lever 36, having in its one arm the slotted extremity, with which said stud 34 engages, and having its other arm of cam form, the bar 38, on which said lever is supported, the slide member 44, movable thereon and provided with the lugs 40 and 42 and the stud 46, and the retracting-spring 45, all as described and shown, for the purpose set forth.

5. In a cash-carrier apparatus, in combination, the station-trackway D and the elevator having the track-section *i*, adapted to align with the said track D, the stop *h*, of U shape, one vertical member of which is guided to play across the end portion of the track D and the other to stand beyond the end of said track, and the spring 50, all as shown.

6. In a cash-carrier apparatus, the combination, with the elevator provided with the spindle or rod 57 and the buffer-slide *j*, movable along the same, and the spring 58, encircling said spindle and having its reaction against the buffer-slide, and the catch-lever to engage the car, of the guiding and elevating devices for the elevator and an abutment-piece 69 to swing the lever out of engagement with the car when the same has been elevated to the proper height, substantially as described.

7. The combination, with the upper track, of the supports 63 and 66 and the brackets 62 and 65 thereon, the latter vertically movable and spring-supported, and the switch G,

pivoted near its end on the bracket 62 and supported on the bracket 65, the elevator having the track-support *i* to be aligned with the said switch, substantially as described and shown.

8. In a cash-carrier apparatus, the combination, with a trackway having a turn upwardly, as at 72, and another turn, as at 74, of the runner-guide 83, the pulleys 76 and 77, the drive-belt 78, having the lugs 82, and further belt-supports, as the sheaves 79 and 80, substantially as described.

9. In a cash-carrier apparatus, the combination, with the track having the upward course and then turned more or less nearly horizontally and the devices for upwardly propelling the car, substantially as described, of the stop 88 in the track, the downwardly-inclined out-

ward track, and the spring-supported switch J, all substantially as described and shown. 20

10. For a cash-carrier apparatus, the combination, with the car, of the bar 98, pivotally supported thereon and having at its one end the bar 97, pivoted thereto, the said latter bar carrying the cash-box, which is pivoted thereto, and the said bars 98 and 97 being formed stepped or with the offset portions 102 25 101, whereby the cash-box may be disposed between them, and means for normally maintaining said cash-box-supporting bars in their compact and folded relations under the car, 30 substantially as and for the purpose described.

HENRY L. WALBRIDGE.

Witnesses:

WM. S. BELLOWS,
G. M. CHAMBERLAIN.