(No Model.) 4 Sheets—Sheet 1.

A. A. CAILLE.

STORE SERVICE APPARATUS.

No. 491,076. Patented Feb. 7, 1893.

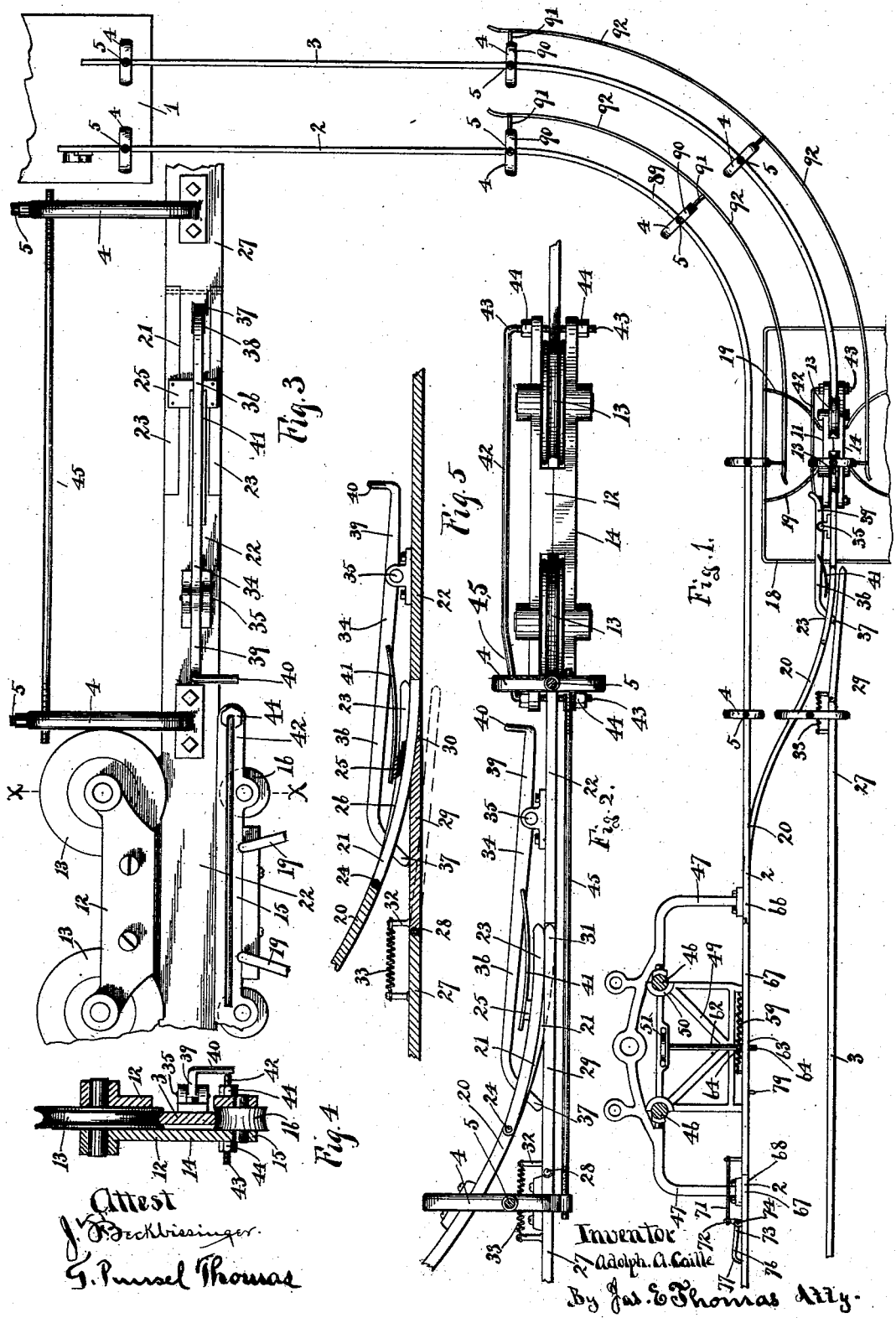

Fig. 1.

Fig. 2.

Fig. 3

Fig. 4

Fig. 5

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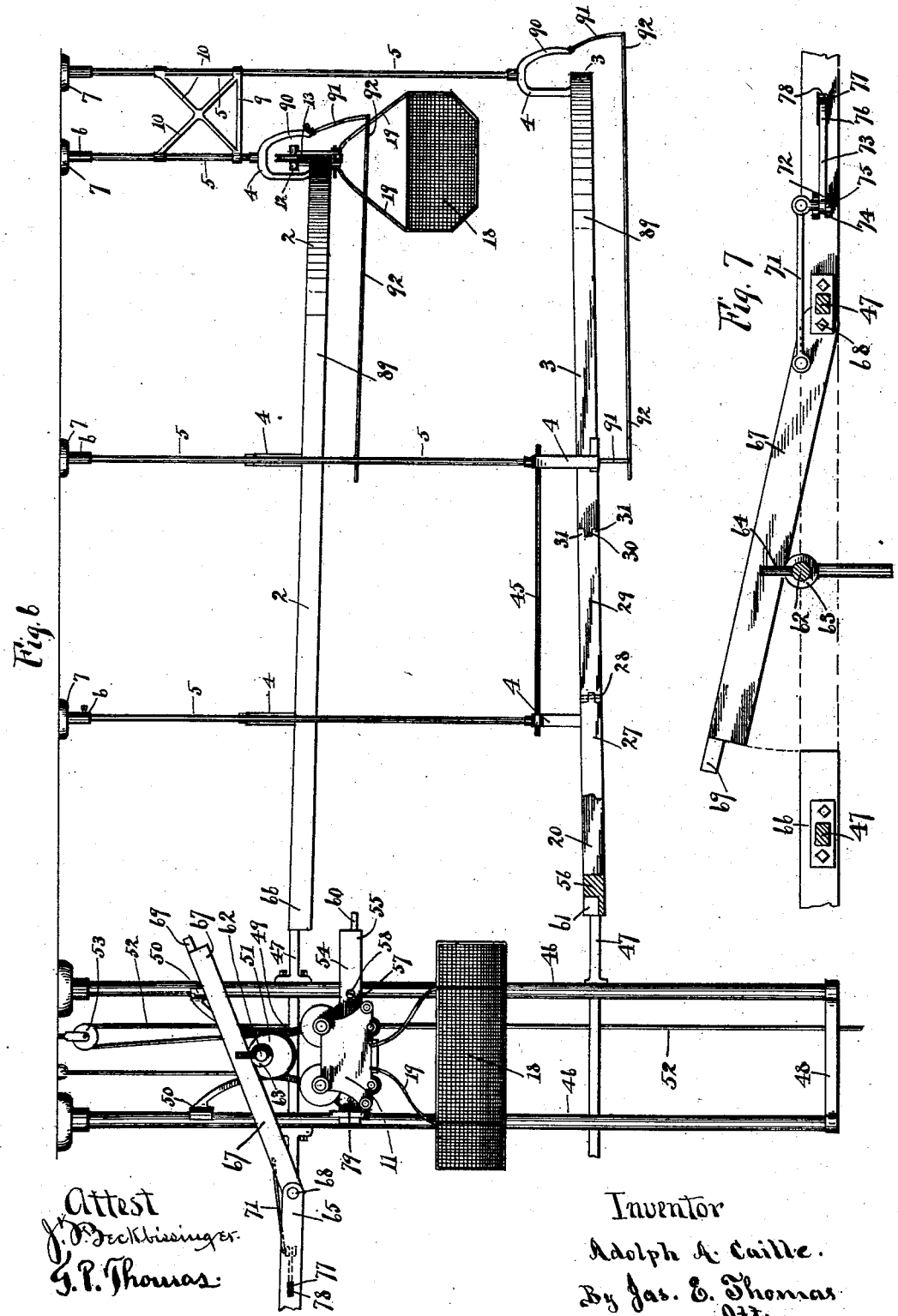

Fig. 6

Fig. 7

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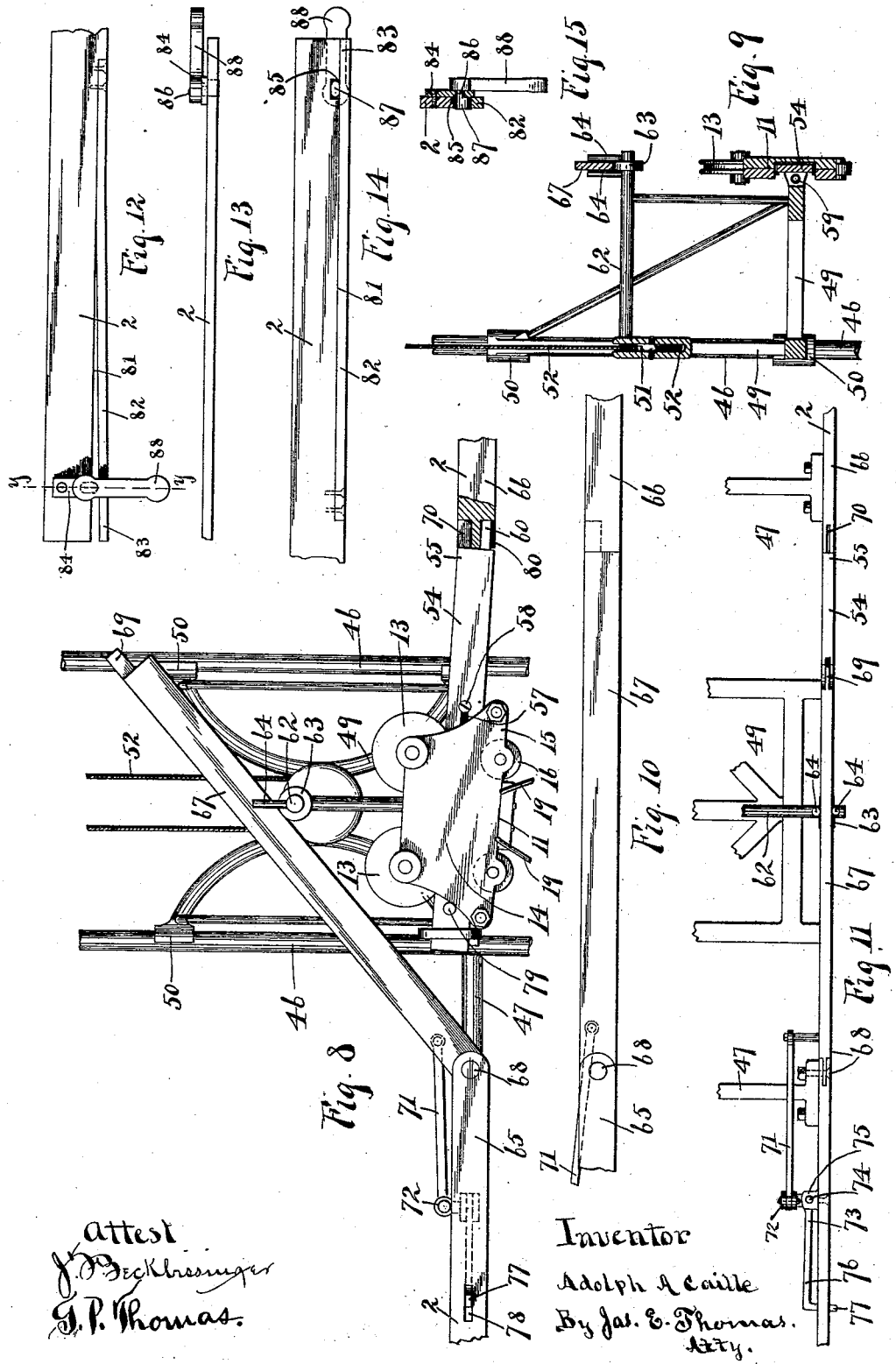

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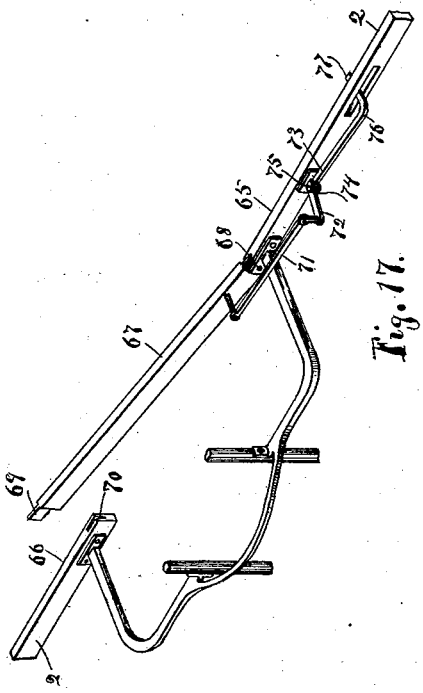

Fig. 17.

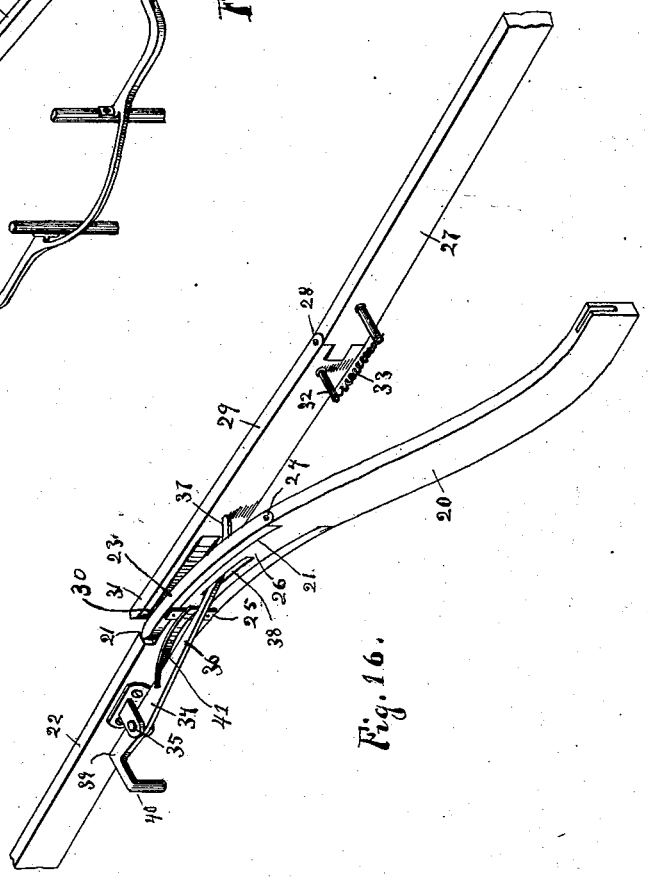

Fig. 16.

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UNITED STATES PATENT OFFICE.

ADOLPH A. CAILLE, OF SAGINAW, MICHIGAN.

STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 491,076, dated February 7, 1893.

Application filed March 17, 1892. Serial No. 425,353. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH A. CAILLE, a citizen of the United States, residing at Saginaw, East Side, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Store-Service Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in store service apparatus, and pertains more especially to improvements in that class of store service apparatus in which inclined tracks to and from the wrapping counter or cashier's desk are used as a means for transferring the carrier and its contents to and from the salesman.

The invention consists in the combination and arrangement of the several devices and contrivances used in the construction of the apparatus, together with the operation of the same as I shall hereinafter describe and detail, and which will also be especially mentioned and set forth in the claims which follow.

One of the objects of the invention is first to provide a sure and reliable means for supporting and sustaining the tracks of a store service apparatus by single rods or hangers, whereby the space required for the apparatus is greatly lessened, and the erection of the apparatus is cheapened and more readily performed.

Another object is to provide a means for operating switches in a reliable manner for directing different carriers to different stations along the track, and for automatically lowering the carrier from the return track to the salesman at the station.

Another object is to provide devices for retaining the carrier in a vertical position when passing a curve in the track, whereby the swaying motion imparted thereto by centrifugal action in passing the curve is avoided and the carrier is forced to leave the curve in a true and upright position.

Another object is to provide devices whereby the carrier is elevated from the salesman's counter to the track and started on its way to the wrapping counter or the cashier's desk by the automatic inclination of a movable track section.

I attain these objects by means of the devices illustrated in the accompanying drawings in which the figures of reference used in the following specification will be found designating the same parts throughout the several views.

Figure 1, is a plan view of my improved system including the switch and elevator apparatus for one station. Fig. 2, is a plan view of the switch section with the carrier in position when about to operate the switch mechanism. Fig. 3, is a view in elevation of the inner side view of the same. Fig. 4, is a transverse vertical section of Fig. 3, taken at x—x. Fig. 5, is a horizontal section of the track in Fig. 2, with the switch rail in a closed position. Fig. 6, is a view in elevation of the apparatus shown in Fig. 1. Fig. 7, is an inner side view in elevation, and enlarged, of the removable section of the track operated by the elevator. Fig. 8, is a view in elevation of the carrier elevator, in position for starting the carrier out, partly in section. Fig. 9, is a transverse vertical section of the same. Fig. 10, is a side view of the track shown in Fig. 9, with the removable track section in alignment with the main track. Fig. 11, is a plan view of the track shown in Fig. 8. Fig. 12, is a side view of the end of the incoming track at the wrapping counter with the parts in position to stop the carrier. Fig. 13, is a plan view of the same. Fig. 14, is a view of the opposite side of same with parts in position for releasing the carrier. Fig. 15, is a transverse vertical section of Fig. 12, taken at y—y. Fig. 16, is a view in perspective of a section of the tracks containing the switch apparatus. Fig. 17, is a view in perspective of the section of upper main track containing the removable track section shown in Fig. 7.

1, represents the wrapping counter, and 2, is a single track inclined to and ending at the counter 1, while 3, is a single track beginning at the counter 1, and is provided with a downward inclination from the counter, the tracks being extended through a store or other place of business or manufacturing, in the upper part of the room and out of the way of persons passing beneath, and are located in relation to each other near to and on vertically parallel lines, while the track 2, is above the horizontal plane of the track 3. The tracks

2, and 3, are each composed of a strip of metal supported to stand with their sides in a vertical position by hangers 4, which are secured at intervals along the tracks and also secured to the lower end of vertical rods 5, while the upper ends of the rods enter and are secured by set screws, to sockets 6, which depend from support 7, secured to the ceiling of the room. The two series of rods 5, and hangers are arranged in pairs opposite each other, the rods being of a suitable length to give the tracks the proper inclination and above the upper series of hangers are arranged tie braces 9, and suitable cross braces 10, for imparting a proper stiffness to the structure.

11, is a carrier arranged for running over the track and is composed of the body or frame 12, carried by wheels 13, provided with peripheral grooves for running over the upper edge of the track, and the outer side 14, of the frame reaches below the track and is provided with a portion 15, which extends beneath the track, and 16, are rollers mounted on the portion 15, and arranged so that their upper peripheries run in contact with the lower edge of the track. Below the lower portion 15, of the frame a basket or receptacle 18, of any suitable form and construction is suspended by bails or hangers 19, for carrying parcels &c.

At a point near to the salesman's station the track 3, is divided or severed and the portion next to the wrapping counter is curved horizontally toward the track 2, and then again recurved and extended forwardly beneath the upper main track 2, forming a side track.

21, are cut out recesses formed in the upper and lower portion of the curved section the rear end of the cut outs extending for a short distance upon the straight section 22, of the main track and tongues 23, are arranged to fit into these recesses 21, so that the vertical and lateral dimension of the track at this point corresponds to the original dimension of the track; the rear ends of the tongues being secured to the track by a pivot 24, and their middle portions are connected by a vertical bar 25, which rests, when the free ends of the tongues are coincident with the main track, against the inner side of the curved section 26, between the cut out recesses.

To the end of the section 27, of the main track is secured by a pivot 28, the forward end of a switch rail 29, the rear free end of the rail being provided with a slot 30, and with portions 31, above and below the slot which, when the rail is swung to a position in alignment with the main track section 22, fits upon the cut out recesses 21, and the inner portion of the slot in contact with the outer side of the portion 26, forms a stop which brings the outer ends of the portions 31, above and below the slot, in a position to abut against the rear ends of the recesses and form when in this position a continuous straight track with the sections 22, and 27.

Upon the inner side of the pivoted end of the switch rail 29, is arranged an inwardly projecting arm 32, and to the outer end of this arm is secured one end of a spring 33, which is secured by its opposite end to the inner side of the rail portion 27, so that the spring draws forwardly upon the arm, and actuates the outer end of the switch rail inwardly to a position in alignment with the main track section, and the switch rail coming in contact with the outer side of the tongues 23, moves the tongues inwardly to a position shown in Fig. 2, and out of the way of a carrier passing over the switch rail from the main track.

34, is a horizontal lever pivotally secured at 35, to the inner side of the portion 22, of the track, and the long arm 36, of the lever is extended along the track and provided with an outwardly turned end portion 37, which, first passing through an opening 38, in the curved section 23, is brought in contact with the inner side of the switch rail 29, and the opposite short arm 39, of the lever extends rearwardly along the track and has an arm portion 40, turned outwardly and downwardly.

41, is a spring rigidly secured to the side of the long arm of the lever, and is arranged to reach upon the bar 25, and actuate the tongues 23, outwardly to contact with the switch rail, or to meet the straight track.

Upon the inner lateral side of the portion 15, of the carrier is placed a horizontal bar 42, with its end portions 43, turned at right angles with the bar and after being provided with screw threads are passed through suitable openings in the ends of the part 15, and nuts 44, are turned upon the threaded ends and against each side of the portion 15, for properly adjusting and retaining the bar to a proper position so that as the carrier intended for the first salesman is sent forward from the wrapping counter, the forward end of the bar 42, which is preferably provided with an inclined portion 45, comes in contact with the outer side of the downwardly turned portion 40, and actuates the short arm of the lever away from the track, and the end portion 37, of the long arm then actuates the free end of the switch rail 29, outwardly, while the spring 41, actuates the free ends of the tongues 23, outwardly to a position in alignment with the portion 22, of the main track, and the carrier then moving over the tongues is guided to the curve and thence to the side track, the portion 14, of the carrier passing between the curve portion 26, and the outstanding end of the switch rail, retains the switch rail in position until the carrier has passed onto the curve, and the spring 33, then operates to bring the free end of the switch rail into position in alignment with the main track portion 22, as before, the carrier passing onto the side track 20. And when a carrier directed to a station farther on comes over the track, the bar 42, thereon is adjusted by the nuts 44, to stand away from the carrier

so as to pass the switch which intervenes between the wrapping counter and the proper station, and the part 40, at the proper switch is extended to a point away from the track, suitable for properly engaging with the bar 42, on the carrier for operating the switch mechanism for that station, so that several carriers directed to different stations along the track can be operated over the track, by adjusting the arm portions 40, so that each succeeding arm will stand nearer to the track than the one coming before, and with a corresponding adjustment of the bars 42, on the several carriers, so that the bar on each carrier will engage with the arm 40, on its own switch and pass those coming before without engagement.

As shown in Fig. 3, one of the hangers 4, is secured to the portion 22, of the track in proximity to the recesses 21, and another hanger is secured to support the end 27, of the main track, and 45, is an adjusting rod extended between these hangers and with its ends provided, one with a right and the other a left hand thread passed through correspondingly threaded openings in the upper portions of the hangers, so that as the rod is turned the hangers are adjusted to and from each other, which moves the parts 22, and 27, to provide a proper space between for the switch rail to neatly fill the space between these parts without binding or catching, and also provides a brace for retaining these parts in their proper relative positions.

The side track 20, is extended in a straight line for a short distance beneath the track 2, and adjacent to the inner side of the track 2, is placed the vertical ways 46, arranged to depend from the ceiling of the room, and 47, is a frame work which is secured to the outer opposite sides of the ways 46, and its end portions extending in opposite directions beyond the ways are turned toward and secured to the side of the track 2, and the ways extending below the side track 20, to a point near the salesman's counter is provided with a cross bar 48.

An elevator 49, is mounted between the ways 46, guides 50, being arranged on the elevator for sliding upon the ways, and on the upper portion of the elevator is mounted a pulley 51, beneath which a cord 52, is passed and the cord is also passed over a pulley 53, suspended from the ceiling and its end is carried down to within a convenient distance from the salesman. The outer side of the elevator is arranged to be in alignment with the inner sides of the tracks 2, and 20, and upon the lower portion of this side is adjustably secured a track section 54, one end 55, of which is adapted for abutting against the end 56, of the side track when the elevator is lowered to a proper position therefor the track section 54, being provided with longitudinal slots 57, through which is passed the screws 58, and these screws are tapped into the elevator frame and adjusted to permit an easy longitudinal movement of the track section for the length of the slots, and 59, is a light spring attached to the elevator frame and the track section in a manner to move the track section backward to allow the end 55, thereof to abut against the end 56, of the side track when in alignment therewith, and 60, is a dog secured within the vertically slotted end 55, by its inner end while its outer end projects for a short distance beyond the end 55, and engages with a longitudinal slotted recess 61, in the end 56, of the side track so as to retain the track section in proper horizontal and vertical alignment with the side track.

Upon the middle portion of the elevator frame is an outwardly extending arm 62, and at a point directly over the track section 54, a roller 63, is mounted on this arm, and 64, are guide pins secured to the arm on each side of the roller and these pins project considerably above the upper periphery of the roller.

Directly in front of the ways 46, and for a short distance beyond the same, the track 2, is cut out leaving the rear end 65, and front end 66, abutting toward each other, and 67, is a track section fitted to fill this opening in the track, and the rear end of this section is secured to the end 65, by a horizontal pivot 68, while the opposite end of the section is provided with a forwardly extending dog 69, which when the track section is in position for a carrier to pass over the track, engages with a recess 70, in the upper side of the end 66, of the main track, so as to bring the ends to coincide to form a continuous track. This end 66, is arranged to project slightly beyond the vertical plane of the end 56, of the side track, so that as the track section 54 is moved to bring the screws 58, to a position in the forward end of the slots 57, as shown in Fig. 6, the end of the section 54, will be in vertical coincidence with the end 66, and when the section is pushed rearward so that the screws are located in the opposite end of the slots, the end of the section will be in vertical coincidence with the end 56, of the side track.

Near the pivoted end of the section 67, is pivotally secured one end of a rod 71, which, extending beyond the pivoted end of the section, is pivoted to the end of the outwardly extending short arm 72, of a bell crank lever 73, which is pivotally secured at its elbow 74, to lugs 75, projecting from the lateral side of the main track, and a long arm 76, of the lever extends along the track and has its end 77, turned outwardly and passed through an opening 78, in the track, the end 77, being arranged to stand in coincidence with the outer side of the track when the track section is down and in position for forming a continuous track as shown in Fig. 1, and when the section 54, is elevated to a position shown in Fig. 11, the rod 71, operates the arm 72, of the bell crank lever to move the arm 76, toward the track and project the end 77, beyond the track, so that should a carrier come

over the main track from beyond the station when the track section 67, is raised, the portion 14, of the carrier comes in contact with the projecting end 77, and stops the carrier until the section 67, is lowered to a position to form a continuous track, which then withdraws the end 77, to a position flush with the track, so that the carrier may then pass on. The outer end of the short arm 72, is preferably turned upward, so that its end which is pivoted to the rod 71, will carry the rod in a position to extend and operate freely above the frame work 47, which is secured to the side of the end 65, of the main track section, as shown in Figs. 1, 7, and 8.

When the elevator is waiting for a carrier it stands at rest with its track section 54, in alignment with the side track and with the dog 60, resting in the recess 61, and a carrier coming over the side track from the wrapping counter passes upon the section 54, and as side portion 14, comes in contact with a projecting pin 79, on the outer side of the section, which by the impact of the carrier moves the section forward to the length of the slots 57, and thereby moves the dog 60, out of the recess, and the weight of the carrier then moves the elevator downward until it reaches the cross bar 48, which brings the carrier in convenient proximity to the salesman. The carrier is then supplied with its load, and by means of the cord 52, is drawn upward and the guide pins 64, then pass over each side of the track section 67, and the roller beneath the section then carries its free end upwardly to the position shown in Fig. 8 and the dog 60 then passing into a slot 80, in the end 66, stops the movement of this end of the section while the opposite end still moves upward until an abrupt incline is given to the track section for starting the carrier out, and when the carrier has left the track section, the elevator by its gravity moves downwardly and, the section after leaving contact with the end of the main track, and being relieved from the weight of the carrier moves back to its former position, and as the elevator is lowered the free end of the section 67, moves downward to its normal position in engagement with the recess 70, and the elevator still continues to descend until the dog 60, is in contact with the recess 61, which stops the elevator in position for receiving another carrier.

At the lower end of track 2, and upon its under side a recess 81, is provided and in this recess is placed a spring 82, permanently secured by its rear end to the track while its forward end 83, is free to be moved downwardly the spring being preferably of a dimension that when in place against the track, the recess 81, is filled out to make the track at this point of the same vertical dimension as the main track, and upon the inner side and near the end of the track is secured a support 84, while an opening or notch 85, is arranged in the track and opens into the recess 81, and a shaft is passed through the support 84, and extending into the notch 85, is provided with a cam 87, on one side within the notch while upon the opposite end of the shaft is secured a lever 88, with which to operate the cam, which on being moved to a vertical position as shown in Fig. 12 operates the cam to hold the outer end of the spring away from the track, and when a carrier is sent out from the elevator as before described, it moves over the downwardly inclined track and near the end thereof the portion 15, comes in contact with the inclined under side of the spring 82, which stops the carrier with a cushioning action, and retains the same in place.

In Figs. 1, and 6, is shown a curve 89, which is carried by the hangers 4, and the supporting rods 5, in the same manner as the main track, and upon the outer arm 90, of the hanger is secured a downwardly and outwardly extending support 91, and to the lower end of these supports is secured a guide rail 92, which is arranged to stand parallel with the curve of the track and has its ends curved slightly outward, and is so located in relation to the track that when a carrier comes over the track the hangers 19, which carry the basket 18, come in contact with the inner side of the guide rail so that as the carrier passes the curve the basket is retained in an upright position by the guide rail whereby when the carrier passes upon the line of straight track beyond the curve the basket is in a position directly beneath the track, and all swaying and outwardly swinging motion of the basket caused by centrifugal force in passing the curve, is avoided and the carrier leaves the track with its load hanging directly beneath the track. When the carrier standing on the end of the track has been removed, the lever 88, is turned to release the spring from the action of the cam, and the spring then closes upon the track and the carrier may then be moved from the end of track 2, and placed upon the adjacent end of track 3 for returning to the station from whence it came; the carrier passing over the track until its proper switch is reached, which, is then operated as before described, and the carrier moves on to the side track and thence to the elevator which then lowers the carrier to the salesman below.

It will be seen that by means of the several devices a complete and accurately working apparatus is arranged for carrying parcels to and from the wrapping counter, and wherein the parts are easily adjusted and changed to compensate for wear or expansion and contraction of the same so that perfect automatic action of the several parts may be obtained, and the liability of binding and catching or misplacement of the several contrivances is avoided.

Of course it will be understood that while I have described and shown the lower recess 21, and the lever tongues 23, for operating in unison with the upper tongue, the lower tongue

and recess may be omitted if desired, the upper tongue only being entirely necessary for directing the wheels of the carrier to the side track, and this construction would be preferable in many cases for carrying light parcels, and I also wish it understood that the apparatus is equally adapted for carrying cash to and from the cashier's desk, by substituting for the basket 18, a suitable cash receptacle, and other slight modifications may be needed to adapt the apparatus to special work and therefore I do not confine my invention entirely to the precise construction and form of the several devices and contrivances shown, but

What I claim as new and desire to secure by Letters-Patent is:—

1. In a store service apparatus, the combination of two inclined main track sections, the first section having its forward end provided with a curve leading to a side track, and having in the upper edge of the curve a recess with a tongue fitted to fill out said recess and pivoted to the track by its forward end and with its rear free end capable of swinging out of the recess, a spring for moving the tongue into the recess, a switch section pivoted by its forward end to the rear end of said second main track section and with its rear end reaching into the said recess and in alignment with said first main track section, a spring for moving the free end of the switch section into said recess, and means substantially as described for automatically moving the rail outwardly by the action of a carrier, substantially as set forth.

2. In a store service apparatus the combination of the two track sections inclined in the same direction and forming a main track, the first section being provided at its lower end with a horizontal curve leading to a branch track, and having in the upper edge of the curve a recess, a tongue adapted for filling the recess and pivoted by its forward end to the track and having its outer free end capable of horizontal movement away from the recess, the second track section having its higher end adjacent to the outer side of said curve, a switch section pivoted by its forward end to the end of said second track section, and having its rear end adapted to fit into the rear end of said recess, a spring for actuating said switch section into said recess and for moving the tongue out of the same, a horizontal lever pivotally supported on the inner side of the said first track section, and having its end adapted for moving the switch section out of the recess, and a carrier for moving over the track and provided with devices for automatically operating the lever to move the switch section, substantially as set forth.

3. In a store service apparatus, the combination of the track section 22, having its forward ends curved to a side track and provided with a recess 21, a tongue 23, fitted to fill said recess and pivoted to the track by its forward end, a spring for actuating the rear end of the tongue outwardly, with the forward track section 27, with its end adjacent to said curve, a switch section 29, pivoted by its forward end to the rear end of the section 27, and having its rear free end fitted to the rear end of said recess in alignment with track section 22, a spring for actuating the free end of the switch section inwardly to displace the free end of the tongue and to fit into said recess, with a horizontal lever pivotally secured to the inner side of the section 22, and having its forwardly extending long arm turned toward the track and bearing against the inner side of said switch section and provided on its rear short end with an outwardly and downwardly turned portion 40, a carrier for running over the track and provided on its inner side with projecting devices adapted for contact with said part 40, for actuating the switch section and the tongue outwardly, substantially as set forth.

4. In a store service apparatus, the combination of the main track section 22, having a forward end curved to a side track and provided with a recess 21, in its upper edge, and a main track section 27, with its end beyond the curve and in alignment with the section 22, a tongue 23, fitted to fill out said recess and pivoted by its forward end to the track and with its opposite end capable of moving out of the recess, a switch section pivoted by its forward end to the end of the section 27, and with its forward end adapted to swing into said recess, a spring for actuating the forward end into the recess a horizontal lever pivotally secured to the inner side of said track section 22, and having a long arm reaching over and with its end bearing against the inner side of said switch section and having a spring adapted for actuating said tongue into the recess, and provided with a rearwardly extending short arm having an outwardly projecting portion 40, and a carrier adapted for running over the track and provided on its inner side with a bar 42, adapted for engaging with the inner side of said portion 40, and provided on its ends with inwardly turned screw threaded portions passed through the carrier frame and with adjusting nuts on the said portions on each side of the frame, substantially as set forth.

5. In a store service apparatus, the combination of the inclined main track having a portion cut out forming two sections with their ends projecting toward each other, a track section for filling the space between said ends and pivoted by one end to the end of the higher track section, and with its opposite end loosely connected to the end of said lower track section, the vertical ways beside said pivoted track section, an elevator frame having guides for sliding on said ways and carrying on its lower portion a track section having one end adapted for coincidence with the end of said lower track section when the elevator is at

the end of its upward travel, and provided on its upper portion with an arm extending beneath and carrying a roller for contact with the under side of said pivoted track section for lifting the loose end of the latter with the upward movement of the elevator, substantially as and for the purpose set forth.

6. In a store service apparatus the combination with an inclined track having a section cut out forming a rear end 65, and a front end 66, projecting toward each other, a track section 67, between said ends and secured to the end 65, by a horizontal pivot and provided on its opposite end with a dog engaging with the end 66, of the bell crank lever 73, pivoted to a support on the inner side of the end portion 65, and having a long arm 76, extending rearwardly and provided with an end 77, turned inwardly and passed through the track, and having an outwardly projecting short arm 72, a rod 71, pivoted by one end to the said short arm and by its opposite end to the middle portion of said track section 67, and an elevator frame adapted for contact with the inner side of track section 67, for lifting the free end of the latter, substantially as set forth.

7. The combination in a store service apparatus of the inclined track having a portion cut out forming the ends 65, and 66, projecting toward each other, with a track section 67, secured to the end 65, by a horizontal pivot and with its opposite end in contact with the end 66, the vertical ways opposite the said track 67, an elevator 49, arranged for moving on said ways and provided with a portion 62, extending beneath said track section and provided with a roller 63, for contact therewith, and with guide pins 64, on each side of and extending above said roller for contact with the sides of said rail section when the elevator nears the extremity of its upward movement, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ADOLPH A. CAILLE.

Witnesses:
C. A. GABEL,
GEO. P. THOMAS.