

(No Model.)

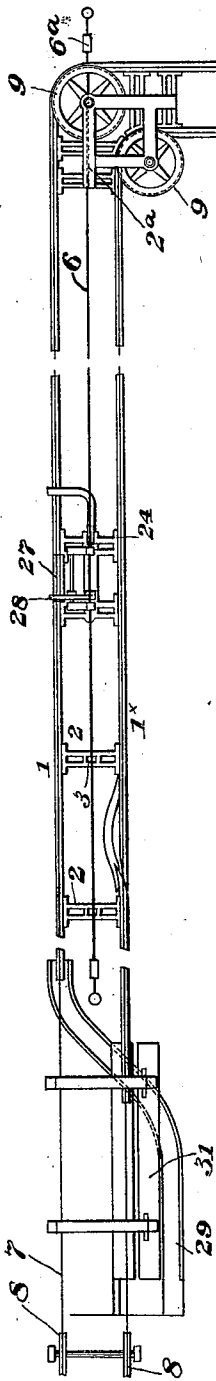
4 Sheets—Sheet 1.

J. S. GOODNOW.
STORE SERVICE APPARATUS.

No. 521,283.

Patented June 12, 1894.

Fig. 1



WITNESSES:

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Fig. 2

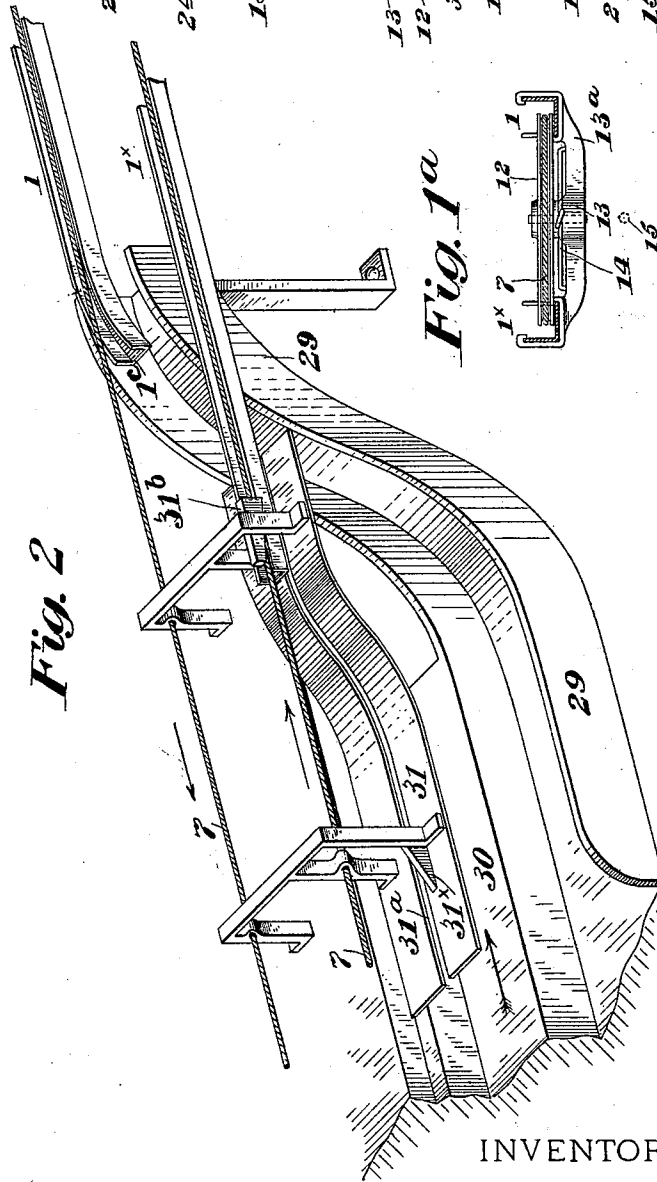
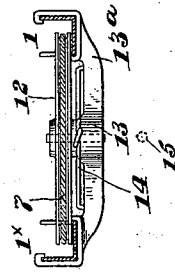


Fig. 1a



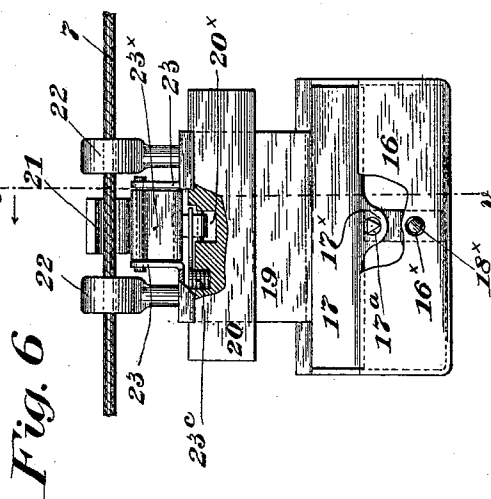
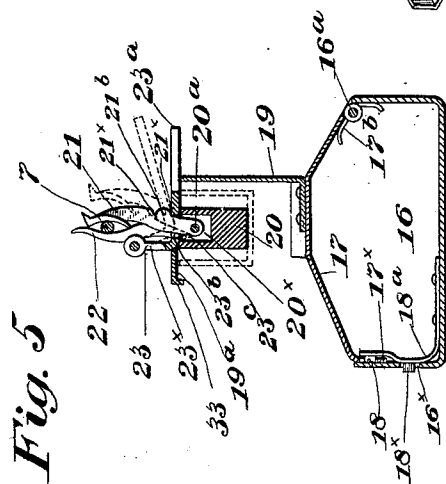
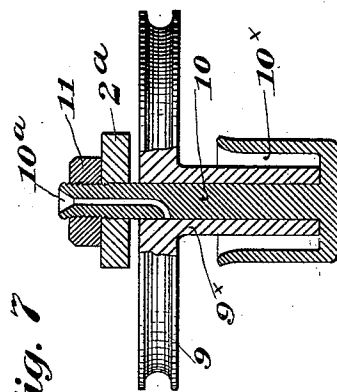
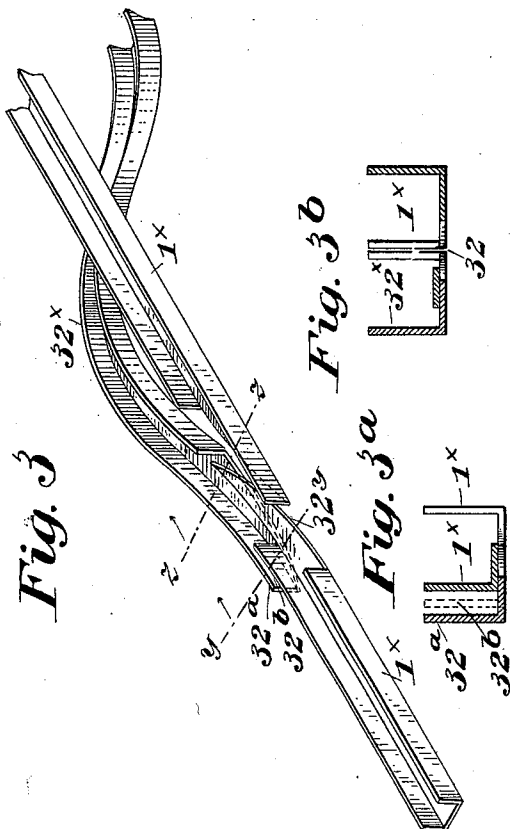
INVENTOR:

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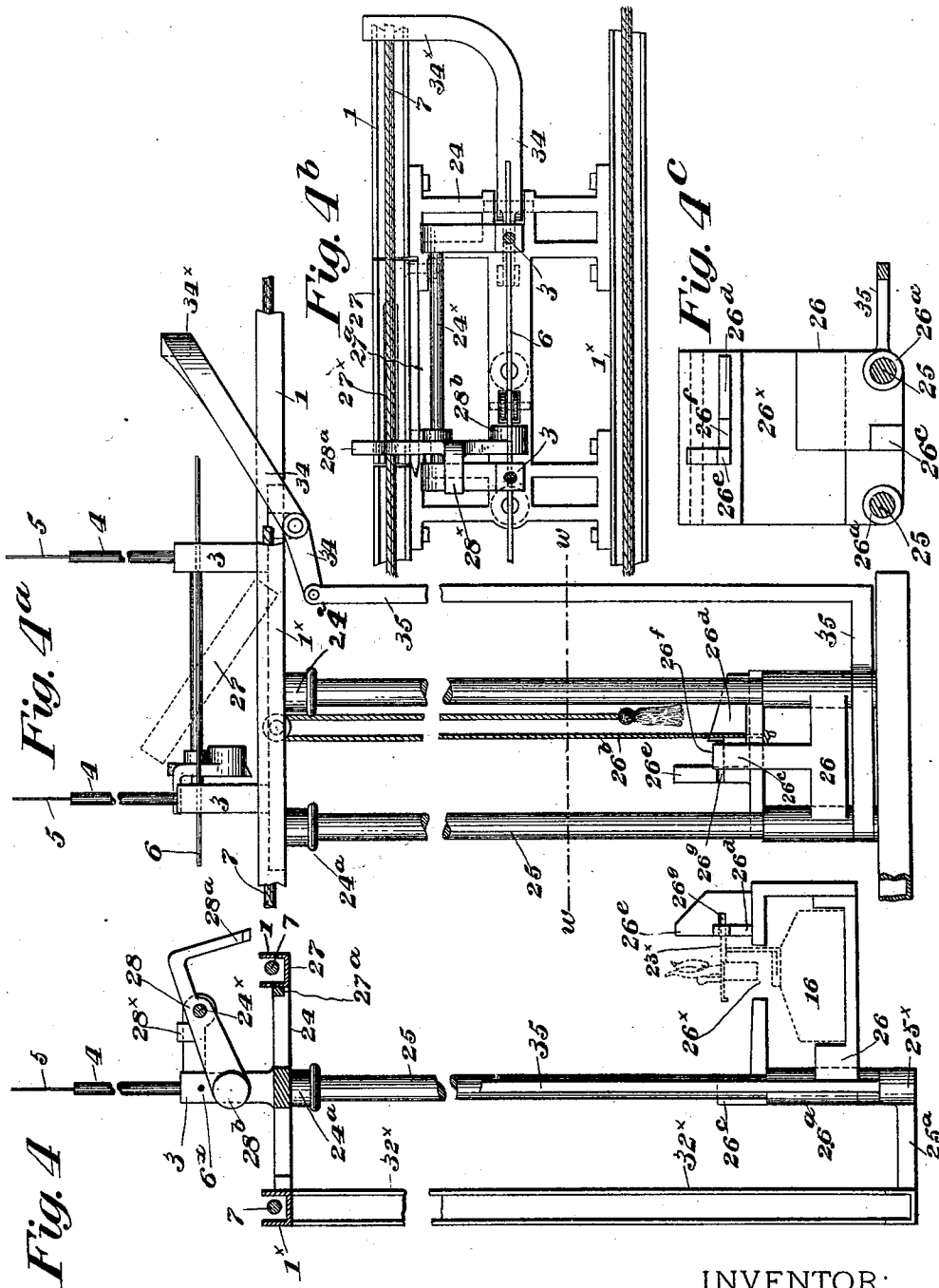
(No Model.)

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STORE SERVICE APPARATUS.

No. 521,283.

Patented June 12, 1894.



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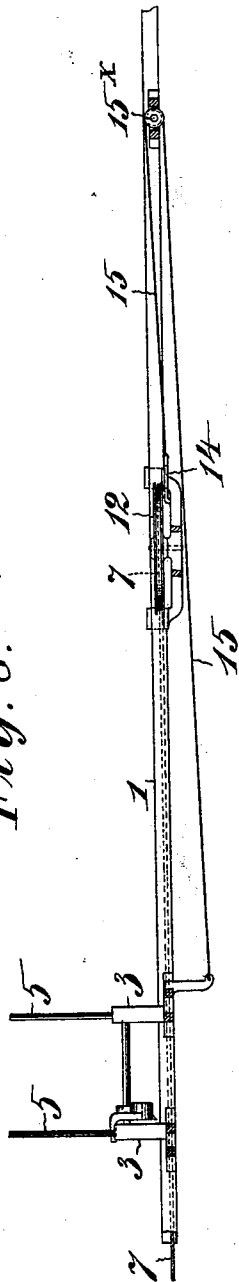
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Fig. 8.



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UNITED STATES PATENT OFFICE.

JULIUS S. GOODNOW, OF BROOKLYN, NEW YORK.

STORE-SERVICE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 521,283, dated June 12, 1894.

Application filed February 3, 1894. Serial No. 498,945. (No model.)

To all whom it may concern:

Be it known that I, JULIUS S. GOODNOW, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Store-Service Apparatus, of which the following is a specification.

This invention relates to certain improvements in that class of apparatus employed in stores for conveying cash from the salesman to the cashier and returning the change, and more particularly to that type of such devices wherein an endless traveling cord or band is employed, to which cord or band the cash-boxes or baskets are attached, one side of the said cord or band being employed to carry the boxes to the cashier's desk and the other side to return said boxes to the respective salesmen or sales-stations, and the object of the invention is to improve the construction of such devices, whereby certain advantages of arrangement and operation are attained, all as will be hereinafter fully set forth.

The novel features of my invention will be carefully defined in the claims.

In order that my invention may be the better understood I have illustrated in the accompanying drawings one embodiment thereof, of which drawings—

Figure 1 is a plan of the apparatus, on a small scale, and Fig. 1^a is an enlarged cross-section of the track at line X in Fig. 1. Fig. 2 is an enlarged perspective view of the receiving and delivering parts of the apparatus at the cashier's desk. Fig. 3 is an enlarged perspective view of one of the switches at the salesman's station; and Figs. 3^a and 3^b are cross-sections of the track at the switch taken respectively along lines Y and Z in Fig. 3. Figs. 4, 4^a, 4^b and 4^c are detached views, illustrating the construction of the elevator for the cash-box and other devices at the sales-station. Fig. 4 is a side view of the elevator, the track being in transverse section. Fig. 4^a is a rear view of the same as seen from the left in Fig. 4. Fig. 4^b is a plan view, looking down on the track, and Fig. 4^c is a horizontal section taken in the plane of line V in Fig. 4^a. Fig. 5 is a transverse section of the cash-box on line V in Fig. 6, and Fig. 6 a front view of the same. Fig. 7 is a sectional view

of the pulley which carries the track-cord around the horizontal curves. Fig. 8 is a longitudinal vertical mid-section of the terminal portion of the track seen at the right in Fig. 1, but on a scale double that of Fig. 1.

The track, which is seen in plan in Fig. 1, and in cross-section in Fig. 4, is composed of two open-topped channels or troughs 1, and 1^x, arranged parallel to one another and at the same level. These troughs are, or may be, of sheet metal formed in sections, and are connected together and supported, preferably out of reach of the floor, by brackets 2, 2, arranged at proper intervals, as indicated in Fig. 1, and suspended from the ceiling by the means illustrated in Figs. 4 and 4^a which I will now describe.

The several brackets are provided with posts 3, the upper ends of which are provided with interiorly screw-threaded sockets in which screw the lower ends of stout rods or wires 4, to the upper ends of which are secured suspending wires 5, attached at their upper ends to the ceiling in any convenient manner. To further brace and support the track, a steel wire 6, extends the length thereof, passing through apertures (indicated at 6^x, Fig. 4) in the upper portions of posts 3, and is secured at its ends to vertical posts extending from the ceiling to the floor, or in any other convenient manner, and in the ends of said wire beyond the ends of the track are arranged, as seen in Fig. 1, turn-buckles, or other suitable tightening devices 6^a, whereby the wire may be strained.

7 is the endless carrying cord or band, running in the troughs 1, and 1^x. At one end of the track, (at the left as seen in Fig. 1,) the two sides of the cord 7, come up from some suitable driving mechanism, over sheaves 8, 8, and at the turns in the track, are arranged deflecting sheaves 9, 9, of the usual or any ordinary construction. Where such sheaves 9, are employed at the horizontal turns or bends in the track, I prefer to provide means for preventing the throwing off therefrom of lubricating oil, which means is illustrated in Fig. 7.

As seen in Fig. 1, an angle bracket 2^a, of a special form is employed at the turn in the track, and in this bracket 2^a are provided in-

teriorly screw-threaded openings, through which are screwed the depending studs or shafts 10, on which sheaves 9 are borne, said studs being secured at their upper ends by means of lock nuts 11. At the lower ends of these shafts or studs 10 are integrally formed expanded cups or reservoirs 10^x, which receive the lower ends of the elongated hubs or bosses 9^x, of the sheaves 9, as clearly seen in Fig. 7. At their upper portions the studs 10 are provided with axial oil-duets 10^a, open at their upper ends to receive oil and at their lower ends extending radially outward to a point just below the upper portion of the bore of the sheave 9, whereby the oil is fed thereto for lubrication. Thus it will be seen that any excess of oil supplied to said sheave will be collected in the reservoir 10^x, and is prevented from being thrown off under centrifugal force, whereby much annoyance and damage are averted. At the opposite terminus of the track (seen at the lower right hand corner in Fig. 1), the bight or bend of the traveling cord or band 7, passes around a tightening sheave or pulley 12, rotatively mounted in a sliding frame or spider 13, having lugs 13^a engaging the respective troughs 1 and 1^x, and capable of longitudinal movement therealong. The inner sides or walls of these troughs are broken away at this point, in order to permit the entrance of the periphery of the sheave 12, thereunto, said sheave having a diameter equal to the distance apart of the sides of said cord or band 7 as seen in Fig. 1^a which is an enlarged sectional end view of this device. The rear arms or lugs 13^a of the spider are connected as clearly seen by a tie-rod or piece 14, of bent wire or other suitable material having a central loop to which is attached a long elastic rubber cord or connector 15, the opposite end of which extends over a small sheave or roller 15^x, mounted in the end-bracket 2 of the track, and is carried down and forward beneath the said frame 13, and secured at its opposite end to a bracket somewhat in advance of the tightening wheel 12, as clearly seen in Fig. 8. This construction, it is evident, may be considerably modified, as it is not essential that said elastic cord shall be carried forward under the frame 13, but this arrangement I believe to be preferable. Thus it will be seen that expansion and contraction of the cord or band 7 under various conditions is compensated by the elasticity of the connector 15, and slipping is prevented at all times.

I am aware that in store-service apparatuses of this general character it has been proposed to employ a coil spring to couple the tightening sheave to a fixed point, but I find that the amount of movement of such sheave is so considerable and the space available is so limited that it is very desirable to employ a rubber cord doubled over a sheave 15^x, so as to provide the maximum of elastic play with the least amount of space.

Figs. 5 and 6 illustrate the construction of the cash box, which I will now describe. This box comprises a receptacle 16, which is intended to contain the money to be transmitted to the cashier, and which I will call the box, to which is hinged at 16^a, the cover 17, which, when closed, is locked fast by the engagement of a bolt 18, on a spring 18^a, secured in the bottom of the box, with an opening or socket 17^a, formed in a lip or depending portion 17^x, of the front edge of the cover 17 as clearly seen in Figs. 5 and 6, the front wall of the box being partly broken out in this latter view to better show this construction. The spring 18^a is further provided with a thumb-piece 18^x, projecting through an opening 16^x, in the front wall of the box 16, whereby the bolt 18 may be conveniently disengaged from its socket 17^a by pressure of the thumb. The lid 17 is also preferably provided with a spring 17^b, whereby it is automatically forced open when unlocked as will be readily understood. The cover 17 of the box is provided at one side with an upwardly projecting arm 19, the upper portion of which is bent over in a horizontal plane as indicated at 19^a, and to the under side of said horizontal upper portion 19^a of arm 19, is secured a slide-block or piece 20, of metal, indurated fiber, or the like, adapted to slide along in the bottom of the troughs 1 and 1^x, as indicated in dotted lines in Fig. 5. In the horizontal plate 19^a, is formed a central aperture and in the upper portion of the slide-block 20, is formed a hollow or recess 20^x, in which is pivoted at 20^a, the lower end of the movable jaw 21, of a gripper serving to clamp the cash box to the traveling cord 7. Mounted on and projecting vertically from the upper face of the horizontal plate 19^a on opposite sides of the said movable jaw 21, are two fixed or stationary gripper-jaws 22, and said stationary jaws, as well as the movable jaw 21, are provided with bent or curved faces adapted to bear on opposite sides of the traveling cord or band 7, as clearly seen in Figs. 5 and 6. Arranged on opposite sides of the movable jaw 21 are two lugs 23, having perforated upper ends between which is pivoted a bent lever 23^x, the free end 23^a, of which projects out as seen in Fig. 5, some distance beyond the horizontal plate 19^a, and said lever is further provided with an opening 23^b, through which passes the reduced lower end of the movable jaw 21 as seen in Fig. 5. The rear side of said jaw 21 is provided with two locking shoulders or notches 21^x, 21^y, adapted to be engaged by the adjacent edge of the aperture in the bent lever 23^x, and between said locking shoulders is formed a rounded projection 21^b. A spring 23^a, is also provided (see Fig. 6) one arm of which bears against the face of the movable jaw 21 whereby said jaw is held with one or the other of its shoulders 21^x pressed against the edge of aperture 23^b. Thus it will be seen that when said le-

ver 23^x lies in its horizontal position, as seen in full lines in Fig. 5, said movable jaw 21 will be thrown over to the left causing the cord 7 to be gripped between the said jaw 21 and the fixed jaws 22, as will be readily understood. On the contrary, when the extremity 23^a of said lever 23^x is elevated, to the position seen in dotted lines in Fig. 5, said spring 23^c will throw said movable jaw over to the right whereby the upper shoulder 21^x is caused to engage the edge of aperture 23^b, and the gripper jaws of the cash box are held open so as to permit the insertion or removal of the cord or band 7.

I will now proceed to describe the means employed at the sales-stations for attaching the cash boxes to the traveling cord for transmission to the cashier's desk or station, especial reference being had to Figs. 4 to 4^c inclusive for illustration.

At each sales station, (of which there are two indicated in Fig. 1) a bracket 24, of special form is employed, provided with two posts or studs 3 for attachment to the ceiling. The form of this bracket is clearly shown in the plan view, Fig. 4^b. Depending from the under side of bracket 24 are two sockets 24^a, serving for the reception of the upper ends of two vertical slide rods 25, 25, which extend down parallel to one another preferably to such a distance as to bring their lower ends within easy reach of the floor, and are united at their lower ends by a tie-piece or bracket 25^x.

26, is a cage, provided with sleeves 26^a, slidably mounted on rods 25, and said cage is of such a form as to permit the passage of the cash box longitudinally through it, being provided at its top with an opening 26^x, to permit the passage of the vertical arm 19 of the cash box to project therethrough as indicated in dotted lines in Fig. 4. This cage is designed to serve as an elevator to raise the box up to the level of the trough 1, and to this end a cord 26^b, is attached at one end thereto, the other end of said cord passing over a small sheave in bracket 24, and thence down within easy reach of the hand. Thus it will be seen that when the cash box is inserted in the cage (as indicated in dotted lines in Fig. 4) said cage may be elevated by a pull upon the cord 26^b so as to present the cash box under the traveling cord or band 7 in position to be gripped thereon. To permit this to be effected, I provide in the trough 1 of the track immediately above the cage 26, a hinged section 27, (see Fig. 4^b) hinged at one end to the bracket 24 and provided with a pin or projection 27^a, along its inner side which rests in a notch formed in the upper surface of bracket 24, as seen in Fig. 4. In the bottom of said hinged section 27 of trough 1, is an open ended slot 27^x, of sufficient length and width to permit the passage of the cord or band 7. Thus it will be seen that as the cage containing the cash box is elevated, the gripper jaws 21 and 22 will bear under

the said hinged section 27 of the trough and elevate the same, as indicated in dotted lines in Fig. 4^a, permitting said cash box to rise to such a level as to insure that its jaws 21 and 22 shall be gripped on the cord 7, when said jaws are closed by the devices I will now describe.

Pivoted on a rod or shaft 24^x supported in arms or brackets on posts 3, of the bracket 24, is a dog 28, the nose of which is bent down as seen at 28^a to a position adapted to engage with the free end 23^a of lever 23^x on the cash box when said cash box is in its elevated position. This dog is provided with a stop 28^x, and a weighted tail 28^b, arranged in a position to be engaged by a stud or post 26^c, projecting upwardly from the cage 26, as seen in Figs. 4 and 4^a. Thus it will be seen that when the cage is elevated to bring the cash box up into position for attachment to the cord 7, said stud 26^c engages the tail 28^b of dog 28 and forces down the nose 28^a against the lever 23^x whereby the same is pressed down to its horizontal position indicated in full lines in Fig. 5, whereupon said cash box is gripped to said cord 7 and carried by the motion thereof along trough 1 to the cashier's desk or station.

From the preceding description it is evident that to insure the proper operation of the device as described it is essential that the cash box when brought into position to be attached to the cord 7 shall have its gripper jaws opened as indicated in dotted lines in Fig. 5. To insure that the parts shall be in this position I provide on the upper side of the cage 26, an inclined plane 26^d, (Figs. 4, 4^a and 4^c) arranged in such position as to engage under the projecting end 23^a of lever 23^x when the cash box is inserted in the cage, and raise said lever to its elevated position seen in dotted lines in Fig. 5. When the lever has been thus raised, its side abuts against a fixed stop 26^e, formed on the cage, beyond the inclined plane 26^d, said stop being separated from said inclined plane by a free space 26^f, equal to the width of said lever. Thus it will be seen that said lever is automatically elevated and the grip jaws on the cash box opened by the operator in inserting the box in the cage, and when said box is fully inserted in the cage said lever rests against stop 26^e, and may be pressed down into the clear space 26^f, by the pressure of the nose of dog 28. When the lever 23^x is thus pressed down (seen in dotted lines in Fig. 4), its free end 23^a lies in the plane of an opening 26^g, in the stop 26^e and when the cash box moves with the cord 7, said free end passes through said opening. The box arrives at the cashier's desk or station and is here detached from the cord 7, by means of a downward bend 1^c, formed in the trough 1, whereby it is allowed to drop into the upper end of a curved chute 29, which bends over under the outgoing trough 1^x so as to be in easy

reach of the cashier. The change is now made and the box is ready for transmission back to the sales-station and I have provided special labor saving devices which I will now describe with special reference to Fig. 2. Behind the lower end of the chute 29 is an elevated table or ledge 30, over which is arranged a slotted guide plate 31. The arrangement of the guide plate is such that the box when placed on the ledge is in position to be pushed by the hand (as indicated by the arrow), along under said slotted plate with its vertical arm 19 projecting up through the slot 31^a therein and its slide block 20 resting on the upper face of the guide plate inside said slot. At this point it is evident that some special device should be provided to insure that the grip jaws of the cash box shall be open in order that they may be closed on the cord 7 and for this purpose I provide a cam plate 31^x, fixed at a proper point along the outer side of the slot in the guide plate 31 to bear under the end of lever 23^x so as to open said jaws. The box being pushed along the plate 31, is gradually raised by a curve in the upper end thereof up to the level of the inside bottom of trough 1^x, into which the slide block 20 passes. At this point a second cam or inclined plane 31^b, is arranged similar to cam 31^x, but inclined in the opposite direction thereto and arranged to bear above the end of lever 23^x whereby said lever is pressed down so as to close the grip jaws on the cord or band 7, and compel the cash box to move along therewith.

It is necessary that some switching device shall be provided at the several sales-stations to switch off from the main track the respective cash boxes, and I will now describe this switching device with especial reference to Figs. 1, 3, 3^a, 3^b and 5. At a suitable distance in advance of the sales station and between said station and the cashier's station, the trough 1^x is cut away as seen at 32, and on the inner side of this cut away portion is mounted a switch-trough 32^x, as clearly seen in Fig. 3, which is a perspective detail of this part. The end of the switch trough 32^x adjacent to trough 1^x is beveled and secured to said trough in any convenient manner, and its inner wall 32^a is arranged at a slight distance from the inner wall of trough 1^x whereby a free space 32^b, is formed between said walls as clearly seen in Figs. 3 and 3^a the latter of which is an enlarged sectional view of trough 1^x looking toward the switch.

Formed on the projecting free edge of the horizontal portion 19^a of arm 19 of the cash box, as clearly seen in Figs. 5 and 6, is a depending lip or tongue 33, adapted, as the box slides along the trough 1^x to engage inside of the inner wall 32^a of switch trough 32^x, said horizontal plate 19^a being made of a sufficient width to project slightly beyond the inner wall of trough 1^x as indicated in Fig. 5 in which the position of the trough is indicated

in dotted lines. Thus it will be seen that as the cash box passes the switch, said lip 33 will engage said trough 32^x, and will ride therealong, the arm 19 thereof passing through the break 32 in trough 1^x. The switch-trough 32^x is bent inward beyond the plane of the trough 1^x and down below the plane thereof, and its lower portion is carried down in substantially the same vertical plane with said trough 1^x and supported at its extremity by a projection 25^a formed on the tie-piece or yoke 25^x as seen in Fig. 4, whereby the box when switched from the main track is brought down within easy reach of the sales person. As there will usually be several of these sales-stations along the line, each station provided with one or more cash-boxes, it is evident that provision must be made for returning each box to its respective station, and for this purpose the several spaces 32^b, at the respective stations are made of different widths, that nearest the cashier's desk being widest and those following in order being each narrower than the other respectively. In the same manner, the lips 33 of the boxes for the station nearest the cashier's desk are formed at a greater distance from the center of the box so as to engage with the inner wall of the trough 32^x at the first station, those for the next station narrower, and so on. The box for the last station may be of course unprovided with such a lip and the end of the track at that station may be simply bent down and no trough 32^x employed. Thus it will be seen that the lips 33 of the boxes for the farther stations will pass through the space 32^b at the first station and the said boxes will follow the main track or trough 1^x until each arrives at its proper station when it will be switched off by the engagement of its lip with the inner wall of the switch trough at that station.

I may state here that the pressure of the gripper jaws of the cash box upon the traveling cord or band is or need be very slight, being simply sufficient to cause said box to move with the cord when supported on the track, and it will therefore be obvious that when the cash box is no longer supported by the track it will fall by gravity away from the cord. Further it should be understood that the cord 7 is raised by the cash box, as indicated in Fig. 5, above and completely out of the troughs, so that when the box reaches the switch and is deflected sideways onto the switch trough, said cord 7 will also be deflected and as the switch trough bends downward, the box will fall by gravity, whereby its grip jaws will be drawn off from the cord 7 allowing said cord, which is capable of considerable lateral motion, to whip back to its proper position while the box shoots down the inclined switch trough to its station.

It is evident that some means must be provided at the stations nearest the cashier's desk to prevent the collision of boxes which may be traveling from the farther stations

with the box which may be in position for attachment to the cord or band 7 at the nearest station, whereby the apparatus might be stopped or serious injury done thereto, and for this reason I have provided an automatic stop to prevent such collisions, which device I will now describe.

Pivoted to the bracket 24 is a lever 34, one end 34^x of which projects rearwardly beyond the end of the bracket farthest from the cashier's desk, and is bent over above the track on trough 1 as clearly seen in Figs. 4^a and 4^b. To the other end of this lever is connected the upper arm of a vertical tie rod 35, the lower end of which is bent over as seen in Figs. 4^a and 4^c and is guided on the slide rods 25 below the cage 26. The bent end 34^x of lever 34 will be weighted or provided with a spring so as to lift the rod 35 by gravity when said rod is released. Thus it will be seen that when the cage is in its lowered position as seen in Fig. 4^a the end 34^x of lever 34 will be held elevated out of the plane of the movement of the cash boxes along trough 1 as seen in Fig. 4^a but when said cage 26 is elevated said bent arm 34^x will be lowered so as to engage and stop any box which may be approaching the sales station from the end of the line until said cage is again lowered. While the boxes are thus detained by the arm 34^x, the cord 7 merely slips through the gripper jaws on the box, and said jaws are not disengaged therefrom.

I do not wish to be understood as limiting myself to the precise construction and arrangement of my invention as herein set forth, since it is evident that considerable modification may be made therein without material departure from its principles. Nor do I claim as my invention all of the features herein illustrated as some of them are known in store service apparatuses. The novel features of the apparatus described will be defined in the claims.

Having thus described my invention, I claim—

1. In a store service apparatus, the combination with an endless traveling cord or band having its two sides arranged parallel, of two suspended troughs arranged beneath and adjacent to the respective sides of said cord or band, brackets connecting said troughs one with the other and a wire connected to each of said brackets and adapted to be strained in the direction of its length, substantially as set forth.

2. In a store service apparatus, the combination with an endless traveling cord or band having its sides or strands arranged parallel to one another, of two troughs arranged beneath and adjacent to the respective sides of said cord or band, brackets connecting said troughs, posts on said brackets, suspending wires attached to the upper ends of said posts, and a wire connected to said posts and provided with a tightening device whereby it may be strained in the direction of its length, substantially as set forth.

3. In a store service apparatus, the combination with an endless traveling cord or band, and a trough through which said cord or band plays, said trough having at suitable points along its length several stations, and having an opening 32 adjacent to one of said stations, of a switch trough arranged with one end adjacent to said opening, and a cash box supported on said trough and provided with a friction gripper for attachment to said traveling cord or band, said box having a normally pendent lip or projection adapted to engage the forward end of said switch trough, the said lip being independent of the gripper, substantially as set forth.

4. The combination with the cord, of a cash box provided with a stationary gripper jaw, a movable gripper jaw pivoted on said box and provided with locking notches or shoulders, a spring mounted on said box and adapted to hold said gripper jaws normally opened, and a lever mounted on said box and adapted to engage one or the other of said locking notches or shoulders on the movable gripper jaw, substantially as set forth.

5. The combination with the cord, of a cash box provided with two stationary gripper jaws adapted to bear on one side of said cord, a movable jaw, pivoted on said box and adapted to bear on the opposite side of said cord between said stationary gripper jaws, said movable jaw being provided with locking shoulders or notches and having a spring whereby said gripper jaws are normally held open and a lever pivoted on said box in position to engage one or the other of said locking shoulders or notches, substantially as set forth.

6. The combination with the traveling cord or band, and the track arranged adjacent to said cord, of a cash box adapted to be supported on and to move along said track, a stationary gripper jaw mounted on said box and adapted to bear on one face of said cord, a movable gripper jaw pivoted on said box and adapted to bear on the opposite face of said cord, said movable jaw being provided with a locking shoulder or notch, a lever pivoted to said box and adapted to engage the locking shoulder or notch of the movable jaw, and means, located at suitable points in the track, for actuating said lever, whereby said jaws on the box are closed and said box is thereby attached to the traveling cord, substantially as set forth.

7. The combination with the traveling cord or band, and the track arranged adjacent thereto, and having its end bent away from the plane of movement of said cord, of a cash box provided with a gripper movable jaw and locking lever for clamping on said cord, and adapted to move along and be supported on said track, whereby the momentum of the moving box detaches it from the cord without unlocking the jaws, substantially as set forth.

8. The combination with the traveling cord

or band, and the track arranged adjacent thereto, of an inclined plate extending downward from one end of said track, a cash box adapted to move along and be supported on said track and provided with a stationary gripper jaw adapted to bear on one face of the said cord or band, a movable gripper jaw pivoted on said box and provided with a locking shoulder, said movable jaw being adapted to bear on the other face of said cord or band, a lever pivoted on said box and adapted to engage the said locking shoulder on the box, means located on said inclined plate, for actuating said lever, whereby the jaws on the box are opened to receive said cord, and means, located near the end of said track for actuating said lever to close said jaws, whereby the cash box is gripped to said cord and caused to move therewith, substantially as set forth.

9. The combination with a traveling cord or band and the track arranged adjacent thereto, of an inclined plate extending downward from the end of said track, a cash box adapted to move along and be supported on said track and provided with a stationary gripper jaw adapted to bear on one face of said cord, a movable gripper jaw pivoted to said box and adapted to bear on the other face of said cord, said movable jaw being provided with locking shoulders or notches and having a spring whereby the said gripper jaws are held open, a lever pivoted on said box in position to engage said locking shoulders or notches on the movable gripper jaw, a cam piece mounted on said inclined plate beyond the end of the track and adapted to actuate said lever to open said jaws to receive said cord, and a cam piece arranged adjacent to the end of said track and adapted to actuate the said lever to close said gripper jaws, whereby said box is attached to the cord and caused to move therewith, substantially as set forth.

10. The combination with the traveling cord or band and the track arranged adjacent thereto and provided with a hinged section, of a vertically movable cage mounted under said hinged section and adapted to receive and hold the cash box, the said cash box adapted to move along and be supported on said track and having a stationary gripper jaw adapted to bear on one face of the cord, a movable gripper jaw mounted on said box and adapted to bear on the opposite face of the cord, said movable jaw being provided with a locking shoulder, a lever pivoted to said box and adapted to engage the shoulder on the movable jaw, and a dog, actuated by the movement of said cage and adapted to engage said lever whereby said gripper jaws are closed on said cord, substantially as set forth.

11. The combination with the traveling cord or band and the track arranged adjacent thereto and provided with a hinged section, of a vertically movable cage mounted under

said hinged section and adapted to receive and hold the cash box, the said cash box adapted to move along and be supported on said track and having a stationary gripper jaw adapted to bear on one face of said cord, a movable gripper jaw mounted on said box and adapted to bear on the opposite face of said cord, said movable jaw being provided with a locking notch or shoulder, a lever pivoted to said box and adapted to engage the shoulder on the movable jaw, a dog pivotally mounted over said track and adapted when actuated, to engage said lever and close said gripper jaws, and a stud mounted on said cage and adapted to engage said dog when the cage is in its elevated position, substantially as set forth.

12. The combination with the traveling cord or band, and the track arranged adjacent thereto and provided with a hinged section, of a vertically movable cage having an opening or chamber to receive and hold the cash box, the said cash box adapted to be slid longitudinally into said cage, and to be supported on and moved along said track, and having a stationary gripper jaw adapted to bear on one face of the cord, a movable jaw, mounted on said box and adapted to bear on the opposite face of said cord and provided with a locking shoulder, a lever pivoted to said box in position to engage the shoulder on the movable jaw, a cam piece mounted on the cage in position to engage said lever, whereby the said jaws are opened, a dog pivotally mounted above said track and adapted when actuated to engage said lever and close said gripper, and means for actuating said dog from the movement of said cage, substantially as set forth.

13. The combination with the traveling cord or band and the track arranged adjacent thereto and provided with a hinged section, of a vertically movable cage adapted to receive and hold the cash box in position for attachment to said cord, the said cash box adapted to move along and be supported on said track, means for automatically attaching said cash box to said cord, when the cage is elevated, and a stop actuated by the movement of the cage, and adapted to be thrown into and out of the path of an approaching cash box, said stop being arranged adjacent to said hinged section of the track on the side thereof opposite to the direction in which the cord is moving, substantially as set forth.

14. The combination with an endless traveling cord or band having its two strands arranged parallel, of tracks arranged beneath and adjacent to the strands of the said cord, a bracket or frame longitudinally movable along said track, a sheave mounted on said frame, and adapted to receive the bight of said endless cord or band, and an elastic connector, attached at one end to said frame and at its opposite end to some fixed part, substantially as set forth.

15. In a store service apparatus, the combi-

nation with a bracket, and a stud 10, fixed in
said bracket and having an oil cup 10^x, fixed
on its pendent lower end, and an axial oil
duct 10^a at its upper end, of a sheave 9,
5 mounted rotatively on said stud and having
a long boss 9^x at its lower side which has a
bearing in the bottom of said oil cup, sub-
stantially as set forth.

In witness whereof I have hereunto signed
my name in the presence of two subscribing
witnesses.

JULIUS S. GOODNOW.

Witnesses:

HENRY CONNETT,
JAS. KING DUFFY.