

May 10, 1927.

M. C. McELLIGOTT

1,628,508

FARE BOX

Filed Sept. 10, 1923

3 Sheets-Sheet 1

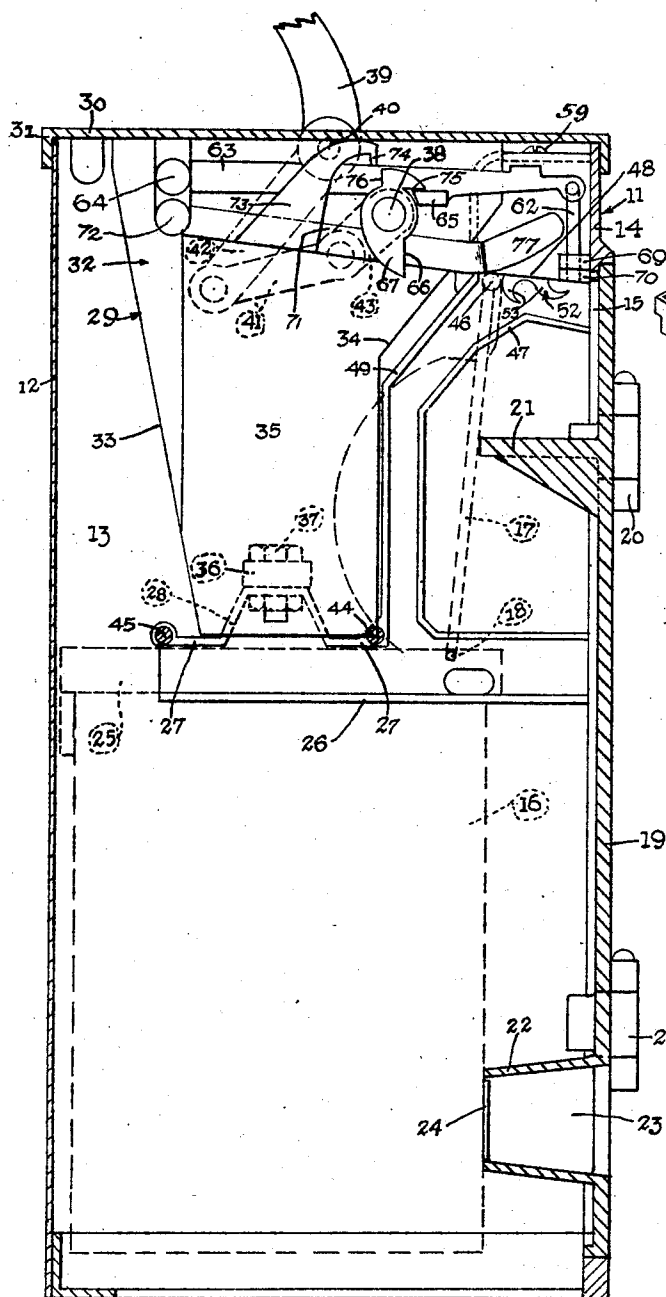


Fig. 1

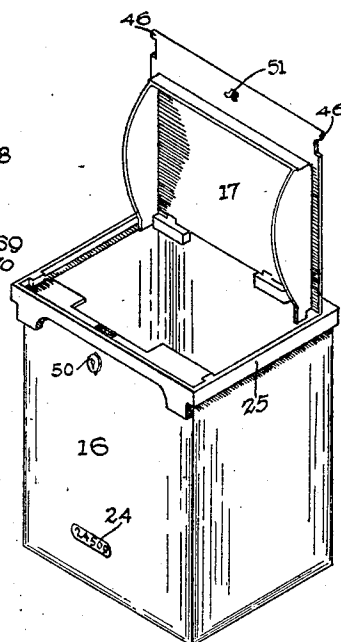


Fig. 2

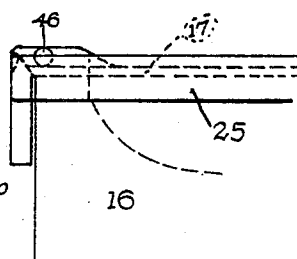


Fig. 3

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3 Sheets-Sheet 2

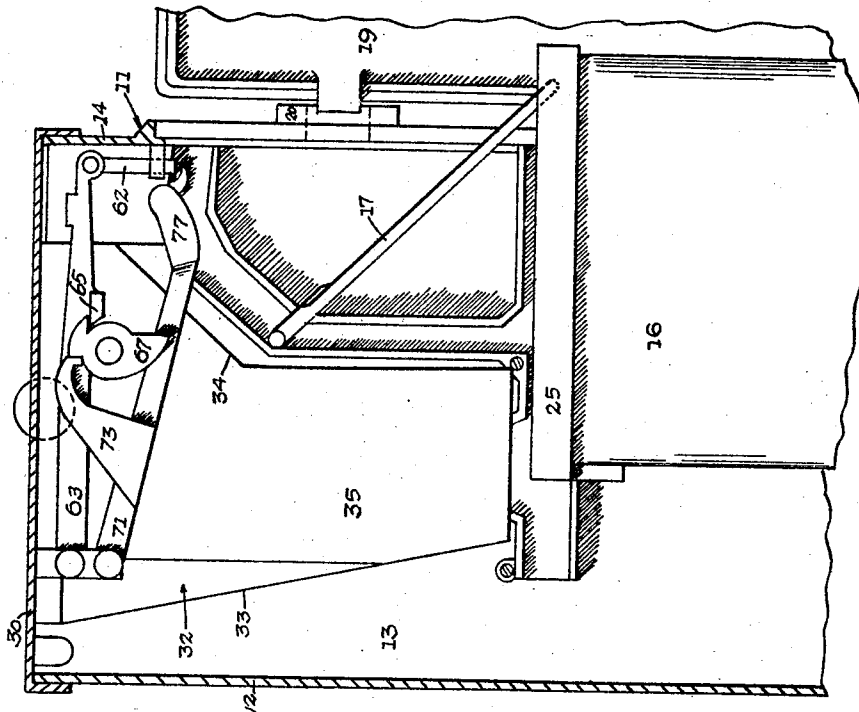


Fig. 5

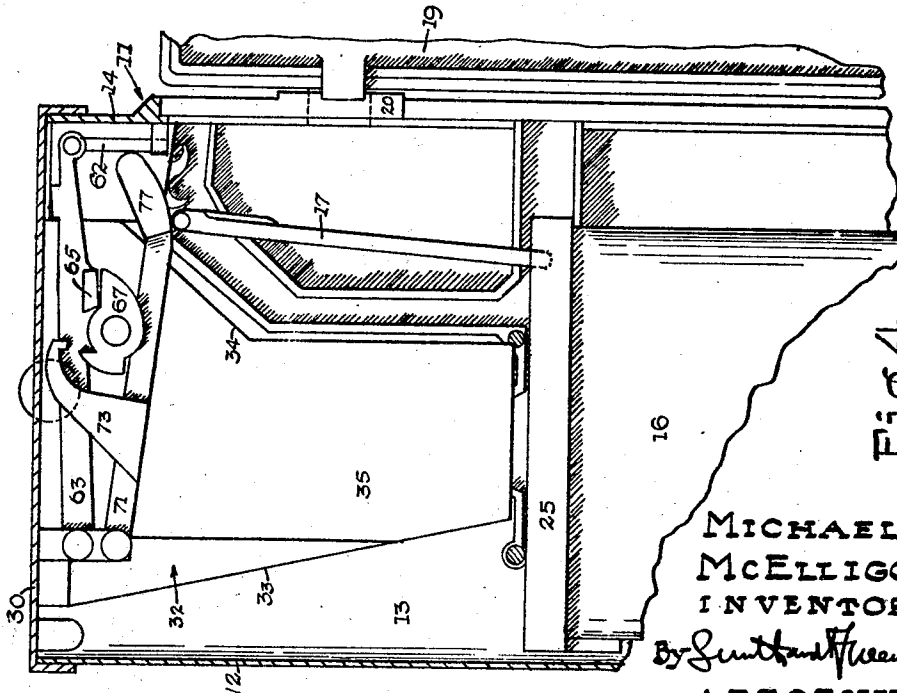


Fig. 4

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3 Sheets-Sheet 3

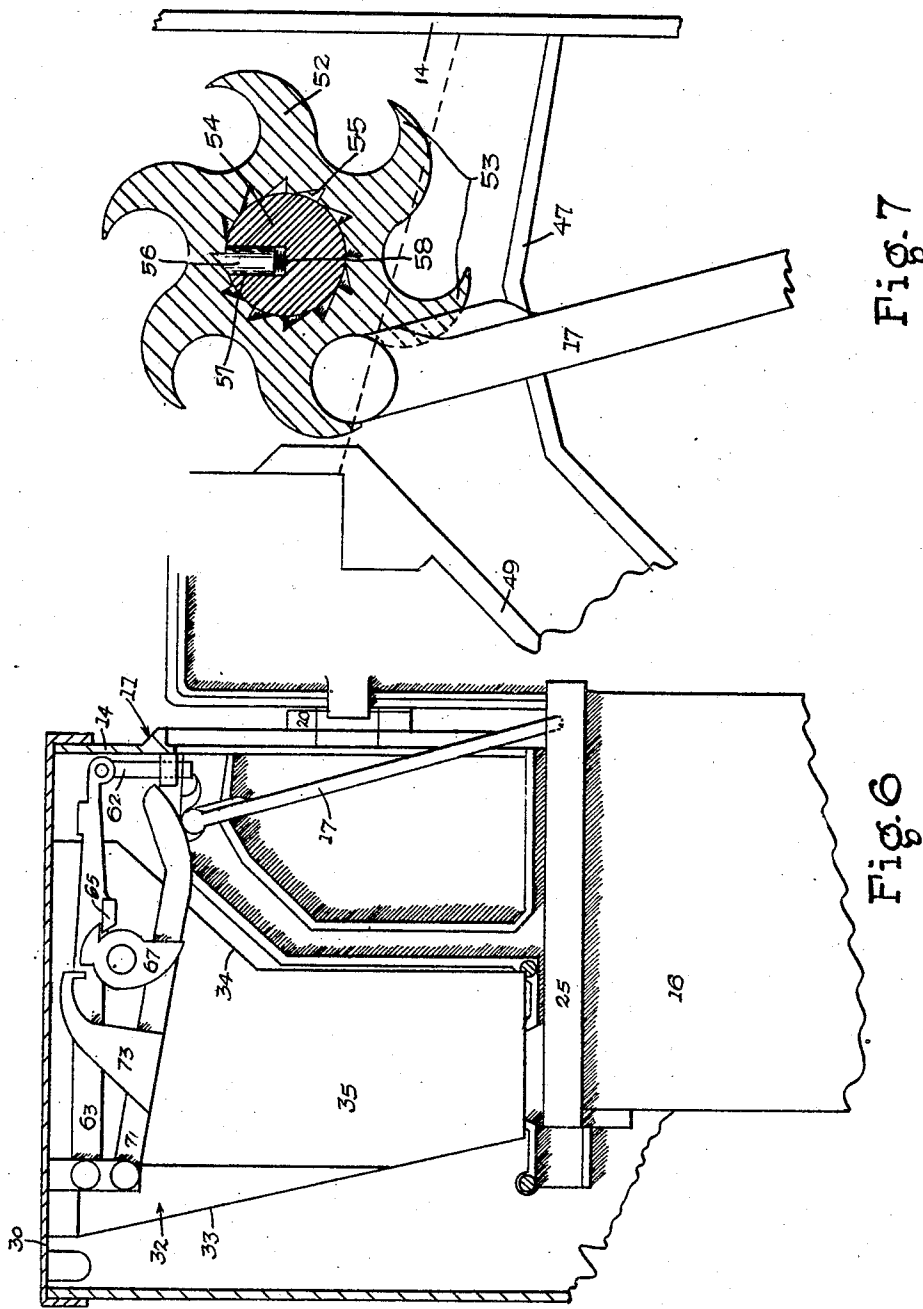


Fig. 7

Fig. 6

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UNITED STATES PATENT OFFICE.

MICHAEL C. McELLIGOTT, OF PRESTON, ONTARIO, CANADA, ASSIGNOR TO THE CLEVELAND FARE BOX COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

FARE BOX.

Application filed September 10, 1923. Serial No. 661,889.

United States Letters Patent 1,105,620 and 1,105,621 and 1,129,552 disclose a fare box which is at present in widespread use for the collection of fares on street cars and which comprises, among other parts, a receptacle provided in its upper face with a cover substantially the width of the receptacle and one half the length thereof, and a casing into which said receptacle may be inserted with the cover closed and contained with the cover open. From this it will be understood that the opening in the casing must be slightly wider and higher than the width and height of the receptacle and that the casing itself must be slightly wider and deeper than the width and length of the receptacle and slightly higher than the combined heights of the receptacle and the open receptacle cover. In actual practice it is found that the receptacle need not be as large as had heretofore been supposed, that the portion of the receptacle disposed beneath the receptacle cover is ample to hold the fares collected while a receptacle remains in position, that the size of this cover should not be materially decreased, and that the depth of the casing, and therefore the distance to which it projects, could be decreased to great advantage. My invention provides a fare box similar to those disclosed in the three Letters Patent above enumerated but improved to reduce the depth of the casing to slightly more than the length of the receptacle cover without increasing the width or height of the casing or decreasing the dimensions of the receptacle cover. In the drawings accompanying this specification and forming a part thereof I have shown, for purposes of illustration, one physical embodiment which my invention may assume. In these drawings:

Figure 1 is a central vertical section through the fare box selected for illustration herein showing the casing in section and the remaining portions of the fare box in side elevation;

Figure 2 is a perspective of the collection receptacle;

Figure 3 is a detail of the upper front portion of the collection receptacle showing the receptacle cover closed;

Figure 4 is a view similar to Figure 1 but showing the parts in position to permit opening of the casing door and the casing door open.

Figure 5 is a view similar to Figure 4 but showing the collection receptacle partially withdrawn,

Figure 6 is a view similar to Figure 5 but showing the parts in the position which they assume after the collection box has been withdrawn and again partially inserted, while

Figure 7 is a detail of the switch mechanism which prevents withdrawal of the collection receptacle in the exact manner in which it was inserted.

The fare box herein shown comprises a casing 11 having a rear wall 12, sides 13, and a front wall 14 provided with an opening 15 slightly wider than the collection receptacle 16, slightly higher than the combined height of the collection receptacle 16 and the collection receptacle cover 17 which is pivotally mounted upon the collection receptacle 16 on an axis 18 extending transversely of the collection receptacle 16 near the edge thereof, and closed by a casing door 19 pivoted to the front wall 14 by means of hinges 20, provided with a lug 21 adapted to engage the receptacle cover 17 and force it into a position from which it can not be directly retracted, and an annular lug 22 adapted to engage the rear of the collection receptacle 16 to force the receptacle 16 fully within the casing 11 and provided with an aperture 23 through which is visible the identification tag 24 secured to the collection receptacle 16. The receptacle 16 is secured in position within the casing 11 by means of a pair of guides 25 secured to the sides of the receptacle 16 near the upper edge thereof, closely fitting the sides 13 of the casing 11 to prevent lateral play of the receptacle 16, and supporting the casing 16 against vertical movement through close engagement within grooves formed on each of the sides 13 of the casing 11 by means of ribs 26 positioned to underlie the guides 25 and pairs of shorter ribs 27 each positioned to overlie one of the guides 25 and each forming part of a bracket 28.

Mounted within the upper portion of the casing 11 is a fare chute mechanism 29 comprising an annular top 30 provided with a depending flange 31 arranged to overlie the top of the casing 11, and a chute 32 having a rear wall 33 and a front wall 34 and side walls 35 and carrying upon the side walls 35 a pair of lugs 36 provided with

apertures for the passage of suitable bolts 37 which are adapted to also pass through suitable apertures in the bracket 28 to secure the lugs 36 to the bracket 28 and in this manner secure the chute mechanism 29 in position in the casing 11. Mounted upon this top plate 30 is a suitable inspection box, not shown herein, which may be similar to that shown in the Letters Patent above mentioned.

Closing the opening in the top 30 and therefore the upper end of the chute 32 is a trap, not shown herein, which is, however, pivotally mounted upon a shaft 38 supported in the sides 35 of the chute 32 and rocked by means of a handle 39 pivoted upon a stud 40 carried by the annular cover 30 and connected to the shaft 38 by means of a link 41 extending between an arm 42 unitary with the lever 39 and an arm 43 unitary with the shaft 38. It will be understood that operation of the shaft in this manner rocks the trap supported thereon to move this trap between the position in which it closes the opening within the annular top 30 and the upper end of the chute 32 and collects the fares reaching it through the reception box, and the position in which it is swung out of closing position to permit such fares to drop into the chute 32 from the lower end of which they obviously pass into the receptacle 16 when that receptacle is in position.

In order to prevent insertion of the receptacle 16 with the cover closed I so form the cover 17 that the combined height of the receptacle 16 and cover 17 with the cover in closed position is greater than the height of the receptacle 16 and then mount between the brackets 28 a rod 44 spaced to just permit passage of the receptacle 16 thereunder and to block passage thereunder of the receptacle 16 and door 17. In order to provide a second safe guard I may also mount in the rear ends of the brackets 28 a second bar 45 similar to the bar 44, and, in addition, may utilize these bars as reinforcements for the casing 11 by securing them rigidly to the brackets 28 as by welding.

In order to guide the cover 17 of the receptacle 16 during the time it is being inserted into or withdrawn from the casing 11, as shown in Figures 6 and 5, or is positioned within the casing 11 ready for operation, as shown in Figure 1, I provide upon the free edge of the cover 17 a pair of lugs 46 arranged to cooperate with guideways formed upon the side walls 13 of the casing 11 and each comprising on one side a continuous rib 47 preferably formed integral with the side wall 13 and on the other side the lower edge of a plate 48 secured to the side wall 13, a rib 49 preferably like the rib 47 formed integral with the side wall 13, and the ledge 26 which cooperates with the

guide 25 to support the receptacle 16 within the casing 11. With this arrangement, when the receptacle 16 is inserted into the casing 11 the lugs 46 are entered into the guideways through the openings between the ribs 47 and plates 48 and as the receptacle 16 and cover 17 are pushed home, either before or upon the closing of the door 19, the lugs 46 are carried to the position shown in Figure 1 from which they may emerge, if the path of entrance be blocked, only by continuing along the guideways between the ribs 47 and 49 and between the ribs 49 and the ledges 26. The ribs 47, however, are so spaced from the ledges 26 that when the lugs 46 travel therebetween the cover 17 will be forced firmly closed in which position it will then be held by means of a suitable lock 50 mounted in the front wall of the receptacle 16 and arranged to engage cooperating hooks 51 carried by the cover 17.

In order to prevent exit of the lugs 46 through the entrance paths I interpose in these entrance paths a pair of discs 52 each provided with a plurality of teeth 53 adapted to cooperate with the lugs 46 carried by the cover 17 and I mount these discs upon studs 54 carried by the sides 13 of the casing 11 in such position that the lugs 46 can not pass the discs 52 without rotating the discs 52 and then prevent retrograde rotation of the discs 52 by means of suitable ratchet mechanism which preferably comprises ratchet teeth 55 carried by the inner peripheries of the discs 52 and cooperating with bevel tooth plungers 56 carried in recesses 57 within the studs 54 and biased outwardly into engagement with the teeth 55 by means of suitable compression springs 58. To prevent removal of these discs 52 I mount the plates 48 in position abutting the ends of the studs 54 and in close proximity to the adjacent faces of the discs 52 and to prevent ready removal of these plates 48 to give access to the discs 52 I secure these plates 48 to the sides 13 of the casing 11 by means of machine screws 59 so concealed by the cover 30 as to prevent access thereto by way of the door 19.

In order to insure that the trap leading into the chute 32 is open, and the fares lying thereon dumped, before the receptacle is removed, I provide an interlock preventing opening of the casing door 19 when the trap leading into the chute 33 is closed and in the embodiment illustrated herein I have shown that interlock as comprising a pin 62 carried by a lever 63 pivoted to the chute mechanism 29 at 64, adapted to be raised upon rotation of the shaft 38 on which the chute trap is mounted by engagement with a lug 65 carried by the lever 63 of the face 66 of a cam 67 carried by the shaft 38, and adapted on being thus raised to withdraw the pin 62 through the guide 69 carried by the front

14 of the casing 11 out of the aperture in the lug 70 carried by the door 19 to thus permit opening of the door 19 by anyone provided with a key adapted to operate the lock, not shown herein, by which the door 19 is secured in closed position.

Under certain circumstances I also find it desirable that operation of the chute trap be prevented when the receptacle 16 is not in position and I accordingly provide in the fare box herein shown means to secure this result which means herein comprises a lever 71 pivoted at 72 to the chute mechanism 29, normally held in depressed position by the action of gravity, provided with an arm 73 extending laterally therefrom and carrying a hooked end 74 adapted to cooperate with the face 75 of the cam 67 to lock the chute trap open or with the face 76 of the cam 67 to lock the chute trap closed, and provided with a second arm 77 positioned in the path of the corresponding lug 46 on the cover 17 in position to be raised by the cover 17 as the receptacle 16 and cover 17 are pushed home in the casing 11 to thereby sufficiently lift the arm 71 to render the hook 74 inoperative.

It will be apparent from the above disclosure that I have provided herein a fare box so arranged that the receptacle cover must be in full open position before the casing door can be closed, in which the receptacle can not be withdrawn without first dumping the chute therein and then securely closing and locking the cover of the receptacle, and in which the chute door can not be operated while the receptacle is withdrawn. It will also be apparent that I have secured these advantages by mechanism which requires a casing having a depth substantially half that of the casings heretofore in use yet necessitating no reduction in the size of the receptacle cover and retaining intact all of the advantages of the previous fare boxes. It will be obvious to those skilled in the art that the particular construction herein shown may be variously changed and modified without departing from the spirit or scope of my invention or sacrificing the advantages thereof and it will therefore be obvious that the disclosure herein is illustrative only and that my invention is not limited thereto.

I claim:

1. In a fare box, the combination with a rectangular casing and a receptacle insertable therein, said receptacle and casing being formed with interfitting projections whereby the receptacle is guided in its movement, of a cover hinged to said receptacle upon a transverse axis, laterally projecting ears carried by said cover, guideways formed in the wall of said casing and inclined away from the path of movement of said receptacle and adapted to receive said ears on the insertion of said receptacle so as to guide the cover to an open position, a ratchet wheel

pivoted to the wall of said casing at the upper end of said guideway and having teeth adapted to receive said ears upon the insertion of said receptacle, a stud carried by said casing and supporting said ratchet wheel, a pawl concealed by said ratchet wheel engaging said ratchet wheel and preventing the retrograde movement thereof, and a second guideway formed in the wall of said casing and adapted to receive said ears upon the withdrawal of said receptacle and shaped to force said cover to closed position.

2. In a fare box, the combination with a parallel sided casing having a chute and a parallel sided receptacle insertable into said casing beneath said chute, said receptacle and casing being formed with interfitting portions whereby the receptacle is guided, of a cover pivoted to said receptacle upon an axis substantially transverse to the direction of movement thereof, laterally projecting ears carried by said cover, the walls of said casing being formed with guideways adapted to receive said ears upon the insertion of said receptacle and move said cover to an open position and with other guideways adapted to receive said ears upon the withdrawal of said receptacle and force said cover to a tightly closed position, and a transferring device adapted to shift said ears from the opening guideway to the closing guideway and means concealed by said transferring device for preventing movement thereof in the opposite direction.

3. In a fare box, the combination with a rectangular casing and a parallel sided receptacle insertable therein, said receptacle and casing being formed with interfitting portions whereby the receptacle is guided, of a cover pivoted to said receptacle upon an axis substantially transverse to the direction of movement thereof, laterally projecting ears carried by said cover, the walls of said casing being formed with guideways adapted to receive said ears upon the insertion of said receptacle and move said cover to an open position and with other guideways adapted to receive said ears upon the withdrawal of said receptacle and force said cover to a tightly closed position, a ratchet wheel pivoted to the wall of said casing and having teeth adapted to receive said ears, said ratchet wheel being arranged to turn by the movement of said ears from the first passageway to the second passageway, and means concealed by said ratchet wheel for preventing the retrograde rotation of said ratchet wheel and so preventing the removal of said receptacle with the cover open.

4. In a fare box, the combination with a casing having a chute, and a receptacle insertable in said casing and having an open top adapted to underlie the end of said chute, of a cover pivoted to said receptacle

upon an axis substantially transverse to the direction of movement of the receptacle and adapted to close the open top of the same. laterally projecting ears carried by said cover, ribs carried by the walls of said casing and adapted to engage said ears so as to open said cover upon the insertion of said box into the casing, other ribs carried by the casing and adapted to engage said ears and close said cover upon the withdrawal of said receptacle, means operated by said ears in passing from one of said ribs to the other, and an irreversible switch concealed by said means for permitting operation of said means in a direction to permit the passage of the ears from said first ribs to said second ribs and for preventing operation of said means in the reverse direction to thus prevent return movement of said ears.

5. In a fare box, the combination with a casing having an opening in the lower portion of one of its ends and having guideways extending inwardly from said opening, of a receptacle slidably mounted in said guideways, the inner wall of said casing being formed with second guideways

above said first guideways and also originating at said opening, a cover hinged to said receptacle upon an axis transverse to the direction of movement thereof, ears carried by said cover and adapted to project into said second guideways simultaneously with the insertion of said receptacle into said first guideways, the interior of the casing being formed with further guideways communicating with said second guideways and adapted to receive said ears from said second guideways and deliver them to said first guideways, means operated by said ears in passing from said second guideways to said further guideways or the reverse, and an irreversible switch device concealed by said means and adapted to permit the operation of said means to permit movement of said ears from said second guideways to said further guideways and to prevent operation of said means in the reverse direction to thus prevent the movement of said ears in the reverse direction.

In testimony whereof, I hereunto affix my signature.

MICHAEL C. McELLIGOTT.