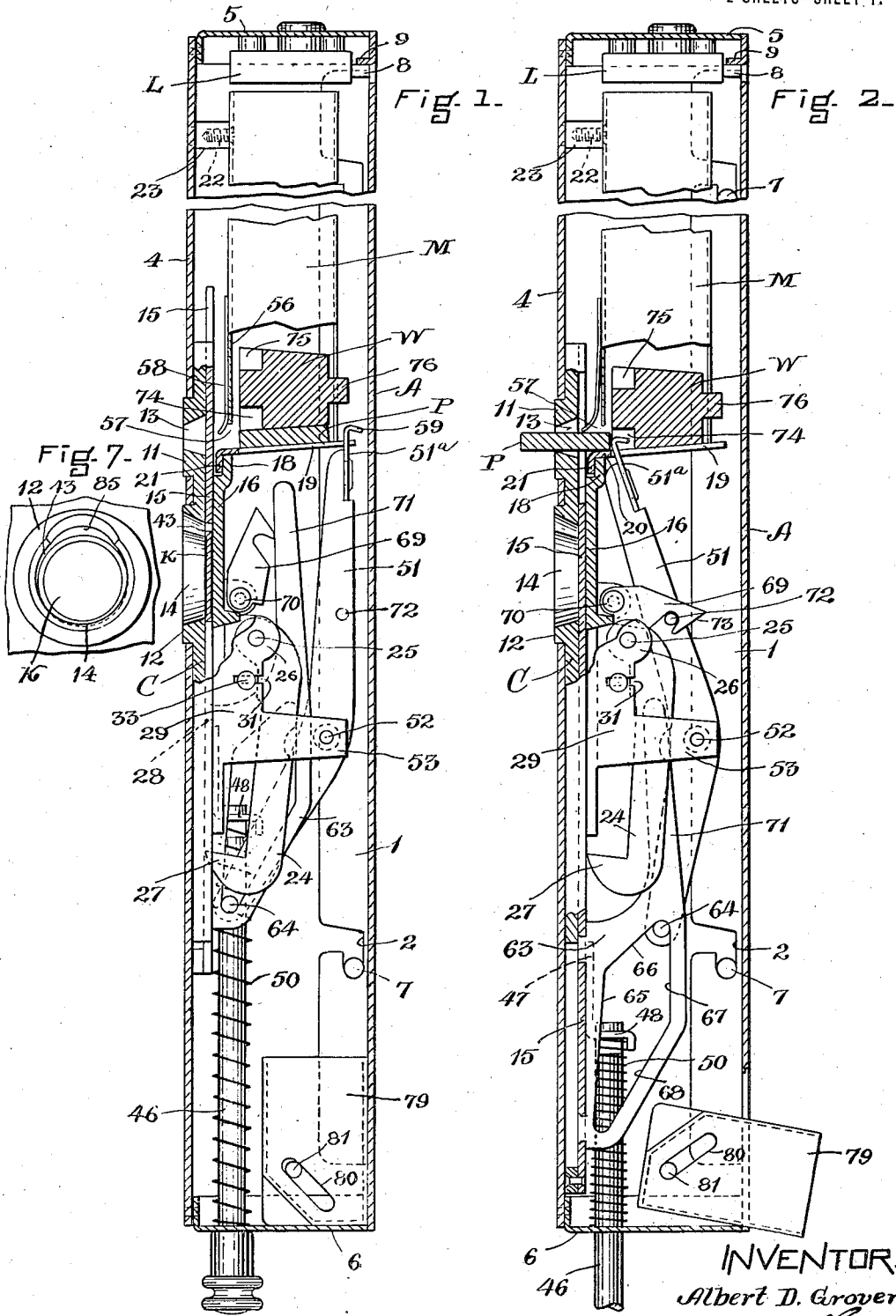


A. D. GROVER.  
 COIN CONTROLLED VENDING MACHINE.  
 APPLICATION FILED MAR. 8, 1917.

1,418,300.

Patented June 6, 1922.

2 SHEETS—SHEET 1.



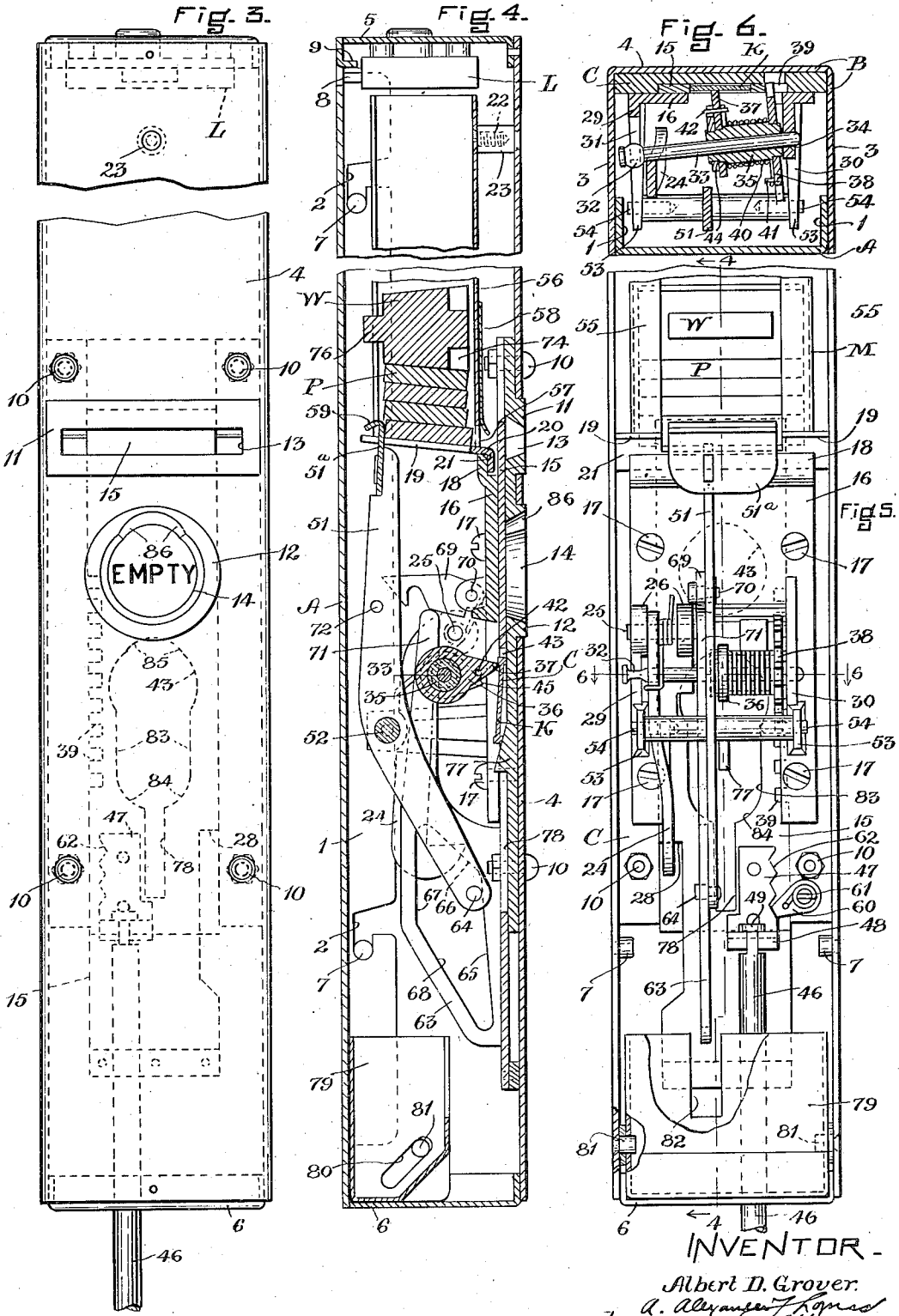
INVENTOR-  
 Albert D. Grover.  
 by A. Alexander Thomas  
 Atty.

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2 SHEETS—SHEET 2.



INVENTOR.

Albert D. Grover.  
 by A. Alexander Jones  
 Atty.

# UNITED STATES PATENT OFFICE.

ALBERT D. GROVER, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO AUTOSALES CORPORATION, A CORPORATION OF NEW YORK.

## COIN-CONTROLLED VENDING MACHINE.

1,418,300.

Specification of Letters Patent. Patented June 6, 1922.

Application filed March 8, 1917. Serial No. 153,487.

*To all whom it may concern:*

Be it known that I, ALBERT D. GROVER, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Coin-Controlled Vending Machines, of which the following is a specification.

The object of my invention is to provide a coin-controlled vending machine especially adapted for use in localities where but little space is available—as for instance, in railroad cars or street cars.

Generally speaking, the machine of my invention embodies certain improvements over the machine shown in my Patent No. 849,609, issued April 9, 1907.

The various features of novelty which characterize my invention will become apparent from a detailed description of the accompanying drawings in which—

Fig. 1 is a longitudinal section of a machine embodying the different features of my invention, the operative parts being shown in normal position.

Fig. 2 is a view similar to Fig. 1, showing the parts in fully operated position, and also showing how the ejecting mechanism is locked in actuated position when the magazine is empty.

Fig. 3 is a front elevation of the machine, showing the coin-slide in position to cover both the delivery-opening and the coin-opening when the magazine is empty.

Fig. 4 is a longitudinal section approximately on line 4—4 of Fig. 5, showing the coin-slide unlocked by the coin for complete operation.

Fig. 5, is a rear elevation showing the interior of the machine, the parts being in position corresponding to Fig. 4.

Fig. 6 is a transverse cross section approximately on line 6—6 of Fig. 5, showing the coin-controlled mechanism which unlocks the normally locked coin-slide; and

Fig. 7 is a fragmentary detailed view showing how the deposited coin is supported in the vertical coin-slot without danger of falling out.

The casing of the machine is preferably formed in two metal sections—a rear plate section A which is adapted to be secured to a suitable support, and a front box-like section indicated as a whole by B. The rear section A is formed with side flanges 1

which are provided with bayonet slots 2. The front box-like section B comprises sides 3, the front wall or panel 4, the top or cover plate 5 and the bottom 6. The sides 3 are preferably formed integral with the front wall 4, while the top and bottom pieces are attached separately. The sides 3 are provided with inwardly extending lugs 7 adapted to fit into the bayonet slots 2 when the sections are assembled. The assembled sections are locked together in any suitable way, as by means of the lock L which has a bolt 8 projecting beneath the flange 9 formed in the back plate A. When it is desired to separate the sections it is only necessary to withdraw the bolt 8, whereupon the box-like section B may be bodily lifted from the fixed rear section A.

The foregoing construction of casing is shown and described merely for the sake of illustration, and may be modified to suit the design or convenience of the manufacturer.

A casting indicated as a whole by C is fixed to the inner side of the front plate 4 by any suitable means, such as the bolts or rivets 10. This casting, which fits between the sides 3, as best shown in Fig. 6, is provided with forwardly extending bosses 11 and 12, which project through corresponding openings in the front panel 4. In the boss 11 is formed the delivery opening 13, while in the boss 12 is formed the circular coin-opening 14. The casting C is at its rear formed with a recess or chamber in which operates the coin-slide 15, as best shown in Fig. 6. The coin-slide 15 is retained in the recess of the casting C by the plate 16 which is rigidly secured to the back of the casting C by screws 17 or otherwise.

At its upper end the plate 16 is formed with a flange or shoulder 18 which forms the support for the goods-magazine indicated as a whole by M. This magazine is at its bottom provided with a U-shaped plate comprising the side pieces 19 and a cross-piece 20 having a downwardly extending flange or lip 21 adapted to engage with the shoulder 18 of the plate 16, whereby the magazine M is firmly supported. The upper end of the magazine is fastened to the casing by a screw 22 adapted to enter a hollow stud 23 fixed to the front panel 4. To remove the magazine it is only necessary to remove the screw 22, whereupon the entire magazine may be lifted out of the casing.

The coin-slide 15 is normally held locked against downward operative movement by the depending dog 24 pivoted on the stud or pin 25 which is carried by the spaced ears or lugs 26 extending rearwardly from the plate 16, as best shown in Fig. 5. The dog 24 is at its lower end formed with a forwardly extending toe 27 which normally hangs in the path of movement of the shoulder 28 formed in the coin-slide 15.

When the coin-slide is in normal position, as shown in Fig. 1, the locking shoulder 28 is sufficiently above the engaging toe 27 of the dog 24 to allow the necessary preliminary movement of the coin-slide downwardly for the purpose of testing the deposited coin by means of mechanism which I will now describe.

The plate 16 is provided with a pair of rearwardly extending brackets 29 and 30. The form of these brackets is best shown in Figs. 1 and 2. The upper end of the bracket 29 forms one of the lugs 26, previously referred to. The bracket 29 is provided with a slot 31 for receiving the flat end 32 of the shaft 33. The other end of the shaft 33 is loosely journaled in the opening 34 formed in the bracket 30. In other words, the shaft 33 is so mounted between the brackets 29 and 30 as to have a limited swinging movement in the opening 34, without being rotatable. On the shaft 33 is rotatably mounted the sleeve 35 at one end of which is loosely mounted the coin-testing segment 36 having a pointed end 37. On the other end of the sleeve 35 is rigidly mounted the pinion 38 adapted to mesh with teeth 39 formed in one edge of the coin-slide 15. A spring 40 coiled about the sleeve 35 bears at one end against the pin 41 carried by the pinion 38 and at its other end against the pin 42 carried by the segment 36. The spring 40 normally holds the coin-testing segment 36 in proper position with respect to the coin-receiving opening 43 in the coin-slide 15. The coin-testing segment 36 is held on the sleeve 35 by the bushing 44 which has a radial projection 45 in the path of movement of the pin 42 carried by the segment 36, as best shown in Fig. 6. The bushing 44, which is rigidly mounted on the sleeve 35, is so arranged with respect to the segment 36 that the radial projection 45 lies beneath the pin 42.

The operation of the coin-testing mechanism above described is as follows: Assuming that a proper coin K has been deposited in the coin-receiving slot 43 of the coin-slide 15, and the slide is pulled downwardly, the teeth 39 of the slide will cause the pinion 38 to rotate with sleeve 35. This rotation of the parts is communicated through the bushing 44 to the segment 36 which is thereby rotated toward the inner surface of the deposited coin K until the point 37 contacts with such surface. Continued downward

movement of the coin-slide will carry the coin over the contacting point of the segment 36 until that point strikes the raised edge or rim of the coin. When this occurs, the further movement of the coin-slide causes the raised edge of the coin to rock the segment 36 downwardly and at the same time force the flat end 32 of the shaft 33 inwardly. When the shaft 33 is thus actuated, it swings the dog 24 rearwardly until the toe 27 thereof is out of the path of the shoulder 28 on the coin-slide 15.

If the deposited check is smooth or without a well-defined edge, the check will not cause the segment 36 to rock and move the shaft 33 against the locking dog 24, but the descending check in the coin-slide will simply slide past the point 37, with the result that the locking dog 24 will engage the shoulder 28 of the descending slide and lock the same against full operative movement.

The above described coin-controlled mechanism does not in and of itself form part of my present invention, it being the subject-matter of my Patent No. 799,045, dated September 12, 1905. Any suitable mechanism may be used for releasing the normally locked slide 15 through the medium of the deposited coin, and I have shown and described the foregoing coin-controlled mechanism because it is excellently adapted for a machine of small dimensions, like the one shown in the drawings.

The coin-slide 15 is adapted to be operated by hand from the outside of the casing through any suitable connections. In the drawings, I have shown a rod 46 projecting through the bottom of the casing and connected at its upper end to the coin-slide 15 in any suitable way. For convenience, I have shown the coin-slide 15 provided at its lower end with a plate 47 having a pair of rearwardly projecting lugs 48 on which rests the head 49 of the hand rod 46. In this way the rod is readily connected to and disconnected from the coin-slide 15. A spring 50 is coiled about the rod 46 for normally holding the coin-slide in uppermost position, as shown in Fig. 1.

The ejecting mechanism consists of a lever 51 pivoted on the shaft 52 which is mounted between the rearwardly extending arms 53 of the brackets 29 and 30. In the drawings, I have shown the shaft 52 in the form of a sleeve on which the lever 51 is rigidly mounted and which is supported at its ends by pins 54 removably secured in the arms 53. At its upper end the lever 51 is provided with an ejecting finger 51<sup>a</sup> which is adapted to sweep across the bottom of the magazine and force the lowermost package through the delivery opening 13, as indicated in Fig. 2.

The magazine M, which is adapted to contain the packages P in a vertical stack, is at

the rear provided with retaining flanges 55 between which the ejecting finger 51<sup>a</sup> enters the magazine. The front wall 56 of the magazine is at its lower end provided with a discharge opening 57 in alignment with the delivery opening 13 and just large enough to permit the passage of a single package or piece of goods. At its lower end, the front wall 56 of the magazine is provided with a spring piece 58 which at its lower end projects slightly into the path of the ejected package to prevent the same from being thrown suddenly out of the machine. In other words, the spring member 58 acts as a retarding device for the ejected package, so as to retain it partly within the casing for removal by the purchaser. Without such retarding device, the action of the ejecting lever 51 would be so violent as to throw the ejected package with considerable force out of the machine. Hence, the obvious advantage of the retarding device 58.

The upper end of the ejecting finger 51<sup>a</sup> is bent slightly downwardly, as indicated at 59, so that during the return movement of the lever 51, the finger 51<sup>a</sup> may readily sweep under the stack of articles back to normal position behind the magazine. To compel downward movement of the coin-slide to a predetermined amount, before the return movement can take place, I provide the usual two-way pawl connection heretofore employed in structures of this kind. In the drawings, I have shown a spring-pressed pawl 60 pivoted on the stud 61 which is carried by the casting C, as best shown in Fig. 5. The bracket 47, to which the hand rod 46 is secured, is provided with teeth 62 which the pawl 60 engages. When the teeth 62 have once come into engagement with the pawl 60 during the downward movement of the coin-slide 15, the return movement of the parts cannot take place until after the coin-slide has been moved downwardly a sufficient distance to disengage the teeth 62 from the pawl 60.

The ejecting lever 51 is actuated by the coin-slide 15 through the following mechanism: To the coin-slide 15 is rigidly secured the open cam 63, which extends rearwardly from the coin-slide at approximately right angles thereto. The open cam 63 is provided with four sides which are so arranged and proportioned as to perform a predetermined cycle of operations on the ejecting lever 51. A pin 64 extends from the lower end of the lever into the opening of the cam 63. The sides 65 and 66 of the cam engage the pin 64 of the ejecting lever 51 during the downward movement of the coin-slide 15 and cause the forward or ejecting operation of the ejecting lever 51. The sides 67 and 68 of the cam engage the pin 64 during the return movement of the parts and cause the return of the ejecting lever to normal position.

The effect of the cam 63 on the ejecting lever 51 during each complete operation of the machine is as follows: With the parts in normal position, as shown in Fig. 1, the pin 64 rests in the lowermost portion of the cam-opening. When the coin-slide is pulled down after the deposit of a proper coin, the effect of the cam edge or side 65 is to produce a slight forward movement of the lever 51 from the position shown in Fig. 1 to that shown in Fig. 4. During this preliminary movement of the coin-slide the coin-testing mechanism previously described has had full opportunity to test the deposited coin. Assuming that the coin-slide is free to be fully operated, further downward movement of the coin-slide will bring the rearwardly slanting cam edge 66 into engagement with the pin 64 and thereby rock the ejecting lever 51 from the position shown in Fig. 4 to that shown in Fig. 2. This movement of the lever 51 is the ejecting movement, and the edge 66 of the cam 63 may therefore be considered as the ejecting portion of the cam. Fig. 2 shows the position of the ejecting lever when the slide has reached its lowermost position. It should be understood that the ejecting lever 51 is not provided with any spring, and, therefore, remains in whatever position it is operated until positively moved out of that position. When the parts begin their return movement from the position shown in Fig. 2, the vertical edge 67 of the cam opening will have no effect on the position of the ejecting lever 51, and the return movement of the ejecting lever does not begin until the edge 68 comes into contact with the pin 64, whereupon the lever is gradually shifted back to normal position, as shown in Fig. 1. During this return movement of the ejecting lever, the ejecting finger 51<sup>a</sup> slides under the stack of packages which drop down upon the supporting side pieces 19 as soon as the ejecting finger passes out of the magazine.

It will be observed that the return edge 68 of the cam opening meets the edge 67 at a wide angle from the vertical. This is to insure a gradual return of the ejecting lever 51, so that the ejecting lever and coin-slide reach normal position at approximately the same time.

I have provided means for positively locking the ejecting lever 51 in forwardly actuated position until the coin-slide 15 has been returned a sufficient distance to close or obstruct the delivery opening 13. One of the important functions of the coin-slide 15 is normally to close or obstruct the delivery opening 13, as clearly seen from Fig. 1. During the downward movement of the coin-slide after a proper coin has been deposited, the delivery opening becomes fully uncovered just before the ejecting edge 66 of the cam 63 engages the pin 64 of the ejecting

lever 51. So that, during the time that the pin 64 is in engagement with the cam edge 65, two operations take place substantially simultaneously—namely, the coin is tested 5 by the coin-testing mechanism and the delivery opening 13 is uncovered by the coin-slide. However, it should be noted that this uncovering of the delivery opening does not take place until after the coin-testing mechanism has had time to test the coin. 10 If the coin was not a proper one, the coin-slide cannot be moved down sufficiently to uncover the delivery opening. Fig. 4 shows the coin-slide 15 about to uncover the delivery opening 13 and the pin 64 of the ejecting lever 51 about to pass from the cam edge 65 on to the ejecting edge 66. It should be observed that when the parts are in this position the teeth 62 of the two-way pawl connection referred 20 to, are in engagement with the pawl 60, so that the parts cannot be returned without further downward movement of the coin-slide.

Now, in order to prevent rearward movement of the ejecting lever 51 before the coin-slide 15 has covered the delivery opening 13 during the return movement of the parts, I have made provisions for positively locking the lever 51 in forwardly actuated position until the coin-slide has fully covered or obstructed the delivery opening. 30 A gravity pawl 69 is pivoted to the casting C at 70 and is normally held in the position shown in Fig. 1 by the arm 71 extending from the cam 63. The pawl 69 when released is adapted to engage the pin 72 extending laterally from the ejecting lever 51. The forward end of the pawl 69 is beveled as shown at 73. When the coin-slide 15 and the cam 63 carried thereby have moved from the normal position shown in Fig. 1 to the position shown in Fig. 4, the arm 71 has moved downwardly sufficiently to allow the pawl 69 to drop into the path of the pin 40 72 of the forwardly swinging lever 51. As the ejecting lever 51 moves from the position shown in Fig. 4 to its final position shown in Fig. 2, the pin 72 rides under the inclined nose 73 of the pawl 69 and when the lever has reached its final position, the pin 72 is in locking engagement with the pawl 69, as clearly shown in Fig. 2. In this way the ejecting lever 51 is positively locked in actuated position. During the return of the coin-slide and cam, the cam edge 67 has no effect on the position of the lever 51, and unless the lever 51 is positively locked in actuated position, a person could insert an instrument into the delivery opening and 60 push the lever rearwardly behind the column of goods. In this way the packages could be fraudulently extracted from the machine without the insertion of a coin. However, because of the locking device for 65 the ejecting lever 51, that lever remains in

forward position, in which it protects the packages of goods against extraction, until the coin-slide 15 has returned sufficiently to cover the delivery opening 13. Referring to Fig. 2, it will be observed that the length 70 of the edge 67 is such that just before the pin 64 passes from the edge 67 to the returning edge 68, the arm 71 has lifted the pawl 69 out of locking engagement with the pin 72 and the coin-slide 15 has covered the 75 delivery opening 13. Thereupon the further upward movement of the coin-slide returns the released ejecting lever back to normal position.

I have also provided means for locking 80 the coin-slide in position to cover the coin-opening and delivery opening when the machine is empty. On top of the stack of goods in the magazine rests a weight or follower W provided with a recess 74 at its 85 lower forward end. When the last package of goods is ejected, the weight W drops to the bottom of the magazine and the ejecting finger 51<sup>a</sup> extends into the recess 74 of the weight W, as shown in Fig. 2. When 90 now the hand rod 46 is released, the coin-slide 15 can move upwardly only as long as the neutral edge 67 of the cam 63 engages the pin 64. As soon as the pin 64 passes on to the return cam edge 68, further upward 95 movement of the slide is prevented, because the ejecting lever 51, even though free from the locking dog 69, is held locked by the ejecting finger 51<sup>a</sup> engaging the recess of the weight W. This locked position of the 100 coin-slide 15 is indicated in Fig. 3, from which it will be seen that both the delivery opening and the coin-opening are closed. To indicate to an intending purchaser that the machine is empty, I inscribe the word 105 "Empty" on the coin slide in such position as to show in the coin-opening when the slide is locked in "empty" position.

In order to make the weight W fool-proof—that is to say, to prevent its being 110 inserted into the magazine wrongly—I provide also the opposite face with a recess 75 arranged similarly to the recess 74, so that the weight may be placed into the magazine with either face down. The rear end of the 115 weight W is provided with a rearwardly extending lug 76 which projects partly out of the magazine and is accommodated in the space between the longitudinal flange in the rear wall of the magazine. The purpose 120 of the projecting lug 76 is to insure the forward position of the recesses 74 and 75. The weight cannot be inserted into the magazine unless the lug 76 is to the rear. By this simple means I provide a weight which 125 can be quickly inserted into the magazine by the collector, who merely has to feel for the lug 76.

After the coin has been tested by the mechanism previously described and the locking 130

dog 24 has been moved into position to release the coin-slide 15, the coin is ejected out of the opening 43 by the lug 77 which projects rearwardly from the casing C. The ejecting action of the lug 77 is clearly shown in Fig. 4 where the coin K has already started to ride over the downwardly and rearwardly sloping surface of the lug 77. To accommodate the lug 77, the coin-slide 15 is provided with a slot 78, as best shown in Fig. 5. The ejected coins drop into the coin-box 79 provided at the bottom of the casing. In order to render the contents of the coin-box 79 readily accessible to the collector who comes to collect the money and replenish the machine, I mount the coin-box 79 in such a way that it can readily tilt forwardly. To this end the coin-box is provided with a pair of diagonal slots 80 in which engage a pair of fixed pins 81 mounted in the sides of the casing. The normal or upright position of the coin-box is shown in Figs. 1 and 4, while the tilted position is shown in Fig. 2. To provide for the free downward movement of the cam 63, the rear wall of the coin-box is formed with a slot 82, as shown in Fig. 5.

To prevent coins of smaller than the prescribed diameter from being held in operative position in the coin-slide 15, the coin-receiving opening 43 is not completely circular, but is open at the bottom where it communicates with the elongated opening 83 which terminates in a coin-seat 84, as best shown in Figs. 3 and 6. The opening 83 is only slightly narrower than the coin-receiving opening 43. Therefore, when a smaller coin is deposited than the one with which the machine is intended to operate, it slides out of the opening 43 into the opening 83 until it rests on the coin-seat 84. Should thereupon the hand rod 46 be pulled downwardly, the coin-testing mechanism will encounter no coin in the coin-opening 43, while at the same time the lug 77 will cam the small coin out of the coin-seat 84.

As the machine of my invention is intended to be placed in operation in a vertical position, I provide means to prevent the deposited coin from tilting forwardly out of the coin-opening. When the coin-slide is in normal position, with coin-receiving opening 43 in alignment with the coin-opening 14 of the casing, the lower edge of the coin-opening 14 projects slightly above the lower edge of the inserted coin in the coin-receiving opening 43. This is clearly shown in Figs. 1 and 7. The coin is, therefore, propped up in vertical position by the lower edge of the coin-opening 14 and is thus prevented from accidentally falling out, especially if the machine should be slightly inclined forwardly from the vertical. This supporting means for the coin is particu-

larly important where the machines are installed in railway cars, as the constant rocking or swaying of the car would otherwise easily throw the inserted coin back out of the coin-opening, before the operator had a chance to pull down the hand bar.

To facilitate the removal of an inserted coin from the coin-opening 43, as when the purchaser finds that he has put in the wrong coin, I provide the coin-receiving opening 43 on the top with a slight elongation, as indicated at 85 in Fig. 3. The coin-opening 14 is provided with a similar elongation or cutout portion 86. These elongations 85 and 86 allow the insertion of a thin instrument or even a finger nail behind the top of the inserted coin, whereby the same may be readily withdrawn from the machine.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States, is:

1. In a coin-controlled vending machine, a casing having a coin-opening and a delivery opening, a magazine for the vendable goods, a normally locked coin-slide adapted to receive the deposited coin and normally covering said delivery opening, means to release said coin-slide through the medium of the coin therein, means for manually operating said slide from the outside of the casing, a movable member for ejecting the goods from said magazine, mechanism connected with said slide for actuating said ejecting member, a device for positively locking said member in actuated position, and means controlled by said slide for automatically moving said device into releasing position during the return movement of said slide after said slide has covered said delivery opening; said last-mentioned means being adapted to hold said locking device in an inoperative position during the normal position of the parts.

2. In a coin-controlled vending machine, a casing having a coin-opening and a delivery opening, a magazine for the vendable goods, a normally locked coin-slide adapted to receive the deposited coin and normally covering said delivery opening, means to release said coin-slide through the medium of the coin therein, means for manually operating said slide from the outside of the casing, a movable member for ejecting the goods from said magazine, mechanism connected with said slide for actuating said ejecting member, a device for positively locking said member in actuated position, and means carried by said mechanism for automatically moving said device into releasing position during the return movement of said slide after said slide has covered said delivery opening, said last mentioned means being adapted to hold said locking device in an inoperative position during the normal position of the parts.



3. In a coin-controlled vending machine, a casing having a coin-opening and a delivery opening, a magazine for the vendable goods, a normally locked coin-slide adapted to receive the deposited coin and normally closing said delivery opening, means to release said coin-slide through the medium of the coin therein, means for manually operating said slide from the outside of the casing, a movable member for ejecting the goods from said magazine, a cam carried by said slide for actuating said ejecting member, a pawl pivoted above said cam for positively locking said member in actuated position, and an extension on said cam for automatically raising said pawl into releasing position during the return movement of said slide when said slide has covered said delivery opening, said extension being adapted to hold said pawl in an inoperative position during the normal position of the parts.

4. In a coin-controlled vending machine, a casing provided with a magazine, an ejector adapted to eject the goods from said magazine, a coin-controlled member operable from the outside of the casing, a connection between said member and ejector for operating the latter when said member is actuated, a device independent of said member for locking said ejector in actuated position, and means controlled by the movement of said member for automatically moving said device into releasing position during the return movement of said member, said means being adapted to hold said locking device in an inoperative position during the normal position of the parts.

5. In a coin-controlled vending machine, an upright casing provided with a horizontal delivery opening and a vertical coin-entrance slot to receive the coin flatwise, a magazine within said casing, a member for ejecting the goods from said magazine through said delivery opening, a vertically movable slide normally closing said delivery opening and having a slot for receiving the deposited coin and carrying the same downwardly into operative position within the casing, means for normally locking said slide in its normal position, mechanism acted upon by the coin in said slide for releasing said locking means, an extension at the lower end of said slide, said extension being provided with a cam opening, means connected with said ejecting member and arranged to engage in said cam opening, whereby the movement of said slide actuates said member into ejecting position, said cam opening having a return edge consisting only of two sections, the first or upper of said sections being approximately vertical and extending downwardly a predetermined distance from the top of said cam opening, the other or lower of said sec-

tions meeting said first section at a wide angle and extending to the bottom of said cam opening, whereby said second section acts upon said member gradually and causes the same to reach normal position simultaneously with said slide, and means projecting out of said casing for manually operating said slide.

6. In a coin-controlled vending machine, a reciprocable coin-slide having a coin-receiving opening, coin-controlled mechanism adapted to co-operate with a coin in said opening, said coin-slide being provided with an opening narrower than said coin-receiving opening and arranged below the same to receive coins of smaller than prescribed diameter, whereby said smaller coins are held in said coin-slide in an inoperative position, and means for ejecting coins held in either of said openings when the coin-slide is operated a predetermined amount.

7. In a coin-controlled vending machine, a reciprocable coin-slide having a coin-receiving opening, coin-controlled mechanism adapted to co-operate with a coin in said opening, said coin-slide being provided with an opening narrower than said coin-receiving opening and arranged below the same to receive coins of smaller than prescribed diameter, whereby said smaller coins are held in said coin-slide in an inoperative position, and a fixed lug adapted to project through both of said openings and remove the coin therefrom when the coin-slide is operated a predetermined amount.

8. In a coin-controlled machine, an upright casing having an opening in the lower end of one of its walls, coin-controlled mechanism within said casing, a normally upright coin-box arranged at the bottom of said casing opposite said opening to receive the coins which drop from said mechanism, and a pin-and-slot connection between the sides of said casing and said coin-box to allow a tilting of the latter through said opening into an approximately horizontal position, whereby ready access may be had to the contents of the box.

9. In a coin-controlled machine, an upright casing, coin-controlled mechanism within said casing, a normally upright coin-box arranged at the bottom of said casing to receive the coins which drop from said mechanism, a pair of angular slots in the sides of said coin-box, and a pair of fixed pins projecting into said slots, said pins being at or near the upper ends of said slots when the coin-box is in normal vertical position, said pins and slots co-operating to allow said coin-box to be tilted into an approximately horizontal position until said pins engage the lower ends of said slots, whereby ready access may be had to the contents of said box.

10. In a coin-controlled vending machine, 130



- a casing provided with a pair of openings in its front wall, a casting secured to said front wall and having a pair of bosses which fit into and project through said openings, 5 one of said bosses being provided with a delivery opening and the other with a coin-opening, a coin-receiving slide mounted in said casting and having a coin-receiving opening adapted to receive the coin through 10 said coin-opening in the casting, an ejecting member carried by said casting and adapted to be actuated by said slide when the latter carries a proper coin, and means for operating said slide from the outside of the casing.
11. In a coin-controlled vending machine, a casing provided with a pair of openings in its front wall, a casting secured to said front wall and having a pair of bosses which fit into and project through said openings, 20 one of said bosses being provided with a delivery opening and the other with a coin-opening, a coin-receiving slide mounted in said casting and having a coin-receiving opening adapted to receive the coin through 25 said coin-opening in the casting, an ejecting lever pivoted on said casting and adapted to eject the articles from said magazine through said delivery opening, a cam carried by said slide, means for connecting said cam with said lever to operate the latter 30 when the slide is actuated, and means for manually operating said slide from the outside of the casing.
12. In a coin-controlled vending machine, 35 a casing provided with a pair of openings in its front wall, a casting secured to said front wall and having a pair of bosses which fit into and project through said openings, one of said bosses being provided with 40 a delivery opening and the other with a coin-opening, a coin-receiving slide mounted in said casting and having a coin-receiving opening adapted to receive the coin through said coin-opening in the casting, an 45 ejecting member carried by said casting and adapted to be actuated by said slide when the latter carries a proper coin, a fixed lug carried by said casting and adapted to automatically eject the coin from said coin-slide when said slide has been operated 50 a predetermined amount, and means for manually operating said coin-slide from the outside of said casing.
13. In a coin-controlled vending machine, 55 a casing provided with a pair of openings in its front wall, a casting secured to said front wall and having a pair of bosses which fit into and project through said openings, one of said bosses being provided with a delivery opening and the other with a coin-opening, a coin-receiving slide mounted in said casting and having a coin-receiving opening adapted to receive the coin through said coin-opening in the casting, an ejecting lever pivoted on said casting and adapted to eject the articles from said magazine through said delivery opening, a cam carried by said slide, means for connecting said cam with said lever to operate the latter when the slide is actuated, a fixed lug 70 carried by said casting and adapted to automatically eject the coin from said coin-slide when the latter has been actuated a predetermined amount, and means for manually operating said coin-slide from the outside of said casing.
14. In a coin-controlled vending machine, a casing provided with a pair of openings in one of its walls, a casting secured to said wall and having portions 80 which extend into said openings, one of said portions having a delivery opening and the other a coin-opening, a slide mounted in said casting and having a coin-receiving opening to receive the deposited coin from 85 said coin-opening in said casting, a fixed lug carried by said casting for automatically ejecting the coin from said coin-receiving opening in the slide when the latter has been operated a predetermined amount, and coin-controlled ejecting mechanism for ejecting 90 the goods through said delivery opening when the coin-slide is actuated.
15. In a coin-controlled vending machine, a casing provided with a vertical coin-opening 95 to receive the coin flatwise, and a manually operated member having a vertical coin-receiving opening normally in alignment with said coin-opening in the casing, said openings being so arranged relatively 100 to each other that the lower edge of the coin in said coin-receiving opening projects slightly below the lower edge of the coin-opening in the casing, whereby the coin is held against falling out of the aligned openings. 105
- In witness whereof, I hereunto subscribe my name this 5th day of March, 1917.

ALBERT D. GROVER.