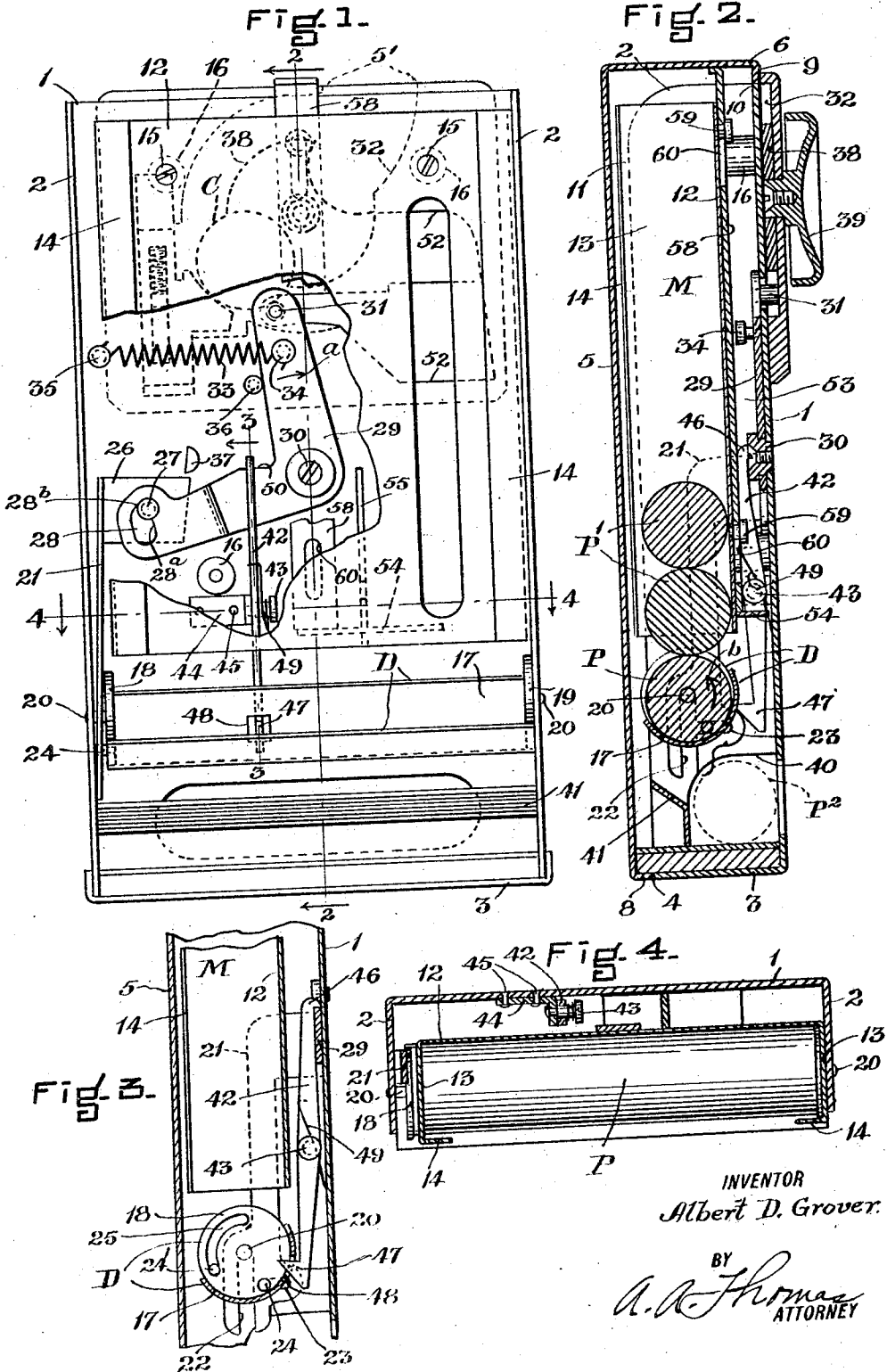


A. D. GROVER.
 COIN CONTROLLED VENDING MACHINE.
 APPLICATION FILED AUG. 20, 1917.

1,415,337.

Patented May 9, 1922.

2 SHEETS—SHEET 1.



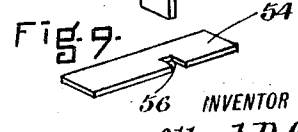
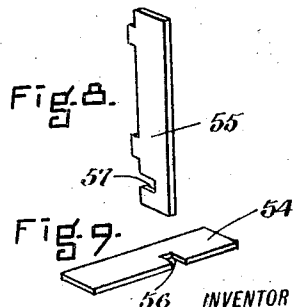
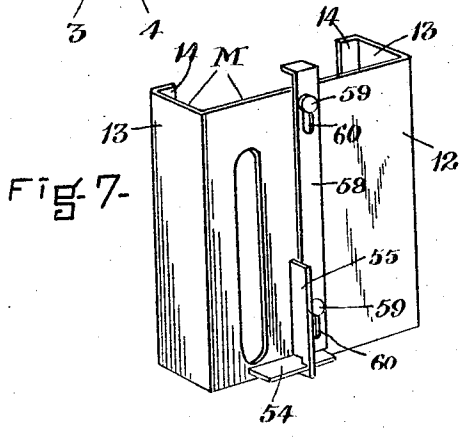
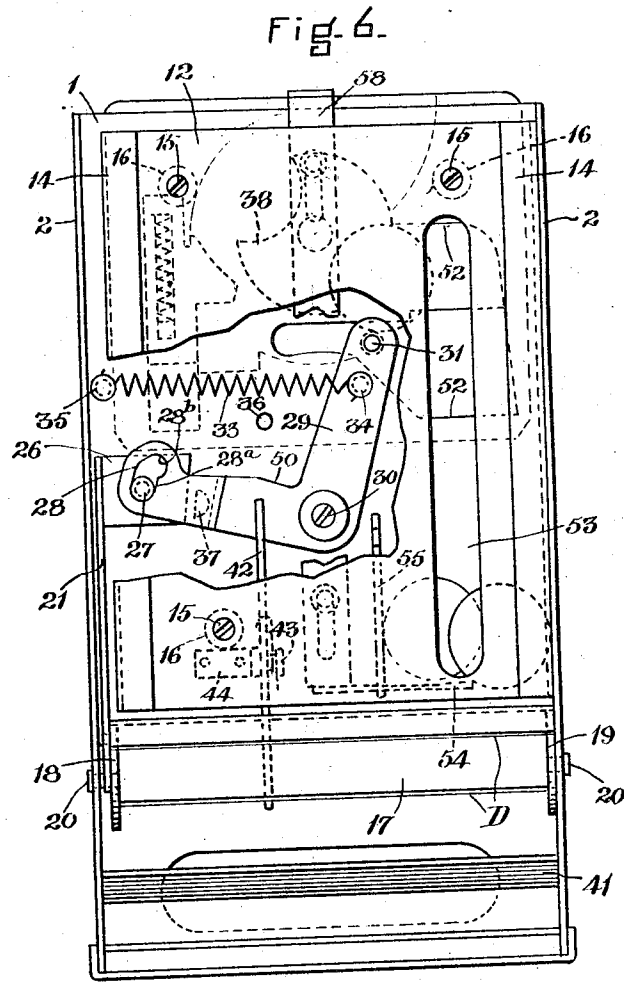
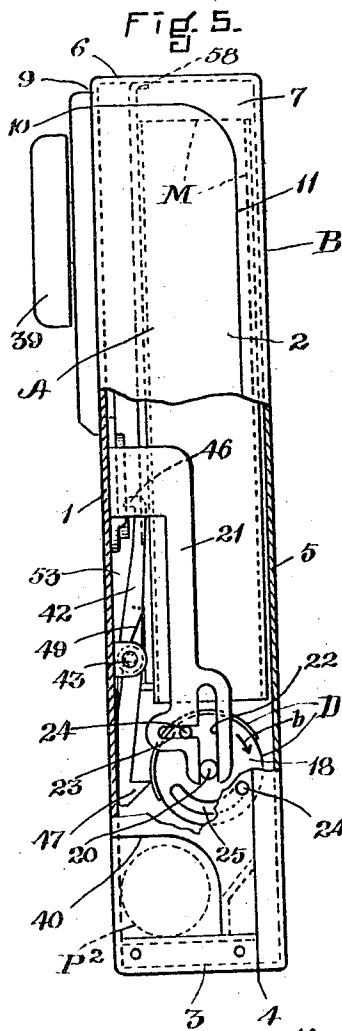
INVENTOR
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BY
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INVENTOR
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UNITED STATES PATENT OFFICE.

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

COIN-CONTROLLED VENDING MACHINE.

1,415,337.

Specification of Letters Patent.

Patented May 9, 1922.

Application filed August 20, 1917. Serial No. 187,206.

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.

My invention relates to coin-controlled vending machines, and has for its object the provision of a machine of small dimensions, especially adapted for use in theatres and other places where but little space is available for accommodating vending machines. The machine of my invention is particularly adapted to sell cylindrical packages, although it is by no means limited to any special form or style of package.

The various features of novelty residing in my invention will become clear from a detailed description of the accompanying drawings which show a preferred embodiment of my invention.

In these drawings,

Fig. 1 represents a rear view of a machine embodying my invention, the back of the casing being removed and the parts being in normal position.

Fig. 2 is a section on line 2—2 of Fig. 1, looking in the direction of the arrows.

Fig. 3 is a fragmentary view in section on line 3—3 of Fig. 1, showing how the coin-controlled actuating lever is locked against movement when the supply of goods is exhausted.

Fig. 4 is a cross-sectional plan view on line 4—4 of Fig. 1, looking downward.

Fig. 5 is a side elevation of the machine shown in Fig. 1, with a portion of the casing broken away to show the working parts.

Fig. 6 is a view similar to Fig. 1, showing the parts in fully operated position.

Fig. 7 is a detached view in perspective of the magazine or goods-compartment, showing the coin receptacle attached thereto; and

Figs. 8 and 9 are detached views in perspective of the two parts which constitute the coin receptacle.

The outer casing of the machine is preferably constructed in two sections,—a front section A and a rear section B. The front section A comprises a front plate 1, side

pieces 2, and a bottom 3 which terminates at the point 4, as indicated in Figs. 2 and 5.

The rear section B of the casing consists of a rear plate 5, a top 6, side flanges 7 and a bottom flange 8. The top 6 is provided with a front flange 9, which meets the upper edge of the front plate 1 along the line indicated at 10 in Figs. 2 and 5.

When the sections A and B are assembled, the side pieces 2 of the front section A abut against the side flanges 7 of the rear section B along the line indicated at 11 in Figs. 2 and 5. In this way a closed casing is formed. The two sections are held locked together by any suitable locking mechanism, which I have not deemed necessary to show or describe, as it forms no part of my present invention.

Within the casing is mounted the magazine or goods-compartment indicated as a whole by M. This magazine is preferably formed of sheet metal and comprises a front wall 12, side walls 13 and inwardly extending rear flanges 14. The magazine M is secured within the casing of the machine in any suitable way, as by means of screws 15 which pass into spacing sleeves or collars 16 carried by the front wall of the casing.

Below the magazine M is mounted the rotary delivery member indicated as a whole by D. The member D is hollow and semi-cylindrical in form, comprising a main body portion 17 and side disks 18 and 19. For the sake of brevity, I will hereinafter refer to the member D as the delivery cylinder, without thereby intending to limit myself to the cylindrical form shown in the drawings. The particular form of this delivery cylinder will depend upon the form or style of the packages to be vended.

The delivery cylinder D is mounted in the sides of the casing by pivot pins or studs 20. The delivery cylinder is so arranged with respect to the magazine M that in its normal position it receives the lowermost package P, as shown in Fig. 2, the remaining packages P¹ being held in the magazine proper by the bottom package.

The delivery cylinder D is actuated into delivery position by a bar 21 mounted at one side of the casing. At its lower end, the bar 21 is provided with a vertical slot 22 and a

horizontal slot 23. The vertical slot 22 engages the pivot pin 20 and thereby guides the bar in its up and down movements. The slot 23 engages a pin 24 projecting from the disk 18, whereby the vertical movements of the bar 21 produce rotary movement of the delivery cylinder. These oscillatory movements of the delivery cylinder are limited by the fixed stop 24' engaging in the curved slot 25 of the disk 18. Any other suitable means may be employed for limiting the movements of the delivery cylinder D.

At its upper end, the bar 21 is provided with a transverse extension 26 which carries a pin or stud 27 arranged to engage in the slot 28 formed in one end of the bell-crank lever 29. This lever is pivoted at 30 to the front wall of the casing, and is at its upper end provided with a forwardly extending pin 31 which extends into the coin-passage 32, as best shown in Fig. 2. The bell-crank lever 29 is normally held in the position shown in Fig. 1 by a contractile spring 33, which has one end fastened to the pin 34 of the lever 29 and the other end to a pin 35 fixed to the casing. A fixed stop 36 limits the movement of the lever 29 under the action of the spring 33.

The slot 28 of the bell-crank lever 29 has a concentric portion 28^a and an angular portion 28^b, the purpose of which will be presently explained.

The casing is provided with a fixed stop 37. When the bar 21 is in normal position, the outer end of the transverse extension 26 thereof is below the stop 37, as shown in Fig. 1, so that the extension 26 must first be moved laterally out of the way of the stop 37 before the bar 21 can be moved vertically. This preliminary release or unlocking of the bar 21 before its operative movement can take place, is effected by the angular portion 28^b of the slot 28 in the actuating lever 29.

When the lever 29 is moved from its normal position in the direction of the arrow *a* in Fig. 1, the first thing that happens to the bar 21 is a lateral shifting of the extension 26 to move it out of alignment with the fixed stop 37. This lateral shifting takes place while the pin 27 of the bar 21 engages the angular portion 28^b of the slot 28. Further movement of the lever 29 brings the concentric portion 28^a of the slot 28 into engagement with the pin 27. This movement of the lever 29 until the bottom of the slot 28 reaches the pin 27, has no effect upon the bar 21, for the portion 28^a of the slot 28 is concentric with the pivot 30 of the lever. In the particular form of machine illustrated, this lost motion of the bell-crank lever 29 is for the purpose of testing the deposited coin C which engages the pin 31 of the lever 29. The deposited coin is carried against the pin 31 by any suitable means, such as a coin disk 38, which is operated from the outside

of the casing by a knob 39. So far as the ejecting mechanism of my invention is concerned, any suitable means may be employed for actuating the bell-crank lever 29 from the outside of the casing.

After the bottom of the slot 28 has reached the pin 27, continued forward movement of the lever 29 raises the bar 21. This upward movement of the bar 21 causes the delivery cylinder D to rotate in the direction of the arrow *b*, as indicated in Figs. 2 and 5, whereby the bottom piece of goods is discharged into the position indicated at P² in Figs. 2 and 5. A slanting guide 41 is preferably provided to receive the package as it drops from the cylinder and to guide it toward the front of the casing, as shown. The side walls of the casing are provided with openings 40 through which the ejected package is removed by the purchaser.

It will be clear from the foregoing that the fixed stop 37 positively prevents operation of the delivery cylinder from below—as by an instrument inserted through the delivery opening in an effort to rock the cylinder. Should an attempt be made to operate the cylinder in any other way than through the medium of the lever 29, the extension 26 will strike the fixed stop 37 and the delivery cylinder is at once locked against movement.

As soon as the coin C passes out of engagement with the pin 31 of the lever 29, the spring 33 returns the lever and its connected parts (namely, the bar 21 and the delivery cylinder D) to normal position. During the delivery position of the cylinder D, the column of goods rests upon the outer surface of the main section 17. As the cylinder D reaches its normal position, the lowermost package drops down into the cylinder, as shown in Fig. 2, and the machine is ready to deliver the next piece of goods.

In order to prevent the loss of a coin to an intending purchaser when the supply of goods is exhausted, I provide means for locking the member 29 in normal position after the last piece of goods has been ejected. A pawl 42 is pivoted intermediate its ends on a pin or lug 43 carried by the bracket 44 which is secured to the front plate 1 of the casing by any suitable means, such as rivets 45. At its upper end the pawl 42 is provided with a hook 46, and at its lower end with a hook 47. The shell section 17 of the delivery cylinder D has an opening 48 through which the hook 47 of the pawl 42 extends when the delivery cylinder is empty. When there is a package in the delivery cylinder, as indicated in Fig. 2, or when the cylinder is in delivery position, as indicated in Fig. 5, the pawl 42 is held in such position that the upper hook 46 is out of the path of movement of the lever 29. However, after the last piece of goods has been ejected

ed and the parts have returned to normal position, the lower hook 47 snaps into the opening 48 under the action of the spring 49, and the upper hook 46 engages the shoulder 50 of the lever 29, thereby positively locking the lever against forward movement. Consequently, when the lever 29 is thus locked, the deposited coin C cannot be carried further into the machine than indicated in Fig. 1. However, the coin-carrier 38 is free to be rotated in the opposite direction to carry the coin C back through the coin-entrance slot 51, whence it may be removed by the purchaser.

When the deposited coin is discharged from between the coin-carrier 38 and the pin 31 of the lever 29, it falls rearwardly through the opening 52 into the chamber 53 formed between the front wall of the magazine and the front wall of the casing. At the bottom of this chamber is a coin-retaining piece 54 on which the discharged coins rest. In the particular embodiment shown in the drawings, the coin-retaining piece 54 is pivotally connected with the vertical strip 55 secured to the front wall 12 of the magazine M. The pivotal connection between the pieces 54 and 55 may be effected by simply providing notches 56 and 57, by means of which the two pieces can be pivotally fitted together, as best shown in Fig. 7. The coin-retaining piece 54 is normally held in coin-retaining position by a vertically slidable bar 58 mounted on lugs 59 carried by the front wall 12 of the magazine. The lugs 59 engage in slots 60 in the bar 58. When the two sections of the casing are assembled, the upper end of the bar 58 rests against the top of the casing, as indicated in Fig. 2, and thereby holds the coin-retaining piece 54 in horizontal or retaining position. When the front section A is removed from the rear or stationary section B, which is intended to be fastened to a suitable support (as for instance, a theatre chair), the weight of the coins on the retaining piece 54 will over-balance the weight of the bar 58 and tilt the piece 54 downwardly to release the coins. When the front section A is put back on the rear section B, after the coins have been collected and the machine replenished, the bar 58 must be forced down so as to fit within the top 6 of the rear section, and this forcing down of the bar 58 swings the retaining piece 54 into normal or coin-retaining position. In other words, the coin-trap which I have provided for receiving the discharged coins must be in closed position before the front section can be put back in place on the rear section of the casing.

Although I have herein shown and described a machine of specific construction, I would have it understood that the various features of my invention are not limited to the details of construction set forth. It is

obvious that changes or modifications may be made without departing from the invention as defined in the appended claims.

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 vending machine, a casing having a magazine for containing the vendible articles, a delivery cylinder pivoted below said magazine for ejecting the bottom article, a vertically slidable bar mounted at one side of said casing and provided at its lower end with an approximately horizontal slot, a pin carried by said cylinder and engaging said slot, whereby vertical movement of said bar causes rotation of said cylinder to discharge the bottom package, a pivoted lever provided with a cam-slot at one end, a lug on said bar for engaging in said cam-slot, whereby the operation of said lever first shifts said bar transversely of the casing and then moves the same vertically to rotate said cylinder, means for manually operating said lever from the outside of said casing, and a fixed stop for preventing operative movement of said bar otherwise than by said lever, said preliminary transverse shifting of the bar causing it to avoid said stop during the subsequent vertical movement of the bar.

2. In a vending machine, a casing having a magazine for containing the vendible articles, a delivery cylinder pivoted below said magazine for ejecting the bottom article, a vertically reciprocable bar connected with said cylinder for actuating the same into delivery position, a pivoted lever connected with said bar for actuating the same, said connection between the lever and the bar being such that the operation of the lever first shifts the bar transversely of the casing and then moves the same vertically to rotate said cylinder, means for manually operating said lever from the outside of the casing, and means for locking said bar against operative movement otherwise than by said lever, said preliminary transverse shifting of the bar rendering said locking means ineffective.

3. In a vending machine, an ejecting device, a vertically slidable bar for operating said device, a fixed stop for normally locking said bar against vertical movement, a pivoted lever operatively connected with said bar for first shifting said bar out of the way of said stop and then moving the bar vertically to operate said ejecting device, said stop positively preventing operation of said bar otherwise than by said lever, and means for manually operating said lever from the outside of the casing.

4. In a vending machine, a casing having a magazine for containing the vendible articles, a delivery cylinder pivoted below said magazine for ejecting the bottom article, a vertically reciprocable bar connected with

said cylinder for actuating the same into delivery position, a pivoted lever connected with said bar for actuating the same, means for manually operating said lever from the outside of the casing, and a pivoted locking dog having means at its upper end to lock said lever against movement when the supply of goods is exhausted, said dog having means at its lower end to be engaged by the goods for holding the upper end of the dog out of engagement with said lever.

5. In a vending machine, a casing having a magazine for containing the vendible articles, a delivery cylinder pivoted below said magazine for ejecting the bottom article, a vertically slidable bar provided at its lower end with a vertical guiding slot and with a horizontal operating slot, said guiding slot engaging the pivot shaft of said cylinder, whereby said bar is guided in its vertical movements, a pin on said cylinder for engaging in said horizontal slot to transmit the movement of said bar to said cylinder, a pivoted lever for operating said bar, and means for operating said lever from the outside of the casing.

6. In a vending machine, a flat casing having a magazine for containing the vendible articles, there being a shallow space or chamber between one wall of said magazine and the adjacent wall of the casing, a delivery member mounted below said magazine for ejecting the articles therefrom, a reciprocable slide for actuating said member, a hand-operable lever pivoted in said shallow chamber and movable transversely of the casing for actuating said slide, and a locking element mounted below said lever outside of said magazine for automatically locking said lever when the supply of goods is exhausted.

7. In a vending machine, a flat casing having a magazine for containing the vendible articles, there being a shallow space or chamber between one wall of said magazine and the adjacent wall of the casing, a delivery member mounted below said magazine for ejecting the articles therefrom, a reciprocable slide for actuating said member, a hand-operable lever pivoted in said shallow chamber and movable transversely of the casing for actuating said slide, and a normally inoperative locking element having a portion arranged to engage said lever and another portion arranged to engage the delivery member, said element being adapted to move automatically into locking engagement with said lever and said delivery member when the supply of goods is exhausted.

8. In a vending machine, a flat casing having a magazine for containing the vendible articles, there being a shallow space or chamber between one wall of said magazine and the adjacent wall of the casing, a delivery member mounted below said magazine for ejecting the articles therefrom, a reciprocable slide for actuating said member, a hand-operable lever pivoted in said shallow chamber and movable transversely of the casing for actuating said slide, a normally inoperative locking element pivoted in said chamber below said lever so as to swing in a plane at right angles to the plane of operation of said lever, and means whereby said element is automatically moved into locking engagement with said lever when the supply of goods is exhausted.

In witness whereof, I hereunto subscribe my name this 6th day of August, 1917.

ALBERT D. GROVER.