March 30, 1926.

1,578,640

M. BUNN ET AL

VENDING MACHINE

Filed June 9, 1924

3 Sheets-Sheet 1

Fig. 1.

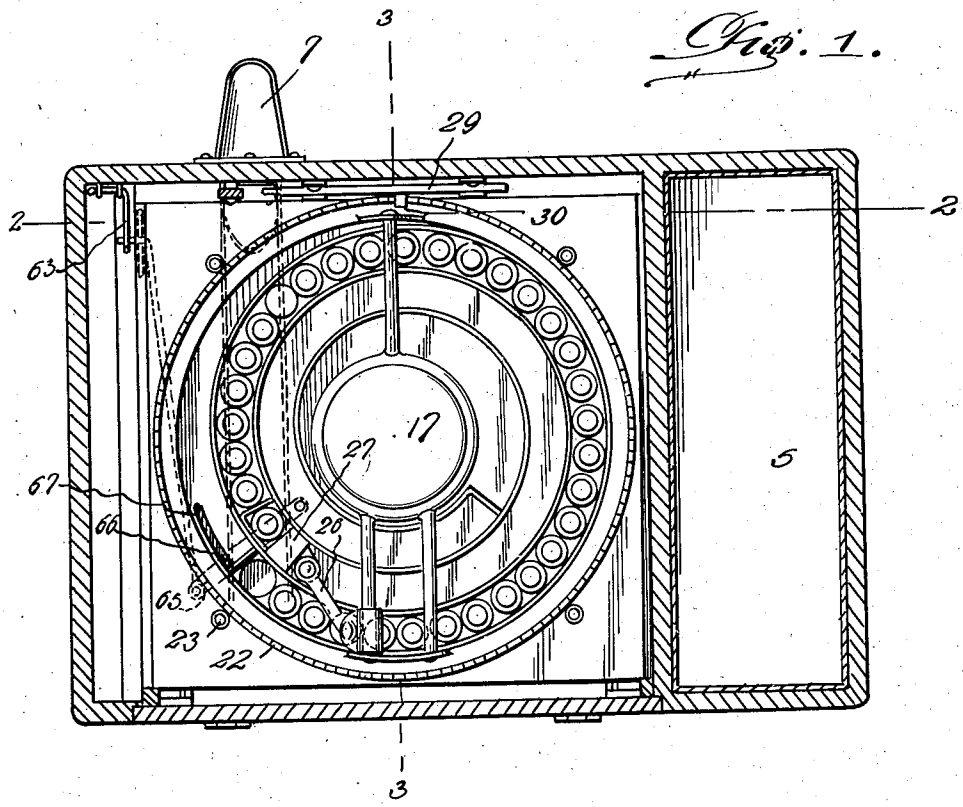


Fig. 8.

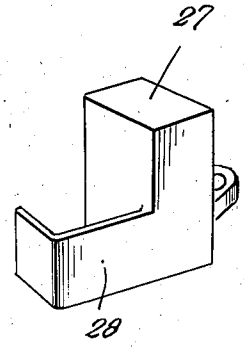
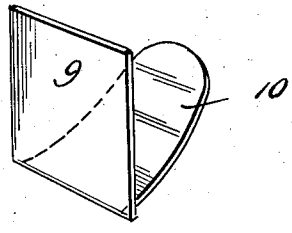


Fig. 9.



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VENDING MACHINE

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Fig. 2.

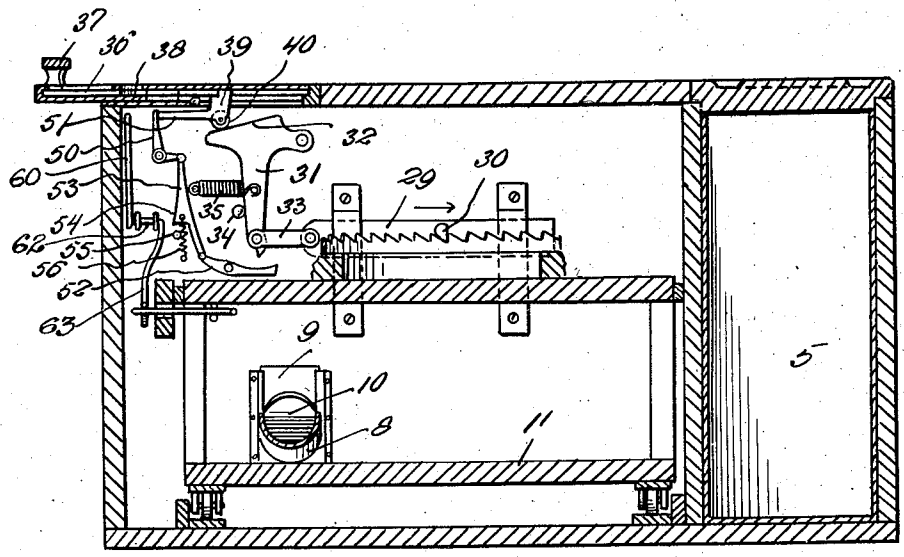


Fig. 4.

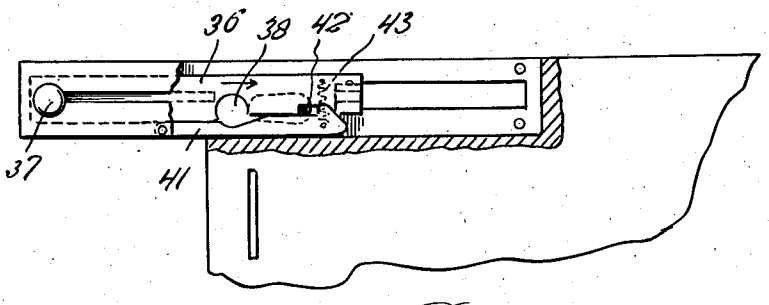
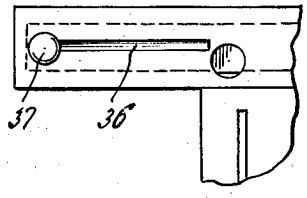


Fig. 5.



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VENDING MACHINE

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Fig. 3.

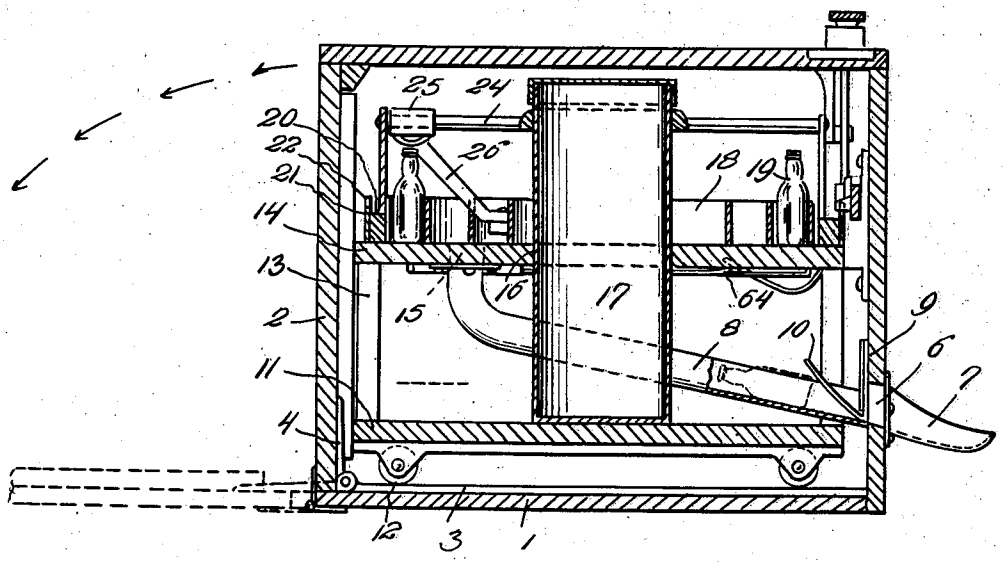


Fig. 7.

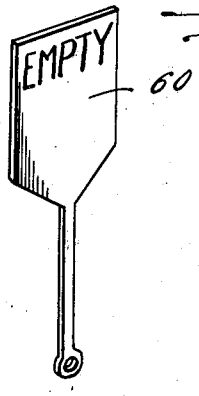
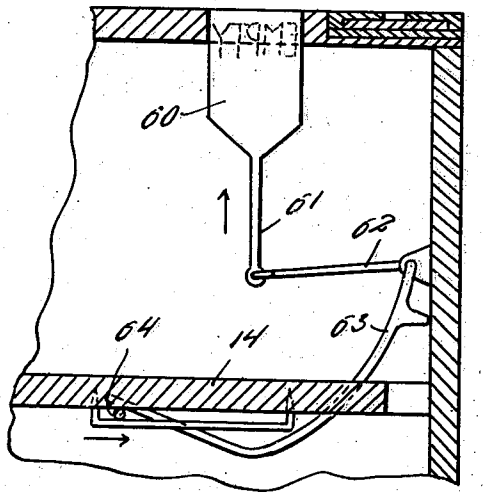


Fig. 6.



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Attorney

Patented Mar. 30, 1926. 1,578,640

UNITED STATES PATENT OFFICE.

MONROE BUNN, OF LENOX, AND BUBBER C. ROBERTSON, OF DYERSBURG, TENNESSEE.

VENDING MACHINE.

Application filed June 9, 1924. Serial No. 718,932.

To all whom it may concern:

Be it known that we, MONROE BUNN and BUBBER C. ROBERTSON, citizens of the United States, residing at Lenox and Dyersburg, respectively, in the county of Dyer and State of Tennessee, have invented certain new and useful Improvements in Vending Machines, of which the following is a specification.

This invention relates to coin controlled bottle vending machines, and its principal object is to provide a vending machine which may be operated to discharge a bottle of any selected beverage.

The invention also contemplates the provision of the bottle vending machine, wherein the bottles are arranged for discharge, one at a time, and selective means operated by the placing of a coin in a machine, to allow a bottle of the beverage to pass therefrom while the remaining bottles are held against discharge.

With the preceding and other objects that will become apparent from the disclosure, the invention consists in the novel combination of elements, arrangement of parts, constructions and operations which will be set forth, claimed and illustrated in the accompanying drawings.

In the drawings:

Figure 1 is a horizontal sectional view of the vending machine.

Figure 2 is a vertical sectional view of the vending machine, cut on the line 2—2 of Figure 1, and with parts broken away.

Figure 3 is a transverse sectional view of the vending machine, cut on the line 3—3 of Figure 1.

Figure 4 is a plan view of the coin receiving device used in the machine, with parts thereof shown in section and parts broken away.

Figure 5 is a fragmentary plan view of a corner portion of the vending machine.

Figure 6 is a fragmentary sectional view of the vending machine, showing means for operating the signal provided upon the machine.

Figure 7 is a perspective view of a signal panel used in the machine.

Figure 8 is a perspective view of a push block used in the vending machine.

Figure 9 is a perspective view of a slide used at the bottle outlet opening in the casing of the vending machine.

The vending machine comprises a casing 1 having one of its side walls 2 hinged to its bottom wall and arranged to swing from a vertical position, as shown in Figure 3 of the drawing, to the horizontal position indicated in dotted lines in the said figure. Tracks 3 are arranged upon the bottom wall of the casing 1 and hinge sections 4 are connected with the ends of the said track and are adapted to swing over the upper side of the wall 2, when the same is swung to a horizontal position and bridge the gap between the adjacent edges of the walls 2 and the bottom wall of the casing. The casing 1 is provided at one end with a compartment 5, adapted to receive ice or other refrigerating agent, whereby the contents of the casing are kept in a cooled condition. The casing 1 is provided at one of its side walls and in the vicinity of the bottom wall with an outlet opening 6, and a delivery trough 7, located at the outer edge of said opening. A chute 8 is located interiorly of the casing 1 and is disposed in an inclined position with its lower end communicating with the opening 6. A member 9 is slidably mounted upon the side wall of the casing 1 and normally lies disposed across the opening 6. The said slide member 9 is provided with an inclined tongue 10, which enters the lower portion of the chute 8, when the said chute is in register with the opening in the side wall of the casing.

The vending machine also includes a carriage 11 mounted upon wheels 12, which are adapted to travel upon the tracks 3 and over the said section 4, when the carriage is moved into the casing or removed therefrom. When the carriage is within the casing, the hinged wall 2 is swung to the vertical position, as shown in Figure 3, and the track

sections 4 are swung up, as shown in said figure, whereby the carriage and the track sections are completely enclosed within the casing. A superstructure 13 is mounted upon the carriage 11 and supports a platform 14. The upper end of the chute 8 is attached to the platform 14 and registers with an opening 15, provided in the said platform. The platform is provided at its center with an opening 16, which receives a can 17, whereby the said can may rest upon the carriage 11. The can 17 is adapted to retain ice or other refrigerating agent. A helical flange 18 is mounted upon the upper surface of the platform 14 and the convolutions of said flange are spaced from each other, the said space forming a helical passageway along which the bottles 19 are adapted to be moved, as hereinafter explained, toward the receiving end of the chute 8. A ring 20 is mounted for turning movement upon the upper surface of the platform 14 and surrounds the flange 18. The ring 20 carries at its outer edge a band 21, which is provided at its upper edge with upstanding teeth 22. Rollers 23 are journaled upon the upper surface of the platform 14 and bear against the exterior surface of the band 21 and serve to hold the said band and the ring in position about the flange. A spider 24 is carried by the ring 20 and receives the upper portion of the can 17, as best shown in Figure 3 of the drawing. A sleeve 25 is mounted for sliding movement upon one of the arms of the spider 24, and a bar 26 is pivotally connected at one end with the sleeve 25, and a push block 27 is pivotally connected with the other end of the bar 26. The said push block is arranged to move along the passageway between the convolutions of the flange 18, and the push block is provided with a hook flange 28 which partially surrounds the terminal bottle of the line of bottles arranged in the passageway between the convolutions of the flange. A bar 29 is mounted for sliding movement within the casing 1 and is provided at its side with a lug 30, which engages between the teeth 22 and the upper edge of the band 21. Means, hereinafter described, are provided for reciprocating the bar 29, whereby the band 21 and the ring 20 are turned and the spider 24 is rotated above the platform 14. As the said spider is turned, the push block 27 moves the line of bottles between the convolutions of the flange 18 and the bottle at the outer end of the line of bottles is moved over the receiving end of the chute 18 and falls through the said chute and turns and slides down the same toward the member 9. When the bottle strikes the tongue 10 of the member 9, the said member is moved in an upward direction by the weight of the bottle and the bottle passes under the member 9 and its lower portion enters the trough 7, from which the bottle may be removed. As soon as the bottle is removed from the trough, the member 9 falls by gravity, and closes the opening 6 and prevents heat from the exterior from entering the interior of the casing 1 and heating the contents thereof.

A lever 31 is pivoted within the casing 1 and is provided with an inclined upper edge 32. A link 33 connects the lower end portion of the lever 31 with one end of the bar 29. A pin 34 is mounted in the casing 1 and is located in the path of movement of the lower portion of the lever 31. A spring 35 is connected at one end with one of the walls of the casing 1 and is connected at its other end with the intermediate portion of the lever 31 and is under tension with a tendency to normally hold the edge of the lever 31 in contact with the pin 34, as best shown in Figure 2 of the drawing.

The coin receiving plate 36 is mounted, for sliding movement in the top wall of the casing 1, and is provided with an upstanding knob 37, by means of which the said plate may be moved longitudinally. The plate 36 is provided with an opening 38 adapted to receive a coin. The plate 36 is also provided with depending flanges 39 having a roller 40 journalled between them, the said roller being arranged to move along the inclined edge 32 of the lever 31, hereinbefore described.

A hook 41 is pivotally mounted upon the casing, at the side edge of the plate 36 and the end portion of the hook 41 is normally received within a slot 42 provided at the edge of the plate 36, and is held therein by a spring 43. The plate 36 may have limited sliding movement with relation to the hook, when there is no coin in the opening 38. When a coin is located in the opening 38 and the plate 36 is moved longitudinally, the edge of the coin comes in contact with the side edge of the hook 41 and the bill end of the hook 41 is moved out of the recess 42, whereby the plate 36 may be moved over the upper edge of the level 31. As the plate 36 moves in an inward direction over the lever 31 and when the opening 38 is completely within the casing 1, the coin drops from the opening 38 into the casing 1. At the same time, the roller 40 rides upon the upper inclined edge 32 of the lever 31, and the said lever, is swung upon its pivotal connection with the casing 1, whereby the link 31 is moved longitudinally and the bar 29 is moved along the side of the casing 1. As the bar 29 moves, the lugs 30 carried by the said bar, engage the teeth of the band and turns the band and ring whereby the push block, hereinbefore described, is moved along the helical passageway between the flange upon the platform and the end bottle is pushed over the receiving end of the chute as hereinbefore described.

Thus it will be seen that means are provided for actuating the bottle delivery mechanism by a coin receiving mechanism, in a manner to deliver or dispense the bottles singly to the trough 7.

The vending machine also includes a fraud preventing mechanism and designed to prevent the delivery of more than one bottle from the machine by the use of a single coin. The said fraud preventing mechanism includes a bell crank lever 50, which is pivoted within the casing 1 and having one end bearing against an arm 51 carried by the flanges 39 of the plate 36. A lever 52 is pivoted in the casing 1 and a link 53 is pivoted at one end with the bell crank lever 50 and at its other end with one of the ends of the lever 52. The link 53 is provided with a shoulder 54. A pin 55 is mounted within the casing 1 and is located in the path of movement of the shoulder 54. A spring 56 is connected at one end with the shoulder 54 and at its other end with the side of the casing 1 and is under tension with a tendency to normally hold the shoulder 54 toward the pin 55. Therefore, as the arm 51 moves with the plate 36 as hereinbefore described, the bell crank lever 50 rocks upon its pivotal connection with the side of the casing 1 and the link 53 is lowered, whereby the spring 36 lowers the shoulder 54 in contact with the pin 55. At the same time, the lever 52 is rocked upon the pivotal connection with the side of the casing 1 and the free end of the lever 52 is moved in an upward direction and into the path of movement of the lower end of the lever 31. Therefore, the lever 31 cannot return to its normal position and with its edge in contact with the pin 34 until the plate 36 is moved back to its normal position, whereby the lever 50 is swung to the position shown in Figure 2 of the drawings and the link 53 is moved so that the free end of the lever 52 is swung down, out of the path of movement of the lower end of the lever 31. Thus, the plate 36 cannot be worked back and forth by the use of a single coin and cause more than one bottle to be delivered from the machine.

A signal panel 60 is slidably mounted in the top of the casing 1, and is provided with a stem 61, which is pivotally connected with an arm 62. The said arm 62 is pivoted within the casing 1 and is provided with a curved end portion 63 which is disposed in the path of movement of a rod 64, carried under the platform 14. The rod 64 is also pivotally connected with a lever 65 pivoted onto the platform and the said lever is provided with an upstanding pin 66, disposed through a slot 67 provided in the platform. When the terminal bottle arrives over the receiving end of the chute 8, the flange 28 of the push block 27 encounters the pin 66, whereby the said pin is moved along the slot 67 and the lever 65 is swung, whereby the rod 64 is moved longitudinally, under the platform. As the said rod moves, its outer end passes under the curved portion 63 of the arm 62, whereby the said arm is swung and the panel 66 is projected above the upper surface of the body of the casing and serves as a signal to indicate that the last bottle has been delivered from the machine and that the machine is empty.

Having described the invention, what is claimed is:

1. In a vending machine, a platform, a chute depending therefrom, a helical flange mounted upon the platform and having its convolutions spaced from each other to provide a bottle passageway, a radially adjustable block mounted for movement along the passageway and having a hooked flange which surrounds one of the bottles.

2. In a vending machine, a platform, a delivery chute depending therefrom, a helical flange mounted upon the platform and having its convolutions spaced from each other to form a bottle passageway, a ring mounted for movement around the flange, means for moving the ring, a spider connected with the ring, a sleeve movably mounted upon the spider, an arm pivotally connected with the sleeve, and a push block pivotally connected with the arm and adapted to move along the passageway.

3. In a bottle vending machine of the class described, a platform, a delivery chute depending from said platform, a helical flange mounted upon the platform and having its convolutions spaced from each other to form a bottle passageway, a ring fastened to said platform and surrounding said flange, ratchet teeth carried by said ring, an operating member for reciprocation adjacent said teeth, a lug carried by said member and engageable with said teeth, and operating means for said member, a spider mounted upon and above said ring, a sleeve mounted upon the spider, an arm connected with and depending from the sleeve, and a push block pivotally connected with the lower end of the arm and adapted to move along in said passageway to push said bottle.

4. In a bottle vending machine of the class described, a casing, tracks in said casing, a carriage arranged in said casing, supporting walls for said carriage mounted upon said tracks, said carriage including a platform, a delivery chute depending from said platform, said casing having a discharge opening with which said chute is adapted to aline, a helical flange mounted upon the top of the platform and having its convolutions spaced from each other to form a bottle passageway, a band mounted upon said platform, a ring surrounding said

band, said ring being provided with ratchet teeth, a member mounted for reciprocation upon said casing adjacent one side of the ring, a lug carried by said member and cooperable with said ratchet teeth, and supports connected with and rising from said band, a spider carried by said support, a sleeve mounted for radial adjustment upon one of the arms of the spider, an arm pivotally connected to the sleeve and depending therefrom, and a push block pivotally connected to the lower end of the arm and adapted to move in said passageway.

In testimony whereof we affix our signatures.

MONROE BUNN.
BUBBER C. ROBERTSON.