

June 24, 1930.

C. A. FRICK ET AL
BOTTLE VENDING MACHINE

1,767,583

Filed July 13, 1927

2 Sheets-Sheet 1

Fig. 1.

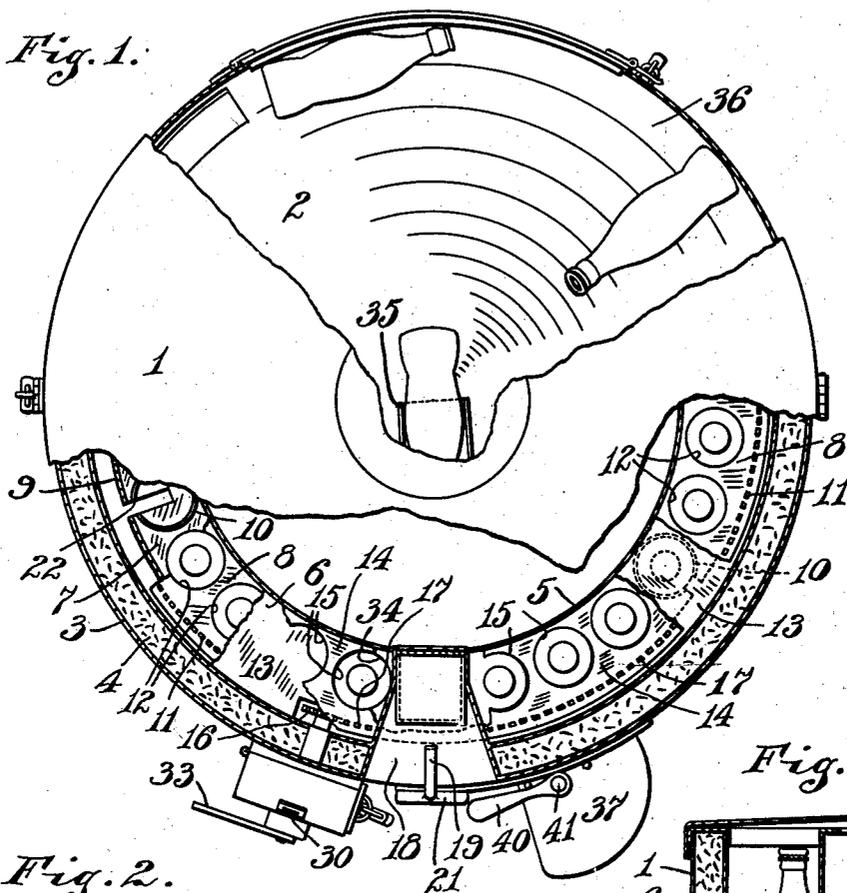


Fig. 2.

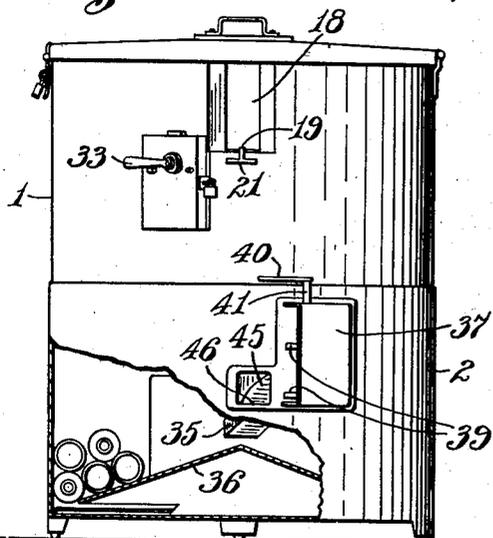
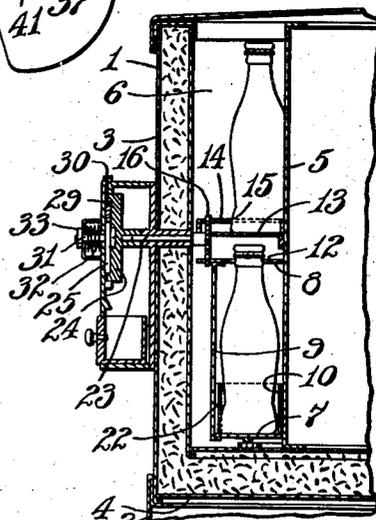


Fig. 3.



INVENTORS
Chester A. Frick and
Robert E. Baker,

BY

Hood & Hahn
ATTORNEYS

June 24, 1930.

C. A. FRICK ET AL
BOTTLE VENDING MACHINE

1,767,583

Filed July 13, 1927

2 Sheets-Sheet 2

Fig. 4.

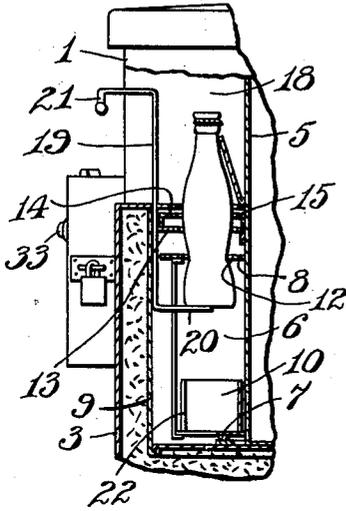


Fig. 5.

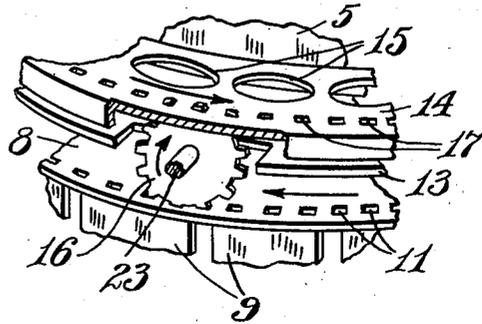


Fig. 7.

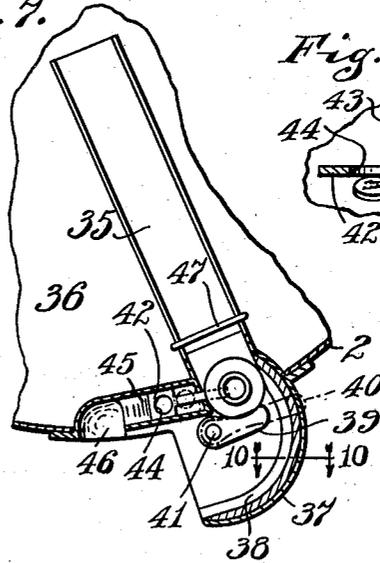


Fig. 8.

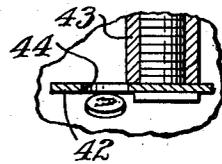


Fig. 6.

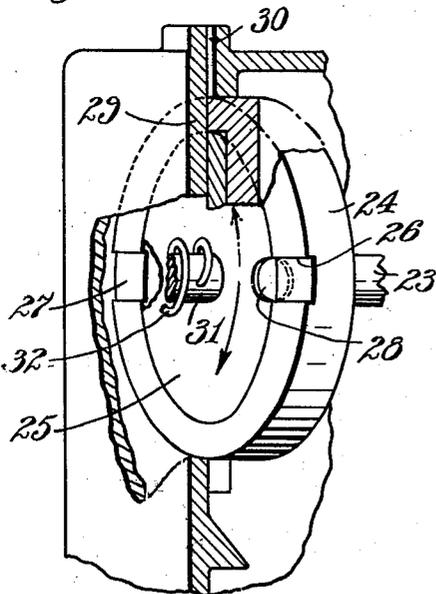


Fig. 9.

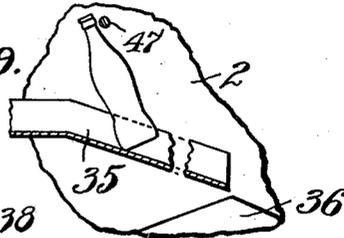
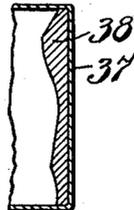


Fig. 10.



INVENTORS
Chester A. Frick and
Robert E. Baker,
BY
Hood & Hahn,
ATTORNEYS

UNITED STATES PATENT OFFICE

CHESTER A. FRICK AND ROBERT E. BAKER, OF MUNCIE, INDIANA, ASSIGNORS TO
GLASCOCK BROTHERS MFG. COMPANY, OF MUNCIE, INDIANA, A CORPORATION OF
INDIANA

BOTTLE-VENDING MACHINE

Application filed July 13, 1927. Serial No. 205,301.

Our invention relates to improvements in vending machines for bottled carbonated beverages, and has for one of its objects the provision of a vending machine which will provide a large storage capacity for bottled beverages and which, at the same time, may be readily and easily manipulated by the operator for the purpose of dispensing a bottle.

Another object of our invention is to provide a machine which will insure the return of an empty bottle, and to this end we provide means which, upon the return of an empty bottle, will deliver a check having a predetermined value or a coin commensurate in value with the bottle returned.

For the purpose of disclosing our invention we have disclosed one embodiment thereof in the accompanying drawing in which:

Fig. 1 is a plan view partly in section, of a dispenser embodying our invention;

Fig. 2 is a side elevation, partly in section, of the same;

Fig. 3 is a detail vertical sectional view showing the bottle moving mechanism;

Fig. 4 is a detail vertical sectional view showing the bottle dispensing mechanism;

Fig. 5 is a detail perspective showing the driving means for the bottle supports;

Fig. 6 is a detail perspective view of the coin lock;

Fig. 7 is a horizontal sectional view showing the coin dispensing means;

Fig. 8 is a detail sectional view of the coin dispenser;

Fig. 9 is a detail vertical sectional view of the "empty" receiver, and

Fig. 10 is a vertical sectional view of the "empty" guide.

In the embodiment illustrated we provide a container comprising the upper receptacle 1 and the lower receptacle 2. This container may, for convenience, be made cylindrical in shape and the upper receptacle is provided at its side and bottom walls 3 and 4 with suitable heat insulating means, such as a cork filler between a double walled construction. Arranged within the upper receptacle is a refrigerant container 5 which may be cylindrical in shape and is of smaller diameter than the receptacle proper and thereby pro-

vides an annular space 6 between the outer wall and the wall of the refrigerant container.

A bottle carrier comprising a pair of vertically spaced rings 7 and 8 connected by suitable vertical bracing members 9 is arranged in the bottom of the annular space 6. This carrier is provided with a series of cups 10 arranged on the ring 7 and adapted each to receive a bottle. The upper ring 8, at its outer periphery, is provided with a rack 11 and with a series of openings 12, one above each of the cups 10 and through which a bottle may be axially lifted for delivery purposes. The carrier thus formed rotates about the inner container 5 on the bottom of the outer container. Due to the connecting bracing members 9 which extend between the bottom ring 7 and the top ring 8, a comparatively rigid structure carrying the cups 10 is provided.

A stationary ring 13 is mounted in the annular space 6 above the bottle carrier and this ring provides a slide member for an upper tier of bottles, which bottles are moved through the space 6 by means of a propeller ring in the form of a flat ring 14 mounted to rotate above the platform 13 and provided with a series of openings 15 each sufficiently large to receive a bottle and permit the bottom to rest on the stationary ring 13. The carrier and the propeller 14 are rotated in opposite directions by means of a driving pinion 16 meshing with the rack 11 and a similar rack 17 in the propeller ring 14.

At one point in the side wall of the upper container there is provided a delivery opening 18 which is above the line of travel of the bottom tier of bottles, and for raising a bottle from the bottom tier to a position where it may be removed through the delivery opening 18 we provide an elevator 19 having at its lower end a horizontal platform or bottle engager 20 and provided at its upper end with an operating handle 21. Immediately beneath the cups 10 the ring 7 is slotted and each of the cups is slotted as at 22 to permit the vertical movement of the elevator in raising a bottle from the cups.

The shaft 23 carrying the driving pinion 100

16 is driven by the operator and can only be rotated a distance equal to the width of one bottle and that only upon the insertion in the coin box of a suitable coin. To this end the shaft 23 has fixedly secured thereon a disc 24 which on its front face is provided with a recess adapted to receive a disc 25. The disc 24 on its front face and at its periphery is provided with a pair of radial slots or grooves 26 and 27 and the disc 25 is provided at its periphery and on its face with a half round recess 28 adapted to coincide with either of the grooves 26 or 27. These discs operate against a face plate 29 in the coin box and are of just sufficient size to receive a coin of the proper denomination. When in normal position one of the grooves 26 or 27 is opposite the coin slot 30 and the groove 28 coincides therewith so that when a coin is dropped through the slot 30 it will drop into the groove 26 or 27 and thence into the groove 28, thereby locking the two discs 24 and 25 together. The disc 25 is mounted on a shaft 31 normally independently rotatable with respect to the shaft 23 and maintained in a position with the coin groove 28 upwardly by means of a coiled spring 32, one end of which is connected to the shaft 31 and the other to a stationary part of the casing.

The operation of the apparatus so far described is as follows.

The refrigerant container is suitably filled with a refrigerant and the annular space 6 with water or other cooling liquid approximately up to a level coinciding with the upper ring 8. Each of the cups 10, with the exception of the one immediately beneath the delivery opening 18, receives a bottle and each of the openings 15, with the exception of the one to the left of and adjacent the delivery opening 18, receives a bottle.

To dispense a bottle the operator drops a coin in the coin slot 30, thereby locking the two shafts 31 and 23 together. He then rotates the shaft 31 by the manipulation of the handle 33, the shaft being rotated in a clockwise direction and through an arc of 180 degrees, which brings the slot 26 or 27 and groove 28 to the bottom of the discs, which will permit the coin to drop out thereby disconnecting the discs and upon the release of the handle, the disc 25 will return to normal or receiving position. The rotation of the shaft 23 moves the ring 14 in a counter-clockwise direction, the direction indicated by the arrow in Fig. 5, and the carrier for the bottom tier of bottles in a clock-wise direction, the direction indicated by the arrow in Fig. 5. This moves a bottle on the carrier to a position immediately beneath the delivery opening 18 and by the manipulation of the elevator the bottle may be raised to a position to be grasped by the operator and removed. At the same time the bottle to the left of the delivery opening and in the upper

tier is moved to a position immediately above an opening 34 in the stationary ring 13 and thus permitted to drop through this opening into the empty cup of the carrier, which has moved to a position beneath the opening. The propeller ring having deposited a bottle in the lower tier, as it moves past the delivery opening 18 there is no bottle which can be removed from the other tier, and a bottle having been removed, by the operator, from the lower tier, there is no bottle to be removed therefrom until the machine is operated by the deposit of another coin.

In a bottle vending machine of this character it is desirable to provide some means for insuring the return of the empty bottle and in the present case we provide a means which, upon the return of an empty bottle, will deliver a check or coin of the value equivalent to the value of the bottle. Within the bottom section 2 of the casing there is provided a bottle chute 35, terminating at one end above the center of the cone shaped bottom 36 of the lower section 2. The opposite end of this chute terminates in an arcuate shield or hood 37, the cross section contour of the inner surface 38 of which may be of such a shape as to prevent any but a predetermined type of bottle to be inserted therein. This hood has operating therein rotating pushers 39 which, when the bottle is inserted in the hood behind the same and the pusher operated by a top handle 40 on the pusher shaft 41, will propel the bottle through the hood and into the chute 35. As the bottle moves into the chute its side engages a plunger 42, projecting into the path of the bottle, and causes said plunger to operate to propel a coin. To this end there is provided a cylindrical container 43 in which the coins or checks are stacked and beneath which the plunger 42 operates, the plunger being provided with an opening 44 coinciding with the interior diameter of the stack casing 43. As the coin is projected it drops into a coin chute 45 terminating in a cup 46 accessible to the operator. It is thus apparent that as a bottle is returned through the chute 35 a coin or check will be automatically delivered through the coin chute 45. As the bottle moves into the chute 35 the neck thereof will strike a cross bar 47 which will cause it to tilt on its side and slide down the chute 35 into the casing. It is also apparent that, due to the curvature of the hood 37 unwarranted tempering with the coin return delivery mechanism is prevented.

We claim as our invention:

1. In a bottle cooling refrigerator, the combination with a horizontally rotatable platform arranged to carry a series of bottles in a row, of a second horizontally rotatable platform vertically disposed with respect to the first platform and rotatable in an opposite direction therefrom and adapted to carry a

series of bottles in a row, means for depositing a bottle from said second platform onto the first platform and means for simultaneously rotating said platforms.

5 2. In a bottle cooling refrigerator, the combination with a pair of oppositely rotatable horizontal platforms arranged one above the other and each supporting a series of bottles in a circular row, means operated by the
10 rotation of one of said platforms for depositing a bottle from one of said platforms at the end of a row of bottles on the other platform and means for simultaneously rotating said platforms.

15 3. In a bottle cooling refrigerator, the combination with a means for supporting a plurality of bottles disposed in circular rows, one row above the other, of means for simultaneously progressively moving the bottles
20 of each row in opposite directions and means operated by the movement of the bottles in one row for depositing the bottles thereof at the end of the other row.

25 4. In a bottle cooling and dispensing refrigerator, the combination with a casing having a refrigerant containing compartment arranged therein, of a plurality of platforms arranged within said casing around said compartment and each adapted to support
30 a series of bottles in a circular row, means for progressively moving each of the rows of bottles in opposite directions on said platforms to move a bottle of one row to delivery position and deposit a bottle of the
35 second row at the end of said first mentioned row.

In witness whereof, we have hereunto set our hands at Muncie, Indiana, this 8th day of July, A. D. one thousand nine hundred and
40 twenty-seven.

CHESTER A. FRICK.
ROBERT E. BAKER.

45

50

55

60

65