

Oct. 28, 1941.

J. ROSAN

2,260,643

VENDING MACHINE

Filed April 12, 1937

4 Sheets-Sheet 2

FIG. 6.

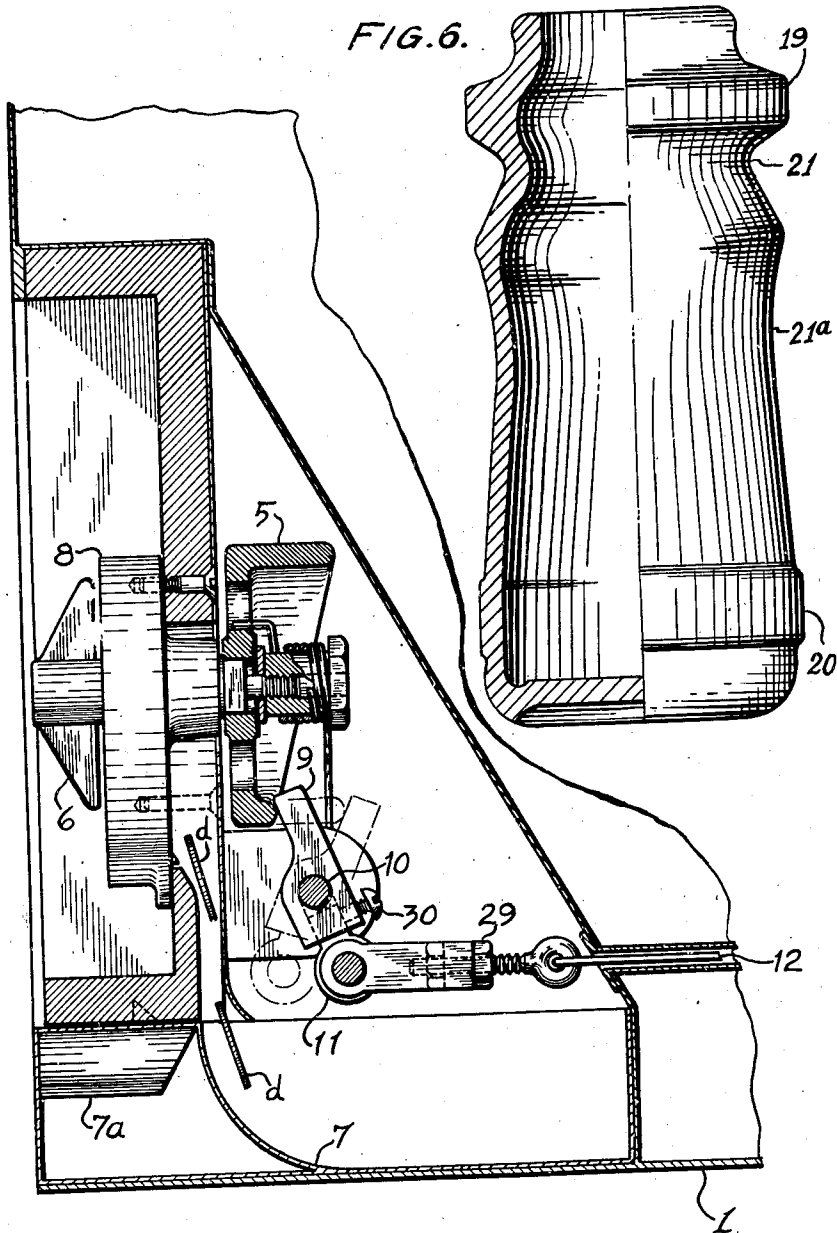


FIG. 2

WITNESS

Mark Morton

INVENTOR
Joseph Rosan
BY
Augustus B. Stoughton
ATTORNEY

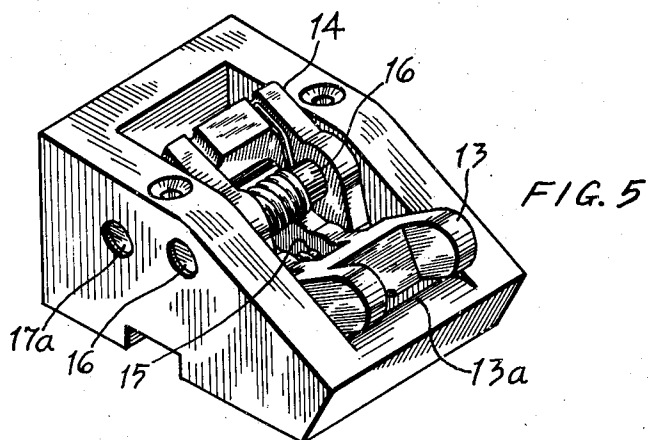
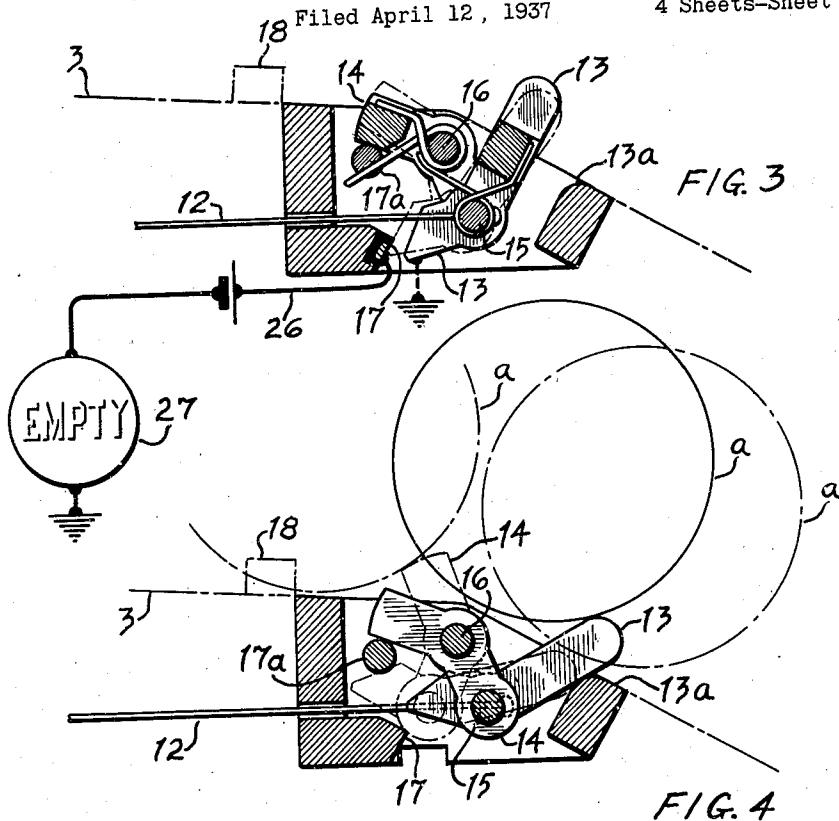
Oct. 28, 1941.

J. ROSAN
VENDING MACHINE

2,260,643

Filed April 12, 1937

4 Sheets-Sheet 3



WITNESS
Mark Morton

INVENTOR
Joseph Rosan
BY
Augustus B. Stoughton
ATTORNEY

Oct. 28, 1941.

J. ROSAN

2,260,643

VENDING MACHINE

Filed April 12, 1937

4 Sheets-Sheet 4

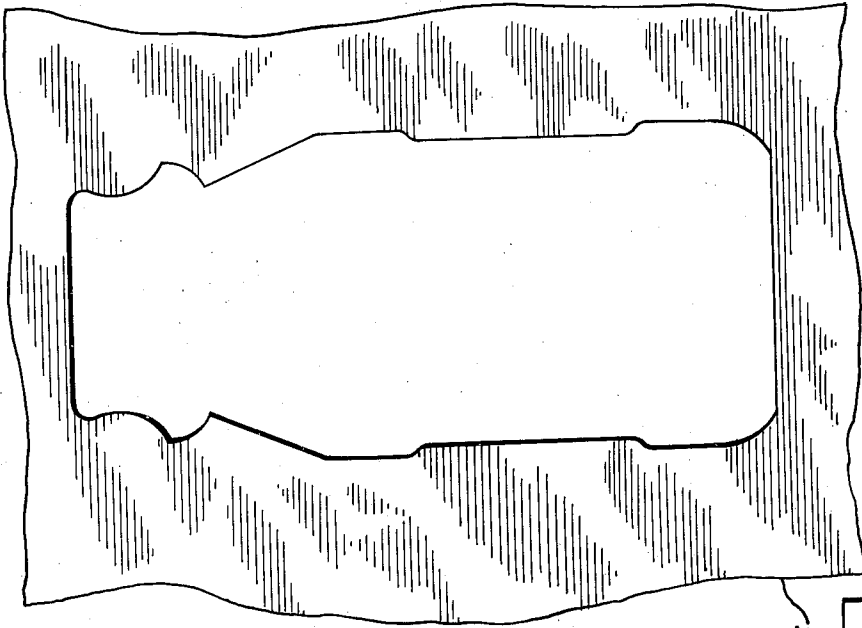


FIG. 8

FIG. 7

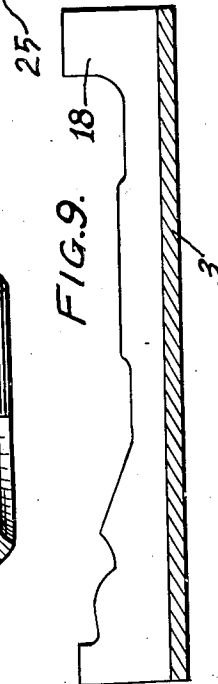
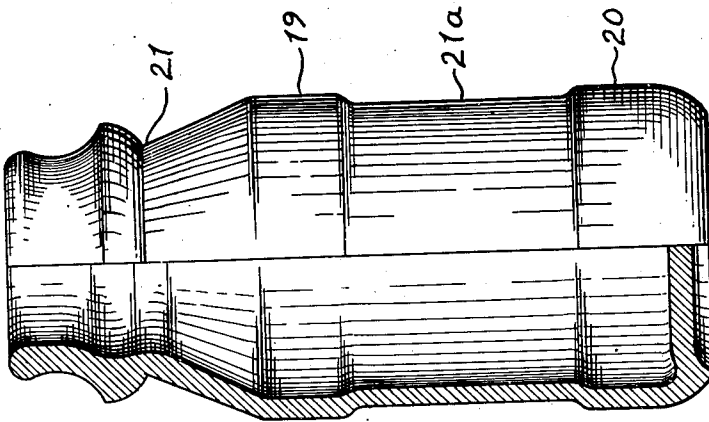


FIG. 9

WITNESS
Mark Morton

INVENTOR
Joseph Rosan
Augustus B. Stoughton
ATTORNEY

UNITED STATES PATENT OFFICE

2,260,643

VENDING MACHINE

Joseph Rosan, Upper Darby, Pa.

Application April 12, 1937, Serial No. 136,319

4 Claims. (Cl. 312—36)

The present invention is an improvement upon the invention constituting the subject matter of my application Serial No. 121,165, filed January 18, 1937, for improvements in Vending machines.

The principal objects of the present invention are to make parts of the mechanism described in said application more compact in order to increase the available space for the commodities which are to be vended; to guard against a refund for empty bottles which were not initially delivered by the machine, and to notify would-be customers that the machine is empty and to prevent the delivery of empty bottles to customers.

To these and other ends hereinafter stated or appearing the invention comprises the improvements to be presently described and finally claimed.

In the accompanying drawings,

Figure 1 is an elevation principally in central section of the chest in which the full bottles or containers are supplied to the machine and which delivers the full bottles and receives the empty bottles and which is transferred from a central station to the vending machine cabinet.

Figure 2 is an elevational view partly in section drawn to an enlarged scale and showing coin receiving and bottle release actuating mechanisms.

Figure 3 is a view in cross-section centrally of Fig. 5 drawn to an enlarged scale and illustrating bottle release mechanism, illustrating in full and dotted lines two positions.

Figure 4 is a view in cross-section just inside the lower or left hand edge of the casing and outside the nearest edge of the levers 13 and 14 as seen in Fig. 5 and similar to Figure 3 showing the parts in different positions.

Figure 5 is a perspective view of the same mechanism.

Figures 6 and 7 are views partly in elevation and partly in section of bottles upon which the operation of the vending mechanism is dependent and with which the vending mechanisms contribute to produce the single result attained.

Figure 8 is a top or plan view of a plate which may be arranged at the bottle entrance of the drawer that receives the empty bottles and it is cut out in the silhouette of the latter.

Figure 9 is a fragmentary view in vertical cross-section on line 9—9 of Fig. 1 showing the stop.

Referring to the drawings, and more particularly to Figure 1, 1 indicates a chest heat in-

5
10
15
20
25
30
35
40
45
50
55

ulated as at 2. This chest is detachable from a vending cabinet. The chest, as will hereinafter appear, is charged with full bottles, for example of milk, at a central station and is transferred to the vending cabinet which may be located away from the central station. It receives the coins paid for the full bottles and it receives and pays for empty bottles so that all of the money is handled at a central station. 3 indicates runners disposed so as to provide a zig-zag path from the top to the bottom of the container. The full bottles *a* and the empty bottles *b* roll along this path and a dummy or a reversed bottle *c* is interposed between the full and the empty bottles. The full bottles are delivered through the open end of the zig-zag path which is normally closed by the gate 4. The gate 4 is spring pressed to closed position and it is provided with insulation and with a sealing gasket 4^a. After passing through the opening at the gate the bottles are delivered to the customer. The spring returned crown cam 5, Fig. 2, is actuated by the customer through the intervention of the handle 6 and by means of a coin *d* inserted in a proper slot in the coin mechanism 8 which deposits coins *d* into the receptacle 7 in a corner of the chest 1. The receptacle 7 is in the form of a drawer and is locked by means of a lock 7^a. The particular coin mechanism 8 forms no part of the present invention. When the cam 5 is turned in the required manner it operates upon one end of a lever 9 pivoted at 10 and to the other end 11 of the lever is fastened a cord or cable 12 through the intervention of a turn buckle 29. The end 11 of the lever is made in two parts which can be adjusted in respect to the center 10 by means of a set screw 30. Near the gate 4 the path 3 for the bottles follows a sharp decline. There are (Figures 3, 4 and 5) two levers 13 and 14 each having two arms and each retracted by a spring. The two levers are pivoted together at 15 and the lever 14 is pivoted to a fixed pivot 16. The cable or wire 12 is connected to the pivot 15. Lever 13 is H-shaped having pivot 15 at one end; while lever 14 is of U-shape having the stationary pivot 16 intermediate its ends and the floating or moving pivot 15 at one end. A spring is coiled around stationary pivot 16 and has one end pressing against stationary stop 17^a and its other end pressing against the cross-bar of lever 14 so as to stress lever 14 in counterclockwise direction. Another spring is coiled around pivot 15 and has one end pressing against stationary pivot 16 and the other end pressing

against the cross-bar of lever 13 so as to stress lever 13 towards movement in a counter-clockwise direction. Lever 13 normally projects into the path of the bottles which have passed stop 18. The lever 13, when there are no bottles in the chest in contact with lever 13, serves as a stop for preventing movement or actuation of the coin receiving mechanism. It does this by abutting upon the abutment 17 which is beneath path 3 and within range of the movement of the inner end of lever 13, as shown in Figure 3. However, when bottles are present they push the lever 13 into the position shown in Figure 4 so that it rests against the support 13^a and is free to slide along the support 13^a until its other end is against the stop 17^a as indicated in dotted lines. The levers 13 and 14 are thus free to move from their positions shown in solid lines in Fig. 4 to those shown in dotted lines in the same figure, the lever 13 thus releasing a bottle for delivery while the lever 14 retains in the chest the bottle immediately following. The guard 18, Figs. 1, 3 and 4 cooperates with the form of the bottles to let them pass over to the bottle release mechanism shown in Figs. 3, 4 and 5 and also cooperates with the form of the dummy or reversed bottle c to prevent it from passing over to said mechanism. Stop 18 may be either a baffle plate such as 25 as shown in Fig. 8, a half of such a baffle plate with that silhouette which corresponds to the silhouette of the bottle placed upward as shown in Fig. 9, or it may be simply a pin located off the longitudinal center of the bottles so as to co-operate with the depression 21 in the bottle of Fig. 6 or Fig. 7 in one position thereof and allow the bottle to pass and to stop the bottle in the reversed position thereof. The form of the bottle and the mechanisms described herein are dependent upon each other and mutually contribute to produce the single result of selling only full bottles and of paying only for the return of bottles previously sold by the machine, or otherwise stated, the single result of automatically dispensing milk or other beverages from a cabinet located, for example, in a school or other public place. That the bottles may roll along the inclined path requires that they shall have cylindrical form at or near each end. This is provided at 19 and 20 (Figs. 6 and 7). In order that the bottles may pass over the guard 18 (Figs. 1, 3 and 4) and in order that the dummy or reversed bottle c may not do so, the bottles are reduced at certain off center portions 21 and 21^a, (Figs. 6 and 7) the guard 18 being so located and so shaped as to cooperate with these reduced portions to let said bottles a pass. Hence the cylindrical portions of a dummy bottle c, or the reduced portions of a bottle reversed do not correspond with the location or shape of the guard 18 and thus may not pass over said guard. Referring to Fig. 1, the empty bottles are returned to the drawer 22 which is provided with a sealing gasket 22^a and from the drawer they roll along the zig-zag path. In doing so they actuate a coin refund lever 23 which actuates a coin refund mechanism 24, the details of which need not be described because they are no part of the present invention. The result of the machine would not be accomplished if bottles of ordinary shape could be put into the drawer 22 and a refund obtained for them. Therefore, the plate 25, Fig. 8, at the bottle entrance of the drawer, is cut out in the silhouette of the bottle illustrated in Figs. 6 or 7. Consequently only

bottles of that silhouette can be put into the drawer and used in obtaining a refund. Baffle plate 25 is a modification which may be omitted if desired. Referring to Figure 3 the lever 13 is in the position shown when the dummy bottle is held by the guard 18, at the exit of the zig-zag path. The operation of lever 13 and stop 17 is as follows. As shown in Fig. 3, when no bottle is present, the springs cause lever 13 to stand upright and thus cause the lower end of lever 13 to engage stop 17 when lever 13 is pulled to the left by cable 12. As seen in Fig. 4, however, if a bottle is present, the weight of the bottle presses lever 13 around a floating pivot 15, towards stop 17^a so that, when cable 12 is pulled to the left, the lower end of lever 13 clears stop 13 and continues until it abuts stop 17^a. The abutting end of lever 13 is included in a circuit 28 which operates, when the circuit is closed by the abutting end of lever 13 against the abutment 17, to actuate the signal 27 as by lighting a lamp which displays the "empty" sign.

The entire chest or container can be opened by means of a cover 28, Fig. 1, which is provided with insulation and with a sealing gasket 28^a. While the invention has been described in connection with milk bottles its application is not limited to milk.

The operation of the vending machine is as follows: At a central station, such as a milk-bottling plant, the cover 28 of the chest is removed and the empty bottles removed from the chest by taking out the drawer 22, detaching the cover 28 and inverting the chest or by actuating the coin-controlled bottle-dispensing mechanism by means of a slug or the like. The empty bottles and the chest are then cleaned and sterilized. The coins received in payment for the full bottles are removed from the receptacles 7. The cleaned, sterilized chest is then ready for re-use. The drawer 22 having been removed, the entrance of full bottles is provided for without passing through the baffle plate 25, or the full bottles may be placed in chest 1 through the opening left by the removal of cover 28 and behind the baffle plate 25. A supply of coins is placed in the coin-refund mechanism. If desired, a dummy or reversed bottle c may be placed at the end of the full bottles a or this may be omitted. Ice or other cooling medium may be placed on the full bottles a if these are to be sold cold. The cover 28 is then secured in position and the chest 1 is ready to be transported to the place at which the sales are to be made. Purchasers then buy full bottles by operating the coin-controlled bottle-dispensing mechanism 8. The sale of each full bottle a leaves a space to which an empty bottle b may be returned. Thus the full capacity of the chest 1 may be utilized for full or empty bottles at all times. The empty bottles can only be returned through baffle plate 25 in such a position that they will not pass the stop 18. When all the full bottles a have been sold, a reversed or dummy bottle c, or the first of the empty bottles b to be returned to the machine, strikes the stop 18, over which it cannot pass. This prevents further actuation of the bottle-delivery mechanism 8 and thus prevents respective customers from depositing their coins and not receiving a full bottle.

It will be obvious to those skilled in the art that modifications may be made in details of construction and arrangement and matters of mere form without departing from the spirit of

the invention which is not limited in respect to such matters, or otherwise than the prior art and the appended claims may require.

I claim:

1. A unit structure for insertion in a vending cabinet comprising a casing having a zig-zag magazine for filled bottles and empty bottles, said magazine having an entrance near the top of the casing for the insertion of empty bottles and an exit near the bottom of the casing for the delivery of filled bottles, a baffle plate at the entrance of the magazine and having a cut-out for permitting the insertion of a bottle of predetermined contour, the cut-out corresponding to the silhouette of the predetermined bottle, a delivery mechanism at the exit of the magazine and having means engaged by a filled bottle for controlling the operation thereof, said magazine adapted to contain a supply of filled bottles of the predetermined contour when the unit structure is inserted into the vending cabinet, said filled bottles having end portions of the same diameter for rollingly engaging the magazine and contracted or reduced portions, said magazine also being adapted to contain a reversed bottle of the same contour engaging the topmost filled bottle but arranged in a reverse position with respect to the filled bottle, and a stop in the magazine adjacent the delivery mechanism so constructed that the filled bottles will pass the stop but the reversed bottle will be detained whereby, when the last filled bottle is dispensed, the means previously engaged by the filled bottle will be operated to prevent further actuation of the delivery means.

2. In a dispensing and collecting machine, the combination of, a chest having an exit for dispensing bottles therefrom and adapted to contain bottles to be dispensed and having an inlet for bottles thereto and adapted to collect used bottles, each of said bottles being non-symmetrical with respect to an axis, a stop in said chest permitting said bottles to pass to said exit in one position of said bottles and holding said bottles from passing to said exit in the reverse position of said bottles, and a baffle plate co-

operating with said inlet whereby said bottles can only be placed in said chest in such a position as not to pass said stop.

3. In a dispensing and collecting machine, the combination of, a heat-insulated chest adapted for attachment to and detachment from a vending cabinet and to contain bottles to be dispensed and to receive bottles to be collected and having an exit for dispensing bottles and an inlet for collecting bottles, a path from said inlet to said exit in said chest holding said bottles in alignment in their passage through the chest, said bottles having a silhouette which is non-symmetrical lengthwise of their longitudinal axes, a stop in said chest adjacent said exit and having an outline corresponding to the silhouette of said bottles whereby said bottles can pass said stop in but one position of said bottles, and a baffle plate in said chest adjacent said inlet and having an outline corresponding to the silhouette of said bottles whereby said bottles can only be returned to said chest in a position in which they will not pass said stop.

4. A unit structure adapted for insertion into a vending cabinet and detachment therefrom and comprising, a chest having its full capacity available at all times to contain bottles to be dispensed and to receive empty soiled bottles to be collected, the chest having an inlet for empty bottles and having an outlet for dispensing bottles, a path from said inlet to said outlet in said chest for holding said bottles in transverse alignment in their passage through the chest, said bottles having a silhouette which is non-symmetrical lengthwise of their longitudinal axes, a manually operable bottle-dispensing mechanism located in said path between said inlet and said outlet and close to said outlet, and a fixed stop in said chest and in said path between said inlet and said dispensing mechanism and close to said dispensing mechanism and co-operating with the silhouette of said bottles whereby said bottles can pass said stop in but one position of said bottles.

JOSEPH ROSAN.