

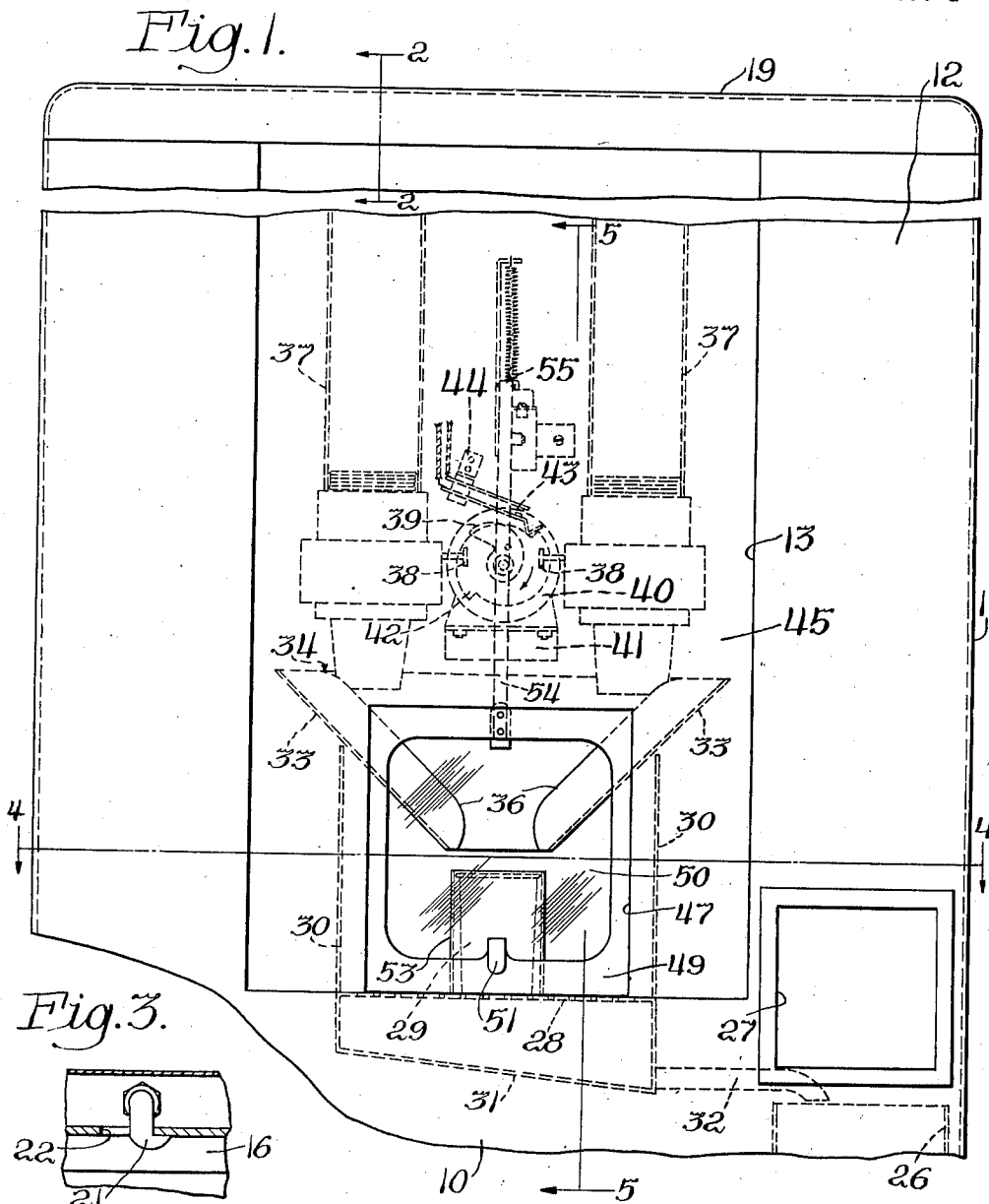
Dec. 31, 1940.

R. A. NICHOLSON
DRINK VENDER STRUCTURE

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2 Sheets-Sheet 1



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Fig. 4.

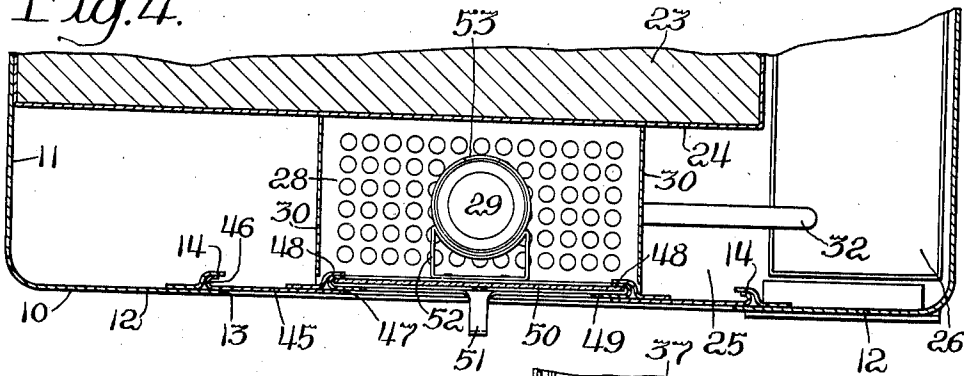


Fig. 5.

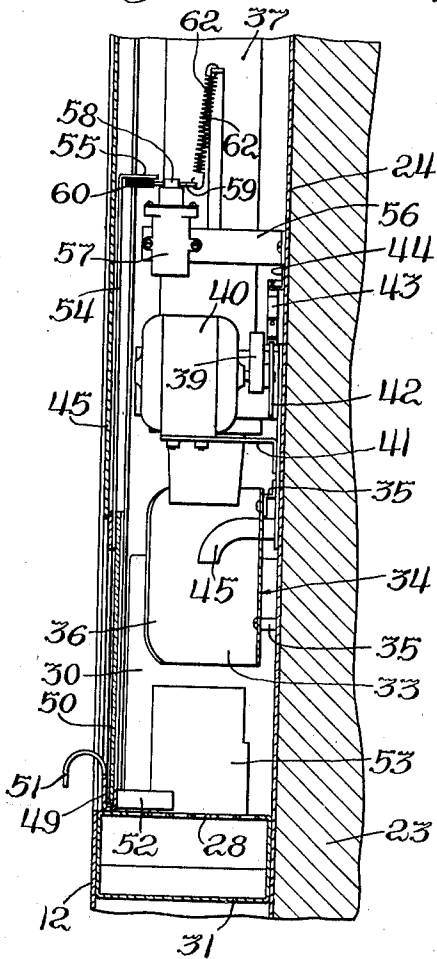
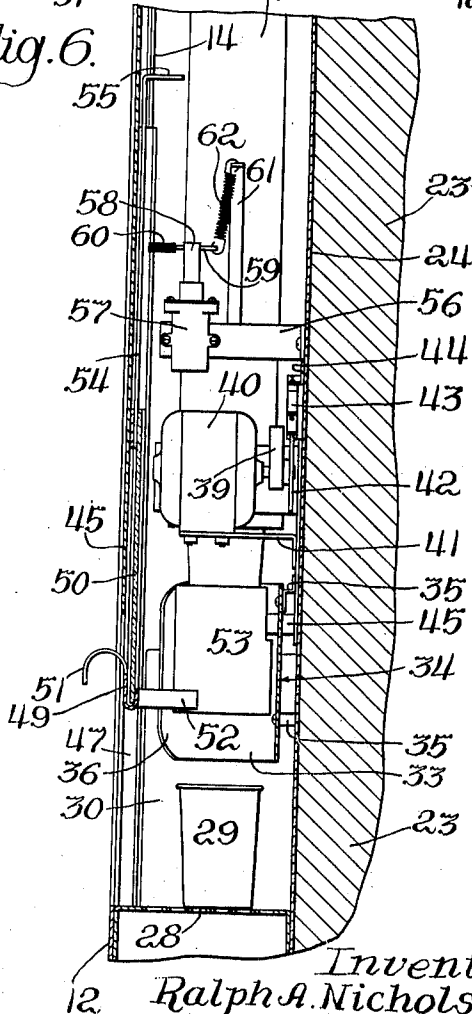


Fig. 6.



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DRINK VENDER STRUCTURE

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4 Claims. (Cl. 312—189)

This invention relates to a construction useful in drink vending machines. Such machines are usually of the coin operated type and it becomes necessary as a result to provide an improved cabinet construction designed to make interior parts easy to service as well as to make them damage and pilfer proof to thwart unscrupulous persons.

These machines comprise a cabinet containing one or more magazines of paper cups which cups are released one at a time for each operation of the machine to dispense a cup to a drink receiving position. In this latter position the drink filled cup should be made readily accessible to the operator of the machine so it is desirable to provide an improved display type door closure for such position, which door is readily opened to gain access to the filled cup. Also it is desirable to provide means to prevent a cup while being filled from accidentally being tipped. It is also desirable to provide means to make the cup magazines readily accessible for reloading and generally to improve the cabinet and door construction of machines of this type.

The main object of the invention is to provide an improved drink vending machine.

Another object is to provide an improved cabinet construction for such a machine.

Another important object is to provide an improved display door construction for gaining access to a drink filled cup held in a vended position.

Still another object is to provide such a door including means to prevent accidental tipping of a drink filled cup in a vended position, such means preferably being associated with the door.

It is also an object to provide such a drink access door in sliding form and to provide an improved shock absorbing means therefor when the same is dropped to closed position.

Another object is to carry such display and drink access door on a front panel for the machine, which front panel itself is in turn slidably carried for removal when the top or a top portion of the cabinet is removed to make reloading of the cup magazines easy.

Still another object is to provide a lock means between the removable top portion and the front slidable panel of the machine cabinet.

Other important objects no doubt will become apparent to those skilled in this art as the disclosure is more fully made.

Briefly, such desirable objects may be achieved by the illustrative, but practicable, example of the invention herein shown, wherein there is

generally provided a housing or cabinet containing the drink vending machine mechanism. This cabinet is closed by a front panel which is slidably removable when a separable top or a top portion for the cabinet is first removed. With the front and top portion removed ready access is had to the interior for any desired purpose, such as servicing interior parts and reloading the cup magazines. This front panel also slidably carries a glass display door which normally is in a down, closed position. Behind this latter door is a support onto which is set a cup to be filled with the vended drink. When the cup is being filled it is supported against accidental tipping by means carried by said display door. This display door is raisable by the operator to expose and make accessible the vended drink. When the said door is released it slides by gravity to its closed position and shock absorbing means is associated therewith to prevent too much noise or jarring of the parts. So much will suffice in presenting a general view of the improved construction.

In the accompanying sheets of drawings:

Figure 1 is a general front elevational view of the drink vending machine with certain interior parts indicated in dotted lines;

Figure 2 is a reduced scale, vertical cross sectional view through the top of the cabinet, the view being a side view;

Figure 3 is a detail view, in section, to show a lock means, viewed from the line 3—3 of Figure 2, looking in the direction of the arrows;

Figure 4 is a horizontal cross sectional view through the vender taken along the line 4—4 of Figure 1, looking in the indicated direction;

Figure 5 is a vertical, side, cross sectional view taken along the line 5—5 of Figure 1, looking in the indicated direction, and showing the display door in its normal or lowered position; and,

Figure 6 is the same sectional view, but showing the display door in its raised position.

The drink vender construction comprises a cabinet 10 having opposite side walls 11, which are turned in at the front to form front wall portions 12 spaced apart as shown to provide a large front opening 13, the sides of which are delineated by groove forming, vertical guide members 14. The cabinet also includes a back wall 15. The back wall and sides near the top of the cabinet carry a horizontal angle bar frame structure 16. This bar structure 16 at each side near the front carries cleats 17 only one being shown, and the inturned front edge 18 of a top 19 is slid under the cleats removably to lock the

said top to the bar 16. The back edge of said top 19 carries a cylinder lock 20 operable by a suitable key, not shown, to turn a hook latch element 21 to cause it normally to be locked under a flange of a portion of the bar 16 as seen in Figures 2 and 3. The bar 16 has an opening 22 formed therein for that purpose. As an alternative to removing the entire top, just a portion thereof as wide as a front panel portion, later to be described, may be made removable.

Inside the cabinet is a refrigerator part 23 having a front wall 24. This structure forms an L-shaped compartment 25 one leg of which carries a waste receiver 26 standing on the floor of the cabinet adjacent one side and behind an opening 27 formed in the front 12 to make the receiver 26 available for use.

The front part of the compartment 25 at its lower portion carries a grated horizontal support 28 onto which may be vended a paper cup 29 in a standing position, as will later appear. This grate 28 is disposed between parallel, opposite side wall members 30 which extend down as shown in Figure 1 and are cross connected below the grate by an inclined solid bottom 31 to direct overflow liquid through a spout 32 and thence to the receiver 26.

The side portions 30 at their upper edges support opposed converging trough portions 33 having a back portion 34 connected by suitable brackets 35 to the partition 24. The front edges of the trough portions 33 are turned up as shown at 36 to act properly to guide a vended cup to position on the grate.

Above the high end of each trough portion 33 is suitably supported respective, vertically disposed, cup containing magazines 37 the upper ends of which are beneath the top 19 so that when the latter has been removed, these magazines are readily made accessible for reloading with paper cups 29. The lower end of each magazine carries any suitable form of cup discharge member such as the plungers 38 shown operable alternately by a rotating cam 39 turned by an electric motor 40 mounted on a suitable shaft 41 carried by the partition 24. The timing of the motor operation may in any suitable way be governed by a notched cam wheel 42 to open and close a switch 43 carried by a bracket 44 from the partition 24 in the manner shown. This motor operated cup dispensing mechanism is not a part of the present invention and is therefore only generally described. However, it will be clear that cups 29, when the machine is operated, will be released alternately from the magazines 37. A released cup drops by gravity onto a funnel chute or trough part 33 and is guided thereby to drop by gravity to a central, upright position of rest on the grate support 28 in a position directly below a pouring spout 45 from which the drink is vended.

Carried slidably in the vertical groove guide structure 14 in the opposed front wall portion 12 is a front removable closure panel 45 the opposite side edges of which are turned back to form a sturdy end bead 46 to fit closely the guide grooves 14 in an obvious manner. The bottom edge of this front panel 45 rests on the grate 28 and extends upwardly to the angle iron bar structure 16. When the top 19 has been removed, this panel 45 can be slid upwardly along the groove guides 14 and out of the cabinet, thereby opening up practically the entire front of the machine for inspection and servicing of interior parts in the space 25 as will now be

readily understood. As has been stated, when it is not desired to remove the entire top 19 a portion thereof about as wide as said panel 45 may be removed, as an alternative construction.

The front panel 45 has a relatively large rectangular opening 47 of a size to expose the lower end of the chute structure 36 and the grate support 28 as seen in Figure 1. As shown best in Figure 4, opposite vertical edges of this opening 47 are formed with groove guides 48 and slidably carried in said guides is a door 49, a portion of which includes a glass display window 50. The bottom of this display door rests on the grate 28 as shown in Figure 5. The door at its lower edge carries a handle 51 accessible from the exterior of the cabinet.

Welded or otherwise secured to the back side of the door 49 at its lower edge is a bracket 52 to which in turn is securely fastened a cylinder 53 the axis of which is normal to the grate 28 which the same overlies when the door 49 is in its lowered position (see Figure 5). A cup 29 discharged from a magazine 37 slides down a trough or chute part 33 under the spout 45 and falls vertically down into said cylinder guide 53 to come to a position of rest on the grate 28. While the display door 49 is down it is therefore impossible for the cup 29 to be tipped.

The upper back side of the display door 49 has secured to it a centrally disposed, upstanding arm 54 having its upper end bent back to form a shoulder 55. In about a position where this shoulder lies when the door 49 is down in closed position, the partition 24 rigidly carries a bracket 56 to which is secured a dash pot 57 having a vertically movable piston 58. Said piston carries a cross piece 59 on which is mounted a rubber pad 60 in a position to be hit by the shoulder 55 when the door 49 is released 40 to drop by gravity to its closed position. The bracket 56 also carries an upstanding arm 61 and connected between the upper end of said arm and the piece 59 is a pull spring 62. The spring 62 acts to pull the piston 58 upwardly 45 when the door 49 is raised and the shoulder 55 is free of the bumper pad 60. This completes the detailed description of the various parts.

In normal use the cabinet is of course closed at its top and front, the parts being then disposed as shown in Figures 1 and 5. When the machine is operated, a cup 29 is released from a magazine 37, the same being guided by the chute structure 33, 36 to a standing position on the support 28 inside the cylinder guide 53 since the display door 49 is in its closed position. The drink is then dispensed from the spout 45 into the cup in full view of the operator because of the glass panel 50. When the vending operation is complete the operator may raise the door 49 60 by means of the handle 51. Since the cylinder 53 is loose around the cup 29 it moves upwardly with the door 49 to leave the drink filled cup standing clear on the support 28 where the operator may reach in with his other hand to take 65 the drink.

As the door 49 is raised, the shoulder 55 moves off the cushion pad 60 thus enabling the spring 62 to pull the piston 58 upwardly out of the air cylinder or dash pot 57 from the position of Figure 5 to that shown in Figure 6. When the operator now releases the door 49 it falls to closing position by gravity and the parts 55, 60 and 58 cooperate in an obvious manner to cushion the shock and ease the door gently 75

to its fully closed position. In this latter position the inside of the machine is kept closed off from the outside to exclude dirt, etc.

The top 19, or a portion thereof, is removable in the manner heretofore described to enable ready access to the upper ends of the cup magazines 37 when they must be reloaded. Also when the top part has been removed the entire front panel 45 can be removed by sliding same upwardly to open up the front of the machine to gain access to interior parts.

From this disclosure it must now be appreciated that an improved drink vending machine construction has been provided which achieves the desirable objects of the invention heretofore recited.

It is the intention to cover all changes and modifications of the example illustrated for the sake of the disclosure which do not in material respects constitute departures from the spirit and scope of the invention as covered in the following claims.

What is claimed is:

1. An upright cabinet having a wall provided with an opening and an interior support adjacent said opening for positioning an article, a slidable gravity closed door normally closing said opening and openable to make the article accessible, said door carrying an upright arm formed with a shoulder, a dash pot including a piston and supported in a position to cooperate with the shoulder to absorb shock when the door closes, and means to pull the piston out of the dash pot when the door is in its raised position.

2. A drink vender comprising a cabinet having a front panel, a horizontal support located

behind the panel onto which a cup may be supported in a standing position, a door slidably positioned on the panel in front of said support and including a transparent window to make a cup on the support visible from the outside of the cabinet, means on the inside of the door normally acting to hold a cup in stable position on the support when the door is in closed position, and means on the outside of the door graspable by an operator's hand to move the door to open position to free the cup from the holding means and make the cup accessible.

3. An upright cabinet having a wall provided with an opening and an interior support adjacent said opening for positioning a cup in an upright standing position, a slidable door normally closing said opening and openable to make the cup accessible, an upright hollow member carried by the door, said member normally serving substantially to surround and position a cup on the support when the door is closed, said member being movable away from the cup with the door when the latter is opened to leave the cup standing on the support.

4. An upright cabinet having a wall provided with an opening and an interior support adjacent said opening for positioning a cup in an upright standing position, a slidable door normally closing said opening and openable to make the cup accessible, an upright cylinder fixed to the inside of the door over the support, said cylinder normally serving to surround and position a cup on the support when the door is closed, said cylinder being movable away from the cup with the door when the latter is opened to leave the cup standing on the support.

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