

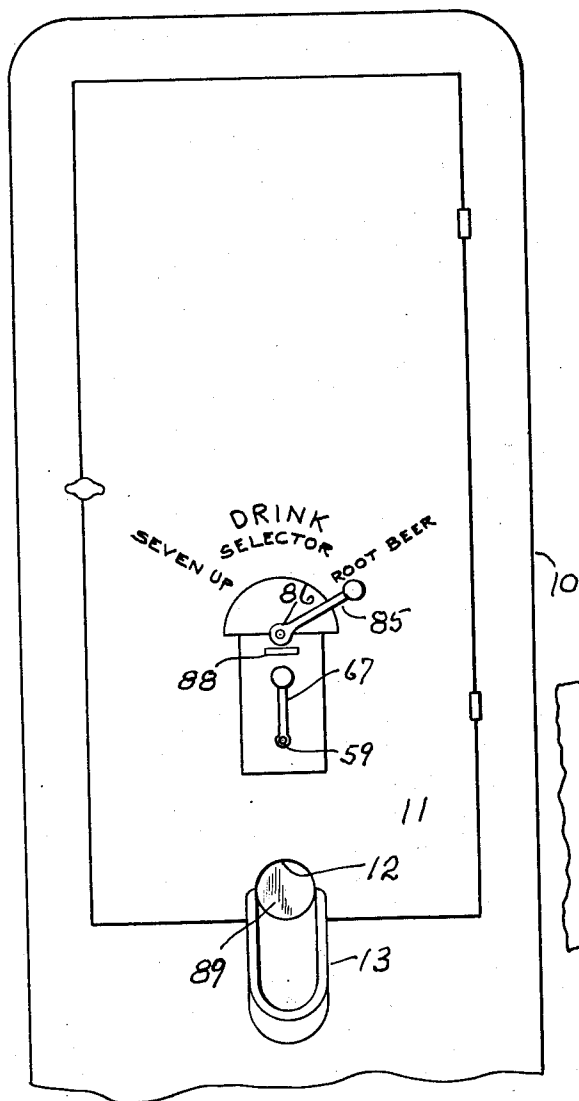
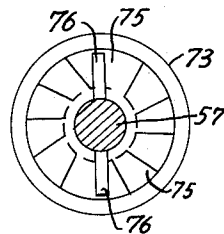
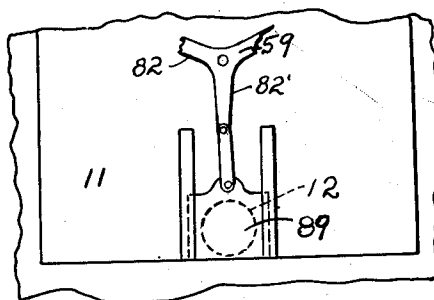
March 4, 1947.

G. F. ALBRECHT
BEVERAGE VENDING MACHINE

2,416,728

Filed April 21, 1945

4 Sheets-Sheet 1



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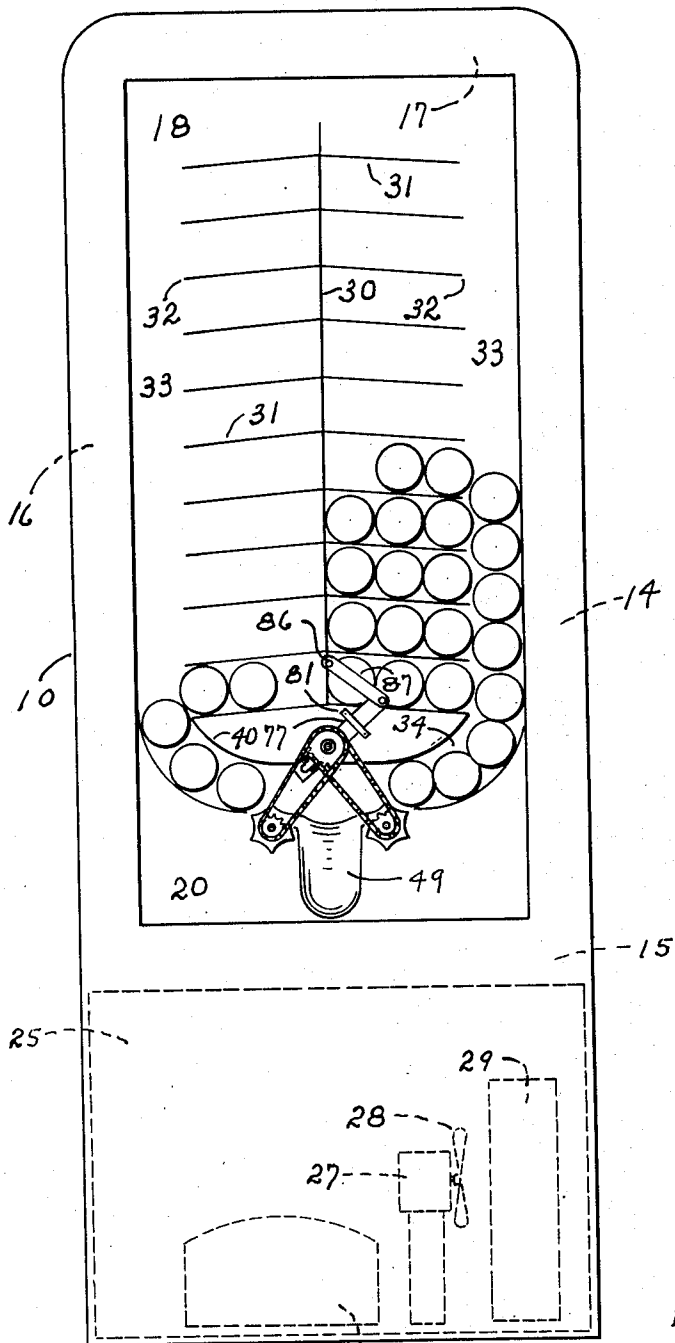


Fig. 3

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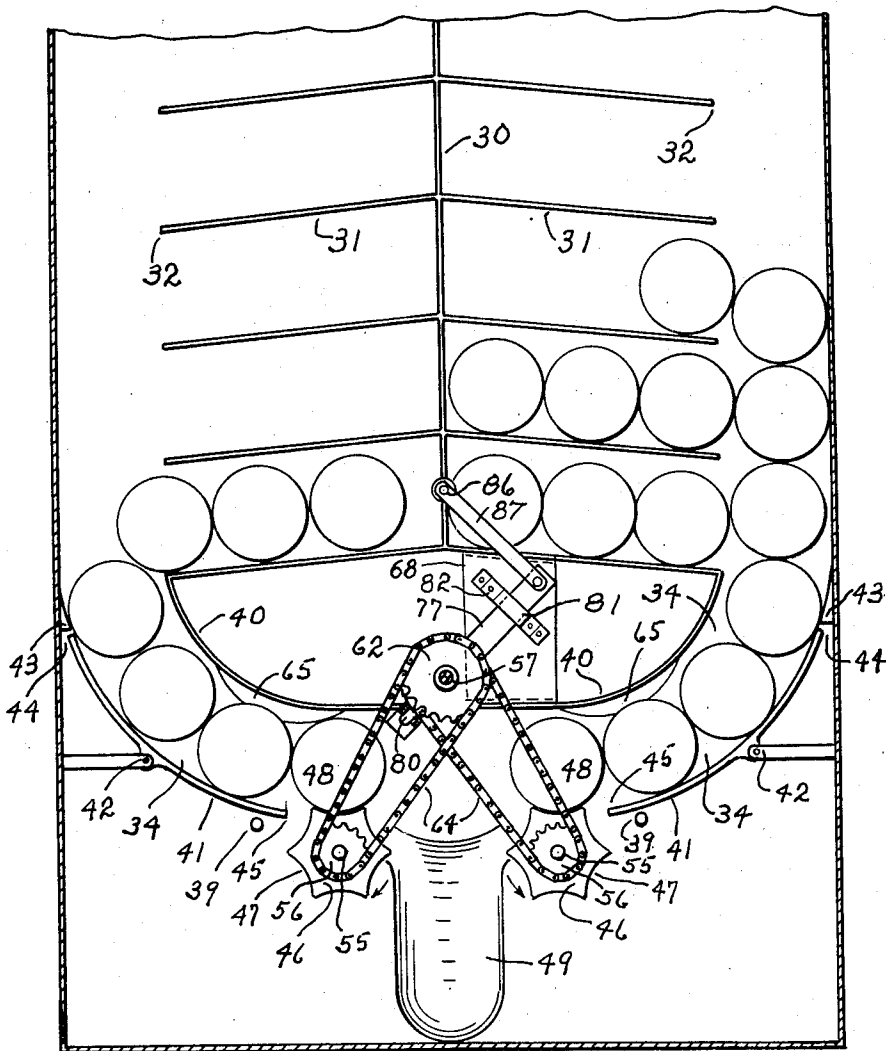


Fig. 4

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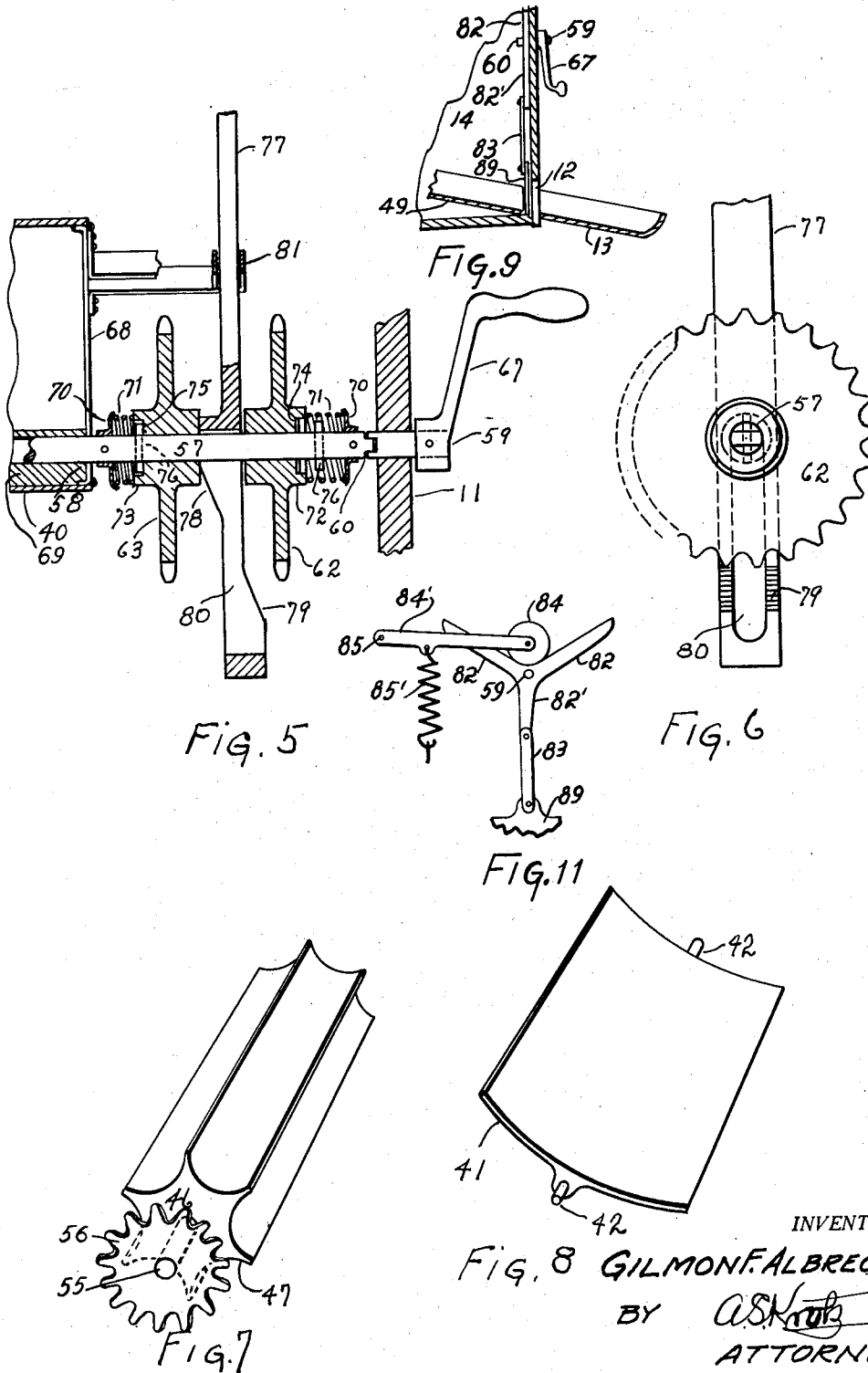
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4 Sheets-Sheet 4



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2,416,728

BEVERAGE VENDING MACHINE

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Application April 21, 1945, Serial No. 589,588

5 Claims. (Cl. 312-48)

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The present invention refers to coin controlled and manually operated venders particularly adapted for vending bottled beverages, the machine having preferably a refrigerating unit for cooling the beverage before being vended.

The principal objects of the present invention are to simplify the design so it may be manufactured at low cost, is durable and reliable.

Vending machines are operated by the general public, old and young and they therefore must be reliable and not apt to get out of order even when roughly handled. I have designed my device so it operates successfully with very few and simple operating parts having means whereby, regardless of the number of packages or bottles in the machine, the operation will not be affected.

One of the objects of the present invention is to design the holding shelves and passageways so the containers may be conveniently removed or replaced when the door is opened, at which time the bottles or packages and the mechanism of the device will be in full view of the attendant.

To these and other useful ends my invention consists of parts, combinations of parts or their equivalents and mode of operation as hereinafter described and claimed and shown in the accompanying drawings in which:

Fig. 1 is a fractional front view of a cabinet equipped with my invention.

Fig. 2 is a rear elevational view of a part of the door illustrating the means for closing the bottle outlet when the machine is at rest.

Fig. 3 is a front elevational view of a cabinet with the door removed, at which time the bottles and mechanism are exposed to view, the compressor unit being shown by dotted lines.

Fig. 4 is an enlarged fractional view similar to Figure 3.

Fig. 5 is a side fractional elevational view of the major parts of the selective dispenser operating means.

Fig. 6 is a front fractional view of certain parts shown in Figure 5.

Fig. 7 is a perspective view of a dispensing cylinder.

Fig. 8 is a perspective view of my improved compensating shutter.

Figure 9 is a side elevational view of a vertical section through members 12, 13, and 49.

Figure 10 is an end sectional view of shaft 57 showing the hub 73 of member 63 and pin 75 as engaged by ratchet portions of this hub.

Figure 11 is a rear view of the clutch of shaft

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59 showing the cam mechanism adapted to return lever 67 to its neutral position.

As thus illustrated the cabinet is designated by reference character 10, having a door 11, the door having a dispensing outlet 12, with a bottle receiving trough 13. The upper portion of the cabinet is surrounded on three sides, top and bottom by members 14, 15, 16, 17 and 18, member 18 being the rear wall of the cabinet and the front being closed by means of the door 11, thus forming a chamber 20 when the door is closed.

The lower portion of the cabinet (see Figure 3) is not insulated, forming a chamber 25 (shown by dotted lines) in which is located a compressor 26 having a driving motor 27, with a fan 28 and a condenser 29, as shown and identified by dotted lines. Fan 28 is adapted to force air through the condenser for cooling the compressed refrigerant and it is thought these elements are too well known to require further description. It is sufficient to say that evaporator coils are suitably positioned in or around chamber 20 and are operatively connected to the compressor 26 and condenser 29. It is the custom generally to provide a thermostat in chamber 20 which is adapted to control the temperature in this chamber through motor 27 on the on and off principle.

I supply a transversely centrally positioned vertical partition 30 in chamber 20 having a number of diverging shelves 31 which terminate at 32 leaving passageways 33-33 between the side walls of chamber 20 and ends of members 31. Each shelf 31 is preferably made wide enough for say three bottles and including the adjacent bottles in the passageways, the machine, as shown, would have a holding capacity of 88 bottles when full, plus 8 bottles which lie within the curved extension 34 from the passageways.

Shelves 31 are given a downward inclination sufficient to cause the bottles to be discharged into passageways 33, first from the upper shelf and then serially from each succeeding shelf as clearly illustrated in Figure 3.

The angle of inclination of the shelves is sufficient to cause the bottles to roll toward passageways 33. It will be seen that it is a comparatively simple matter to replenish the supply of bottles in the cabinet by opening the door and that when the door is open the bottles and entire mechanism will be exposed to view.

Curved passageways 34-34 comprise upper guideways 40-40. The bottom portion of these passageways comprise preferably compensators 41-41 which are pivotally mounted near their

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centers to front and rear brackets as at 42. These brackets are secured to the side walls of the cabinet.

I provide guideways 43—43 adjacent the upper ends of members 41, the upper end of members 41 being a slight distance from the wall of the cabinet as at 44, thus to give members 41 limited freedom of movement on their axes 42. Members 41 terminate at 45. I provide stops 39 which will prevent an out of bounds movement of members 41 when there are no bottles lying on the upper ends of these members.

I provide dispensing rollers 46—46 each having preferably six curved longitudinal grooves 47 which are arranged so that when members 46 are at rest the upper pocket 47 in each of these members supports a bottle 48.

The compensator 41 operates in such a manner that there is always about the same amount of pressure against a bottle 48, by the adjacent bottle. It will be understood that there never will be enough pressure against a bottle 48 to move the roller and its connected parts.

Outlet trough 13 registers with outlet 12 in the door and outlet 12 in the door registers with a guideway 49, so that when the door is shut, if one or the other roller 46 is turned in the direction indicated by arrow for one sixth revolution, the bottle will be discharged into guideway 49 from which it will slide downwardly and outwardly end-wise through opening 12 and into receiving trough 13, within convenient reach of the purchaser. Opening 12 in the door for obvious reasons cannot be left open when the machine is at rest. I therefore provide a gate valve 89 which is opened by the movement of the mechanism which turns one or the other of the rollers 46 and then is closed as will hereinafter appear. It will be understood that Figure 2 is a rear fractional view of the door.

Referring now to Figures 4, 5 and 6; rollers 46 are mounted on shafts 55 as an axis and these shafts are provided with sprockets 56—56. A shaft 57 is rotatably mounted on its inner end 58 in a bearing 69, which is secured to members 68 and 40 preferably on member 40 as illustrated in Figure 5. Door 11 carries a rotatably mounted shaft 59. Shafts 57 and 59 are in alignment and are provided with suitable engaging jaws as at 60 so when the door is closed shafts 57 and 59 will be engaged. On the outer end of shaft 59 I provide a manually operated handle 67 so shaft 57 may be turned as and for a purpose which will hereinafter appear.

I rotatably and slidably mount sprockets 62 and 63 on shaft 57, each of these sprockets being operatively connected to a sprocket 56 by means of a chain 64 whereby either of the rollers 46 may be turned for delivering a bottle from either the right or left side of the machine, as will hereinafter appear.

Referring again to Figure 4: it will be noted that if there are but a few bottles on the left side of the machine, the pressure on the upper end of the compensator will be light because there is the weight of but 2 or 3 bottles lying on this part of the compensator and there will therefore be a very light downward pressure on the upper end of compensator 41. On the other hand if for example as shown at the right in Figure 4 there may be the weight of four or more bottles on the upper end of compensator 41, there will naturally be a greater pressure against the last two bottles on this side of the machine and there will therefore be a greater upward pressure of the lower

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end of the compensator against the bottle on this part of the compensator. I provide preferably rubber friction members 65—65 for contact with the lower bottles in the passageway whereby additional pressure of bottles against the last bottles in the passageway will be correspondingly restrained by the contact of the bottles on the lower end of member 41 against friction pad 65.

I provide means for manually operating rollers 46 as follows:

Shaft 57 is provided with flanged collars 70—70 against which springs 71—71 rest. The inner ends of these springs rest against hubs 72 and 73, each hub having ratchet teeth 74 and 75. Pins 76—76 are secured in shaft 57 and are positioned so that when a hub is in its outermost position (as shown on the left of Figure 5) the pin will be engaged by teeth 75, at which time the teeth on the right side will be disengaged as illustrated.

I provide means for moving either of the hubs to an engaged position as follows:

Arm 77 is arranged to be oscillated by the selective device, this arm having cams 78 and 79. Cam 78 is adapted to engage hub 73 when arm 77 is in its lowest position and when this arm is moved upwardly to a neutral position both hubs will be in their disengaged position and when arm 77 is moved to its highest position hub 72 will be moved to the right so as to be engaged.

It will be seen by scrutinizing Figures 4 and 5 that if arm 77 is in the position shown in Figure 5 and hand lever 67 is moved counter clockwise on its shaft 59, the right hand roller will be moved and a bottle dispensed and another bottle received by the succeeding groove 47; if however arm 77 is moved upwardly to an extreme position then if lever 67 is moved clockwise, the left hand roller 46 will be turned in the direction indicated by arrow and a bottle will be dispensed from the left side of the machine. If however arm 77 is left in a neutral position a bottle will not be dispensed if lever 67 is moved in either direction.

As a matter of convenience I have shown lever 67 in its upper or neutral position in Figure 1. Therefore this lever must be moved either to the right or left for dispensing a bottle. As illustrated in Figures 9 and 11, upwardly diverging arms 82—82 are secured to shaft 59 having a depending member 82' which at its lower end is pivoted to a link 83, the lower end of which link is pivoted to valve 89. A roller 84 is rotatably mounted on the forward end of an arm 84'. This arm is pivoted to door 11 as at 85. A spring 85' is at its lower end anchored to door 11 and at its upper end to arm 84'. Thus roller 84 yieldingly engages arms 82 and acts to return lever 67 to its neutral position and close valve 89. It will be noted that guideway 81 is secured to member 68 by means of legs 82—82. A cross member 83 is secured to legs 82 at its ends and is positioned for the necessary free movement of member 77.

Any convenient means may be supplied for engaging hubs 72 and 73. In Figures 5 and 6 one form of this operating means is shown wherein a slot 80 in arm 77 is adapted to position the arm transversely on shaft 57. Any convenient means may be provided for holding arm 77 into position longitudinally of the shaft so the cams will operate satisfactorily. In Figures 3 and 5 I illustrate a guideway 81 for this purpose, formed with supporting legs as shown, which are secured to member 40 by means of a plate 68. Member 40 is a hollow casing without a front

closure and chains 64 are in front of this member.

I provide means for coin controlling the operation of lever 67 as follows:

A selector lever 85 is provided so that this lever may be moved in the direction of printing which designates the kind of beverage in the machine. In Figure 1 root beer is designated on the right side and 7-Up on the left side and lever 85 is pointing in the direction of root beer; if however the customer desires 7-Up this lever is moved to the left. Lever 85 is mounted on a shaft 86 and an arm 87 is secured to this shaft. This arm has a connection to the upper end of arm 77. Thus it will be seen that when lever 85 is moved to the right arm 77 will move down and cam 78 will cause hub 73 to be engaged with pin 76 and if lever 85 is moved to the left cam 79 will cause hub 72 to be engaged, thus the purchaser may choose the beverage desired.

A coin slot 88 is provided having a duct which leads to a convenient coin controlling device, which is associated with lever 67 and is arranged to prevent lever 67 from moving in either direction from its neutral position unless a coin is first inserted. The coin when once inserted in slot 88 will permit lever 67 to be operated for dispensing the beverage selected.

It will be seen that the purchaser must first move lever 85 over the beverage wanted, but the beverage cannot be dispensed until a coin is dropped into the slot so as to release lever 67 for dispensing the bottle.

I provide a gate valve 89 over outlet 12 which has an operating connection to shaft 59 as shown, whereby when lever 67 is moved in either direction for dispensing a bottle, this valve will be opened and then closed after the lever has been permitted to return to its neutral position (see Figures 2 and 11).

In the drawings it will be seen that no provisions have been made to prevent the bottles from moving into trough 49 accidentally. If such provisions are necessary, means may be provided as shown in my issued Patent Number 2,336,382, December 7, 1943. In this patent members 58 are used for the purpose.

In the figures I have shown rollers 46 in a position whereby the bottles dispensed are carried over the top of the roller. It will be understood that the rollers may be suitably designed and positioned so the bottles are caused to move under the rollers for dispensing.

It will be understood that my invention is largely concerned with the device as shown in Figure 4 and that some slight modifications may be made in this showing and that many minor detailed changes may be made in the design shown in the other figures without departing from the spirit and scope of my invention as recited in the appended claims.

I claim:

1. A vending device of the character described comprising; a number of vertically spaced shelves mounted in a cabinet each extended to a vertical passageway and being positioned at an angle to the horizontal so the bottles will travel toward the passageway and downwardly in the passage-

way by gravity, the arrangement of the shelves being such as will cause the bottles to be discharged into the passageway first from the upper shelf and then serially from each succeeding shelf, dispensing means at the bottom of said passageway whereby the bottles may be discharged therefrom one at a time, said dispensing means being positioned under the shelves and a distance from the passageway, a curved passageway extending from the bottom of the vertical passageway to the dispensing means, the bottom of said curved passageway being formed by a member pivotally supported near its center forming a compensator, whereby the weight of the bottles against the entrance side of the compensator will cause the outlet end thereof to cause more or less upward pressure against the bottles thereon and crowd the bottle thereon against the top of the curved outlet.

2. A device as recited in claim 1 including; yielding means on the upper wall of said curved passageway adapted to restrain the bottle laying on the delivery end of said compensator.

3. A device as recited in claim 1 including; retarding means in the top of said curved passageway adapted to yieldingly contact the bottle on the outlet end of said compensator and prevent harmful pressure against the bottle on the dispenser.

4. A device as recited in claim 1, said cabinet having a door adapted to expose all of the bottles and the mechanism to view when open as and for the purpose specified.

5. A device of the character described comprising; a chamber having a transversely centrally positioned vertically arranged partition, a number of vertically spaced shelves on opposite sides of said partition each adapted to hold a number of elongated circular containers, said shelves terminating at their outer ends in a downwardly extending passageway in the chamber adapted to receive containers from the shelves, said shelves being mounted at an inclination to cause the containers to roll by gravity into the passageways first from the upper shelf and then serially from each succeeding shelf, inwardly curved extensions to the bottom of said passageways each terminating at a dispensing cylinder with a number of grooves whereby the lowermost container to be dispensed will lie in a groove, a common discharge opening between side cylinders, manually operating means adapted to selectively engage and turn a cylinder whereby a single container may be dispensed.

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