

Oct. 17, 1939.

T. J. ELDER

2,176,394

VENDING MACHINE

Filed March 9, 1937

4 Sheets-Sheet 1

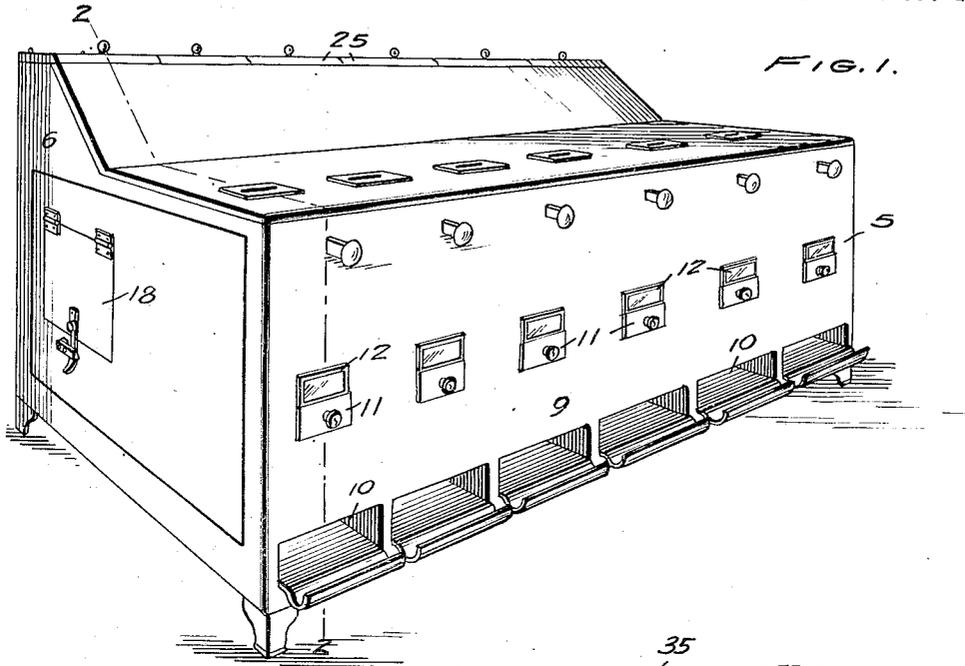


FIG. 1.

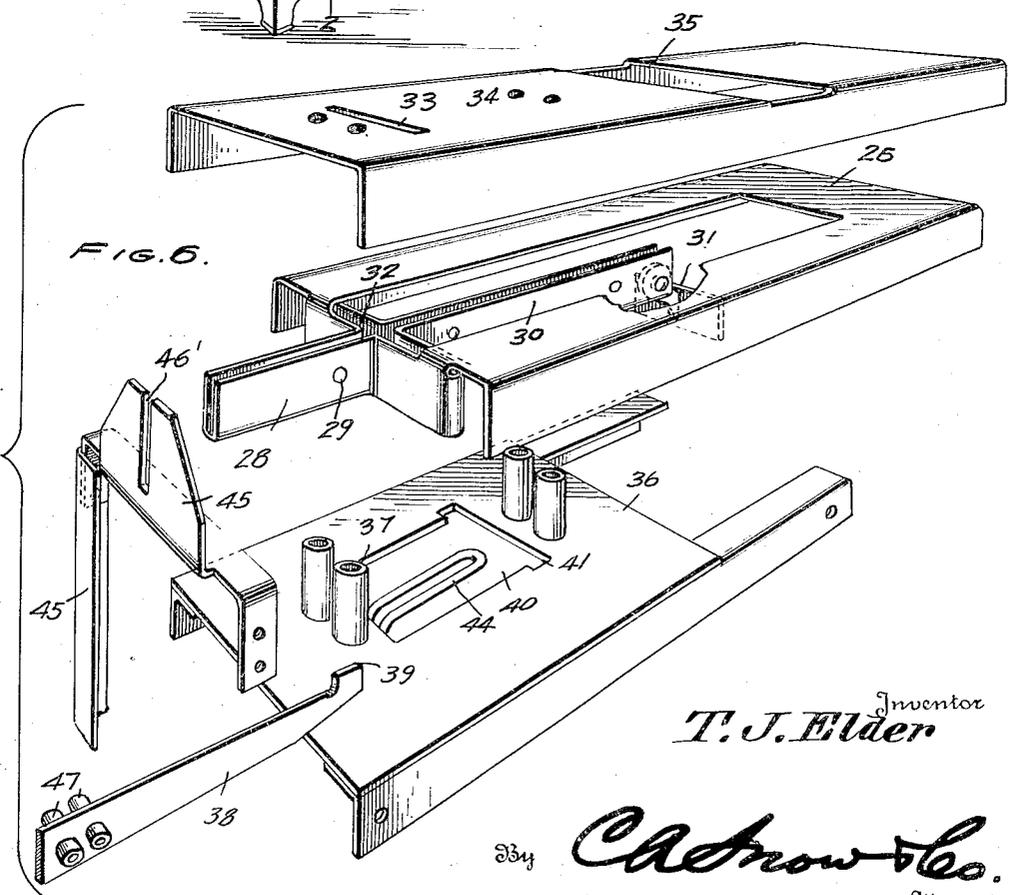


FIG. 6.

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4 Sheets-Sheet 2

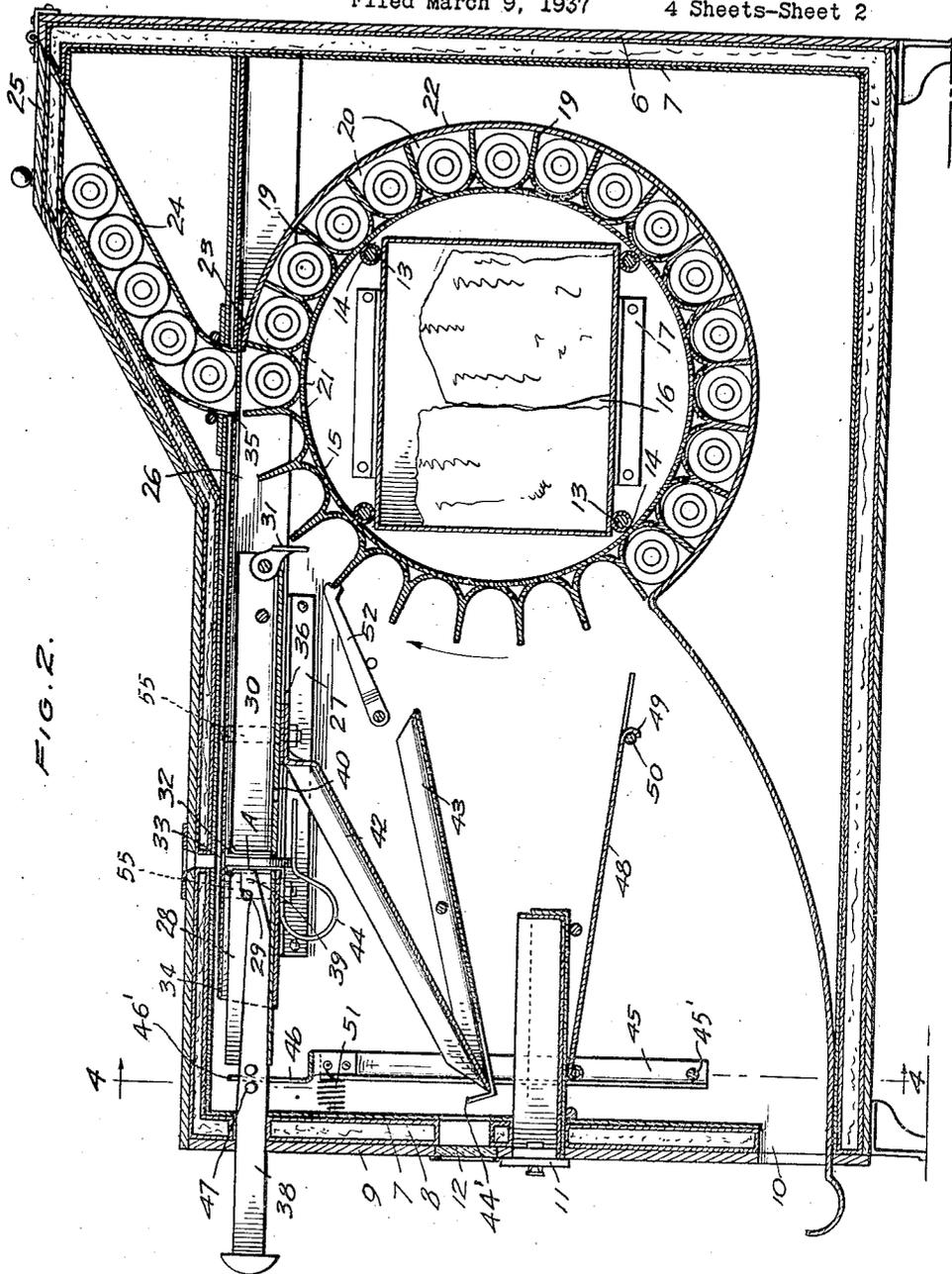


FIG. 2.

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4 Sheets-Sheet 3

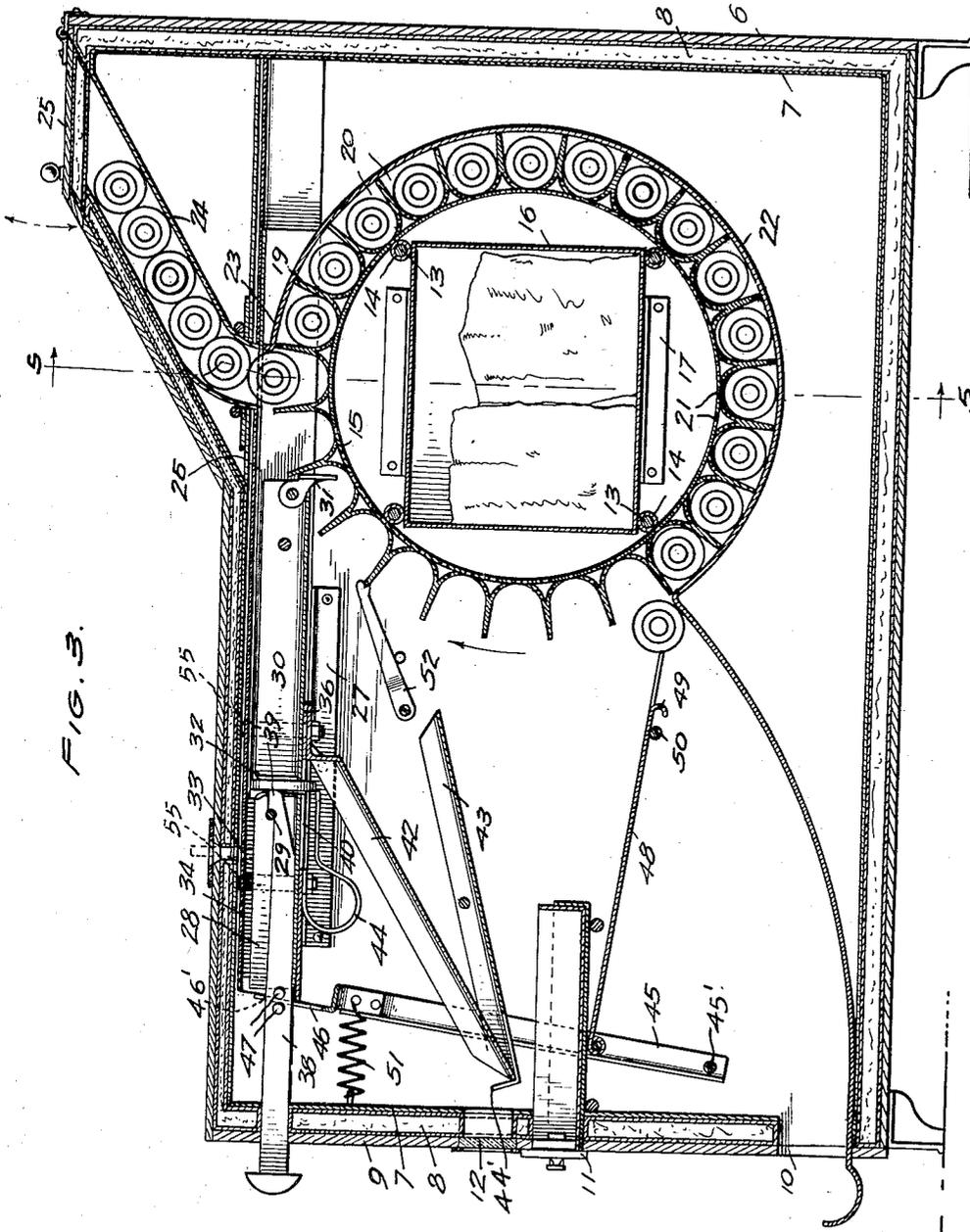


FIG. 3.

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4 Sheets-Sheet 4

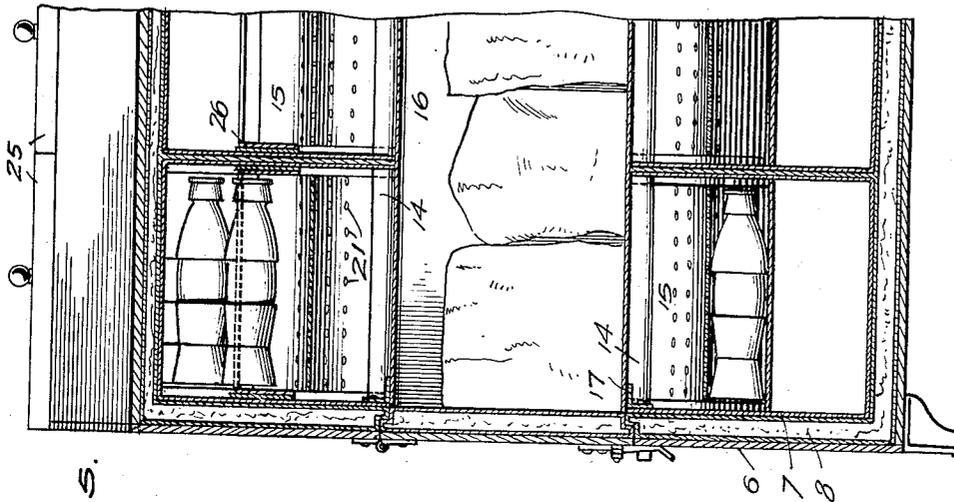


FIG. 5.

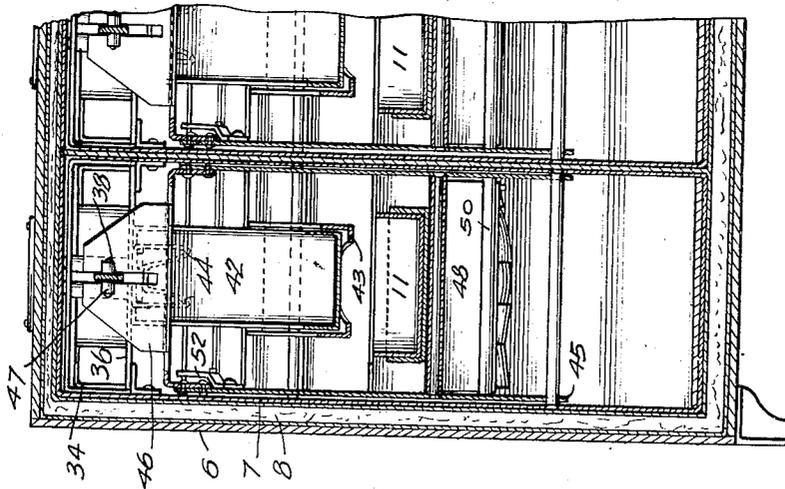


FIG. 4.

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UNITED STATES PATENT OFFICE

2,176,394

VENDING MACHINE

Thomas J. Elder, Decatur, Tex.

Application March 9, 1937, Serial No. 129,896

3 Claims. (Cl. 312-36)

This invention relates to vending machines, and particularly to vending machines designed for vending bottled goods.

An important object of the invention is to provide means for delivering a bottle or similar package, to the chamber containing the goods to be dispensed, simultaneously with each dispensing operation, thereby maintaining the container chamber full at all times.

Another object of the invention is to provide means for closing the discharge chute of the cabinet, with each operation of the operating lever to dispense a package, thereby preventing the operation of the machine through fraud, by inserting an instrument into the discharge opening.

A still further object of the invention is to provide a vending machine of this character including means for maintaining the bottled goods cold, eliminating the necessity of submerging the bottled goods in cold water.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein described, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawings:

Figure 1 is a perspective view of a cabinet constructed in accordance with the invention.

Figure 2 is a vertical sectional view through the cabinet, disclosing the position of the rotary container prior to dispensing a package.

Figure 3 is a vertical sectional view through the cabinet, illustrating the position of the rotary container when dispensing a package.

Figure 4 is a vertical sectional view taken on line 4-4 of Figure 2.

Figure 5 is a sectional view taken on line 5-5 of Figure 3.

Figure 6 is a view illustrating the coin controlled operating slide plates of the machine.

Referring to the drawings in detail, the vending machine embodies a cabinet indicated generally by the reference character 5, the cabinet being constructed of a plurality of like units, operated and controlled independently of each other.

The cabinet includes an outer wall 6 and an inner wall 7, spaced apart and insulated by means of the insulating material 8. The front

wall 9 of the cabinet, is provided with discharge openings 10, disposed near the lower front edge thereof. Coin drawers 11 operate through suitable openings formed in the front wall 9 of the cabinet, the front wall being formed with sight openings 12 disposed directly above the coin drawers 11, so that the discharge ends of the coin chutes, to be hereinafter more fully described, may be viewed without the necessity of removing the front wall of the cabinet.

Horizontally disposed rods 13 are arranged in each unit of the cabinet, and are spaced predetermined distances apart. These rods provide a support for the rollers 14 on which the rotary magazine 15 of the unit, rotates.

The magazine of each unit, is hollow, providing a compartment for an ice chamber indicated by the reference character 16, the ice chamber being supported between brackets 17. The ice chambers of the units, may be filled through the door 18, at one end of the cabinet. While I have shown and described ice chambers for supplying the cooling medium for the cabinet, it is to be understood that a suitable cooling medium may be provided, such as electric refrigeration now in common use.

Secured to the outer surface of each magazine, are partitions 19 defining open-sided compartments 20 in which the bottles or packages being dispensed, are held. Openings 21 are formed in the magazine, and permit cold from the ice contained in the ice chamber, to contact with the bottles or packages.

The reference character 22 designates a curved plate that forms a guard for the magazine, the plate being curved conforming to the shape of the magazine, as clearly shown by Figure 3 of the drawings. One end of the plate 22 extends downwardly and forwardly, the extremity thereof extending through the discharge opening of the unit, providing a rest for the bottle or package, when it has passed from the unit. Because of the construction of the curved plate 22, it will be seen that bottles or packages contained in the magazine, will gravitate to a position beyond the front wall of the cabinet, with each operation of the machine.

The upper edge of the curved plate 22, extends upwardly and contacts with the upper wall of the unit, as clearly shown by Figure 3, the upwardly extended end of the plate 22 being indicated by the reference character 23. This upwardly extended portion 23 of the curved plate 22, forms a continuation of the chute 24, which is of a length to contain several bottles or

packages being dispensed by the machine. The chute 24 is filled through the hinged door 25, which normally closes the upper end of the chute 24. It might be further stated, that the compartments 20, are so arranged that with each operation of the machine, a compartment will be brought opposite to the discharge end of the chute 24, to receive a bottle or package from the chute. In order that only one bottle or package will move into a compartment 20, sliding plate 26 is provided. The sliding plate 26 moves between adjacent bottles or packages and is formed with an opening to allow the bottles or packages to pass from the chute as the opening moves into registry with the chute, the sliding plate providing a support for the bottles or packages above the bottle or package which has entered a compartment, when the plate is in its normal position.

This plate 26 is slidably mounted on the flanged members 27 that are secured to the inner surfaces of the side members of the inner wall 7, as clearly shown by Figure 3 of the drawings.

Extending from one end of the sliding plate 26, is a channel member 28 through which the pin 29 extends. The channel member 30 extends inwardly from one end of the sliding plate 26, and carries a wide pivoted member 31 at its inner end. The wide pivoted member being designed to engage the partitions 19 of the compartment 20, as the sliding plate is actuated or moved inwardly, rotating the magazine, to deliver a bottle or package to be discharged, through the discharge opening of the unit. The channel members 28 and 30 are constructed to provide a transversely disposed coin slot 32 adapted to register with the coin slot 33 of the unit cover plate 34, that also has a slot 35 through which the bottles or packages pass from the chute 24.

Bolts 55 extend through openings formed in the cover plate 34 and connect with the supporting plate 36, the plate being held in spaced relation with the plate 34, by means of the spacers 37, positioned on the bolts 55.

The reference character 38 designates the operating bar that operates between the spacers 37, and is provided with hook 39 at the inner end thereof, which hook is adapted to engage under the pin 29. This operating bar 38 is of a length so that the inner end thereof is normally held at a point adjacent to the coin slot 32, to engage a coin deposited in the coin slot 32, as shown at A in Figure 2 of the drawings, with the result that the operating bar 38 may now be pushed inwardly causing the sliding plate to move inwardly and operate the rotary magazine 15 to discharge a bottle or package. It will of course be obvious that when no coin is in the coin slot 32, operation of the bar 38 will result in the bar 38 moving through the channel members 28 and 30, without operating the sliding plate 26. An elongated opening 40 is formed in the supporting plate 36, and is of a width to receive a coin of a predetermined denomination, holding the coin against movement into the coin chute. One end of the elongated opening is substantially wide, as shown at 41, to allow the coin to fall through the opening, when the coin reaches the inner end of the opening. Disposed directly under the wide portion 41 of the opening 40, is a coin chute 42, which is inclined forwardly to cause a coin deposited therein, to gravitate to the coin drawer 11, associated therewith.

Pivotally supported under the coin chute 42, is

a chute 43 having upstanding fingers 44' providing a stop against which the coin engages, retarding the passage of the coin into the coin drawer. It will of course be understood that the weight of the coin will tilt the chute 43 downwardly, depositing the coin.

The spring member 44, which is secured to the plate 36, provides a support for the coin which has been positioned in the coin slot.

Pivotally mounted on the shaft 45' at the forward end of each unit, is an operating frame indicated by the reference character 45, the operating frame including the plate 46 having a slot 46', the slot 46' being designed to accommodate the bar 38. The plate 46 extends between the laterally extended pins 47, carried by the bar 38, with the result that movement of the bar 38, produces a relative movement of the frame 45.

Connected with the frame 45, is a horizontal guard plate 48 which is of a length to extend inwardly to a point adjacent to the magazine, to be engaged by the bottle or package dispensed, retarding movement of the bottle or package.

A downwardly and forwardly curved finger 49, is formed integral with the guard plate 48, and is adapted to engage the rod 50, when the guard plate 48 has been moved forwardly, thereby preventing the operation of the magazine by fraud by forcing an instrument into the discharge opening of the cabinet.

A coiled spring indicated by the reference 51, connects with the frame 45, and normally operates to return the frame and elements connected therewith, to their inactive positions, or to positions adjacent to the forward wall of the cabinet.

In order that reverse movement of the rotary magazine, will be prevented, a pivoted arm indicated by the reference character 52 is mounted within each unit, the arm being of a length to engage the partitions forming the compartments of the magazine. Assuming that a coin has been deposited in the coin slot of one of the units of the machine, and the bar 38 has been moved inwardly against the coin, the operation of the machine is as follows. The pivoted member 31 contacting with one of the partitions of the rotary magazine, will rotate the magazine in a clockwise direction, and such rotary movement will be sufficient to bring a bottle or package to a position as shown by Figure 3 of the drawings, where the bottle or package contacts with one end of the guard plate. As the operating bar 38 is withdrawn, the guard plate is moved forwardly, releasing the bottle or package, allowing the bottle or package to gravitate towards the front end of the cabinet and pass through the discharge opening of the cabinet, where it may be removed by the purchaser.

It will of course be obvious that with each bottle or package which is dispensed, another bottle or package is fed to the rotary magazine through the chute 24, as described.

Having thus described the invention, what is claimed is:

1. In a vending machine, a cabinet, a rotary magazine mounted within the cabinet, compartments on the magazine and adapted to contain articles dispensed by the machine, a chute for delivering articles to the compartments, a plate movable in a horizontal plane and operating under the discharge end of the chute, said plate having an opening adapted to register with the discharge end of the chute with each movement of the magazine to discharge an article, where-

by articles are delivered to the compartments, said plate normally providing a support for the contents of the chute, and means for simultaneously operating the magazine and plate.

5 2. A vending machine comprising a cabinet, a rotary magazine operating within the cabinet, a plurality of compartments on the periphery of the magazine and having their outer sides open to permit articles to pass into the compartments, a 10 delivery chute above the rotary magazine and adapted to deliver articles to the compartments, a slide plate mounted under the delivery chute and having an opening adapted to register with the delivery chute whereby articles may pass 15 through the opening to the compartments one by one, means for operating the magazine to deliver an article from the cabinet, and said operating means including means for operating the sliding plate to bring the opening thereof into registry 20 with the chute.

3. In a vending machine, a cabinet, a rotary magazine operating within the cabinet, compartments on the periphery of the magazine, an operating member supported within the cabinet and adapted to rotate the magazine a predetermined 5 distance, whereby an article is discharged from the magazine, a sliding guard plate mounted within the cabinet said guard plate being inclined downwardly towards the interior of the cabinet 10 and adapted to move into the path of travel of an article discharged from a compartment, temporarily holding the article against movement from the cabinet, said plate adapted to move to 15 release the article upon reverse movement of the operating member to its normal position, and said cabinet having an opening through which the articles are discharged.

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