Aug. 19, 1952 D. P. LEE 2,607,462

VENDING MACHINE FOR PEANUTS AND THE LIKE

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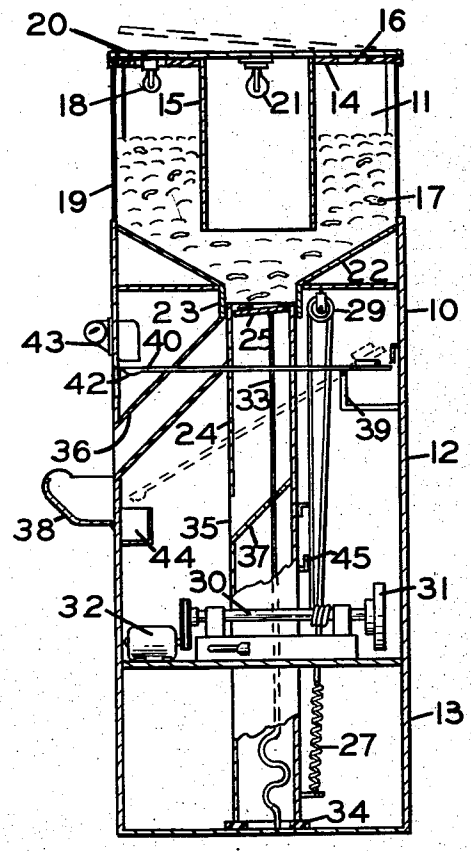


FIG 1

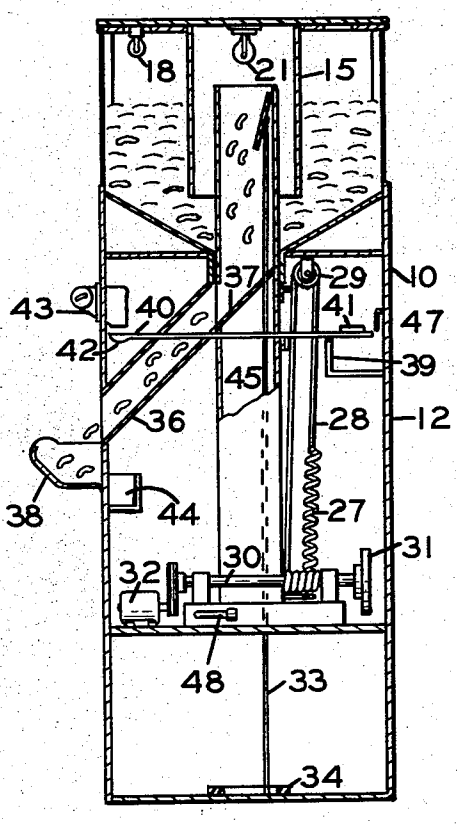


FIG 2

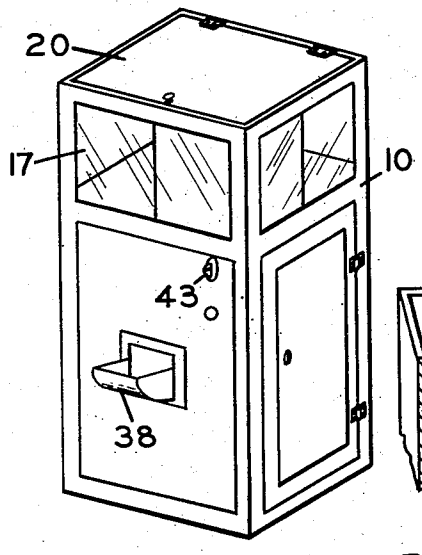


FIG 3

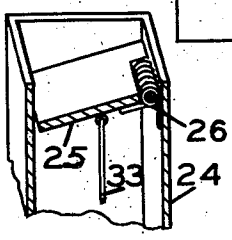


FIG 4

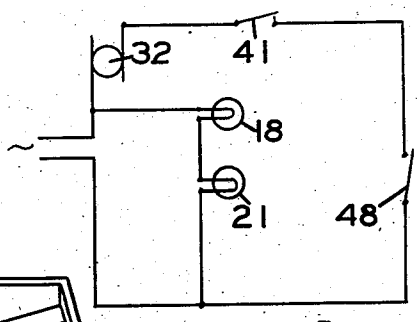


FIG 5

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VENDING MACHINE FOR PEANUTS AND THE LIKE

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4 Claims. (Cl. 194—10)

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This application relates to a vending machine for peanuts and the like.

In dispensing peanuts and the like, it has been found difficult to design a machine which was both simple in operation and reliable in dispensing uniform quantities of the commodity, and at the same time inexpensive to manufacture. Because of the odd shapes, sizes and weights of peanuts, and because of their tendency to clog and failure to flow freely, prior art machines have either been complicated and expensive in construction, or else did not function satisfactorily in uniformly dispensing the desired quantity of the commodity.

It is an object, therefore, of my invention to provide a vending machine for peanuts and the like which is simple in design, inexpensive to construct, requires a minimum of maintenance and care, and is efficient and reliable in operation.

A further object of my invention is to provide a vending machine with a pick up of predetermined size and being provided with such movement that when the releasing mechanism is operated a uniform quantity of the commodity will be reliably delivered to a convenient place of access.

Other and further objects and advantages of my invention will be apparent from the following description taken in connection with the accompanying drawing in which like characters of reference designate corresponding parts throughout the several views, and wherein:

Fig. 1 is a right side cross-sectional view of a vending machine embodying my invention.

Fig. 2 is a cross-sectional view similar to Fig. 1, but showing the mechanism in a different stage of operation.

Fig. 3 is a perspective view of the device shown in Fig. 1.

Fig. 4 is a cross-sectional view of a detail.

Fig. 5 is a wiring diagram showing the electrical connections.

In the embodiment of my invention chosen for purpose of illustration, my device comprises a generally rectangular cabinet 10 which is provided with an upper storage and display compartment 11, an intermediate mechanism housing compartment 12 and a lower well compartment 13. The storage compartment 11 is provided with an upper wall member 14 from which is suspended a hollow shield 15 which is open at both its upper and lower end. The upper wall 14 is provided with a filling opening 16 by means of which peanuts, or other commodities,

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are introduced into the storage and display compartment 11, the peanuts being indicated generally at 17. An electric lamp 18 is suspended from the top wall 14 to illuminate the peanuts for viewing through the windows 19. The cabinet 10 is provided with a cover plate 20, which is hingedly mounted, as indicated in Fig. 1, and which carries an electric lamp 21 which projects into the interior of the hollow shield 15 for supplying heat to the peanuts.

The storage compartment 11 is provided with an inclined bottom 22 which slopes downwardly toward its center and is provided with a central discharge opening defined by the downwardly extending flanges 23. The central discharge opening in the bottom 22 is aligned directly beneath the hollow shield 15, the lower extremity of the shield 15 being spaced vertically from the bottom 22 to provide a passage for peanuts between the bottom 22 and the shield 15.

Positioned within the discharge opening defined by the flanges 23 in a hollow pick-up member 24 which is arranged for vertical reciprocating movement. The pick-up member 24 extends vertically through the mechanism housing chamber 12, and the upper end of this member 24 is positioned within the discharge opening defined by the flanges 23 when the lower end of this member rests upon the bottom of the lower well compartment 13, as shown in Fig. 1. The upper end of the pick-up member 24 is normally closed by a hinged gate 25 which is pressed by spring 26 into horizontal position to close the upper end of the hollow pick-up member 24.

Vertical movement is imparted to the pick-up member 24 through spring 27 which has one end connected to the pick-up member 24 near the bottom thereof, as shown in Fig. 1, the other end of this spring 27 being connected to a cord or flexible cable 28 which extends upwardly over a pulley 29 and thence downwardly to a horizontal shaft 30 to which it is affixed, the shaft 30 being journaled for rotation in bearings mounted on the bottom of the mechanism housing compartment 13. Fly wheel 31 is mounted on one end of the shaft 30, and at the other end the shaft 30 is belted to electric motor 32 to be driven thereby.

Attached to the bottom of the gate 25 is a cord or flexible cable 33 which extends downwardly from the gate through the hollow pick-up member 24, and has its lower end anchored to the bottom of the lower well compartment 13 in the vicinity of the rubber mat 34.

The pick-up member 24 is provided in one wall thereof with an outlet opening 35 which is ar-

ranged to register with a discharge spout 36 which extends generally downwardly from the discharge opening defined by the flanges 23 and outwardly through the front wall of the cabinet 10. Positioned transversely across the pick-up member 24 is a closure member or baffle 37 for directing peanuts passing downwardly through the pick-up member 24 out through the outlet 35 and into the discharge spout 36, and thence into the receptacle 38 which is conveniently positioned on the outside of the cabinet 10 so as to receive peanuts dispensed through the discharge spout 36.

An L-shaped bracket 39 mounted on an inner wall of the mechanism housing compartment 12 carries a pivoted lever arm 40 upon one end of which is mounted a mercury switch 41. The other end of the arm 40 terminates in a spoon shaped body 42 positioned to receive coins from the coin slot mechanism 43 which extends outwardly through the front wall of the cabinet 10. The weight of a coin dropped into the spoon 42 overbalances the weight of the mercury switch 41 and tips the lever arm 40 downwardly, as indicated by broken lines in Fig. 1, to deposit the coin in coin box 44. The lever arm 40 is so balanced that after being tipped to the position shown by the broken lines in Fig. 1, it will not return itself to the horizontal position, but is arranged to be lifted to the horizontal position by means of the lift arm 45 which is mounted on the vertically reciprocating pick-up member 24. Mercury switch 41 is arranged to be closed when it is tipped by the tipping of lever arm 40 to the position shown in broken lines in Fig. 1.

The freely swinging pivoted latch 47, which is mounted on an inner wall of the mechanism housing compartment 12 is arranged to engage the lever arm 40 to prevent tipping thereof in the event the cabinet 10 is tilted forward. Also, the mercury switch 48 is arranged to be opened to prevent operation of the motor 32 if the cabinet 10 is tilted.

In the use of my vending machine, commodities such as peanuts are put into the storage compartment 17, through the opening 16 provided in the top thereof, until the peanuts partially fill the storage compartment as shown in Fig. 1. It will be noted that the peanuts thus stored do not enter within the confines of the central hollow shield 15, but heat is supplied to the peanuts through this shield by means of the lamp 21. The interior of the storage compartment 11 outside the shield 15 is lighted by the lamp 18, and the peanuts can be seen through the windows 19. It will be noted in Fig. 1 that the discharge opening in the bottom of the storage compartment is closed by means of the gate 25 in the upper end of the pick-up member 24 which is at rest with its lower end upon the rubber mat 34 on the bottom of the lower well compartment 13.

When a coin is dropped into the slot mechanism 43, it is delivered into the spoon 42, and the weight of the coin tips the lever arm 40 to the position indicated by broken lines in Fig. 1 to close the mercury switch 41 and thereby energize electric motor 32. The electric motor 32 then rotates the shaft 30 to commence winding the cord 28 upon this shaft, thereby pulling upon the spring 27 to lift the pick-up member 24. As the pick-up member 24 moves upwardly through the discharge opening defined by the flanges 23 with which it has a sliding fit, the upper end of the pick-up member is forced upwardly through the peanuts contained in the storage compartment, and carries with it the peanuts which lie above the gate 25. As the upper end of the pick-up member 24 enters the hollow shield 15, excess peanuts carried upwardly by the pick-up member are free to fall off by gravity and return to the larger quantity of peanuts remaining in the storage compartment. The exact quantity of peanuts picked up and finally retained by the pick-up member 24 is of course governed by the cross-sectional area of the pick-up member and by the distance between the gate 25 and the upper edge of the pick-up member.

As the pick-up member proceeds upwardly into the shield 15 by the winding of the cord 28 upon the shaft 30, the cord 33 attached to the under side of the gate 25 is pulled taut. At this moment the lift arm 45 which has been raising the lever arm 40 by positive engagement therewith has now returned this lever arm to horizontal position so that mercury switch 41 opens, thus shutting off power to the electric motor 32. The pick-up member proceeds to move upwardly a short distance by the momentum due to its weight and the weight of the fly wheel 31, and the cord 33 which was already drawn taut now opens the gate 25 by pulling downwardly thereon as the outlet opening 35 comes into registry with the discharge spout 36, and peanuts resting on top of the gate 25 are released to fall downwardly through the pick-up member 24 whence they will be directed by the baffle 37 through the outlet 35 into the discharge spout 36 and thence outwardly of the vending machine and into the receptacle 38.

It will be remembered that the coin which initiated the operation of the machine has dropped from the spoon 42 into the coin box 44, and electric power which was supplied to the motor 32 when the mercury switch 41 was closed, has now been shut off by the return of the lever arm 40 to its horizontal position. The electric motor 32 is therefore no longer urging the pick-up member 24 upwardly, and this member therefore returns by its own weight from the upward position shown in Fig. 2 to the downward position shown in Fig. 1, unwinding the cord 28 from the shaft 30 as it descends. The shock of the downward movement of the pick-up member 24 is absorbed by means of the rubber pad 34, and when the mechanism has thus been brought to rest, it is obvious that it is ready to repeat the above described operation.

Having thus described my invention, it will be obvious to those skilled in the art that I have provided a vending machine of great convenience and usefulness, and that while I have illustrated and described my invention in a very practical embodiment thereof, various changes and adaptations may be made without departing from the scope of my invention as defined in the appended claims.

I claim:

1. In a vending machine, a cabinet containing partitions defining a storage compartment, said storage compartment being provided with a downwardly sloping floor terminating in a discharge opening, a hollow shield suspended in said storage compartment in alignment with said discharge opening and spaced above said floor, a hollow pick-up member mounted for reciprocating movement in said central discharge opening, said pick-up member being provided with an outlet opening in a side wall thereof, a gate on said pick-up member normally closing the upper end thereof, motive power means con-

nected to said pick-up member for raising the upper end thereof through said discharge opening and into said hollow shield, a discharge spout extending through a wall of said cabinet, means engaging said gate to open the same when said pick-up member has been raised to a predetermined height at which said outlet opening is in registry with said discharge spout, coin operated switch means connected to energize said motive power means, and means operated by movement of said pick-up member for opening said switch means and deenergize said motive power means.

2. In a vending machine, a cabinet containing partitions defining a storage compartment, said storage compartment being provided with a downwardly sloping floor terminating in a discharge opening, a hollow shield suspended in said storage compartment in alignment with said discharge opening and spaced above said floor, a hollow pick-up member mounted for reciprocating movement in said central discharge opening, said pick-up member being provided with an outlet opening, a gate on said pick-up member normally closing the upper end thereof, motive power means connected to said pick-up member for raising the upper end thereof through said discharge opening and into said hollow shield, a discharge spout extending through a wall of said cabinet, means engaging said gate to open the same when said pick-up member has been raised to a predetermined height at which said outlet opening is in registry with said discharge spout, a pivoted lever arm in said cabinet arranged to be tipped by the weight of a coin, a normally open switch carried by said lever arm and connected to energize said motive power means when said lever arm is tipped, and means carried by said pick-up member for returning said lever arm to its original position to open said switch and deenergize said motive power means.

3. In a vending machine, a cabinet containing partitions defining a storage compartment, said storage compartment being provided with a downwardly sloping floor terminating in a central discharge opening, a hollow shield suspended in said storage compartment in alignment with said discharge opening and spaced above said floor, a hollow pick-up member mounted for reciprocating movement in said central discharge opening, said pick-up member being provided with an outlet opening in a side wall thereof, a gate on said pick-up member spaced from the upper end thereof and normally closing the same, a flexible tension member having one end connected to said pick-up member for raising the upper end thereof through said central discharge opening and into said hollow shield, a

rotatably mounted shaft to which the other end of said tension member is connected, motive power means connected to said shaft to wind said tension member thereon to lift said pick-up member, a discharge spout extending through a wall of said cabinet, means engaging said gate to open the same when said pick-up member has been raised to a predetermined height at which said outlet opening is in registry with said discharge spout, a pivoted lever arm in said cabinet arranged to be tipped by the weight of a coin, a normally open switch carried by said lever arm and connected to energize said motive power means when said lever arm is tipped, and means carried by said pick-up member for returning said lever arm to its original position to open said switch and deenergize said motive power means.

4. In a vending machine, a cabinet containing partitions defining an upper storage compartment and an intermediate mechanism housing compartment and a lower well compartment, said storage compartment being provided with a downwardly sloping floor terminating in a central discharge opening, a hollow shield suspended in said storage compartment in alignment with said discharge opening and spaced above said floor, a hollow pick-up member mounted for reciprocating movement in said central discharge opening, said pick-up member being provided with an outlet opening in a side wall thereof, a gate on said pick-up member spaced from the upper end thereof and normally closing the same, a flexible tension member having one end connected to said pick-up member for raising the upper end thereof through said central discharge opening and into said hollow shield, a rotatably mounted shaft to which the other end of said tension member is connected, motive power means connected to said shaft to wind said tension member thereon to lift said pick-up member, a discharge spout extending through a wall of said cabinet, means engaging said gate to open the same when said pick-up member has been raised to a predetermined height at which said outlet opening is in registry with said discharge spout, a pivoted lever arm in said mechanism housing compartment arranged to be tipped by the weight of a coin, a normally open switch carried by said lever arm and connected to energize said motive power means when said lever arm is tipped, and means carried by said pick-up member for returning said lever arm to its original position to open said switch and deenergize said motive power means.

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No references cited.