July 4, 1961 W. S. FULTZ 2,990,976

VENDING MACHINE

Filed July 1, 1958 2 Sheets-Sheet 1

Fig.1

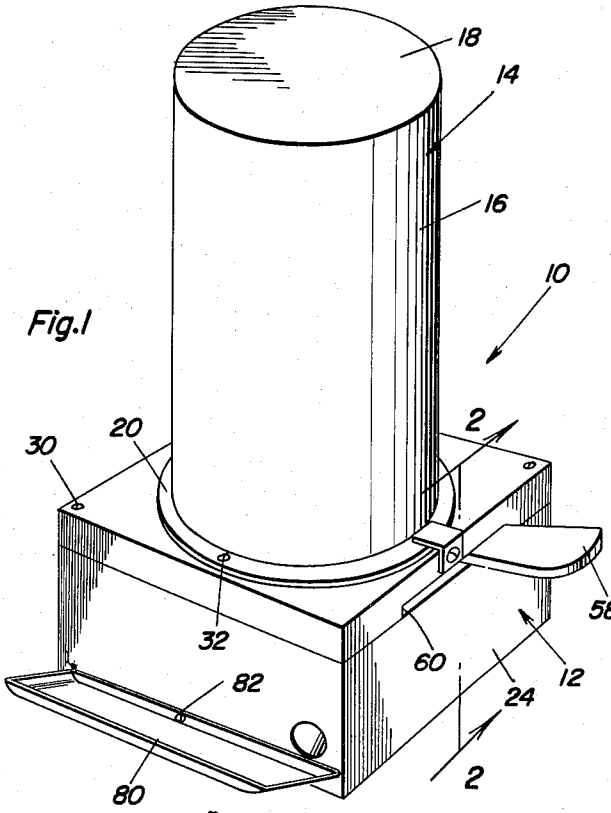


Fig.6

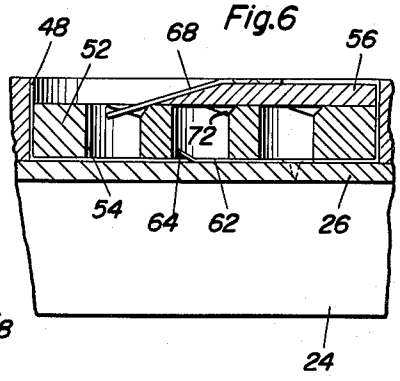
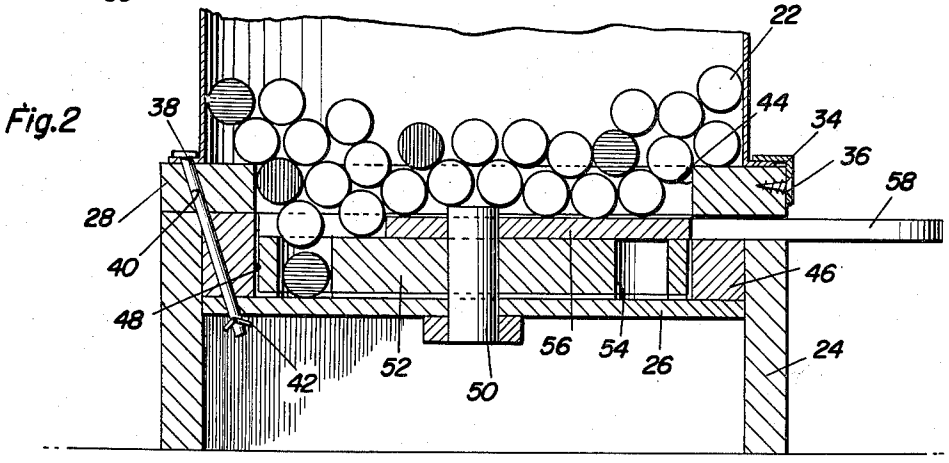


Fig.2



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Filed July 1, 1958 2 Sheets-Sheet 2

Fig.3

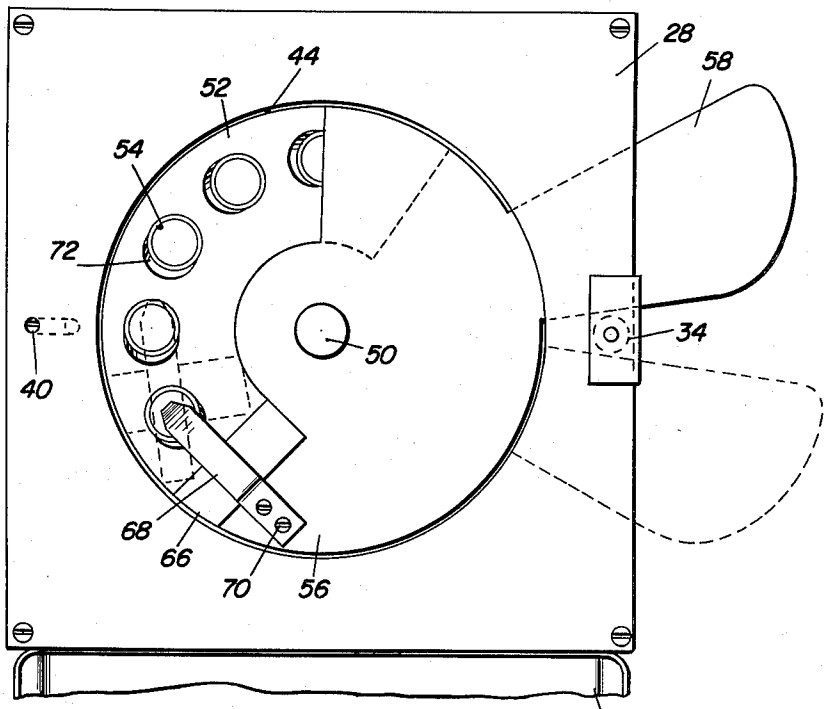


Fig.4

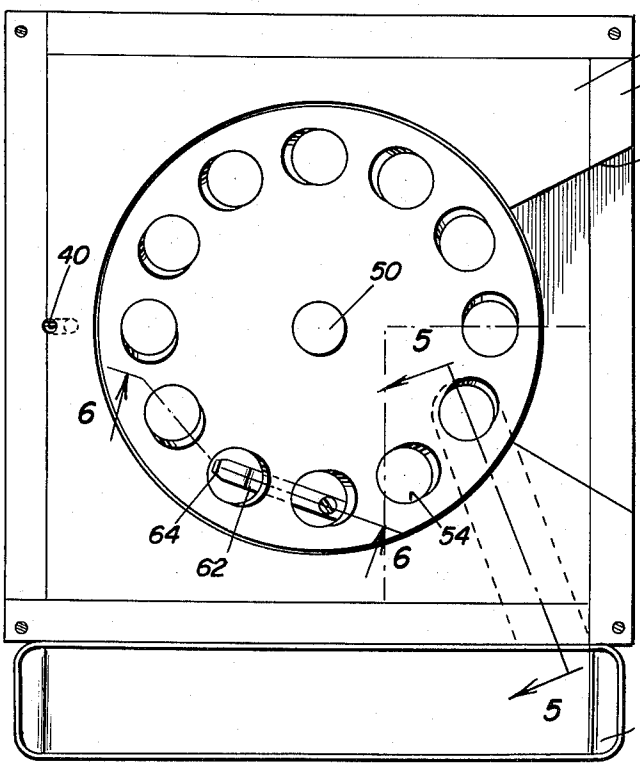
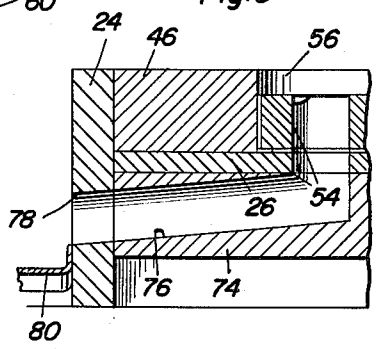


Fig.5



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VENDING MACHINE

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2 Claims. (Cl. 221—265)

The present invention generally relates to a vending machine and more particularly to a dispenser for dispensing confection articles such as chewing gum in the form of spherical balls or spherical balls of candy which may be of various colors but which are of the same size.

The primary object of the present invention is to provide a vending machine in the form of a dispenser having a handle for operating the same together with a trough-like member for receiving the article dispensed together with a dispensing plate having a plurality of circumferentially spaced openings for receiving the articles to be dispensed whereby the handle means for operating the plate will move the dispensing plate a sufficient distance for registering one of the filled apertures in the plate with a discharge chute for discharging a single article to the trough.

Another object of the present invention is to provide a dispenser having a novel arrangement of parts and more particularly a novel ratchet mechanism interconnecting the handle and dispenser plate for purposes of rotating the plate a single increment of movement during each pivotal oscillation of the handle.

Another important feature of the present invention is to provide a vending machine in the form of a dispenser which is extremely simple in construction, easy to operate, provided with a minimum number of moving parts, well adapted for dispensing articles and relatively inexpensive to manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawing forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the vending machine;

FIGURE 2 is a sectional view taken substantially upon a plane passing along section line 2—2 of FIGURE 1;

FIGURE 3 is a plan view of the base with the container removed;

FIGURE 4 is a plan view similar to FIGURE 3 but with the top of the base removed;

FIGURE 5 is a detail sectional view taken along section line 5—5 of FIGURE 4 illustrating the discharge passageway;

FIGURE 6 is a fragmentary sectional view along section line 6—6 of FIGURE 4 illustrating the ratchet member.

Referring now specifically to the drawings, the numeral 10 generally designates the dispenser of the present invention which includes a generally hollow base generally designated by the numeral 12 and a hollow container generally designated by the numeral 14.

The container 14 includes a cylindrical peripheral wall 16 and a circular top 18 and a peripheral horizontal flange 20 at the lower end thereof. The interior of the container 14 is hollow and receives a plurality of balls which may be ball candy designated by the numeral 22.

The base 12 includes vertically disposed walls 24 which are interconnected intermediate their ends by a transverse plate 26 and provided with a top plate 28 on the top edges thereof with the top plate 28 being secured thereto by screw threaded fasteners 30. The flange 20 is secured to the top plate 28 by screw threaded fasteners 32 as well as an L-shaped clip 34 which has a vertical leg thereof secured to the outer side edge of the top plate

28 by screw threaded fastener 36. Diametrically opposed to the clip 34, there is an elongated headed rod or pin 38 which extends downwardly through an opening 40 in the top plate 28 and extends downwardly through the plate 26 and has a securing lock 42 connected with the lower end thereof with the securing lock 42 being in the form of a cotter key or the securing device may be in the form of a pad lock so that only authorized persons that are equipped with a key can remove the pin 38 which extends through the flange 20 thus securing the container 14 in position.

The top plate 28 is provided with an enlarged circular opening 44 and disposed below the top plate 28 is an annular member 46 which is interposed between the transverse plate 26 and the top plate 28 and is provided with a circular opening 48 equivalent to and coextensive with the opening 44.

Mounted on the plate 26 is an upstanding pin or shaft 50 which is disposed in the center of the circular openings 44 and 48. Carried by the pin or shaft 50 for rotation is a circular dispenser plate 52 having a plurality of circumferentially spaced openings 54 therein each being of a size to receive a single candy ball 22. Also mounted on the pin or shaft 50 is a semi-circular plate or arcuate plate 56 having a handle 58 projecting laterally outwardly from the edge thereof with the handle 58 extending through a slot 60 defined at the line of juncture between the closure plate 28 and one of the walls 24. The ends of the slots 60 limit the movement of the handle 58 thus limiting the arcuate movement of the plate 56 about the center of the shaft 50. The handle 58 and plate 56 are rotatable independently of the dispenser plate 52 and are capable of oscillation about the center of the shaft 50.

Mounted on the upper surface of the transverse plate 26 is a flat spring member 62 having an upwardly inclined end 64 for disposal in the bottom of the apertures 54 in the dispenser plate 52. The upturned end 64 will permit the plate 52 to rotate in one direction but will prevent rotation thereof in the other direction by virtue of the upturned end 64 being disposed within the confines of the bottom end of the aperture or opening 54 in the dispenser plate 52.

One edge of the arcuate plate 56 is provided with a beveled radial edge 66 having a flat spring 68 extending down the upper surface thereof and being secured to the upper surface of the plate 56 by fastening members 70. The lower end of the spring 68 projects a distance for engagement with the dispenser plate 52 and disposal within the top end of one of the apertures 54 in the dispenser plate 52. Thus when the handle 58 is moved, the end edge of the spring 68 will engage the remote surface of an aperture 54 and will move the plate 52 an increment of movement. During this increment of movement, the upturned end 64 is flattened out due to movement of the area of the plate between adjacent apertures over the upturned end 64. As soon as this area passes the upturned end 64, it will spring up to prevent return movement during return movement of the handle and plate 56 along with the spring 68 which will cause the spring 68 to ride up over the area between adjacent apertures and then spring down into the next adjacent aperture for a repeat operation. The upper edge of each of the apertures which forms the trailing edge thereof is provided with a beveled area 72 for facilitating movement of the spring 68 in relation to the plate 52.

Mounted below the plate 26 on one side wall is a block 74 having a tubular passageway 76 communicating with an aperture 78 in the outer side wall 24 and with one of the openings 54 in the circular plate 52 so that the candy balls may be discharged from that particular aperture in the plate 52 onto a trough member 80 mounted on

the wall 24 immediately below the opening 78 with the trough having upturned edges with one of the edges being secured to the wall 24 as by fasteners 82.

It is noted that the bore or passageway 76 is located in such a manner that the segmental plate 56 will overlie the same thus preventing the possibility of more than one ball dropping through the dispenser plate. The height of the openings 54 is substantially the same as the diameter of the candy balls thus assuring that only a single ball will be able to be disposed in the openings 54 and still pass under the plate 56 which is necessary in order that the aperture be aligned with the passageway 76. The other radial edge of the plate 56 opposite from the tapered or inclined edge 66 will assure that only one candy ball will be disposed in each aperture 54 as it passes under the plate 56. Thus, each movement of the handle from an initial position to a new position and then back to the initial position will cause the dispenser plate 52 to move one increment of movement to move the next adjacent opening 54 in alignment with the passageway 76 for discharging a single candy ball. During movement from the initial position, the end edge of the spring 68 will engage the surface of the aperture 54 and push thereon as the handle is moved from the full line position in FIGURE 3 to the dotted line position thus causing the dispenser plate 52 to move about its center of rotation for moving the next aperture 54 into alignment with the passageway 76. When the handle has reached the dotted line condition, it is then returned to the full line position. However, before the handle reached the dotted line position, the upturned end 64 of the spring 62 had sprung up into the next adjacent aperture 54 and would preclude counterclockwise rotation of the dispenser plate 52. Then when the handle is moved back towards the full line position, the spring 68 rides up the edge of the opening having the bevel 72 thereon and over the area between the openings 54 and will drop into the next adjacent opening which already receives the upturned end 64 in the lower end thereof. The beveled edge 72 also assures that the candy balls normally stacked on the ball in the opening 54 will be brushed aside or removed off of this position by the radial edge of the plate 56 opposite to the beveled edge 66, without any possibility of any cutting or shearing action on the balls of candy.

With the present invention, there is provided an extremely simple dispensing device which is manually operated and which is constructed with a minimum number of moving parts and which has a highly novel and effective ratcheting mechanism for dispensing candy balls. While there has been disclosed a manually operated device, it is pointed out that the handle 58 could be a handle on a coin control mechanism so that the handle 58 would be released only upon insertion of a proper coin.

The candy balls 22 could be of various colors and the container 14 could be transparent to reveal the varied colored candy balls thus providing a highly novel and attractive vending machine.

One particular use of the present invention is its use as a trade stimulator in selling boxes of candy. The vendor loads the machine with ball candy which are mostly white but with a sprinkling of other colors throughout. There is also provided boxes of candy which have colored stripes attached to them which correspond with the colored candy balls. When a person purchases a ball of candy, he will obtain only the ball of candy if he obtains a white ball when the handle is pulled but if one of the colored balls is obtained when the handle is manipulated, a box of candy is received that has the colored strip thereon corresponding to the color of the candy ball received thereby stimulating the sale of boxes of candy. Of course, the number and color of the balls placed in the machine may be carefully controlled so that the vendor obtains only the usual market price for the box of candy since the purpose of the machine is merely to stimulate sale of the candy.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A vending machine comprising a base of generally hollow construction, a container detachably mounted on said base for receiving a plurality of spherical members, said container having an open bottom, said base including a passageway communicating the exterior surface of the base with the open bottom of the container, a dispenser plate rotatably mounted in said base for selectively discharging spherical members into the passageway, said plate having a plurality of circumferentially spaced openings, a handle mounted on said base and connected with the dispenser plate for rotating the dispenser plate the distance between adjacent openings for aligning the openings with the said passageway, said base having a recess receiving said plate with the plate receiving spherical members from the container for discharge of the spherical members in a sequential manner to the exterior of the base, a ratchet mechanism interconnecting the handle and the dispenser plate for rotating the dispenser plate in only a single direction, said ratchet mechanism including a flat spring finger carried by the handle with the spring finger having a depending free end for engagement with the upper edges of the openings in the dispenser plate, each of the openings in the dispenser plate having a beveled trailing upper edge so that all of the spherical members except the one received in the opening may be brushed aside, flat spring means mounted on the base against the undersurface of the dispenser plate for frictionally retaining the dispenser plate in position and preventing rotation of the dispenser plate in one direction, said handle including a segmental plate overlying the dispenser plate and rotatable about the same axis, a laterally extending handle member on said segmental plate, said base having a slot receiving said handle member and limiting the pivotal movement of the handle member for limiting the movement of the segmental plate.

2. The combination of claim 1 wherein said segmental plate overlies the dispenser plate and also overlies the inner end of the passageway with the dispenser plate having a thickness substantially equal to the diameter of the spherical members whereby the segmental plate substantially resting on the dispenser plate will prevent more than one spherical member from being received in the openings in the dispenser plate when the openings are disposed under the segmental plate and aligned with the inner end of the discharge passageway.

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