Feb. 12, 1963 A. E. GOLDFARB 3,077,254

GUM BALL-DISPENSING MACHINE

Filed Dec. 31, 1959

Fig. 1

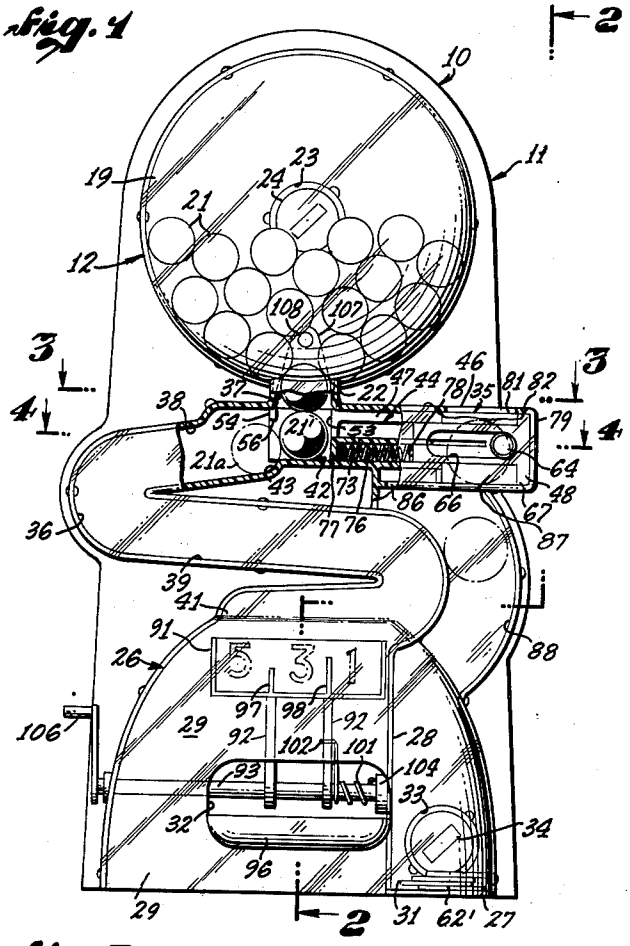


Fig. 2

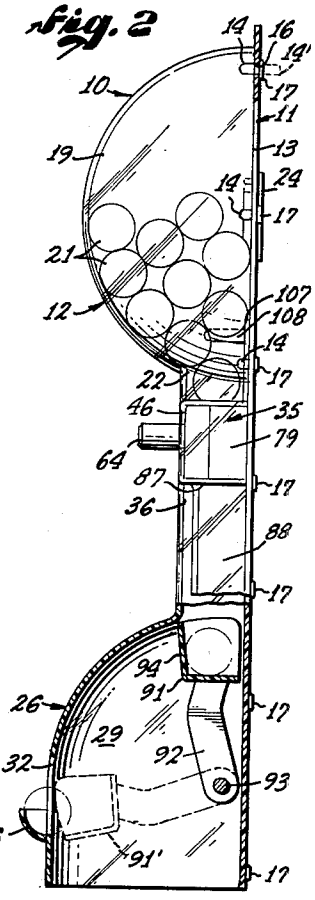


Fig. 3

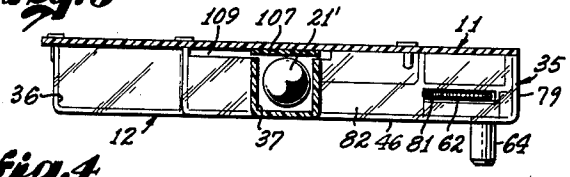


Fig. 6

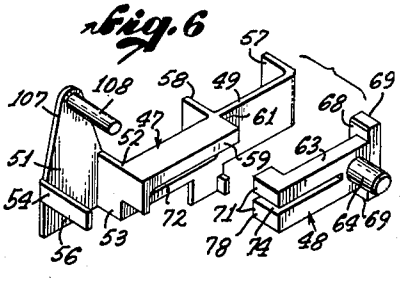


Fig. 4

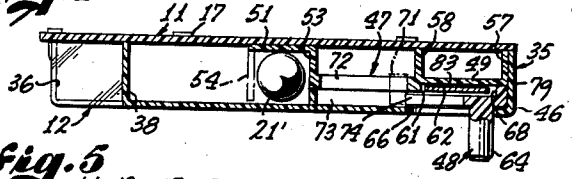
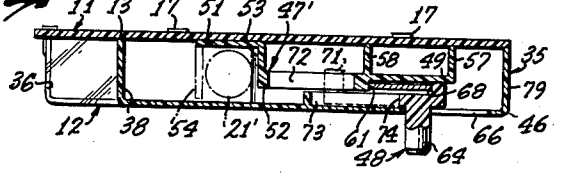


Fig. 5



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GUM BALL-DISPENSING MACHINE

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The invention relates to dispensing machines, and more particularly to a toy gum ball-dispensing machine useful for the amusement, education and development of thrift habits of children.

This invention provides a new and improved gum ball-dispensing machine for use as a toy which includes a transparent unitary housing secured to a base whereby complete visibility of the action of the machine is afforded the user. The housing includes a reservoir capable of storing a plurality of objects such as gum balls, or the like, a valve means for metering one of the objects at a time from the reservoir and selectively depositing the object in a sloped passageway of the housing communicating with a manually operable dispensing means. The valve means is manually operable when a coin is inserted therein, the coin being deposited in a coin passageway communicating with the banking compartment in response to actuation of the valve, while the ball passageway and the dispensing means are designed to provide a challenging or competitive game for the users thereof. The housing, being transparent, allows the user to visually follow the action of the ball as it is being metered and conveyed in the passageway and deposited in the dispensing means and the coin as it is being conveyed to the bank, thereby adding to the amusement of the user.

It is an object of this invention to provide a new and improved toy gum ball-dispensing machine of the character described above, which is economical to manufacture and capable of mass production.

It is another object of this invention to provide new and improved valve means for metering one ball at a time from the reservoir, the valve means being so designed and constructed to require a coin for the operation thereof.

Another object of this invention is to provide a new and improved gum ball-dispensing machine which provides a compartment in which coins used in the operation of the valve means are deposited to develop thrifty habits of the user.

It is a further object of this invention to provide a new and improved gum ball-dispensing machine which includes a competitive and challenging game in the dispensing means thereof.

Yet another object of this invention is to provide a new and improved gum ball-dispensing machine in which the complete operation thereof and dispensing thereof is visually accessible to the user.

A general object of this invention is to provide a new and improved gum ball-dispensing machine, which overcomes disadvantages of prior means and methods heretofore intended to accomplish generally similar purposes.

These and other objects of this invention will be more apparent from the following drawings, detailed description and appended claims.

In the drawings:

FIGURE 1 is a front, side view of a gum ball-dispensing machine, designed and constructed in accordance with this invention, with parts broken away for greater clarity;

FIGURE 2 is a cross-sectional view, as taken substantially along the line 2—2 of FIGURE 1, with parts shown in elevation;

FIGURE 3 is a horizontal, cross-sectional view, as taken substantially along the line 3—3 of FIGURE 1;

FIGURE 4 is a horizontal cross-sectional view as taken substantially along the line 4—4 of FIGURE 1;

FIGURE 5 is a horizontal cross-sectional view, similar to FIGURE 4, with parts thereof illustrated in a changed position; and

FIGURE 6 is a perspective view, in elevation, illustrating portions of a valve means of the invention in exploded relationship.

Referring in detail to the drawings, there is shown, by way of illustration, but not of limitation, a gum ball-dispensing machine designed and constructed in accordance with this invention and generally designated by the numeral 10. The gum ball machine 10 comprises a relatively flat, upstanding base 11 of substantially rigid material, such as metal, or the like, and a housing 12 of unitary construction and having an open back 13 juxtaposed to the base 11 so that, when assembled, the base 11 closes the open back 13. The housing 12 is preferably molded, die cast or otherwise formed in a unitary construction of a transparent, substantially rigid material such as plastics, or the like. The housing 12 includes a plurality of rearwardly-extending, peripherally-spaced tabs or pins 14 extending through aligned apertures 16 of the base for securement of a housing 12 to the base 11. The pins 14 are preferably integral with the housing 12 and of a thermoplastic material whereby the outwardly-extending portions, indicated in broken lines 14' may be flattened, by heating or the like, to form enlarged heads 17 to securely fasten the housing 12 to the base 11.

The housing 12 includes a hemispherical, or otherwise enlarged upper configuration which, with the base 11, forms a reservoir 19 for storing a plurality of objects such as spherical gum balls indicated at 21, the balls 21 being urged by gravity downwardly towards an opening 22 formed at the lower portion of the reservoir 19 for selective exit of balls 21 from the reservoir. An aperture 23 is formed in the base 11 substantially centrally located relative to the reservoir 19 for filling the reservoir with the objects 21, a removable closure member 24 being provided to close the opening after filling.

The housing 12 further includes an enlarged lower portion 26 of a generally parabolic configuration, the lower portion 26 being partially enclosed by a bottom wall 27 and the lower portion of the base 11, as best seen in FIGURES 1 and 2, and is vertically divided by a partition 28 to form a pair of discrete compartments 29 and 31, the compartment 29 being a dispensing compartment and having an elongated aperture 32 extending transversely through the front wall thereof, whereas the compartment 31 forms a coin collection or bank compartment. The compartment 31 is preferably accessible as through an opening 33 extending through the base 11 and having a removable closure member 34 removably secured within the opening for closure thereof.

A tortuous passage 36 is formed integral with the housing 12 and includes a substantially vertical portion 37 communicating with the opening 22 of the reservoir 19 and the interior of a transverse extension 35, a downwardly-sloped portion 38 communicating with the vertical portion 37 and an oppositely-sloped portion 39, the portion 39 having a substantially wide entry 41 communicating with the interior of the compartment 29, the dispensing compartment. The passage 36, at the intersection of a vertical portion and the sloped portion 38, is provided with a substantially horizontal shelf-portion 42, coextensive with a downwardly-extending step 43, forming a part of the downwardly-angled portion 38.

A valve means 44 is slidingly disposed in the extension 35 of the housing 12 and includes a pair of sliding elements 47 and 48 which are capable of linear movement within the extension 35, transverse to the vertical passage 37, and of sliding linear movement relative to each other.

The slide element 47 is slidable into a ball-receiving position, indicated in FIGURES 1–4, and a ball-discharging

position, indicated in FIGURE 5, wherein a ball 21', last received in the element 47, is deposited and discharged into the passage 36 for conveyance to the ball-dispensing compartment 26. The element 47 includes a longitudinal wall 49 having an offset portion 51 adjacent one end 52 thereof and a pair of transverse walls 53 and 54 spanning the offset 51 and spaced apart a distance slightly greater than the diameter of the balls 21, the wall 54 being cut away as indicated at 56 for a purpose to be herein described. The element 47 further includes a rearwardly-extending flange 57 adjacent to the opposite end, from the end 53, and a rib 58 intermediate of the end 52 and flange 57, the flange and rib 57 and 58 together with a horizontal flange 59 forming guide means to guide the element 47 in its sliding movement within the extension 35. The wall 49 is stepped to form a transverse shoulder 61 spaced inwardly from the end flange 57 for abutment with a coin 62 forming a key between the element 47 and the manually operable element 48.

The manually operable slide element 48 includes a longitudinal wall 63 having an elongated finger piece 64 extending forwardly therefrom and through an elongated slot 66 formed in a forward face 67 of the extension 35, the fingerpiece 64 being linearly movable within the slot 66 to move the element 48. The wall 63 further includes a shoulder 68 facing the shoulder 61 of the element 47 and cooperable with an opposite edge of the coin 62, as best seen in FIGURES 4 and 5, for transmitting movement of the element 48 in one direction to the element 47. A pair of transverse lugs 69 and a pair of inwardly extending transverse lugs 71 are provided on the element 48, the lugs 71 being engaged within an elongated, longitudinal slot 72 of the element 47, and slidable within the slot 72.

To stabilize and guide the movement of the element 48, a centrally-located horizontal longitudinal rib 73 is secured to or integral with the extension 35 and engages a longitudinal slot 74 of the element 48, the element 48 being slidable within the extension 35 and on the rib 73. A coil spring 76 is disposed within the extension 46 and has one end bearing against a vertical rib 77, connecting the rib 73 with the shelf 42, and another end bearing against the inner end 78 of the element 48 for biasing the element 48 outwardly and into normal contact with an end wall 79 of the extension 35, thus biasing the shoulders 61 and 68 apart when the elements 48 and 47 are in their outermost positions indicated in the ball-receiving and coin-receiving positions of the element FIGURES 1–4.

A coin slot 81 is formed in an upper wall 82 of the extension 46, as best seen in FIGURES 1 and 3, the slot 81 being aligned with a space 83 formed between the walls 49 and 63 of the elements 47 and 48, respectively, and between the shoulders 61 and 68, so that a coin 62 may be dropped through the slot 81 for positioning in the space 83.

After a coin 62 has been deposited in the space 83, between the shoulders 61 and 68, the element 48 may be manually actuated by linear manipulation of the fingerpiece 64 within the slot 66 to bring the shoulder 68 into contact with the coin 62. Subsequent movement of the element 48 transmits linear movement of the element 48 to the element 47, via the shoulder 61, to impart longitudinal linear movement to the element 47 transversely to the passage portion 37 and thereby transport a ball 21' received between the transverse walls 53 and 54 of the element 47 to the position indicated in broken lines 21*a*, and in solid lines 47' of FIGURE 5, whereby the ball 21' overlies the step 43. It will be noted that the cut-out 56 is dimensioned so as to retain the ball 21' within the element 47 and pocketed between the walls 53, 54 and on the shelf of 42. When the element 47 is in the position 47' of FIGURE 5, the ball 21' is removed from the shelf 42 and dropped off the step 43, thereby clearing the wall 54 to permit the ball to roll down the passage 38 into the passage portion 39 and through the opening 41 to the compartment 26.

When the fingerpiece 64 is released, the spring 76 biases the element 48 into abutment with the end wall 79, that is, to the right, as viewed in FIGURES 1, 3–5, whereby the lugs 71 disposed within the slot 72 of the element 47 engage the end 84 of the slot to return the element 47 into the coin-receiving and ball-receiving position.

In the event that the element 48 is operated without a coin within the space 83, there is no transmission of linear movement from the element 48 to the element 47, the lugs 71 merely slide within the slot 72 and no ball like 21' is transferred to the portion 38 of the passage 36.

A slot 86 is formed in the lower wall 87 of the extension 46 whereby the coin 62, when the valve element 47 reaches the actuated ball-discharging position, passes through the slot 86 and into a tortuous passageway 88 formed within the housing 12, communicating between the slot 86 and the coin compartment 31, wherein the coins are accumulated, as at 62', until removed through the opening 33 by removal of the closure member 34.

As a ball 21' enters the enlarged mouth 41 of the passage 36, it drops into a trough means including a trough 91 positioned thereunder. The trough includes one or more depending arms secured to a shaft 93 rotatably mounted in the compartment 29 for pivotal movement from an upper ball-receiving position, indicated in solid lines in FIGURES 1 and 2, to the dotted line, ball-dispensing position 91' indicated in FIGURE 2. The trough 91 in its lowermost position is aligned with the opening 32 of the lower portion 26 of the housing. A wall 94 of the trough 91 is substantially vertically disposed when the trough 91 is in its uppermost position and downwardly, slopingly disposed when in its lowermost position 91', whereby the ball is rolled or dispensed outwardly of the trough and through the opening 32. A lip 96 is preferably provided to retain the ball and prevent the ball from being ejected onto a floor or other support, not shown, for the machine 10.

To provide further amusement in the form of a game, the trough 94 is preferably subdivided into a plurality of vertical compartments by providing one or more partitions like 97 and 98 of varying heights. The compartments may be given different values, as indicated by the indicia thereon, whereby a ball falling into one of the compartments, denotes a score achieved by the user.

The trough 91 is biased into its upward ball-receiving position by means of a spring 101 circumjacent the shaft 93 and having one end 102 bearing against one of the arms 92 and another end anchored as to the partition 28 or a bearing 104 mounted thereon for supporting the shaft 93.

An actuator, in the form of a manually operable handle 106, is keyed or otherwise secured to the shaft 93 for manually rotating the shaft 93 and thereby pivoting the arms 92 and trough 91 into the lower ball-dispensing position, the arms 92 and trough 91 being urged into the upper position by the spring 101.

An agitator means is preferably provided to stir the balls to prevent them from sticking while in the reservoir and to provide further amusement to the user by causing motion of the balls visible through the wall of the reservoir. For this purpose, an upwardly-extending arm 107 is secured or integral with the offset 51 of the slide and has a transverse pin 108 extending into the reservoir, the arm 107 being reciprocable in response to sliding of the member 47, in a slot 109 of the housing.

While I have herein shown and described my invention in what I have conceived to be the most practical and preferred embodiments, it is recognized that departures may be made therefrom within the scope of my invention, which is not to be limited to the details disclosed herein, but is to be accorded the full scope of the claims so as to embrace any and all equivalent devices and methods.

What I claim and desire to secure by Letters Patent is:

1. A ball-dispensing machine comprising: a base; a

unitary housing secured to said base, said housing including a reservoir for storing balls and having an opening at the lower end thereof for gravity-biased exit of balls from said reservoir, manually operable dispenser means in said housing and spaced below said reservoir, passage means connecting said opening and said dispenser means for passage of said balls from said reservoir to said dispenser means, manually operable valve means intersecting said passage for selectively blocking and opening said passage, said valve means including first and second elements supported in said housing for linear movement therein, the first of said elements having a portion intersecting said passage and constructed to receive one ball at a time from said opening, the second of said elements being manually operable for linear movement relative to said first element, means whereby said elements are cooperable with a coin of predetermined size for translating the linear movement of said second element in the same direction, said first element being operable to discharge a ball received therein into said passage leading to said dispenser means in response to simultaneous linear movement of both elements in said one direction, and unitary spring means engaging said housing and said second of said elements for moving both of said elements in the opposite direction.

2. A gum ball-dispensing machine comprising: a substantially upright base; a unitary housing of transparent material having an open back and secured on said base with said open back juxtaposed to said base so that said base closes said open back, said housing including means defining a reservoir in the upper portion of said housing

and a lower compartment, valve means slidably mounted in said housing and intersecting said passage for selectively receiving one ball at a time from said opening and discharging said ball into said passage for passage of said ball to said lower compartment, said valve means being cooperative with a coin of predetermined size for manual actuation of said valve means, dispenser means having a plurality of ball receiving compartments pivotally mounted in said lower portion of said housing and having an opening communicating with said passage, manually operable means connected to said dispenser means for selectively positioning said dispenser means into a substantially vertical ball receiving position and a substantially horizontal ball dispensing position; means defining a transverse opening in said lower portion of said housing, and aligned with said trough in said horizontal dispensing position for dispensing a ball contained in said trough through said opening.

3. A machine as in claim 2 including spring means for biasing said dispenser means in said ball receiving position.

References Cited in the file of this patent

UNITED STATES PATENTS

1,602,765	Green et al.	Oct. 12, 1926
1,852,392	Axelson et al.	Apr. 5, 1932
1,905,169	Hartle	Apr. 25, 1933
2,606,088	Leaf	Aug. 5, 1952
2,765,101	Shanhouse et al.	Oct. 2, 1956