

B. WILLIAMS.
 VENDING MACHINE.
 APPLICATION FILED AUG. 18, 1920.

1,398,351.

Patented Nov. 29, 1921.

2 SHEETS—SHEET 1.

FIG. 1.

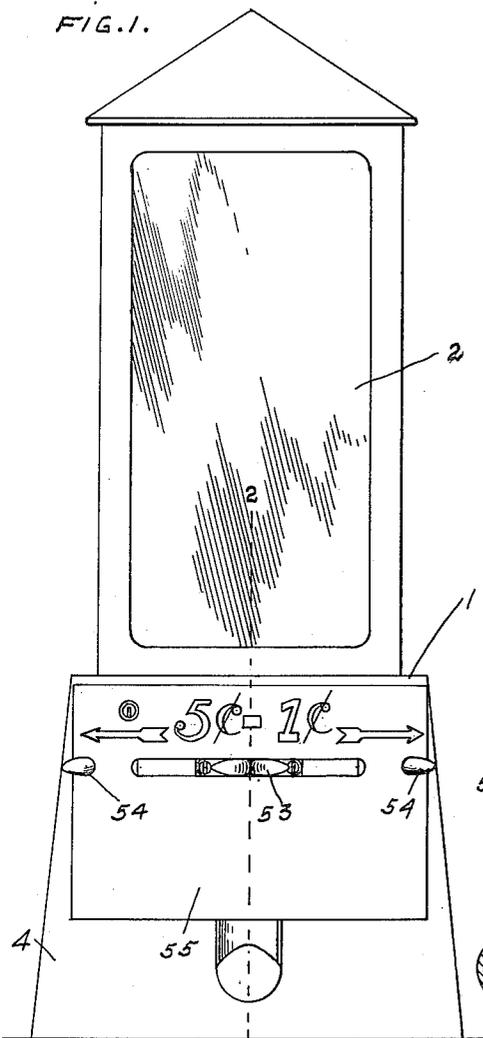


FIG. 2.

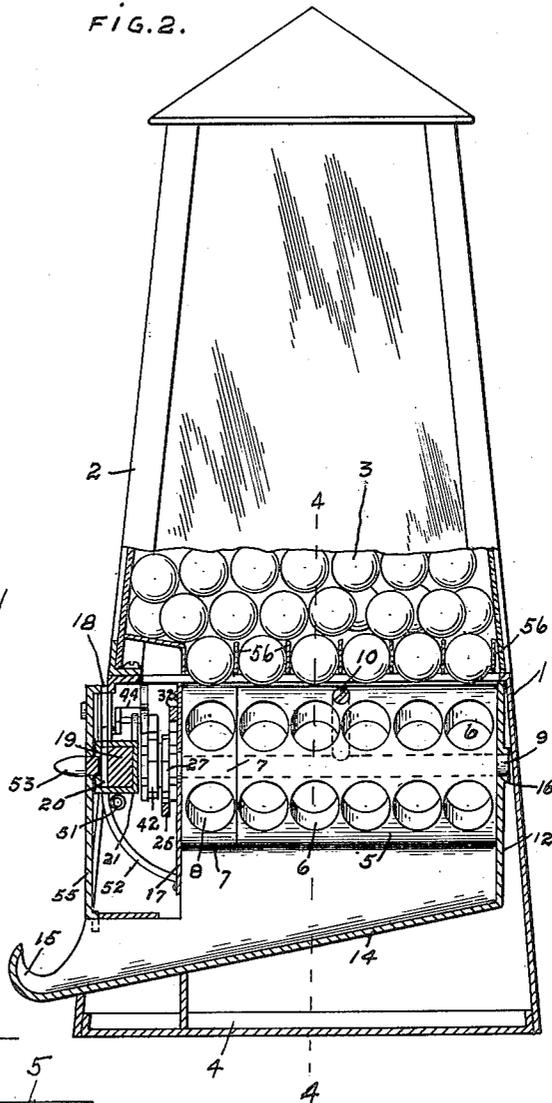
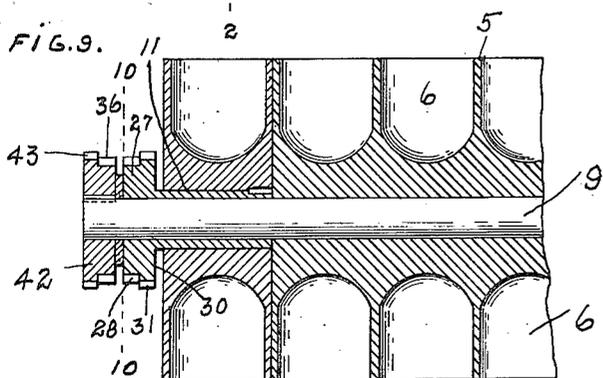


FIG. 9.



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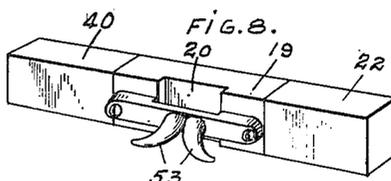
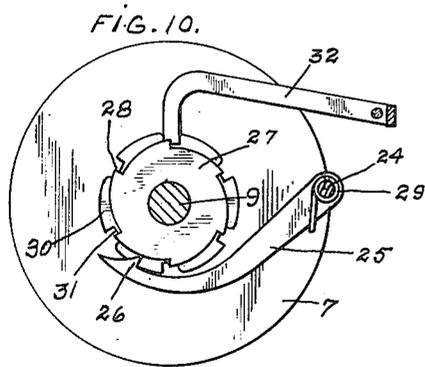
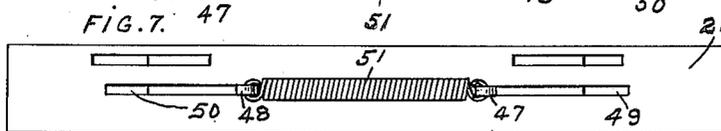
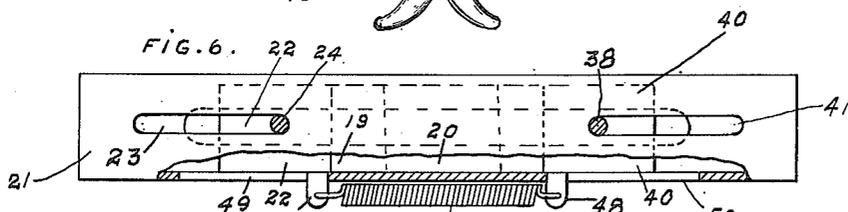
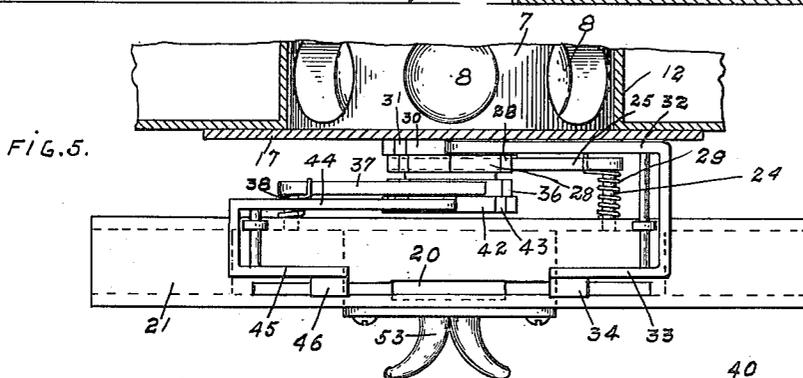
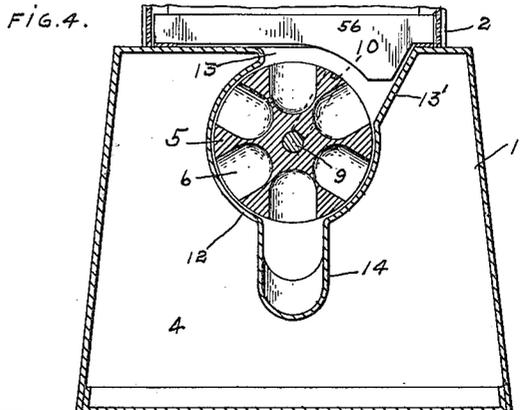
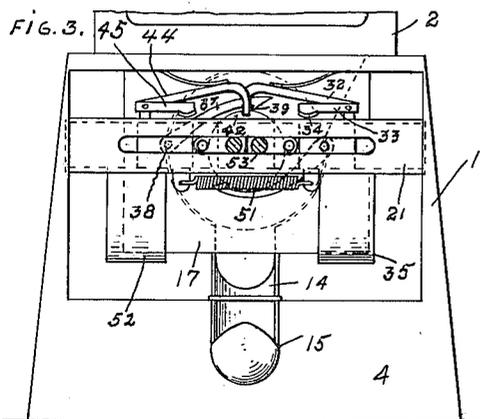
BY *W. B. [Signature]*
 ATTORNEY.

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2 SHEETS—SHEET 2.



INVENTOR.
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UNITED STATES PATENT OFFICE.

BRICE WILLIAMS, OF KOKOMO, INDIANA.

VENDING-MACHINE.

1,398,351.

Specification of Letters Patent.

Patented Nov. 29, 1921.

Application filed August 18, 1920. Serial No. 404,428.

To all whom it may concern:

Be it known that I, BRICE WILLIAMS, a citizen of the United States, residing at Kokomo, in the county of Howard and State of Indiana, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

The invention relates to vending machines and is designed primarily for vending gum, although it will be understood that it may be used for vending various other articles. The gum in this instance is formed into balls or globules so that it will readily enter the delivering portion of the vending machine.

The prime feature of the invention is the provision of a delivery cylinder so arranged that a single or a prescribed number of the globules of gum may be delivered at one operation of the cylinder, means being provided for causing the part of the cylinder delivering a single ball of gum to operate when a penny is deposited in parts of the machine, another mechanism being provided for causing another part of the cylinder to operate for delivering a plurality of the balls of gum simultaneously at one operation when a five cent piece or nickel is deposited in the machine.

A further feature of the invention is the provision of means for readily manipulating the operating parts of the device by hand when a penny or nickel has been deposited in the vending machine.

A further feature of the invention is the provision of means for causing the balls or globules of gum to readily descend into engagement with the discharging or delivery cylinder and not become pyramided within the gum receptacle of the machine.

Other objects and advantages will be hereinafter more fully set forth and pointed out in the accompanying specification.

In the accompanying drawings, which are made a part of this application,

Figure 1 is a front elevation of one form of gum vending machine,

Fig. 2, is a sectional view thereof as seen on line 2—2, Fig. 1,

Fig. 3, is an elevation of the lower portion of the vending machine with the door portion thereof removed,

Fig. 4, is a sectional view, as seen on line 4—4, Fig. 2,

Fig. 5, is an enlarged top plan view of the cylinder operating mechanism showing parts of the machine in section,

Fig. 6, is a plan view partly in section of the means for operating the cylinder when coins are placed therein, the view being on the reverse side from that shown in Fig. 3,

Fig. 7, is a bottom plan view of the parts of the mechanism shown in Fig. 6,

Fig. 8, is a perspective view of the coin receiving and carrying mechanism removed from its casing,

Fig. 9, is a central longitudinal sectional view through the cylinder and cooperating ratchets, and

Fig. 10, is a sectional view as seen on line 10—10, Fig. 9 showing the levers for co-operation with one of said ratchets.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1 indicates a vending machine which preferably comprises a receptacle 2 in which are placed a plurality of balls or globules of gum 3, and 4 indicates the base portion or housing of the vending machine.

In order to adapt the machine for dispensing a single ball of gum costing a penny, or a plurality of balls of gum simultaneously, and costing a nickel, a cylinder structure is provided comprising a cylinder 5 having a plurality of series of openings or sockets 6 around its periphery and an auxiliary cylinder 7 having a plurality of single openings 8 around its periphery, the cylinder 5 when rotated, discharging a plurality of the balls of gum simultaneously and the auxiliary cylinder when rotated discharging but a single ball of the gum.

Both of the cylinders 5 and 7 are mounted on a shaft 9 which forms an axis for said cylinders, the cylinder 5 being attached to the shaft 9 in any suitable manner as by means of a binding screw 10, and is caused to rotate with said shaft 9, while the auxiliary cylinder 7, which must operate independently of the cylinder 5, is connected to a sleeve 11 in any suitable manner, which sleeve is rotatably mounted upon the shaft 9. Surrounding the major portion of the

cylinders 5 and 7 is a shield 12, said shield being slotted at a point above the cylinders, as shown at 13, permitting the balls of gum 3 to readily enter the openings 6 and 8 of said cylinders, one wall of the slot being preferably inclined, as shown at 13'. At a point centrally below the cylinders and extending longitudinally thereof, the shield is bent to form a trough 14 which is inclined from its inner to its outer end, the forward end of the trough projecting through the front wall of the base 4 and terminating in a discharge lip 15, the inclined bottom surface of the trough 14 causing the globules or balls of gum to descend by gravity into the discharge lip. One end of the shaft 9 enters a bearing 16 in the inner end wall of the shield 12 while the outer end of said shaft extends through a plate 17 over the outer end portion of the shield.

The cylinder 7 is to be operated when a penny is deposited in the machine so as to deliver but a single ball of gum, and in accomplishing this result a coin slot 18 is formed in parts of the vending machine and below said coin slot is positioned a slide bar 19 through which is formed a slot 20 for the reception of the coin, said slide bar being preferably incased in a housing 21, which housing is in turn mounted in any suitable manner within the base portion 4 of the machine.

Also mounted in said housing 21 and at one end of the slide bar 19 is an operating bar 22 which merely abuts against one end of the slide bar 19 and is moved in one direction by the movement of the slide bar 19. Attached to the operating bar 22 and projecting through an elongated slot 23 in the inner face of the housing 21 is a bearing post 24 to the protruding end of which is attached a pawl 25, the latch end 26 of the pawl passing below a ratchet 27 which is in turn attached to the sleeve 11 of the auxiliary cylinder 7, the ratchet 27 having shoulders 28 for engagement with the latch end 26. The latch end 26 of the pawl is held in the path of the shoulders 28 in any suitable manner, as by means of a spring 29 which in this instance is attached around the bearing post 24 and having one end thereof hooked beneath the pawl 25. By this arrangement it will be noted that when the slide 19 is moved lengthwise toward the operating bar 22, said operating bar and the bearing post 24 will be moved longitudinally and the pawl 25 engaged with one of the shoulders on the ratchet 27 and cause said ratchet and the auxiliary cylinder 7 attached thereto to rotate a prescribed distance, or in other words will be moved a sufficient distance to bring the next succeeding opening 8 into registration with the trough 14 and discharge a ball of gum.

Coöperating with the ratchet 27 is a dial 30 having notches 31 around its periphery and coöperating with said notches is a locking finger 32, and so long as one end of said locking finger is in engagement with one of said notches it will be impossible to rotate the auxiliary cylinder 7. The locking finger 32 is pivotally mounted, preferably upon the housing 21, and is provided with an arm 33 which extends into the path of the coin in the slot 20 in the slide 19, the coin striking a ledge 34 on the arm 33 thereby rocking the arm and finger on their pivot and causing the locking end of the finger 32 to elevate. This releases the ratchet 27 and permits the same, together with the auxiliary cylinders 7 and dial 30 to rotate, the notches 31 being so arranged that they will register substantially with the openings 8 in the auxiliary cylinder and limit the rotation of the auxiliary cylinder so that but one ball of gum can be discharged with each penny entered in the machine. The locking finger and pawl are so arranged with respect to the movement of the operating bar 22 and slide bar 19 that the penny will be released slightly in advance of the discharge of the gum from the opening in the cylinder 7. This renders it impossible for the operator to manipulate the machine and obtain more than one ball of gum with a single penny. As the coin is discharged from the slot 20 it descends through a chute 35 into any suitable form of coin compartment in the base portion 4 of the machine.

The cylinder 5 is operated in a manner similar to the cylinder 7, the shaft 9 having a ratchet 36 fixed thereto, and coöperating with said ratchet 36 is a pawl 37 similar to the pawl 25, but arranged on its bearing post 38 so that the latch end 39 thereof will pass above the ratchet 36 and rest thereon by gravity, although a pressure may be applied if necessary. The post 38 is attached to an operating bar 40 at the opposite end of the slide bar 19 from the bar 22, said post passing through a slot 41 in the face of the housing 21. A dial 42 is associated with the ratchet 36 and the locking dial 30 is provided with a number of notches 43, in number equal to the series of openings 6 in the cylinder 5, and with these notches coöperates a locking finger 44, the arm 45 of which extends in the path of the coin carried by the slot 20, a ledge 46 carried by the arm 45 being engaged by the coin for rocking the arm and finger on their pivot for releasing the end of the locking finger from the notch 43 in the dial 42. This latter releasing or operating mechanism is so arranged as to require a coin of the five cent denomination to operate the same as the cylinder 5 which releases a number of the balls simultaneously is controlled thereby, conse-

quently, a coin of a smaller denomination as for instance a penny, will not operate these members. Therefore, when a five cent piece is deposited in the slot 20 the sliding bar 19 is to be moved in the opposite direction from that previously described for carrying the penny, thereby moving the operating bar 40 longitudinally of the housing 21 and moving the coin of the larger denomination below the ledge 46 for operating the locking finger connected therewith, this movement also operating the pawl 44 and rotating the cylinder 5.

The coin in this instance, similar to the coin of the smaller denomination, passes from beneath the ledge 46 just prior to the release of the gum from the openings 6 in the cylinder 5, consequently it is impossible to again operate the machine for releasing additional balls of gum until an additional coin has been placed in the slot.

The operating bars 22 and 40 are so arranged that when one bar is being moved lengthwise of the housing 21, the other operating bar remains stationary, consequently but one cylinder can be operated at a time and by extending ears 47 and 48 downwardly from the operating bars 22 and 40, respectively, through slots 49 and 50 in the bottom of the housing 21 and connecting said ears with a tensioning spring 51 the operating bar and the slide bar will be returned to their initial positions, as soon as the operation has been completed, to discharge the gum from the machine. The coins of the larger denomination, or the five cent pieces, after they leave the coin slot 20, pass through a chute 52 into any suitable coin compartment in the lower portion of the base 4.

To facilitate the operation of the slide 19 and the operating bars 22 finger grips 53 may be attached to the slide bar 19 and similar finger grips 54 attached to the movable face plate 55 and by gripping one of the members 53 and one of the members 54 with the thumb and finger and directing a squeezing pressure the slide bar 19 and one of the operating bars will be moved either to the right or left depending upon the denomination of the coin entered in the coin slot, and as soon as this pressure is released the spring 51 will return said operating parts to their initial position. In order to prevent the balls of gum from binding or pyramiding within the receptacle 2 a plurality of separating fingers or partitions 56 are extended transversely across the bottom portion of the receptacle 2 and immediately over the cylinders 5 and 7, the spaces between said fingers being such as to permit the passage of but one ball side by side, consequently there is always a ball in position to enter the openings 6 and 8 as the

cylinders are rotated and brought into registration with the slot 13.

In operating the device, supposing a purchase of a single ball of gum is to be made, the purchaser deposits a penny in the slot 18 which descends into the slot 20 of the slide bar 19 and is held so that the upper edge thereof projects above the top of the housing 21. The slide bar 19 and the operating bar 22 are then moved lengthwise of the housing 21 by directing pressure on the fingers 53 and 54, and as the coin is carried below the ledge 34 the locking finger 32 will be released from the dial 30 and the pawl 25 will rotate the cylinder 7 and discharge a ball of gum therefrom. As soon as the gum descends into the trough 14, pressure is released from the fingers 53 and 54 whereupon the spring 51 will return the slide 19 and bar 22 to their initial positions, and the locking finger 32 will engage the next succeeding notch 31 and prevent further rotation of the dial 30 until an additional coin has been entered in the slot 20.

If the purchaser desires a greater number of balls of gum than one, a five cent coin is placed in the slot 18 and descends into the coin slot 20, and when so deposited the slide bar 19 and the operating bar 40 are moved in the opposite direction from the previous movement of the slide 19 which will bring the coin below the ledge 46 and release the locking finger 44, the continued movement of the bar 40 causing the pawl 37 to rotate the cylinder 5 and discharge a plurality of balls of gum simultaneously into the trough 14. Likewise, in this instance the spring 51 will return the slide bar 19 and operating bar 40 to their initial positions when pressure is released from the fingers 53 and 54. In the present instance the slot 20 is shown as formed in one face of the slide bar 19, but it will be clearly understood that the slot 20 may be formed through the solid portion of the slide bar 19 between the side faces thereof.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a vending machine, a pair of cylinders, a single shaft supporting both of said cylinders, one of said cylinders delivering a plurality of vendible articles at each operation and the other a single vendible article at each operation, and independently operable means for rotating one or the other of said cylinders.

2. In a vending machine a cylinder having series of openings therein for the reception of vendible articles, an additional cylinder having a plurality of openings arranged singly therein, independently operable means for rotating said cylinders a

prescribed distance for discharging a number of vendible articles simultaneously or a single article, and coin controlled means for determining the release of said cylinders.
5

this 10th day of August, A. D. nineteen hundred and twenty.

BRICE WILLIAMS. [L. s.]

Witnesses:

CAREY S. FRYE,
M. L. SHULER.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana,