A. JACOBS.

VENDING MACHINE.

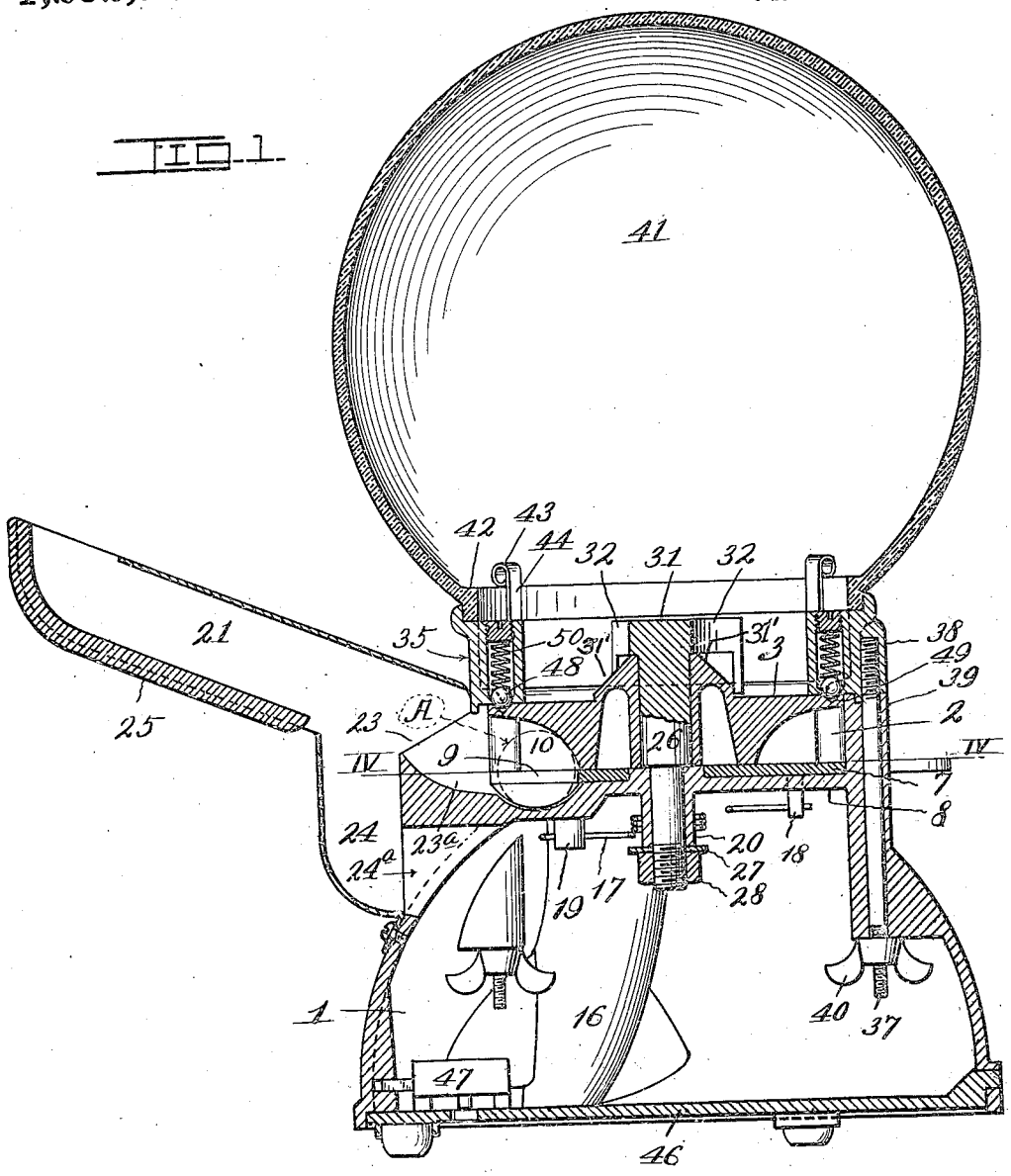
APPLICATION FILED NOV. 15, 1916.

1,252,121.

Patented Jan. 1, 1918.

3 SHEETS—SHEET 1.

FIG. 1.



Witness:

R. H. Hamilton

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3 SHEETS—SHEET 2.

FIG. 2.

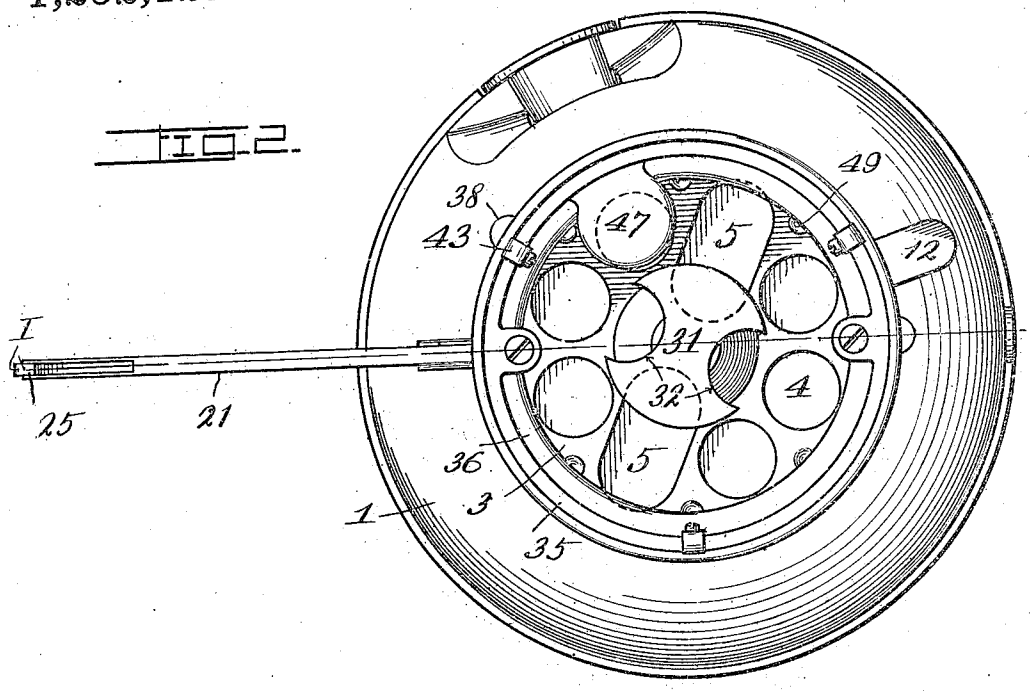
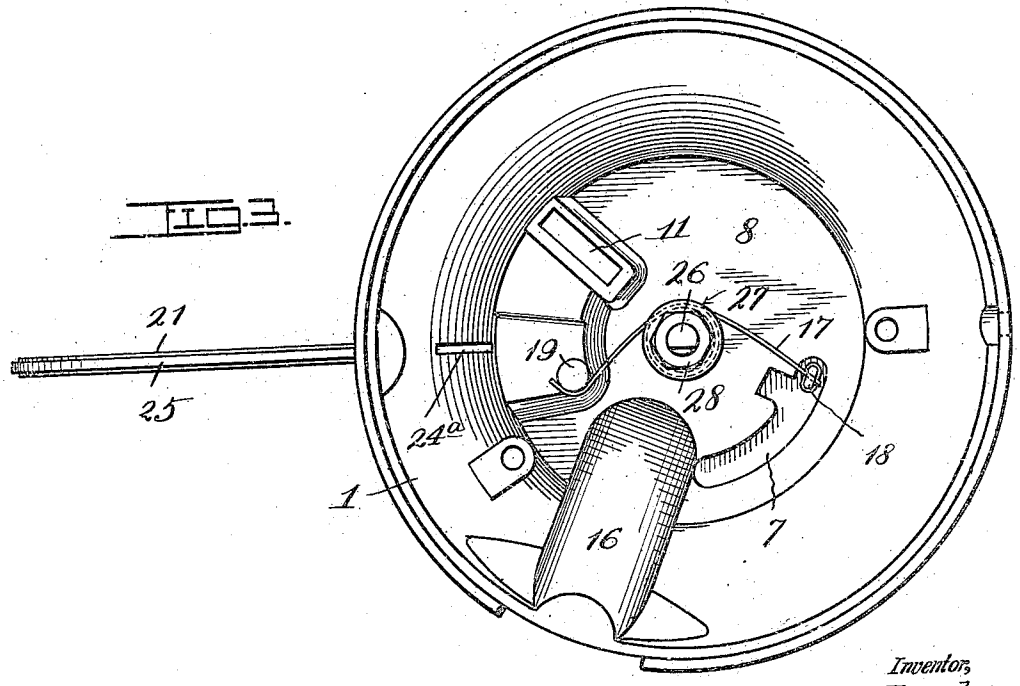


FIG. 3.



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3 SHEETS—SHEET 3.

1,252,121.

FIG. 4.

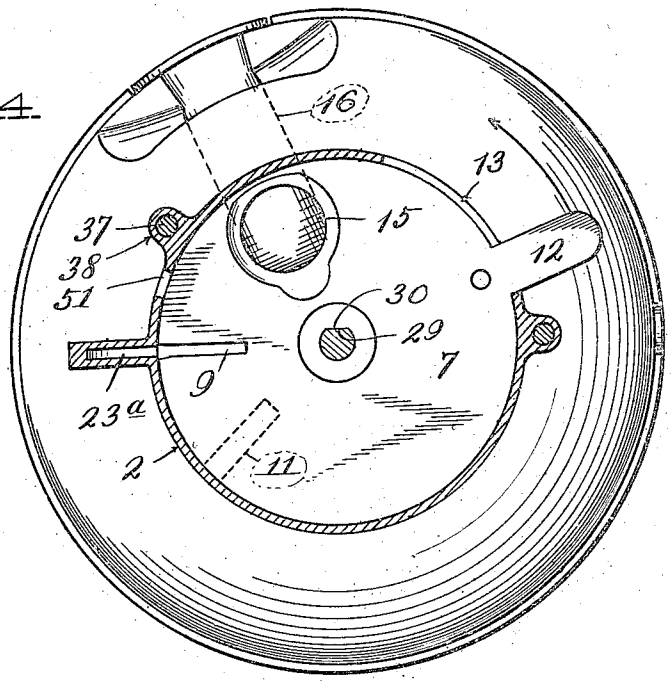


FIG. 5.

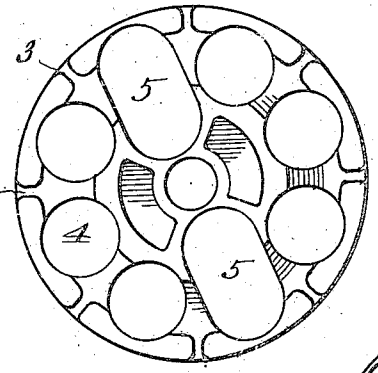


FIG. 8.

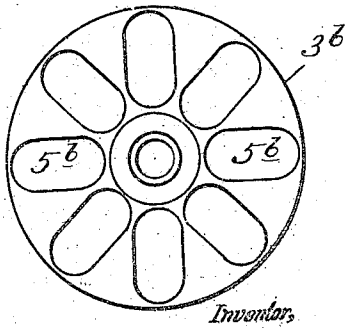


FIG. 7.

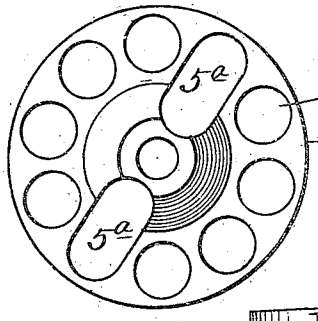
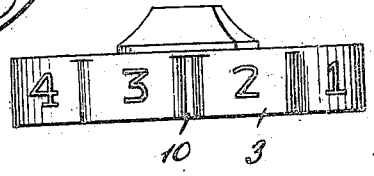


FIG. 6.



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UNITED STATES PATENT OFFICE.

ALONZO JACOBS, OF KANSAS CITY, MISSOURI, ASSIGNOR TO JACOBS GUM COMPANY, A CORPORATION OF MISSOURI.

VENDING-MACHINE.

1,252,121. Specification of Letters Patent. Patented Jan. 1, 1918.

Application filed November 15, 1916. Serial No. 131,547.

To all whom it may concern:

Be it known that I, ALONZO JACOBS, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

This invention relates to vending machines and is an improvement upon a machine on which Letters Patent were issued to me July 4, 1916, No. 1,189,954. The present machine like the patented one, embodies a suitable base whose upper portion is formed into a tray compartment containing a circular chambered delivery tray similar to the well-known drop plate employed in seed planting machinery. To impart to this delivery tray a step by step movement in advance direction, an actuating plate lies under it in the tray compartment and is arranged for rotative movement by the vendee sufficient to advance the tray one step when engaged therewith by a proper coin. The actuating plate is provided with a port adapted to register with successive chambers of the delivery tray and allow emptying of said chambers into a delivery chute as they are successively brought into delivery position.

One object of the present invention is to provide a delivery tray with different sized chambers, so that more articles will be vended at one time than another.

A further object is to provide a coin chute and detecting device, whereby a proper coin is received and guided into the machine to lock the actuating plate and the delivery tray together, or a spurious tag or article with which attempt is made to operate the machine, will be detected and delivered into the base of the machine, so that it cannot be utilized in further attempts to defraud the machine.

Other objects will hereinafter appear, and in order that said invention may be fully understood, reference will now be made to the accompanying drawings, in which:

Figure 1 is a vertical sectional view of the machine taken on the plane of line I of Fig. 2.

Fig. 2 is a plan view of the machine with the container for holding the goods removed.

Fig. 3 is an inverted plan view of the machine with the base plate removed.

Fig. 4 is a horizontal section on line IV—IV of Fig. 1, with the coin chute removed.

Fig. 5 is a detail inverted plan view of the delivery tray.

Fig. 6 is a side elevation of the delivery tray.

Fig. 7 is a plan view of a modified form of delivery tray.

Fig. 8 is a plan view of another modified form of delivery tray.

Referring now in detail to the various parts, 1 designates a hollow base having its upper portion formed into a compartment 2 containing the circular delivery tray 3. As disclosed by Figs. 2, and 3, said delivery tray has circular chambers 4, each adapted to receive and deliver one article to be vended, and elongated chambers 5, each adapted to receive and deliver two of the articles to be vended.

7 designates the circular actuating plate (Fig. 4), which lies upon the bottom 8 of the compartment 2 beneath the delivery tray 3, to which it is adapted to be locked by a proper coin A, the lower portion of which passes through a slot 9 in said actuating plate 7, while its upper portion enters any one of the slots 10 arranged between the chambers of the delivery tray. The bottom 8 of the compartment 2 has a slot 11 for the passage of coins into the hollow base 1, which is of sufficient depth to hold a large number of coins.

The actuating plate 7 is manually operated by an integral handle 12, which projects through a slot 13 in the wall of the tray compartment 2, and is limited in its movement by the ends of said slot. Said actuating plate 7 has a port 15 for the passage of goods to a delivery chute 16 leading from the bottom 8 of the compartment 2 to the exterior of the hollow base 1. The actuating plate 7 is normally held in the position disclosed by Fig. 4, with its port 15 registering with the upper end of the delivery chute 16, by a spring 17, one end of which bears against a lug 18 on the underside of the actuating plate 7, while its opposite end bears against a lug 19 depending from the bottom 8. In order to give the spring 17 the desired resiliency it is coiled around a tubular protuberance 20 depending from the central portion of the bottom 8 of the compartment 2.

The coin is guided to the registering slots 9 and 10 by a coin chute 21, having branches 23 and 24 at its lower portion leading to slots 23^a and 24^a in the base 2, which communicate with the slots 9 and 10, respectively, (Fig. 1).

A permanent magnet 25 is incorporated in the underside of the coin chute 21 to retard the downward movement of a spurious coin, so that the same will fall into the branch 24 and be directed into the hollow base 1, whereas a proper coin being unattracted by said magnet 25, rolls down the inclined chute 21 with sufficient rapidity to jump the branch 24 and enter the registering slots 9 and 10, after passing through the branch 23 and the slot 23^a.

26 designates a stud which forms a central shaft for the delivery tray 3 to rotate on. Said stud 26 extends down through the protuberance 20, below which it is threaded and engaged by a washer 27 and a nut 28, which latter holds the stud in place. In order to prevent the stud 26 from rotating with the delivery tray 3, it has a flattened side 29 engaging a corresponding side 30 (Fig. 4), on the interior of the protuberance 20. The upper end of the stud 26 has an enlarged head 31 with two peripheral recesses 32 to allow two of the articles to be vended to pass into each of the elongated chambers 5, when the same are brought into coincidence with said recesses 32 through the step by step rotation of the delivery tray 3. The delivery tray 3, as shown in Fig. 1, has a conical central part 31′ which flares downwardly. The elongated chambers 5, 5, (Fig. 2) at their inner ends extend into and interrupt the conical part 31′, whereby when the chambers 5 register with the recesses 32 two of the articles will drop in chambers 5 and when the cut-outs register with the chambers 4, but one of the articles will be caused by the inclined faces 31′ to roll into chambers 4, and will be guided by the side walls formed by recesses 32 in their rolling movement.

In holding the machine in assemblage an annular upward extension 35 whose inner lip 36 holds the delivery tray 3 down in the tray compartment 2, is provided with depending rods 37 permanently screwed into protuberances 38, integral with said extension 35. Said rods 37 pass removably-downward through protuberances 39 on the sides of the base 1 and are engaged by wing nuts 40. The container 41 is held in place by an annular shoulder 42 near its lower edge and this shoulder is reliably engaged by the upper hooked ends 43 of a plurality of spring fingers 44, fixed to the inner surface of the annular extension 35. The base plate 46 of the base 1 is provided with a suitable lock 47, so that it cannot be removed by a person not provided with a proper key.

To fill the container 41, the machine is inverted and the base plate 46 removed, so that access may be had to the nuts 40, which on being removed from the rods 37 permit the container 41 and the extension 35 to be taken off the top of the base 1. After filling the container 28 in its inverted position, the base 10 is placed back upon it and the nuts 40 screwed in place on the rods 37. The base plate 46 is then put in place and secured by the lock 47.

The operation briefly stated is as follows: After a proper coin has been inserted, the actuating plate 7 is rotated until its handle 12 contacts the opposite end of the slot 13 (Fig. 4), carrying the delivery tray 3 therewith one step equal to the distances between centers of the chambers 4. This carries the empty chamber away from over the entrance to the delivery chute 16 and a filled chamber over said entrance, but communication with the latter is cut off by the actuating plate 7 until released by the vendee and carried back to normal position by the spring 17, whereupon the port 15 is brought into register with the filled chamber and the delivery chute, into which latter the chamber empties. The empty chamber remains in position over the entrance to the delivery chute until the delivery tray 3 is advanced another step, but articles in the container 41 are prevented from passing down through the empty chamber 4 and out through the delivery chute by a guard 47 on the extension 35. When the actuating plate 7 is moved in the direction of the arrow, Fig. 4, to advance the delivery tray 3 one step the latter is locked to said actuating plate by the interposed coin until the actuating plate reaches the end of its movement, whereupon said coin drops through the slot 11 in the bottom plate 8 and releases the delivery tray 3 from the actuating plate. When the actuating plate is released by the vendee and returned to normal position by the spring 17, the delivery tray 3 is prevented from moving backward therewith by two ball detents 48 entering the two underlying ball seats 49. Seats 49 are arranged between chambers in the delivery tray 3, and the detents 48 are yieldingly-forced by springs 50 into said seats as they successively pass beneath said detents.

In order to eliminate all chance and enable the vendee to determine when two articles are to be delivered for one coin, the sides of the chambers 4 and 5 are consecutively numbered as disclosed by Fig. 6, and a peep-hole 51 is provided in one side of the extension 35 with which said numerals consecutively register as the delivery tray is rotated step by step.

In the modified form disclosed by Fig. 7 the delivery tray 3^a is provided with eight small chambers 4^a and two diametrically opposed long chambers 5^a. Thus two articles will be delivered for each fifth coin placed in the machine.

In the modified form disclosed by Fig. 8, all of the chambers 5^b of the delivery tray 3^b are elongated, so that two of the articles will be delivered for each coin.

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

1. In a vending machine, a base having a delivery chute, an actuating plate having an article outlet for register with said chute, a delivery tray above and connected to the actuating plate and having a central conical part flared downwardly with a series of article receiving chambers and a series of larger article receiving chambers the inner ends of which latter extend into said conical part, and a stud extending through the plate and having an enlarged head engaging the top of the tray, said head having recesses extending through its periphery for register with the larger tray chambers to admit articles to the latter said recesses exposing the underlying portions of the conical part so that the latter will cause the balls to roll into the smaller chambers upon the latter being positioned opposite said recesses.

2. In a vending machine, a base having a delivery chute, an actuating plate having an article outlet for register with said chute, a delivery tray above and connected to the actuating plate and having a central conical part flared downwardly with a series of article receiving chambers and a pair of diametrically opposed larger article receiving chambers the inner ends of which latter extend into said conical part, and a stud extending through the plate and having an enlarged head extending over the tray, said head having a pair of diametrically opposed cut-outs in its periphery for simultaneous registry with said pair of larger article receiving chambers said recesses exposing the underlying portions of the conical part so that the latter will cause the balls to roll into the smaller chambers upon the latter being positioned opposite said recesses.

In testimony whereof I affix my signature, in the presence of two witnesses.

ALONZO JACOBS.

Witnesses:
W. H. L. WATTS,
F. G. FISCHER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."