

April 25, 1939.

J. E. ROMANOSKI

2,156,196

VENDING MACHINE

Filed April 28, 1937

3 Sheets-Sheet 1

Fig. 1.

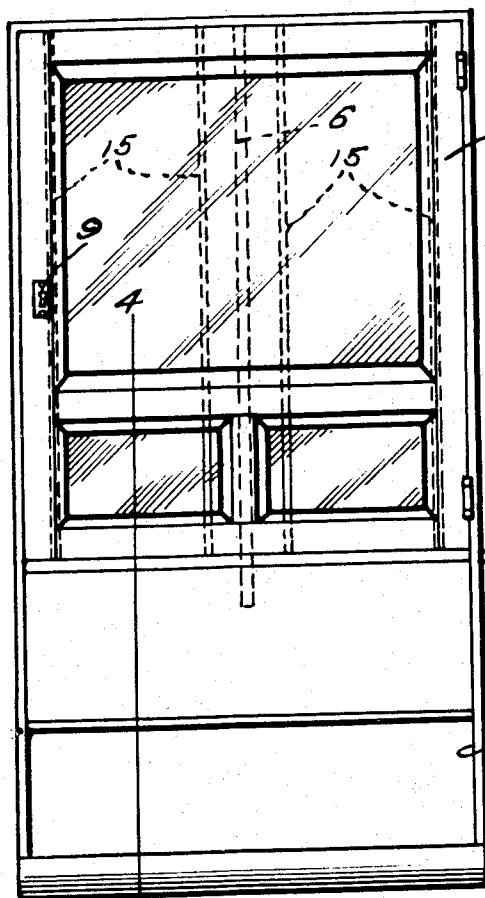


Fig. 11.

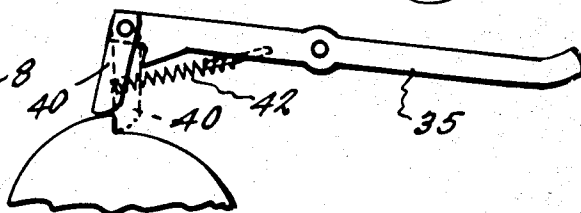


Fig. 12.

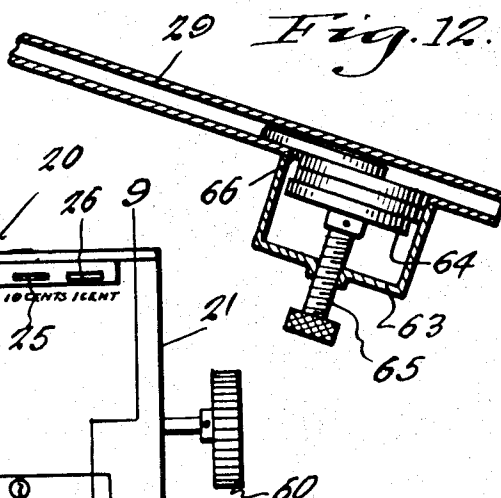
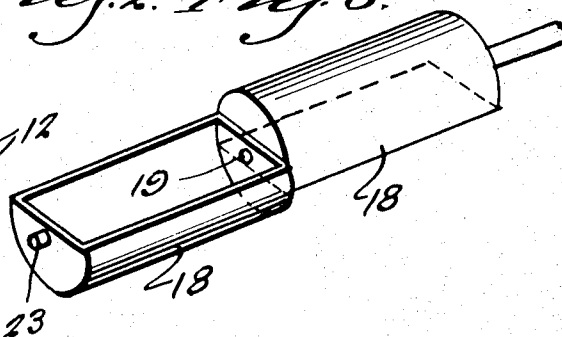
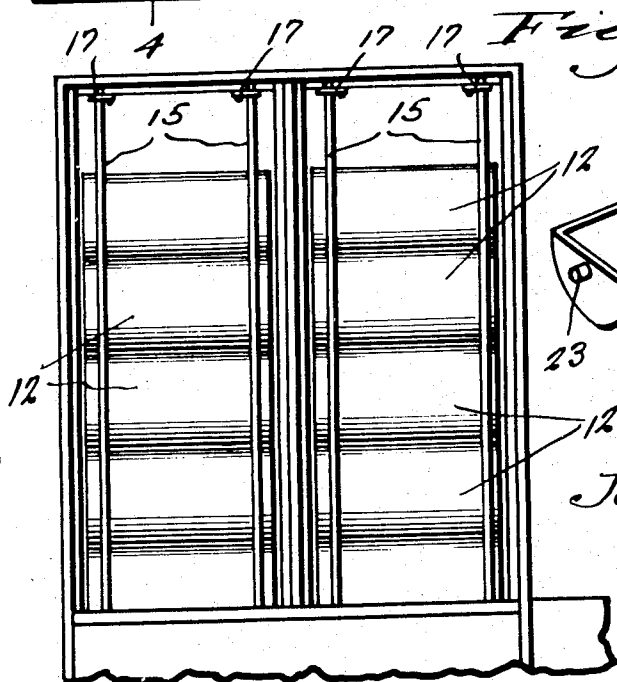


Fig. 2. Fig. 6.



Inventor

Joseph E. Romanoski

By

Oliver A. O'Brien
Hyman Berman

Attorneys

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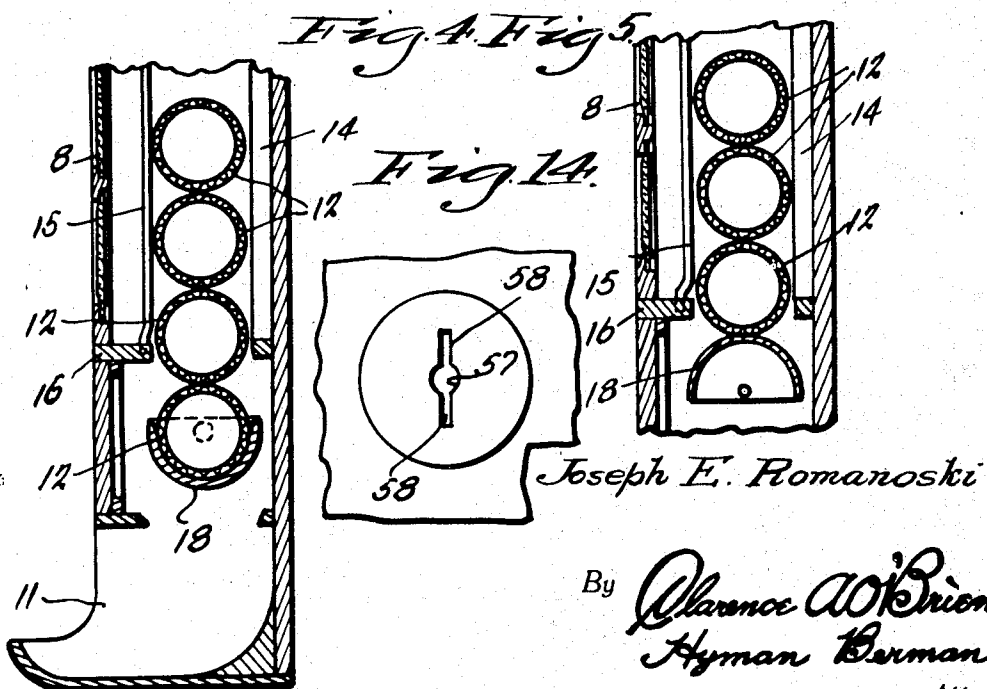
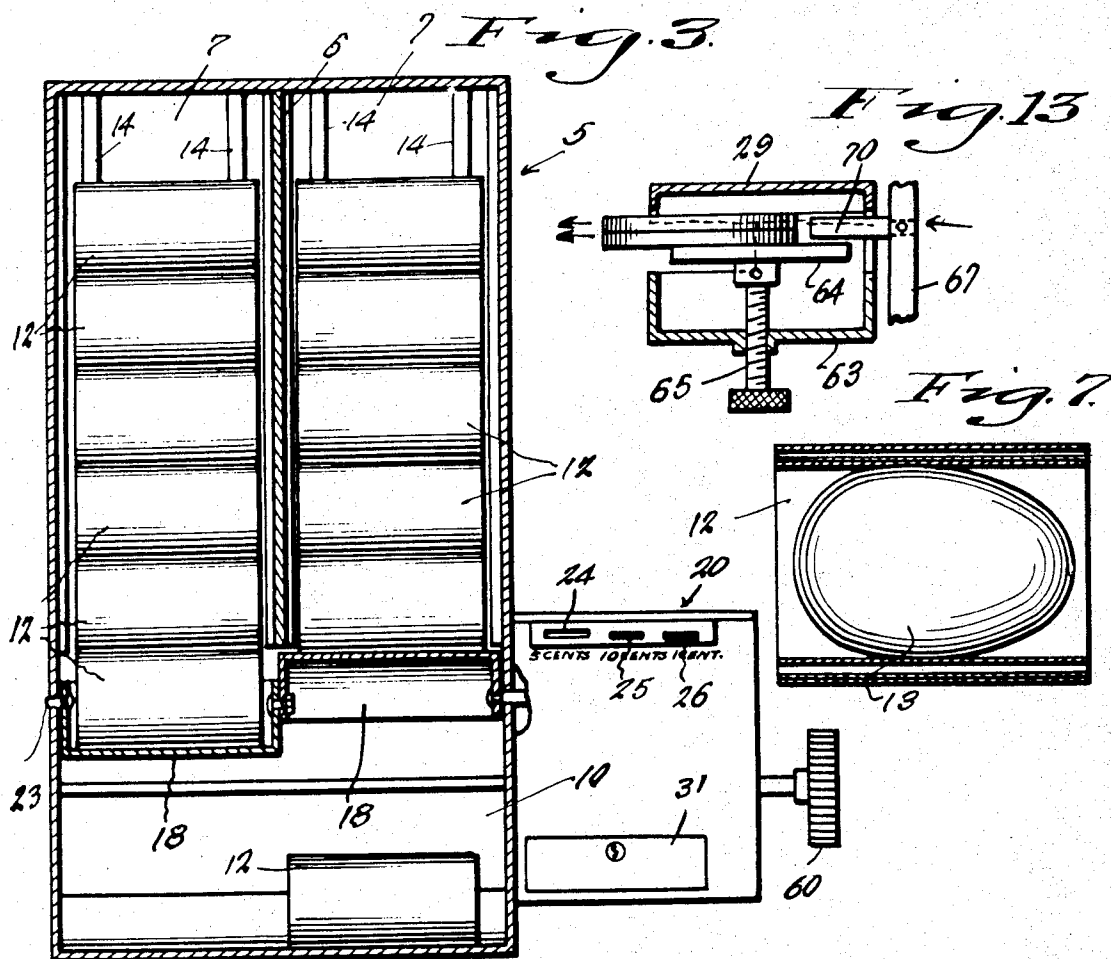
J. E. ROMANOSKI

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VENDING MACHINE

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3 Sheets-Sheet 2



2,156,196

3 Sheets-Sheet 3

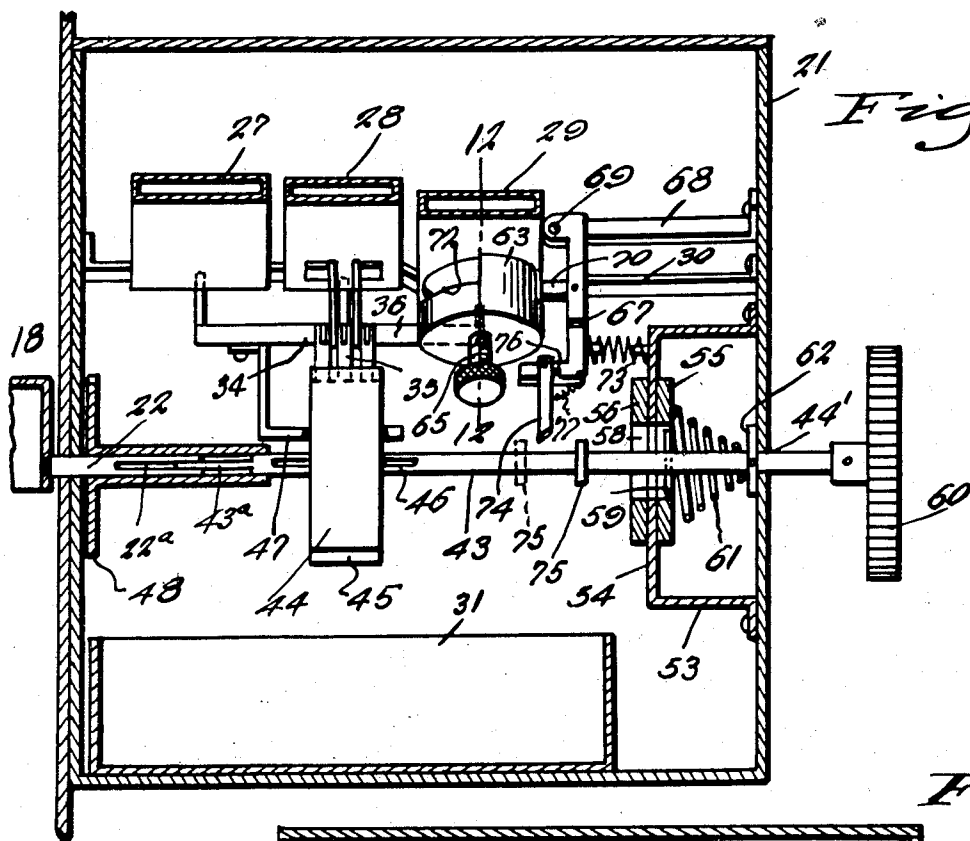
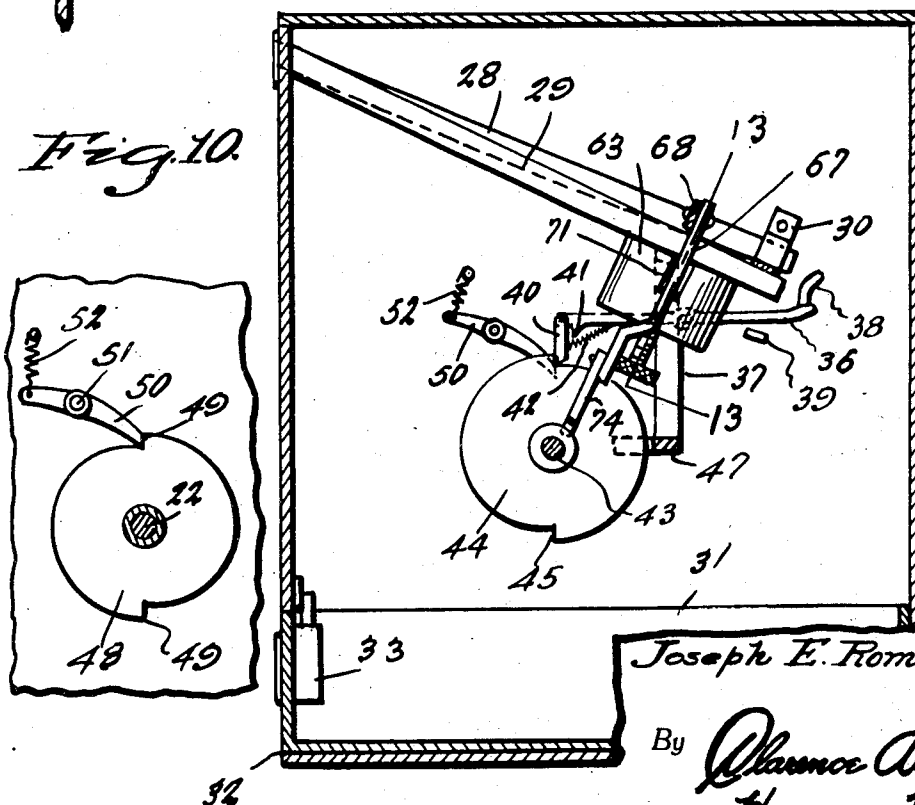


Fig. 9.



Inventor

Joseph E. Romanoski

Bu

Clarence A O'Brien
Hyman Berman

Attorneys

UNITED STATES PATENT OFFICE

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VENDING MACHINE

Joseph E. Romanoski, Huntington, N. Y.

Application April 28, 1937, Serial No. 139,595

2 Claims. (Cl. 312-48)

This invention relates to improvements in vending machines, and has as its object the provision of a vending machine particularly adapted for vending foodstuffs, and principally cooked foodstuffs such as hard boiled eggs and the like.

In accordance with the present invention hard boiled eggs suitably wrapped may be vended from a coil controlled vending machine embodying the features of the present invention, and which machine can be set up in restaurants, amusement parks, and the like.

The invention, together with its objects and advantages will be best understood from a study of the following description, taken in connection with the accompanying drawings, wherein:

Figure 1 is a front elevational view of the vending machine.

Figure 2 is an elevational view of the magazine portion of a casing forming part of the invention and with certain parts removed.

Figure 3 is a vertical sectional view illustrating certain features hereinafter more fully referred to.

Figures 4 and 9 are detail views taken on the lines 4-4 and 9-9 of Figure 1.

Figure 5 is a fragmentary detail sectional view illustrating certain details hereinafter more fully referred to.

Figure 6 is a perspective view of a receiving and delivering member.

Figure 7 is a longitudinal sectional view through a wrapping for an egg and showing the egg arranged within the wrapping.

Figure 8 is a vertical sectional view through the housing forming part of the coin control mechanism.

Figure 10 is a detail view showing a dog and cam assembly hereinafter more fully referred to.

Figure 11 is a detail elevational view of a coin actuated lever and a cam disk complementary thereto.

Figure 12 is a detail sectional view substantially on the line 12-12 of Figure 8.

Figure 13 is a detail sectional view substantially on the line 13-13 of Figure 9.

Figure 14 is a fragmentary detail elevational view of a slotted disk assembly hereinafter more fully referred to;

Referring to the drawings by reference numerals, it will be seen that in accordance with the present invention, my improved article vending machine comprises a casing 5, the upper portion of which is divided by a vertical partition 6 into a pair of compartments or magazines 7. For the front of the casing there is provided a horizontal-

ly swingable hinged door 8 provided with glass panels through which may be viewed the contents of the magazines or compartments 7. Any suitable lock 9 may be provided for the door 8 to prevent unauthorized access to the compartments 7.

The lower portion of the casing 5 is formed to provide a delivery chamber 10 open at the front thereof as at 11 and through which opening 11 access is had to the compartment 10 for removal of the articles delivered to the compartment 10.

In the present instance, I have shown arranged in the compartments 7 substantially cylindrical bodies in superimposed relation for delivery to the compartment 10. Such bodies referred to consist of cylinders 12 of corrugated paper and provide wrappings for eggs 13 which have been "hard boiled" and thus will remain in a fresh eatable station over a considerable period of time.

The packages 12 are held in vertical rows within the magazines or compartments 7 through the medium of pairs of guide strips 14 suitably mounted in the compartments 7 and extending along the rear wall of the casing 5, and forwardly disposed pairs of rods 15 which have lower ends seating in sockets provided in a transverse ledge or cleat 16 provided at the lower ends of the compartments 7, and upper ends engaged by pivoted latch members 17 that serve to hold the rods 15 perpendicularly (see Figure 2).

For receiving and delivering the packaged articles from the magazines or compartments 7 to the compartment 10 there are provided hollow semi-cylindrical trays 18, there being one tray 18 for each compartment or magazine 7, the trays 18 at one end being riveted or otherwise secured together as at 19, and where it is desired to deliver the packages 12 one at a time and in alternation from the compartments 7 to the compartment 10, the trays 18 are relatively arranged as shown in the drawings. Where, however, it is desired to deliver two packages simultaneously, one from each compartment 7, both trays will be so positioned as to normally have their open sides disposed upwardly as is thought to be apparent.

Further, in accordance with the present invention there is provided an improved coin control mechanism indicated generally by the reference numeral 20. The coin control mechanism 20 comprises a suitable housing 21 mounted on one side wall of the casing 5 adjacent the lower end of the casing and extending from the housing 21 into compartment 10 of the casing 5 is one end of a shaft section 22. Secured to said end of the

shaft section 22, as clearly shown in Figure 8, is the free end wall of one of the trays 18, and the other of the trays 18 has projecting from its free end wall a short shaft 23 that is journaled in a side wall of the casing 5 as shown in Figure 3. It will thus be seen that the trays 18 are supported in alignment with the magazines 7, and in the present instance the trays 18 are so angularly related that when one of the trays is in an inverted position, the lowermost package 12 in a magazine 7 with which said inverted tray is aligned rests on the peripheral wall of the tray, while the other tray is in a position receiving the lowermost package 12 in a magazine 7 in which the second mentioned tray is in alignment (see Figure 3).

In the present instance, the front wall of the coin control housing 21 is provided with three money slots, including a coin slot 24 of a size to accommodate a nickel, an intermediate coin slot 25 of a size to accommodate a dime, and a coin slot 26 of a size suitable to accommodate a cent.

Extending inwardly from the coin slots 24, 25 and 26, are inclined coin chutes 27, 28 and 29, respectively, and at their lower ends the coin chutes 27 to 29 inclusive are supported through the medium of a suitably provided bracket bar 30.

As shown in Figure 8, coin chutes 27 and 28 are coplanar while coin chute 29 is in a plane slightly below the plane of the chutes 27, 28, for a reason hereinafter made manifest.

At their lower inner ends the chutes 27, 28, and 29 are positioned to discharge a coin passing therethrough into a coin drawer or receptacle 31 that is removable through an opening 32 provided in the front wall of the housing 21. The coin drawer 31 is provided with a suitable lock 33 to prevent unauthorized removal of the drawer.

For the coin chutes 27, 28 and 29, there are provided coin actuated levers 34, 35, and 36, and these levers are pivoted intermediate their ends to a bracket 37.

As shown in Figure 8, the levers 34, 35 and 36 are positioned in closely spaced relation and the levers 34 and 36 at their rear ends are provided with lateral branches or extensions that terminate in proximity to the lower ends of the chutes 27 and 29.

At one end thereof, each of the levers 34, 35 and 36, is provided with an abutment 38 against which a coin discharging from a chute strikes and causes the lever to rock in a clockwise direction, movement of the lever in this direction being limited through the medium of a suitable stop 39 provided therefor.

Also, each of the levers 34, 35, has pivoted to the end thereof remote from the abutment 38 a dog 40 that is normally urged against a stop 41 provided on the lever through the medium of a coil spring 42.

An elongated shaft section 43 has a rotating and sliding fit through an opening 44 provided in an end wall of the housing 21 and at its inner end the shaft section 43 is provided with a reduced squared portion 43a that has a sliding working fit in a squared socket 22a provided therefor in the inner end of the shaft section 22 as shown in Figure 8. It will thus be seen that while shaft section 43 is slidable longitudinally relative to shaft section 22, rotative movement of shaft 43 is transmitted to shaft 22 for rotating the trays 18.

On the shaft 43 is a cam disk 44 that is provided at diametrically opposite points on its periphery with shoulders 45 that successively move into engagement with the dogs 40 on the coin actuated

levers each time the cam disk 44 is rotated one hundred eighty degrees.

In connection with the above, it will be noted that shaft section 43 is provided with key means 46, and the cam disk 44 is provided with ways, not shown to receive the key 46 whereby disk 44 will rotate the shaft 43 but shaft 43 may be shifted axially through and relative to the disk 44; disk 44 being held against axial shifting movement through the medium of a retaining boss 47 suitably mounted within the housing 21 and having the arms thereof straddling the disk 44 as shown in Figures 8 and 9.

To confine rotative movement of the shaft 43 to one direction only, there is provided a cam disk 48 mounted on the shaft section 22 to turn with said shaft section, and at diametrically opposite points on its periphery disk 48 is provided with stop shoulders 49 that successively cooperate with a spring biased dog 50 pivotally mounted on a wall of the housing 21 as at 51 and having its end normally urged into engagement with the periphery of the disk 48 through the medium of a spring 52. In connection with the above, and by considering Figures 9 and 10, it will be seen that shoulders 49 are reversed with respect to the shoulders 45 on the disk 44 so that the shaft 43 and shaft section 22 can rotate only in one direction, namely, in a clockwise direction.

It will be appreciated that where desirable but a single coin slot may be used, and of course, where but a single coin slot is used, a single coin operated lever will be employed. In this connection it will be seen that when the coin operated lever is, by the striking of a coin against the projection 38 thereof, caused to rotate in a clockwise direction, dog 40 will clear the uppermost shoulder 45 of the disk 44 and under action of the spring 42, which is an expansion spring, swing forwardly to a position beyond said shoulder. Shaft 43 will then be free to turn in a clockwise direction with the result that the trays 18 will turn in a corresponding direction to the end that as one of the trays 18 deposits the package therein within the compartment 10 the other tray 18 will be moving to a position to receive the lowermost package from that compartment or magazine 7 with which the last mentioned tray is in alignment. Obviously, during this rotative movement of the disk 44 with shaft 43, the dog 40 will ride on the periphery of the disk 44 as suggested in Figure 11 until the succeeding shoulder 45 is brought into engagement with said dog 40, when the parts are then again in the position shown in Figure 9, preventing further rotative movement of shaft 43. This rotative movement of the shaft 43 for one-half of a complete revolution will result in a positioning of the trays 18 so that one of the trays, namely, the one which has just deposited its package will be in an inverted position and the other of the trays will be in a position receiving a package 12, the parts being thus in a position to receive a second coin, whereby the operation just described will be repeated for vending a package 12.

In Figure 8 is illustrated means whereby the shaft 43 is normally retained against rotation in any direction with the result that before the shaft can be rotated to operate the coin control mechanism an inward push on the shaft 43 would be necessary. Thus, in Figure 8 is shown a housing 53 mounted on an end wall of the casing or housing 21 and this casing or housing 53 is provided with a perpendicular wall 54 to the inner and outer sides of which are secured disks 55, 56, 75

Disks 55 and 56, and wall 54 are provided with registering openings 57 and vertical slots 58 above and below the openings 57. Openings 57 accommodate the shaft 43 while the slots 58 accommodate a pin 59 carried by the shaft and normally disposed within the slot 58 of the innermost disk 55. Thus it will be seen that in order to rotate shaft 43 the latter must be pushed inwardly a distance sufficiently far enough so as to have the pin 59 clear the disk 56 when the shaft 43 is then free to rotate in a clockwise direction.

On the outer end thereof shaft 43 is provided with a knob 60 and for normally urging the knob equipped end of the shaft 43 outwardly with respect to the housing 21 there is provided a substantially conical coil spring 61 housed within the housing or compartment 53 and bearing at one end against the disk 55 and at a relatively opposite end against a collar 62 fixed on the shaft or rod 43 in any suitable manner (see Figure 8).

While in Figure 8 I have shown provisions requiring the inward movement of the shaft 43 prior to a rotative movement thereof, it is to be understood that where desired this requirement as to an inward movement of the shaft 43 may be eliminated without affecting the operation of the device as otherwise above described.

Further, in accordance with the present invention, means is provided whereby two or more coins must be inserted in the proper coin slot before the coin control mechanism will be released to operate the vending machine. In this instance I have illustrated the coin chute 29 as being so equipped as to require several pennies to be placed in the slot 26 therefore before the coin control device will be released. Thus it will be seen that adjacent the lower end thereof the chute 29 is provided, as shown best in Figures 12 and 13 and adjacent its lower end, with a depending well 63 in which works a follower 64 swivelly mounted on the inner end of an adjusting screw 65 threaded through the bottom of the well 63. At its upper end the well 63 is in alignment with an opening 66 provided in the bottom of the aforesaid coin chute 29.

As shown in Figure 12, the follower 64 is so adjusted as to require three coins being placed into the inlet slot 26 for the chute 29. In this connection, it will be appreciated that the first two coins will pass through the opening 66 to rest one upon the other and upon the follower 64 while the third coin will pass through the chute 29 to strike the abutment 38 provided for on one end of the lever 36 arranged in operative position to the chute 29. Thus it will be seen that the first two coins passing down the chute 29 will be entrapped within the well 63 so that a third coin will be required before the lever 36 will be operated to release the cam disk 44 and consequently the shaft 43 so that the latter may be again rotated for emptying a package 12 into the compartment 10 of the casing 5.

For ejecting the coins from the well 63 there is provided, in the form of the invention shown in Figure 8, an ejector arm 67 pivoted at one end to a bracket 68 as at 69. Intermediate its ends the ejector arm 67 is provided with a lateral projection 70 that works through a vertical slot 71 in one side of the well 63. At the opposite side thereof, the well 63 is provided with a suitable slot 72 through which the ejected coins pass to drop into the drawer 31.

Interposed between the lower end of the ejector arm 67 and the housing 53 is a coil spring 73 that normally urges the arm 67 to rotate or pivot in

a clockwise direction. At the lower or free end thereof the arm 67 is provided with a lateral extension to which is pivoted one end of a dog 74, the lower end of which is arranged in the path of a fixed collar 75 on the rod or shaft 43. The dog 74 is normally urged to swing in a counterclockwise direction and into engagement with a stop lug 76 on the arm 67 through the medium of a coil spring 77.

It will thus be seen that when the rod or shaft 43 is moved inwardly in order that the pin 59 may clear the inner disk 56 to permit the shaft 43 to be subsequently rotated, collar 75 will slip past the dog 74 to the dotted line position shown in Figure 8. Thus after the package has been discharged into the compartment 10 of the casing 5 and pressure is released on the rod 43 the latter under action of spring 61 will return to the position shown in Figure 8. As the rod 43 returns to this position collar 75 moving from the dotted line position to the full line position shown in Figure 8 will engage the dog 74 for causing the ejector arm 67 to swing in a counterclockwise direction against the action of spring 73. As the rod 43 moves into final projected position, the collar 75 will slip past the dog 74 so that arm 67 under action of spring 73 will forcibly return to the position shown in Figure 8, and this forcible return of the arm 67 will cause the projection 70 to forcibly engage the coins in the well 63 for forcing the coins through the slot 72 and into the drawer 31 and in this manner effectively empty the well of the coins, leaving the device in readiness for the next dispensing operation.

For purpose of illustration only, the structure as shown in the drawings is illustrated as provided to dispense packages 12 one at a time and to require the insertion of eighteen cents in order to effect a dispensing of a package. Thus, the device as illustrated, operates as follows: A nickel, a dime, and three pennies are inserted in the proper coin slots, and as the nickel discharges from its chute 27 lever 34 is caused to swing in a clockwise direction so that dog 40 of said lever clears the uppermost shoulder 45. As the dime discharges from its chute 28, lever 35 is similarly acted upon so that the dog 40 associated therewith clears the uppermost shoulder 45. The first two pennies inserted in the slot 26 are entrapped in the well 63 as shown in Figure 12 while the third penny passes entirely through the chute 29 to trip the lever 36 so that the dog 40 associated with the last mentioned lever is raised to clear the uppermost shoulder 45 of disk 44. The operator then pushes inwardly on the shaft 43 until the collar 75 is moved to the dotted line position shown in Figure 8, where a structure such as shown in Figure 8 is employed. With the collar 75 in this dotted line position it will also be apparent that pin 59 will have cleared disk 56 so that shaft 43 is then rotated in a clockwise direction for rotating the trays 18 to the end that as one of the trays moves to a position to dispense its package the other tray is moved to a position to receive a package from the compartment or magazine 7. When the shaft 43 has been turned through an arc of one hundred eighty degrees a stop shoulder 45 comes into engagement with the dogs 40 to prevent further rotation of the shaft 43.

From the above it will thus be seen that a rotation of the shaft 43 for one-half a complete revolution of disk 44 will result in a dispensing of a package 12 which package may then be withdrawn from the compartment 10 of the casing 5.

As shaft 43 assumes its normal position the coins entrapped in the well 63 are ejected therefrom in a manner clearly described through the mechanism provided therefor as shown in Figure 8.

It is thought that a clear understanding of the construction, utility and advantages of an invention of this character will be had without a more detailed description.

Having thus described my invention, what is claimed as new is:

1. In a dispensing cabinet, a tray supported for rotation therein, a shaft connected with the tray and having a non-circular socket therein, a second shaft having a non-circular part for engaging the socket, said second shaft being supported by said cabinet for rotary and sliding movement, said cabinet being provided with a stationary member having an opening therein through which the second shaft passes and an elongated slot extending from the opening, an elongated projection carried by the second shaft, spring means for normally holding the second shaft in a position with the projection in the slot for preventing rotary movement of the second shaft and a knob on the second shaft for moving the second shaft longitudinally to free the pro-

jection from the slot after which the second shaft can be turned to rotate the first shaft and the tray.

2. In a dispensing cabinet, a tray supported for rotation therein, a shaft connected with the tray and having a non-circular socket therein, a second shaft having a non-circular part for engaging the socket, said second shaft being supported by said cabinet for rotary and sliding movement, said cabinet being provided with a stationary member having an opening therein through which the second shaft passes and an elongated slot extending from the opening, an elongated projection carried by the second shaft, spring means for normally holding the second shaft in a position with the projection in the slot for preventing rotary movement of the second shaft and a knob on the second shaft for moving the second shaft longitudinally to free the projection from the slot after which the second shaft can be turned to rotate the first shaft and the tray, a disk connected with the first shaft and having shoulder forming notches therein and a spring-pressed dog on said cabinet adjacent said disk for engaging the shoulders for preventing turning movement of the shaft in one direction.

JOSEPH E. ROMANOSKI.