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1,982,273

COIN CONTROLLED VENDING MACHINE

Original Filed Nov. 8, 1930 2 Sheets-Sheet 2

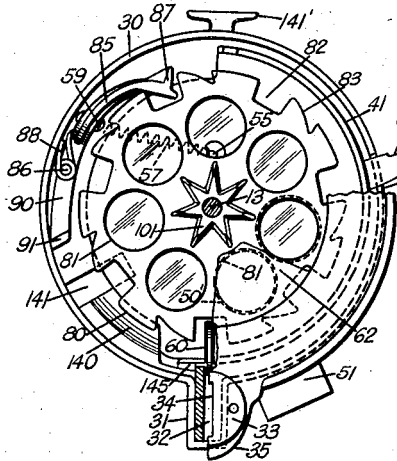


Fig. 2

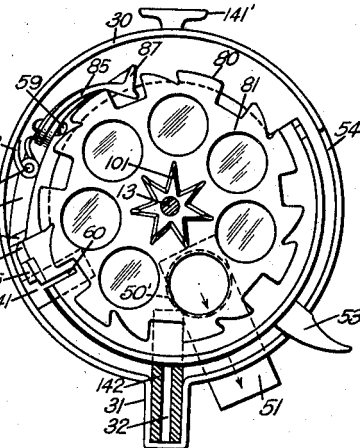


Fig. 3

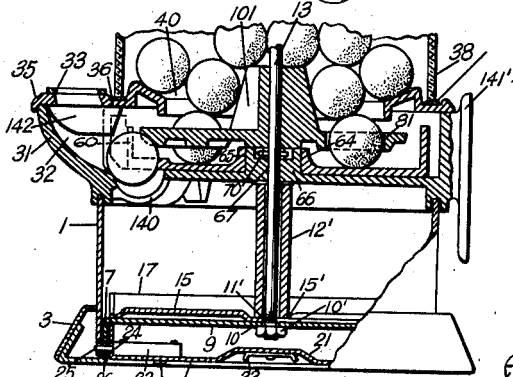


Fig. 4

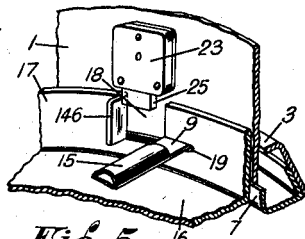


Fig. 5

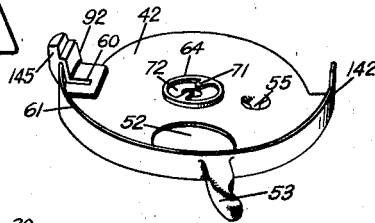


Fig. 6

Fig. 7

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UNITED STATES PATENT OFFICE

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COIN-CONTROLLED VENDING MACHINE

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Original application November 8, 1930, Serial No. 494,212. Divided and this application October 22, 1931, Serial No. 570,396

1 Claim. (Cl. 312—35)

This invention relates to a coin-controlled vending machine. It has to do, more particularly, with a novel form of detent device for controlling the rotative movement of the vender disk with the actuating device. Furthermore, this invention relates to a novel form of closure member for the commodity and coin receiving compartments respectively and to a novel means for agitating the articles contained in the hopper.

10 This is a division of our application, Serial Number 494,212, filed November 8, 1930.

In the past, the vender disk of a coin controlled vending machine has been maintained in alignment with the vender lever by means of a spring actuated pawl adapted to engage with successive notches in the vender disk. In some instances, the application of undue force on the operating handle has resulted in driving the vender disk, by impetus, past the point where its notch registers with the coin slot of the vender lever, and also moving the vender disk to such position as to preclude cooperation of the pawl with one of the notches therein. As a result, subsequent operation of the vending machine is prevented in view of the fact that the disaligning slots in the vender disk and the vender lever will not permit proper positioning of a coin until the machine has been re-adjusted which necessitates disassembling thereof.

30 One object of this invention is to provide a means for insuring the proper alignment between the selector plate and the vender lever to allow the slot of the vender lever to register with one of the notches in the selector plate after each operation to thereby ensure positive and reliable operation of the machine.

Another object of this invention lies in the provision of a novel form of cap for the commodity compartment that will closely embrace the upper end of the cylindrical hopper to preclude the entry of dirt, dust and moisture thereinto from this source, and a closure for the coin receiving compartment that will successfully preclude the insertion of wire or similar articles into the coin compartment in an attempt to remove coins or checks therefrom.

Another object of this invention lies in the provision of a cap member for the hopper and a closure plate for the coin receiving compartment that are each respectively equipped with an interiorly located locking means operable from the exterior of the machine, thus providing a locking means that is inaccessible to persons who might be inclined to tamper therewith if such

lock were to be located exteriorly of the device as in several of the prior art models.

Still another object of this invention is to provide a closure for the commodity and coin receiving compartments respectively that may be readily removed from the machine to fully uncover each respective compartment, or, may be mounted thereon and rotated to such position as to cause the cooperation of a plurality of means for precluding the removal thereof by a direct pull perpendicular to the plane of the base, and then operating a locking means to preclude turning of such closures to a point where such interlocking means is ineffective.

A further object of this invention is to provide a vending machine wherein the operating mechanism is protected against persons who might be inclined to insert wire, pins or even the fingers of the hand into the commodity chute in an attempt to fraudulently obtain the articles in the hopper.

A still further object of this invention lies in the provision of an agitating means that will positively agitate and rearrange the articles in the hopper with each operation of the machine and will serve to correctly feed the articles from the containing hopper to the delivery mechanism as the articles are withdrawn therefrom by the operation of the machine.

This invention contemplates the provision of a pawl member having a heel thereon that is positively contacted by the vender lever at the end of every stroke to drive one end of the pawl into engagement with a notch in the vender disk to preclude movement of the vender disk by impetus past the point where the coin slot therein registers with the coin slot of the vender lever. This will insure the proper alignment, at all times, of the vender disk with the vender lever and will allow the positive and reliable operation of the machine.

Furthermore, this invention contemplates the provision of a cap for the commodity compartment that is adapted to be held thereon by the cooperation of spaced lugs co-acting with a peripheral annular groove formed in that part of the cap member that embraces the upper end of the cylindrical hopper. The peripheral groove is provided with a plurality of spaced grooves perpendicular thereto to allow the cap to be positioned on the upper end of the cylinder and to permit downward movement of the cap until the lugs engage with the peripheral annular groove. Rotation of the cap in any direction will remove the lugs from registry

with the perpendicular openings and will preclude removal of the top by a direct pull perpendicular to the plane of the base. A locking means is provided to prevent turning of the cap from this position to a point where the lugs may register with the perpendicular grooves. A detailed description of this locking device will be hereinafter set out in the specification. The principal idea of such an arrangement is to provide means for preventing removal of the cap, unless the cap is turned to a point for allowing such removal and when the cap is in the first named position, to prevent rotation thereof by a locking means.

Much the same principle is followed in providing a closure member for the coin compartment. In place of an annular peripheral groove and a plurality of lugs, the closure member for the base is provided with a plurality of bayonet slots formed in that portion of the closure member which interfits with the cylindrical housing. These bayonet slots are adapted to cooperate on rotation, with a plurality of arms mounted in the coin compartment and when such cooperation is approximated further movement of the closure member is prevented by closing the bolt of a locking means. This base closure is designed to operate as a receptacle for coins and is of sufficient depth to allow the removal thereof without spilling the coins therefrom.

The selector plate of this vending device is provided with a centrally disposed upstanding agitator having a plurality of diverging vertical flutes or wings adapted to effectively agitate the articles within the hopper to ensure the continuous proper feeding thereof to the selecting and vending mechanism. Furthermore, means are provided for insuring that the commodity hopper will not be emptied by holding the operating mechanism at a position of discharge.

This vending machine is also provided with a novel means for closing the commodity chute when the drop gate is lifted. This means is formed as an extension of the drop gate and normally lies in the commodity chute although not in such position as to interfere with the passage of articles therethrough. However, when the gate is lifted, the extension drops into such position as to obstruct the passage and prevents access to the internal mechanism of the machine.

Other objects and advantageous features of this invention will be apparent in the following detailed description and the accompanying drawings wherein similar figures of reference designate like characters and wherein:

Figure 1 is a perspective view of our novel form of vending machine with certain parts thereof broken away to more clearly illustrate the various features thereof.

Figure 2 is a horizontal section through the operating mechanism showing the vender disk and the preferred form of our pawl in the position which they occupy immediately preceding actuation of the vender lever.

Figure 3 is a view similar to that of Figure 2 showing the vender lever after it has been moved to such position as to bring one end thereof into contact with one end of the pawl member to positively drive the opposing end thereof into a notch in the vender disk.

Figure 4 is a detail in vertical section through the coin receiving compartment and the operating mechanism of our vending machine.

Figure 5 is a view showing a modified arrange-

ment of the locking means for the base closure plate, wherein the lock is mounted on the wall of the base section rather than on the closure member.

Figure 6 is a perspective view of the under side of the bowl casing removed from the machine.

Figure 7 is a perspective view of the vender lever plate removed from the machine.

The individual parts of our novel vending machine will now be discussed with reference to their construction and respective functions, the closure member for the base being considered first.

With reference to the drawings, we have shown in Figure 1 a vending machine that is substantially cylindrical throughout its length. The base section of this machine preferably comprises a cylindrical wall 1 preferably made up of a light metal which serves as a wall for the coin receiving compartment 2 adapted to receive and contain the coins or other devices after they have passed through the operating mechanism. This cylindrical wall 1 also serves as a support for the operating mechanism and the hopper mounted thereabove.

The lower end of this cylindrical wall is equipped with an outwardly flaring apron 3, that is adapted to encircle the base and to be rigidly mounted thereon. The lowermost end of such apron extends below the lowermost limits of the annular wall and is turned under as at 4 to embrace and hold in position an annular member 5.

This annular member 5 comprises a rib-like portion 6 that is disposed intermediate the inner side of the flange 3 and the lower end of the base portion 1. Formed integrally with the horizontal portion of the rib-like member is an upstanding flange 7 adapted to normally lie within the coin receiving compartment and in intimate contact with the inner side of the cylindrical wall 1. The horizontal flange of the rib-like member may be equipped with a plurality of cushioned supports 8 to prevent the machine from scratching or otherwise marring any surface upon which it rests.

The upstanding wall 7 is provided with a plurality of radial arms 9, Figures 1 and 4, having one end thereof formed integrally therewith. The inner ends of the arms 9 are joined to an annular center portion 10, Figures 1 and 4, that is drilled centrally as at 11, Figure 4, for the reception of the threaded lower end 12 of the center post 13. Each arm 9 is provided with a reinforcing rib throughout its length and is reinforced by one of the legs 15 of a reinforcing spider 15' that is bored centrally to allow the central post 13 to extend therethrough. Each leg 15 which is preferably made up of a strip of metal is fixedly secured to one of the horizontal arms 9 and extends substantially the length thereof, but terminating short of the points of juncture of such arms 9 with the wall 7. The reinforcing plate is also adapted to support a sleeve 12' mounted in concentric relation to the post 13 and supporting one end of a spout 50, as shown in Figure 6, hereinafter referred to, on its upper end. The central post 13 is secured to the under side of the annular center portion 10 by a nut 10'.

The base closure plate 16 preferably comprises a horizontal base section having an upstanding annular flange member 17 formed integrally with the peripheral edge thereof. This upstanding annular flange is provided with a plurality of spaced perpendicular cut away portions 18 each of which communicates with a slot 19 extending

at right angles to the base thereof. These communicating grooves form a bayonet slot. When the closure plate is mounted on the base, the cut away portions 18 are brought into registry with the horizontal arms 9 and the base plate is moved upwardly until the arms contact with the bottom of each respective cut away portion 18. The closure plate may then be rotated to move each arm 9 into a slot 19.

The horizontal portion of the base closure plate 16 may be centrally indented as at 21, Figure 4 to receive a handle member 22. The provision of this member 22 will enable the closure plate to be readily rotated to effect removal or mounting thereof on the device.

After the closure plate has been mounted on the lower end of the device, in the manner shown in Figure 1, it is desirable that some means be provided for precluding the turning of such plate. In order to accomplish this, we utilize a lock 23 that may be mounted either on the interior of the closure plate adjacent the periphery thereof, Figures 1 and 4, or may be positioned on the inner side of the wall 1, Figure 5. When the lock is positioned on the closure member, an opening 24, Figure 4 is provided in the wall of the flange 17 to allow the bolt 25 to pass therethrough and into engagement with the walls of an opening 26 formed at some point in the upstanding wall 7. This lock is adapted to be operated by a key inserted in the key slot 27 that extends below the base of the closure plate Figure 4 in such position as to be readily accessible, by merely tipping the machine to one side.

However, where the user desires to secure the machine to a pedestal or counter, the other mounting of the lock is to be preferred, since the key slot is now accessible from the wall 1. This permits the owner of the device to firmly secure the base closure plate to a table or counter by driving screws through such plate in a manner that will be clearly apparent. To obtain separation of the machine from the closure plate, the machine may be grasped and rotated until the ends of the arms 9 register with the vertical notches 18 and then lifted. By reversing the procedure, the machine and base may again be joined. The bolt of the lock may then be operated to engage with any one of the vertical fins 146 which are formed integral with the flange 17 and are located adjacent the notches 19. These fins prevent rotation of the closure plate with respect to the base and the two cannot be separated until the bolt has been withdrawn and the machine rotated as hereinbefore set out.

It can readily be seen that the closure plate is supported at a plurality of points and the flange member 17 thereof will tightly coact with the flange member 7 of the rib-like member 5 to prevent persons from inserting small objects between the closure plate and the base of the machine to remove coins or other devices from the coin containing compartment. Furthermore, provision of a closure plate having an upstanding peripheral flange converts this plate into a receptacle of sufficient depth to allow the removal of such plate without spilling the coins or checks therefrom.

Mounted on the upper end of the cylindrical casing 1 is an annular bowl casing member 30 adapted to enclose and support the operating mechanism of this vending machine. Cast integral with this bowl casing is a member 141', by means of which the device may be attached to a

wall or similar supporting surface. This bowl casing member is also cast with a radially projecting hood 31, Figures 1, 4 and 6, designed to enclose a depending portion 142 of a top plate 36 in which the major portion of the coin channel 32 is contained. The entrance to this coin channel is guarded by a plate 33 having a suitable slot 34 therein that overlies and cooperates with such coin channel.

The plate 33, is mounted on an extension 35 formed as a part of a top plate 36, mounted on the upper edge of the casting 30. This member 36 is equipped with an annular groove 37 in the upper portion thereof adapted to receive the lower end of a cylindrical hopper 38 of transparent material. A gasket 39 of some suitable material is preferably disposed in the groove prior to mounting of the cylindrical hopper therein. This top plate is further provided with an annular beveled flange 40, Figure 1, adjoining the groove 37 that is adapted to lie within the commodity compartment, the purpose of which will be hereinafter described in connection with the agitating means.

Located below and to one side of the coin channel is a spout 50 extending through a suitable opening in the wall 1 that is normally closed by a hinged drop-gate 51. This drop-gate is novel in that it is provided with an integral extension 143 that extends rearwardly from the pivots 144 and normally lies in a horizontal plane adjacent the upper limits of the spout when the drop-gate is in closed position. However, on raising of the drop-gate, the extension descends and blocks the entry to the spout in such a manner that such articles as wire, pins or even the fingers cannot be inserted beyond it. The drop-gate and extension are so constructed that persons cannot change the angular relation therebetween by holding the gate open and pushing against the extension. This is accomplished by either stamping the drop-gate and extension out of a heavy metal and crimping it on the marginal edge, or casting them from a strong metal that cannot be bent with ordinary pressure.

The inner end of this spout is located at the center of the machine and in a position to receive the vended material from the vender lever plate through a suitable aperture hereinafter referred to, in the base of the bowl casing, such inner end being apertured and mounted on the post 13 and held in position by the upper end of the sleeve 12' which maintains it against the under side of the bowl casting 30. As will be noted the spout has its base inclined downwardly and outwardly to allow the commodity to move toward the drop-gate.

Mounted within the bowl casting 30 is a vender lever plate 41 best shown in Figures 1, 6 and 7. This plate preferably comprises a horizontal main body portion 42 having an opening 52, Figures 4 and 7 therein. This opening is adapted to register with one of a plurality of openings 81 in the selector plate to receive the commodity to be vended from the hopper and to subsequently, on proper actuation, deliver such material to the inner end of the spout 50 through an opening 50' in the base of the bowl casting.

This vender lever plate 41 also comprises a handle 53 which projects through and operates in an opening 54, Figure 6, in the bowl casting 30. The under side of this vender lever plate, Figure 6, is equipped with a depending tongue 55 disposed in a slot or opening 56 formed in the bowl casing 30.

A retractile spring 57 is connected, at one end, to this tongue 55 and is connected at its other end to a second tongue 59 depending from the under side of the bowl casting 30. It can readily be seen, that the retractile spring tends to always return the vender lever plate to its initial position and to return it to such position after it has been operated to effect discharge of the vended material.

The vender lever plate 41 is further provided with a substantially radial slot 60 which extends through the segmental flange 61 and into the horizontal portion of such plate. When the vender lever plate is in initial position, Figure 2, this slot 60 is in alignment with the inner end of the coin channel 32 formed in the depending lobe 142 cast as a part of the top plate and located in radially projecting hood 31.

The alignment of the inner end of the channel 32 with the slot 60 is positively insured after each and every operation of the vender lever plate by reason of the fact that the lever is provided with a stop 145 that is adapted to contact with the lobe 142 containing the coin channel 32, the lobe extending into the path thereof, as shown in Figure 3. The contacting surfaces of both the stop member and the lobe may be milled to insure that the vender lever plate on returning to initial position will stop at the exact point where the channel 32 and slot 60 align.

The coin is adapted to be delivered, when it is received in the channel 32, into the slot 60 where it is held upright by the walls of such slot and by an arcuate semi-circular channel 140 formed in the bowl casting 30. This channel extends from a point adjacent the entry to an opening 141 in the bowl casting through which the coins drop into the coin receptacle.

The vender lever plate 41 is provided with a central hub 64 that is drilled centrally as at 65 for proper mounting on the annular upstanding portion 66, Figure 4, formed integrally with and centrally disposed with relation to the bowl casting 30. A bushing may be inserted in the hub 64 to reduce the wear resulting from rotation of the plate 41. The annular portion 66 is drilled centrally as at 67 to allow the vertical post 13 to extend therethrough. To prevent rotation of such post, it is provided with a pin 70 that extends beyond the periphery thereof and is normally adapted to engage the lugs 71 formed as a part of the upper portion of the portion 66, being disposed in a cut away portion 72 in the upper portion thereof and lying in concentric relation to the center post 13.

Mounted on the center post 13 directly above the vender lever plate is selector plate 80, Figures 2 and 3, that is supported out of engagement therewith by its integral depending hub adapted to rest on the upper end of the annular portion 66 formed as a part of the bowl casting 30. This selector plate preferably comprises a horizontal body portion provided with a plurality of circular openings 81 arranged in a circle about the post 13 and spaced equally distant therefrom and from each other. These circular openings are adapted to receive the articles to be vended and carry them to proper position for vending. The periphery of the selector plate 80 is provided with a plurality of spaced substantially U-shaped notches 82 that, as will be hereinafter noted, is each adapted to successively align with the coin slot 60 in the vender lever plate. In addition, the periphery of this selector plate is equipped with a plurality of ratchet teeth 83. These

ratchet teeth lie intermediate two of the notches 82 over which a pawl member 85 is adapted to ride, the cooperation of such pawl with the teeth serving to prevent reverse movement of the vender selector plate.

The pawl member 85 is pivoted on an upstanding pin 86 mounted on the base plate of the bowl casting to the left of the coin slot and adjacent the periphery thereof. The forward end of this pawl, as at 87, is turned inwardly so as to engage with the teeth and notches of the selector plate and is adapted to be influenced toward contact with the periphery of the selector plate and these teeth and notches by a resilient member 88 as mounted on the pin 86.

This pawl structure serves to prevent any reverse movement of the selector plate and is also adapted to successively align the notches 82 with the slot 60 in the vender lever plate and with the coin channel 32. In some instances, an operator will throw the handle 53 from the position shown in Figure 2 to the position shown in Figure 3 with undue force. If the selector plate is given undue impetus it might rotate to a point where the forward end 87 of the pawl will engage with one of the teeth 83 instead of correctly positioning itself in one of the notches 82. In order to prevent this from happening, one end of the pawl member has been provided with an extension 90 having a heel 91 formed on the rearmost end thereof that is adapted to be contacted with the end 92 of the segmental upstanding portion 61 formed as a part of the vender lever plate, see Figures 1 and 3. The cooperation of this portion 61 with the heel 91 of the pawl member, Figure 3, is adapted to positively drive the forward end 87 of the pawl thereinto into cooperation with one of the notches 82.

Perhaps the operation of this pawl member will be best understood in connection with a brief description of the operation of the mechanism. When a suitable coin is inserted in the slot 34 it will roll down the channel 32 and into the slot 60, being supported from below by the arcuate wall of the channel in which position it will also be disposed in one of the notches 82 in the selector plate as best shown in Figure 2. This suitable coin will thereby lock the selector plate and vender lever plate together so that when the vender lever plate is moved by the handle 53 the selector plate will also be moved a corresponding distance until such time as the coin traverses the channel and drops through a suitable opening in the bowl casting 30 and into the coin receiving compartment.

During movement of the selector plate the forward end 87 of the pawl 85 drags over the notched periphery of such plate to prevent any reversal in the movement thereof. When the plate reaches the position shown in Figure 3, the forward end 92, Figure 1, of the vender lever plate 41 will contact with the heel 91 of the pawl member to drive the forward end thereof into positive engagement with one of the notches 82 thus ensuring that one of the other of such notches will align with the coin slot 32. It is obvious that the handle 53 may be thrown from one end of its stroke to the other with as much force as desired, yet, the novel form of pawl structure will positively preclude rotation of the selector plate in either direction after such engagement. When the lever 53 is released, the vender lever plate will rotate in a reverse direction under the influence of the resilient member 57 until the stop 145 strikes the wall 142 extending into the path thereof, Figure 2. However, rotation of the selector plate in a re-

verse direction is prevented by the pawl 85 and the coin slot 60 in the vender lever plate will again align with another of the notches 82.

It is obvious, that movement of the selector plate will serve to convey one of the spherical articles seated in one of the openings 81 of the selector plate beneath the lobe 62 where it will be discharged through the opening 50' in the bowl casting 30 and from there into the spout 50 down which it rolls to the drop-gate 51 from which it can readily be removed. The lobe 62 is so located that it overlies the discharge opening in the lever plate and will prevent other of the articles located in the hopper from entering the opening 50'. This ensures that only one article at a time will be vended.

Formed integrally with the selector plate and extending upwardly from the center thereof is an agitator 100 that is bored centrally to allow the center post 13 to extend therethrough. This novel form of agitator is provided with a plurality of vertical fins 101 arranged concentrically around the center post 13. The agitator is frusto-conical in form. Therefore, the fins 101 are deeper at these bases than at their tops. It will be apparent that any movement of the vender disk will also serve to rotate this agitator. With reference to Figure 4, it will be noted that the spherical commodities are grouped around and rest against the fins of this agitating member and also rest on the beveled portion 40 of the top plate. With each operation of the machine, the agitator is revolved, thus serving to rearrange the articles grouped therearound to prevent any failure in the operation of the machine due to the articles compacting, arching, adhering or assuming a stable arrangement in the hopper. The beveled portion 40 of the top plate will tend to direct the spherical articles against the diverging fins 101 that are so angled as to direct the articles into any one of the openings 81, with the exception of the opening lying directly below the lobe 60.

As hereinbefore mentioned the top plate is adapted to support a cylindrical hopper 38 preferably made up of a transparent material such as glass. This portion of the machine is adapted to receive and hold the articles to be vended. The central post 13 extends upwardly therethrough and has its threaded upper end inserted in an opening 105 formed in the centermost portion of a retaining spider ring 106. This retaining ring comprises an annular depending flange 107 adapted to embrace the upper side of the cylinder 38 and is provided with an annular integrally formed flange 108 extending inwardly therefrom so as to overlie the upper edge of the cylindrical hopper. This portion 108 is substantially horizontal and is provided with a plurality of radial arms 109 that extend inwardly toward each other and have their innermost ends joined. Center post 13 is bolted to this retaining ring 107 by means of the cap nut 110, a lock washer being inserted between the spider and such nut.

The horizontal portion 108 of the retaining ring is provided with three upstanding stops 111, 112 and 113. The stop 112 is located between the stops 111 and 113 and is of somewhat greater height than the other two stops. Each stop preferably comprises a vertical wall formed integrally with the retaining ring and a horizontal portion 115 formed integrally with the vertical portion and extending inwardly toward the center post. The purpose of these stops will be hereinafter described in detail.

The vertical flange 107 of the retaining ring is provided with a plurality of spaced lugs 120. The purpose of these lugs will be hereinafter described.

The cap member for the commodity compartment is best shown in Figure 1 and designated by numeral 121. This cap preferably comprises a horizontal portion 122 that is equipped with an annular depending flange 123 adapted to embrace the retaining ring 107 mounted on the upper end of the hopper and to be retained thereon by means of the cooperation of an annular groove 124 with the lugs 120.

As will be noted, the annular groove 124 is formed adjacent the lowermost end of the depending flange 123 formed as a part of the cap member. Furthermore, a plurality of vertical grooves 125 cooperating at one end with the annular groove 124 are spaced around the periphery of the vertical portion 123. The opposing ends of each respective groove 125 are open. These grooves are arranged the same distance apart from one another as the lugs 120 formed on the retaining ring 106.

To mount the cap in proper position, the grooves 125 are brought into registry with the lugs 120 and the cap is moved downwardly until such time as the lugs engage the annular groove 124. The cap may now be turned in either direction to remove the lugs 120 from registry with the vertical grooves 125. Thus, it would be impossible to lift the cap from the hopper 38 owing to the fact that the lugs 120 now engage with the annular groove 124.

In order to preclude removal of the cap, we have mounted a lock 130 on the inner side of the depending flange 123 in the position shown in Figure 1, wherein the key slot 131 for operating the bolt 132 extends through to the opposing side of the flange 123 to allow operation of the bolt from the exterior. When the cap 121 is rotated, in either direction, the body of the lock 130 ultimately contacts with the center stop 112, or at least with the horizontal portion 115 thereof. The lock is so located that when the bolt is withdrawn it will not contact with either one of the stop members 111 and 113. With the cap in the position shown in Figure 1, wherein one side of the lock is abutting against the central stop member 112, the bolt 132 may be extended by means of a key inserted in the key slot 131. This will prevent subsequent rotation of the cap owing to the fact that the bolt 132 will now contact with the returned flange of the shorter stop member 111, or 113 as the case would be if the position of the cap were to be reversed.

From the foregoing description, it will be clearly understood that we have provided a novel form of vending machine in which are embodied many entirely new features.

One advantageous feature of this novel form of vending machine resides in the fact that a means is provided for positively insuring the alignment of the coin slot in the vender lever plate with any one of the notches 82 in the selector plate. This feature alone prevents jamming of the operating mechanism when the lever for operating such mechanism is thrown from one end of its stroke to the other with such force as to cause subsequent disalignment of the hereinabove mentioned parts. The provision of such a means will also allow the vender lever to be roughly manipulated without any detrimental results arising from such handling.

One advantageous feature of our invention re-

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sides in the fact that the cap closure and plate are sanitary and will serve to prevent dust and moisture from entering the respective compartments that they cover. Furthermore, the construction of the closure plate is such as to allow it to become filled with coins, yet since it is itself a receptacle, it may be removed from the device without the coins falling therefrom.

Still another advantageous feature of this invention lies in the provision of a cap for the commodity compartment that may be turned in any direction until it stops. It may then be locked in this position which will preclude removal thereof. The provision of such a cap means that it may be unlocked, but yet cannot be removed from the hopper until rotated to a predetermined position.

A still further advantageous feature of this invention resides in the agitating means that is adapted to ensure a uniform feeding of the articles to be vended to the delivery mechanism in

addition to agitating such articles in the hopper to preclude the adhering, arching or compacting thereof.

Having thus described our invention, what we claim is:

In a vending machine, a hopper, a cap for said hopper having a closure surface and a flange attached thereto, said flange having an annular groove therein and a plurality of grooves perpendicular to said annular groove, a retaining ring mounted on said hopper, a plurality of lugs on said retaining ring adapted to cooperate with said annular groove in said cap member and with said perpendicular grooves therein, a lock member on said cap, a plurality of upstanding members of varying height on said retaining ring, one of said members adapted to contact with said lock member and the remaining members adapted to contact with the bolt of said lock.

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