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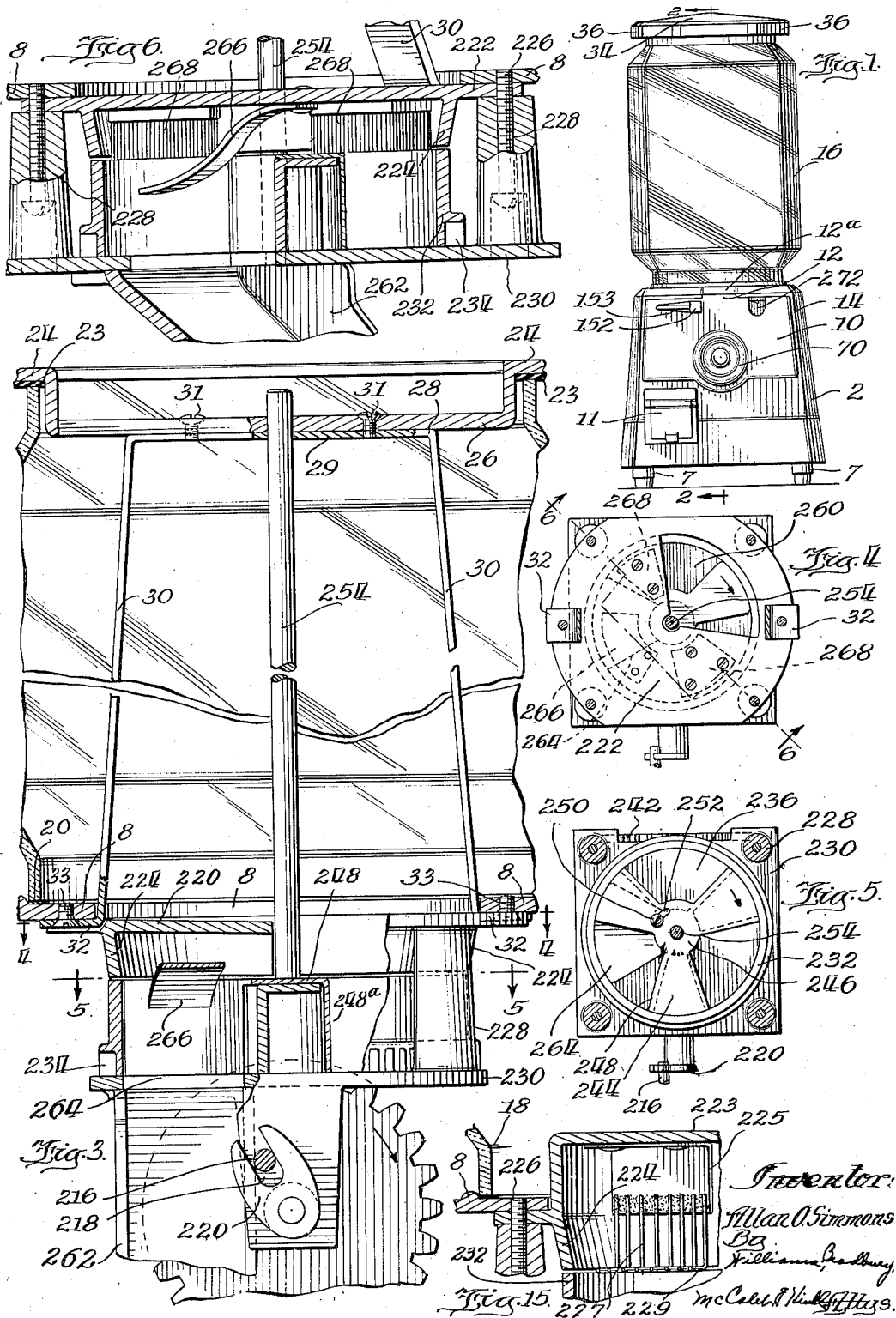
A. O. SIMMONS

2,129,185

DISPENSING MACHINE

Filed March 7, 1934

3 Sheets-Sheet 1



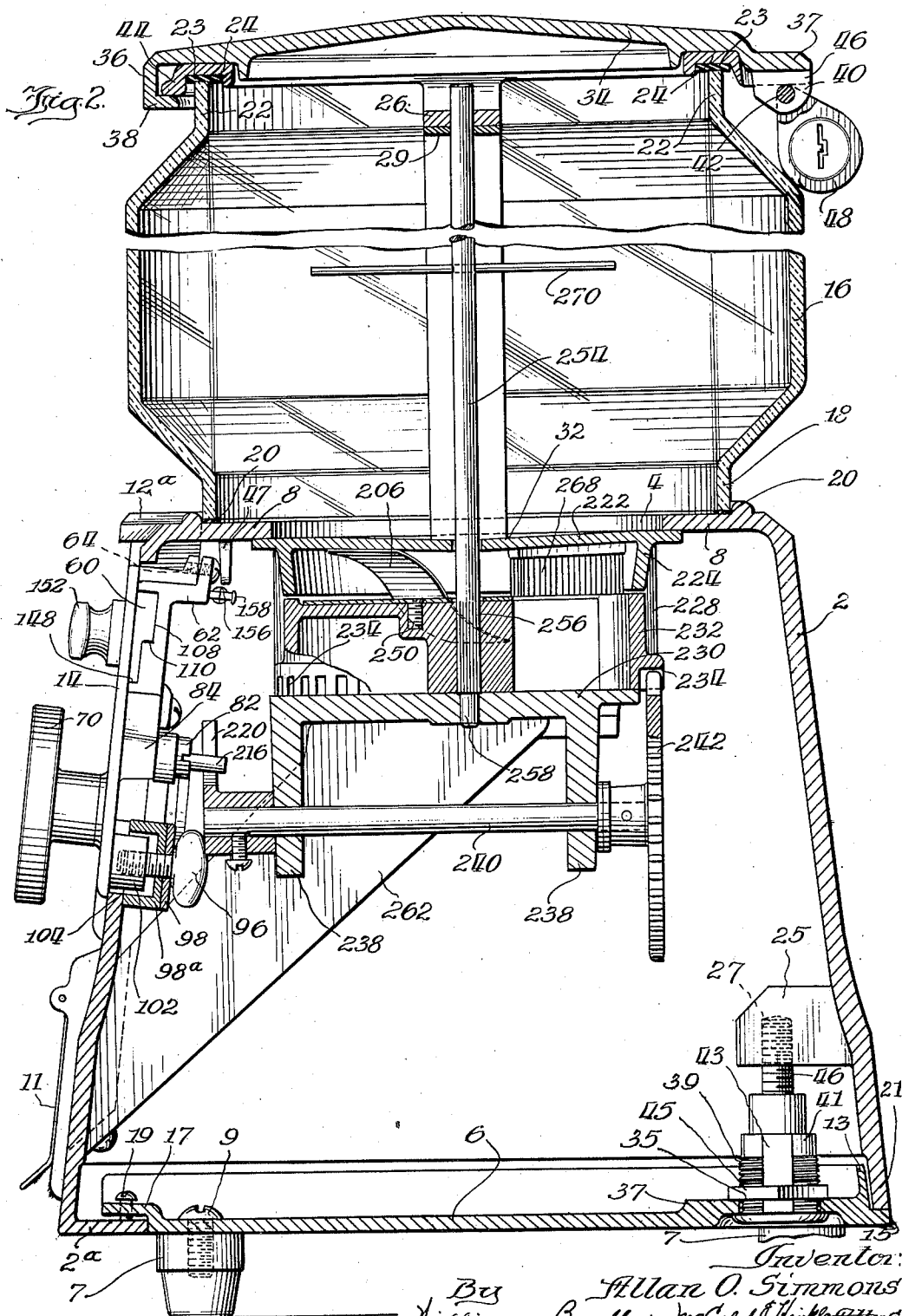
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3 Sheets-Sheet 2



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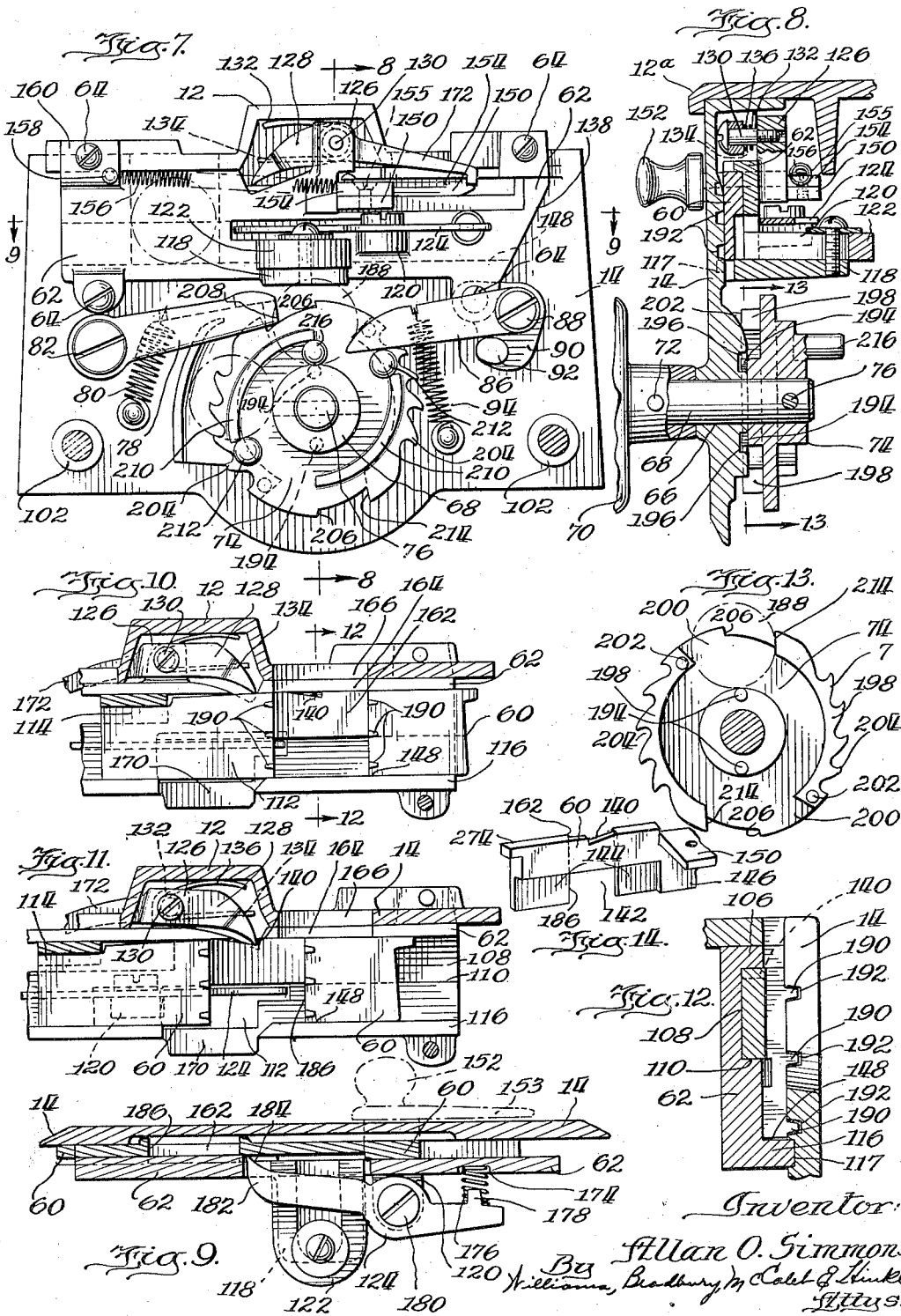
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3 Sheets-Sheet 3



UNITED STATES PATENT OFFICE

2,129,185

DISPENSING MACHINE

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Application March 7, 1934, Serial No. 714,402

9 Claims. (Cl. 221-108)

My invention relates to coin controlled dispensing machines. An object of my invention is to provide a dispensing machine which is constructed to prevent clogging or operating of the coin mechanism by (a) coins which are too small or too large in diameter, (b) slugs of too soft a material, or (c) slugs which are too thin or too thick.

Another object of my invention is to provide means for rejecting coins and slugs of the foregoing character.

Another object of my invention is to return to the operator all rejected slugs and coins.

A further object of my invention is a coin operated mechanism which will reject and return to the operator a coin if the coin previously inserted has not passed through the mechanism and effected a delivery of merchandise.

Another object of my invention is a coin operated mechanism so constructed that insertion of foreign matter in the coin receiving slot will not clog said mechanism.

Another object of my invention is the provision of a plug for the coin receiving slot, which plug is drawn to such a position to prevent the insertion of a second coin or foreign matter while the first coin is being delivered to its operative position.

Another object of my invention is to provide means to prevent thin slugs from jamming between moving members of the coin mechanism.

Another object of my invention is the provision of means for positive delivery of the merchandise through the merchandise chute to the operator.

Another object of my invention is the provision of agitating means in the merchandise storage chamber, such agitation being necessary, for example, in extremely cold weather when merchandise tends to freeze and form a solid mass. Such weather conditions, of course, likewise make the foregoing positive delivery means necessary.

Another object of my invention is to provide brushes, or the like, suspended over the receiving sections of the merchandise delivery wheel to level off the quantity of merchandise in said sections to prevent shearing and mutilation of the merchandise and a resultant clogging or sticking of the delivery wheel, rendering the device inoperable.

Another object of my invention is to provide means for securing the merchandise container to the dispensing mechanism in such a manner that should the container itself be broken the top would remain securely locked to said dispensing portion.

Another object of my invention is to provide a

coin operated dispensing machine so constructed as to be quickly disassembled for repair, and likewise so constructed as to be quickly and easily refilled.

Another object of my invention is to provide a coin control mechanism having no adjustable parts.

Other objects and advantages of the invention will be apparent from the following description and accompanying drawings, in which

Fig. 1 is a front elevation of my complete dispensing apparatus;

Fig. 2 is a sectional elevation taken on the line 2-2 of Fig. 1;

Fig. 3 is a fragmentary front elevation of the merchandise dispensing apparatus proper. Fig. 3 also shows the means of attaching the merchandise container to the base;

Fig. 4 is a sectional view taken on the line 4-4 of Fig. 3;

Fig. 5 is a sectional view taken on the line 5-5 of Fig. 3;

Fig. 6 is a sectional view taken on the line 6-6 of Fig. 4;

Fig. 7 is a rear view of the coin controlled mechanism showing the details thereof;

Fig. 8 is a sectional view taken on the line 8-8 of Fig. 7;

Fig. 9 is a sectional view taken on the line 9-9 of Fig. 7;

Fig. 10 is a front view of the coin slide and carrying means therefor;

Fig. 11 is a similar view of Fig. 10, showing the movement of the parts during operation of the coin controlled mechanism;

Fig. 12 is a sectional view taken on the line 12-12 of Fig. 10;

Fig. 13 is a front view of the operating wheel;

Fig. 14 is a perspective view of the coin carrying slide;

Fig. 15 is a fragmentary view of the dispensing device showing a variation of my leveling brush.

Referring to Figs. 1 and 2, the numeral 2 represents a hollow base having an opening 4 at its top and being open at its bottom, said open bottom being enclosed by a detachable bottom plate 6.

The bottom plate 6 has feet 7 attached thereto in any suitable manner, preferably by screws 9. In the form of base used for the present illustration of my invention, the bottom plate 6 is substantially square and has an integral upstanding wall 13 extending around its sides and across its rear edge and being offset from its edges, as at 15. The front edge of the plate 6 is provided with a

slightly raised forwardly projecting lip 17, this lip being provided with adjustment screws, one of which is shown at 19.

The lower extremities of the walls of the base 5 at the rear and on each side terminate in substantially vertical rims, as shown at 21, the front wall, however, being turned under as shown at 2^a. This underturned portion is adapted to engage the lip 17 and adjustment screws 19.

10 The rear wall of the base is provided with an integral horizontally extending post 25, said post having a screw seat 27 drilled therein.

The plate 6 has near its rear edge and directly under the post 25 an aperture 35 strengthened 15 by a thickened portion 37 of the plate. Screwed into the aperture by means of threads 39 is a lock casing 41. This lock casing has diametrically opposed channels milled therein, as shown at 43, said channels receiving spreading laminations of the lock proper, which laminations spread only 20 when the key of the lock is withdrawn. The casing 49 is held fixedly in the aperture 35 by means of locknut 45.

The upwardly extending extremity of the lock 25 has fixedly attached thereto a screw 46, which screw is adapted to be threaded into the seat 27 of the post 25 when the laminations are drawn into the body of the lock by insertion of the key to allow turning thereof.

30 In operation it will be seen that when the lock proper is inserted in its bearing 41, the key being inserted in the lock, the laminations being drawn into the body of the lock by the insertion of the key, and disengaged from the channels 43, turning of the key will result in screwing the bearing 35 41 by means of threads 46 into its seat 27, and upon withdrawal of the key the laminations will engage in the channels 43, which engagement will prevent further screwing in or screwing out of 40 the lock.

When the base 2 is placed upon the plate 6 in such a manner that the lip 17 overlies the lip 2^a, the lock bearing 41 is screwed into its seat 27 and the screws 19 are adjusted to provide a tight 45 fit for the plate, the contents of the base 2 will be enclosed within said base. An unauthorized person having no key for the lock will have no means of prying the base open due to the position of wall 13 relative to the joint between the edges of 50 the base 2 and the edge 15 of the plate 6. Similarly the junction of the plate 6 and lip 2^a is sealed by the lip 17.

The top opening 4 is bordered by a flange 8, said flange being formed from, and an integral 55 part of, the base 2. A portion of one of the vertical surfaces of the base is cut away to carry the coin controlled mechanism, shown generally at 10 in Fig. 1. Another portion of the same vertical surface is cut away to provide an aperture, which 60 is generally shown at 11 in Fig. 1, through which the merchandise is delivered to the operator. The vertical surface having these cut away portions will be known as the front of the base.

The front edge of the horizontal flange bordering the top opening in said base is raised as at 12^a to take the raised portion 12 of the casing of the coin controlled mechanism, as shown at 14, Fig. 2. An integral plate 47 depends from the under side of the flange 8 adjacent the raised portion 12^a 70 in said flange. Attached flush with the horizontal flange circumscribing the opening 4 in the base, is a merchandise container 16 of glass, or other suitable material. Inserted between the flange 8 and the rim 18 of the merchandise container 16 is a gasket 20, which gasket tends to 75

protect the merchandise in the container from atmospheric conditions.

Resting upon the top rim 22 of the container 16 is a container retaining ring or cap seat 24 of cast iron, or other suitable material. This 5 retaining ring has a diametrical integral strip 26, which strip is utilized to support another substantially U-shaped iron strip 28. The strip 28 has its top 29 secured to the strip 26 by means of screws 31 and has arms 30 extending down- 10 wardly through the body of the container to and under the flange 8. Outwardly extending ends 32 of the strip 28 are secured from the inside of the base 2 to the flange 8 by screws 33.

Inserted between the rim 22 of the container 15 16 and the ring or seat 24 is a gasket 23 of rubber, or other suitable material, which, like the gasket 20, serves to protect the merchandise in the container from atmospheric conditions.

Supported upon the ring 24 is a cap 34 of cast 20 iron, or other suitable material. The cap 34 is securely locked to the ring 24 in the following manner: the cap 34 has a downwardly extending skirt at 36. At the forward side of said downwardly extending skirt there is an underturned 25 lip 38. At the rear of said downwardly extending skirt and diametrically opposite the lip 38, a portion of the skirt 36 extends outwardly as at 37. Projecting downwardly from said outwardly extending portion of the edge 36 is a lug 40 having 30 an aperture 42 therein. The ring 24 has, at the point coinciding with the lip 38, a lip 44 adapted to overlie said lip 38. Diametrically opposite the lip 44 on the ring 24 are two outwardly extending prong members between which depends the lug 35 40, one of which is shown at 46 in Fig. 2. A suitable locking device for the cap is shown at 48.

From the foregoing description, it will be seen that when the U-shaped member 28 is secured 40 to the flange 8 of the base 2 by means of screws 33, the container 16 is placed in position upon the flange 8, the ring 24 is placed upon the upper rim 22 of the container 16, the top 29 of the U-shaped strip 28 is secured to the diametrical strip 26 of the ring 24 by means of screws 31, the cap 34 is 45 attached to the ring 24 by the co-engagement of lips 38 and 44, lug 40 and prongs 46, and the lock 48 extended through the aperture 42 of the lug 40, the base, container, and cap are secured together in such a manner that they cannot be 50 taken apart by breaking the container 16. From the manner of locking the cap 34, container 16 and base 2 together and the manner of attaching the plate 6 to the bottom of the base 2, it will be seen that if the container 16 were to be 55 broken, it would still be impossible to disengage, without mutilation, the U-shaped strip 28, the ring 24 and the cap 34.

Figs. 7, 8, 9, 10, 11 and 12 represent detailed views of my coin controlled mechanism. This 60 mechanism is mounted on the back of the front casing 14 and comprises generally a coin carrying slide 60, which slides upon supporting means, indicated generally at 62. This supporting means is attached to the front casing by screws 64, 65 while the coin carrying slide is held slidably between the front casing 14 and its supporting means 62.

The front casing 14 has a bearing 66 drilled therein, this bearing having rotatably extended 70 therethrough a journal 68, said journal having at its forward extremity an operating handle 10 fixedly secured thereto by a pin 72, and at its rearward extremity a coin controlled operating wheel 74. The wheel 74 is also fixedly engaged 75

to the journal 68 by means of a pin 76. An operating lever adapted to engage the operating wheel 74 is shown at 78, said lever being held by the spring 80 in such a position to engage the periphery of the operating wheel. The lever 78 is secured to the front casing 14 by means of a screw 82 threaded into an integral post 84 upstanding from said front casing as shown in Fig. 2.

A release lever 86 is adapted to return the operating wheel 74 to a coin receiving position after it has been revolved by means of the handle 70. Said release lever is attached to the front casing 14 by means of a screw 88 threaded into an integral post 90, said post upstanding from the back of the front casing 14. Extending from the post 90 is an integral pin 92 which limits the downward movement of the lever 86, such downward movement being the result of the action of the spring 94.

The coin control mechanism, as above described, is assembled upon the rear face of the front casing 14, and the complete assembly is attached to the front wall of the base 2 through the cut away previously referred to, by means of thumbscrews 96, washer 98 and cup-washer 98^a, one of which is shown in Fig. 2. The thumbscrews are screwed into the integral post 102 of the casing 14. It will be seen that the edge 104 of the base 2 is secured tightly between the cup-washer 100 and the edge of the front casing 14.

The supporting means 62 provides a horizontally sliding support for the coin carrying slide 60. These members are preferably of cast metal, each being milled on one of its surfaces to conform to the configuration milled on the surface of the other. As will be seen from the cross sectional view, Fig. 12, the slide 60 is provided on its upper side with a forwardly extending lip 106. A groove 108 is milled into this supporting member, the lower face of said groove being the upper edge of a raised portion on the forward surface of said supporting member as shown at 110.

The vertical portion of the supporting member 62 has cut away sections therein, as shown at 112 and 114, the purpose of which will be described later.

A forwardly extending lip 116 provides a further sliding support for the member 62. This lip 116 is embedded in the front casing 14 as at 117. Integral with the member 62 are lugs 118 and 120, the lug 118 providing a support for a magnet 122. The lug 120 provides a support for a locking lever 124, the purpose of which will be described later.

Extending upwardly from the support 62 is a lug 126, which lug provides a support for the tooth lever 128, the latter lever being rotatably secured to said lug by means of a screw 130 and being forced downwardly by means of a spring 132, one arm of said spring bearing against the lever itself, as shown at 134, while the other arm bears against the undersurface of the raised portion 12 of the front casing 14, as shown at 136. The purpose of this lever will be described later.

As shown at 138, in Fig. 7, a portion of the supporting member 62 is cut away, the purpose of which will be described later.

Referring to Fig. 14, the slide 60 is provided with a notch 140 and has a cut away section 142 in approximately the mid-section of its lower half. A ridge 144 is milled out of the slide leaving an end portion 146 being equal in thickness

to the width of the track 148 formed by the lip 116 of the supporting member 62.

The slide 60 is provided with a rearwardly extending lug 150 which provides a support for a slide operating handle 152, said handle having a rearwardly extending integral plate 154 extending through the cut away section 114 of the support 62 and a similarly cut away slit (not here shown) in the front casing 14. The handle 152 has an extension 153 adapted to cover the cut away in the front casing 14 throughout the operation of the handle, thus preventing the insertion of foreign matter to clog the dispensing machine. The plate 154 is adapted to overlie the lug 150 and be tightly secured thereto by means of screws 155. Attached in any convenient manner to the lug 150 or the plate 154 is one end of a spring 156, the other end being attached to a pin 158, which pin is secured to the lug 160 of the supporting means 62.

From the foregoing description it will be seen that the operating handle 152 and the slide 60, to which it is attached, will be drawn on the supporting member 62 toward the left, as viewed in Fig. 7, due to the action of spring 156.

Referring to Fig. 10, which shows the relative positions of the slide 60 and the support 62, when the slide is under the action of the spring 156, the coin receiving pocket 162 (see Fig. 9) will be in direct alignment with the coin insert slot 164 (see Figs. 10 and 11) of the supporting member 62. The slot 164 is formed by cutting away a portion of the lip 106 of the support 62. This slot 164 is in alignment with another slot 166 similarly cut away in the lip portion 168 of the front casing 14.

When the slots 166, 164 and the pocket 162 are in direct alignment, a coin inserted in the slot 166 will drop directly to rest in the pocket 162 of the slide 60.

Referring to Figs. 8, 10 and 11, when the handle 152 is drawn to the left, as viewed in Figs. 10 and 11, against the action of spring 156, the coin carried by the pocket 162 will be drawn along the bottom track 148 of the support 62 until the pocket comes into alignment with a third slot 170, which slot is formed by cutting away a portion of the lip 116 of the supporting member 62. It will be seen that when the pocket 162 and the slot 170 are in direct alignment, the coin will fall from the pocket 162 through said slot to a coin receiving wheel to be hereafter described.

Should the slug inserted be too small or of a soft material such as linoleum or cardboard, the slide, when drawn across, will be stopped at the point shown in Fig. 11 by the engagement of the tooth lever 128 with the notch 140. In other words, in order that the tooth lever 128 allow the slide to be sufficiently operated to deliver the coin through the slot 170 to the coin receiving wheel 74, it is necessary that the coin be of such a size to provide a sliding surface for the lever 128 to pass over the notch 140.

Referring to Fig. 7, the lever 128 may be provided with an extension or lever 172. Should the coin be too large, it is obvious that the utility of the notch 140 would be defeated and the slide would pass under the tooth lever 128. Should the pocket 162 be of such a size that it would receive a coin larger than that of the denomination the machine is built for, such a larger coin inserted in the pocket would raise the lever 128, which lever being fixedly secured to, or integral with the lever 172, the latter would be forced downwardly to engage the side of the lug 150

and its attached plate 154, thus again preventing movement of the slide 60 by the handle 152 into such a position that the pocket 162 would be in direct alignment with the slot 170, thereby delivering the coin to the coin receiving wheel 74.

A spring seat 174 is drilled into the rear face of the support 62, a spring 176 terminating therein engages a holding tooth 178 on one arm of the lever 124. This lever 124 is rotatably secured to the lug 120 by means of a screw 180. The end 182 of the lever 124, which is remote from the spring engaging end, is provided with a tooth-shaped tip 184, which tip rides against the top of ridge 144 of the slide 60. The purpose of this lever is to prevent the operation of my dispensing machine should the operator attempt to use thin slugs or washers having holes therein in lieu of legitimate coins. The tip 184 bites into slugs of soft material.

Referring to Fig. 9, the pocket in slide 60 is milled to the exact thickness of the coin intended to be used in my machine, and it will be seen that when coins of the proper thickness are used, the slide may be drawn to the right, in Fig. 9, and as the pocket passes the tip 184 the coin will prevent said tip from being forced forward by the spring 176. Should the coin be of less thickness than the vertical portion of the slide 60, or should the coin be a washer, or the like, having a hole in the center, the spring 176 will force the tip 184 forward, and when the surface 186 is progressed it will abut against said tip, which has protruded partially into the pocket 162 due to the thinness or perforation in a slug, such abutment preventing further movement of the slide and thus preventing the pocket 162 coming into direct alignment with the slot 170.

Referring to Fig. 7, it will be noticed that the right end of the supporting member 62 is cut away. The purpose of the space provided by this cutting away is as follows: should any foreign matter, which might tend to jam between the rearward face of the slide 60 and forward face of the support 62, accumulate on the track 148, the thickened portion 146 and the slide 60 being of the same width as the track 148 will clear said track of this foreign matter during the operation by handle 152 which, when pushed to the extreme right during the operation of my mechanism, will fall down to the bottom of the base 2.

It is a practice of those attempting to operate dispensing machines by counterfeit slugs, to use a plurality of very thin sheets cut the size of a penny. When such thin sheets are used in this manner, it is possible for one or more of them to slip out of the pocket holding them and fall down into such a position that they will jam between two moving parts of the mechanism and thus prevent further operation until the machine has been disassembled and repaired. It will be seen that the probable place in my device for such jamming, would occur first between the rear face of the front casing 14 and the front face of the slide 60 should a coin slip horizontally out of the pocket 162; and, second, such a jamming would occur if one of these thin plates were to become lodged between the rear face of the front casing 14 and the front face of the operating wheel 74. To obviate any possibility of such jamming, I have provided on the front face of the slide 60 a series of protuberances 190. As indicated in the drawings, these protuberances 190 are located adjacent to and on each side of the pocket 162. These protuberances extend into longitudinal

grooves 192 milled into the rear face of the front casing 14.

In a like manner, I have provided pins 194 on the forward face of the coin receiving wheel 74, which pins extend into and ride in annular grooves 196 milled into the rear face of the front casing 14.

The intermediary mechanism between the coin insert operation and the confection dispensing operation, is a coin receiving wheel 74. The operation of the coin receiving wheel 74 is effected by the rotation of the journal 68, which is in turn operated by the handle 70.

This wheel 74 has integral forwardly extending annular rims 198 having diametrically opposite cut away sections 200 of such a size as to receive the particular coin intended to be used with my dispensing machine. These rims 198 have protruding horizontally from their forward tips in relation to the direction of rotation, integral pins 202.

The periphery of the wheel 74 adjacent the rims 198 is toothed, as shown at 204. Adjacent the broken away portions 200, the periphery has at approximately the middle of said spaces, an abutment 206. Due to the action of spring 80 on the lever 78, the lever is held tightly against the irregular surface of wheel 74; thus should the wheel 74 be turned by means of handle 70 and should there be no coin in the coin receiving space 200, the tip 208 of the lever 78 will engage the abutment 206 and prevent rotation of the wheel 74. However, should a coin have passed through the slot 170 and to the coin receiving space 200 of the wheel 74, it will be seen that upon rotation, the tip 208 of the lever 78 will be lifted over the abutment 206 and allow a half rotation until the diametrically opposed abutment comes into contact with said tip. The rear side of said wheel 74 has integral rearwardly extending riders 210 upon which the lever 86 rides during rotation of the wheel. Immediately forward of said riders, with relation to the direction of rotation of the wheel 74, are integral pins 212. The purpose of this lever 86 is to prevent the operating wheel 74 coming into a position of rest with the tip 208 of the lever 78 against the abutment 206, for it will be seen that in such a position the receiving space 200 would not be in alignment with the slot 170, which would prevent the proper positioning of the coin, as shown at 188, to allow operation of my dispensing machine.

The lever 86 operates as follows: under the action of spring 94, said lever rests against one of the pins 212, and due to its spring action revolves the wheel 74 in a direction opposite to that of operation until the under side of tip 208 of the lever 78 rests against the abutment 214 of the wheel 74.

Extending horizontally rearward and integral with the wheel 74 is a pin 216, which pin engages the slot 218 of the bell crank 220.

Attached to the under side of the flange 8 is a cap 222. Depending from and integral with said cap is an annular flange 224. The cap 222 is attached to the flange 8 by means of screws 226, which screws have their seat in posts 228 of a dispensing wheel support 230. The dispensing wheel is shown at 232 and has a series of gear teeth 234 on its lower outward edge. The dispensing wheel 232 is divided into segmental compartments 236, as shown in Figure 5. Depending from the dispensing wheel support 230 are the arms 238, which arms serve to carry rotatably the journal 240. The bell crank 220 is fixed

edly secured to the forward end of the journal 240, while the gear wheel 242 is fixedly secured on its rearward end. The teeth of the gear wheel 242 are adapted to engage the teeth 234 of the dispensing wheel 232.

Referring to Fig. 5, the segmental compartments 236 are clearly shown. These compartments are separated from one another by means of walls 244, which walls extend radially from a central post 246. Overlying the central post and the separating walls 244 is a plate 248 having downwardly extending flanges 248^a adapted to cover the rearward wall of the segmental compartments 236 with relation to the direction of rotation. This plate 248 is secured to the separating walls 244 and the central post 246 by means of a screw 250, said screw extending through the slot 252 in the plate and into the central post 246. It will be seen that by loosening the screw 250 the plate may be rotated with relation to the separating walls and thus vary the size of the compartments 236.

Extending through an aperture in the center of the strip 26 of the ring 24 is a central rod 254. This central rod extends downwardly through the merchandise container 16 and is fixedly secured in the central post 246 as at 256 and has a reduced end portion 258 revolving in an aperture in the center of the dispensing plate support 230. Thus it will be seen that the rod 254 serves as the centralizing journal for the dispensing system of my dispensing machine.

Referring to Fig. 4, the cap 222 has a segmental aperture shown at 260. This aperture serves to allow delivery of the merchandise from the merchandise container 16 to the pockets 236 of the dispensing wheel. It will be seen that as the dispensing wheel revolves, the compartments 236 will pass under the aperture 260 and, if empty, will be filled from the container 16. The top of the cap serves as the floor of the chamber 16.

Referring to Fig. 2, 262 represents a delivery chute, the top opening of which leads to an aperture 264 in the dispensing wheel support 230. This aperture is shown at 264. But for this portion cut away to provide the aperture 264, the dispensing wheel support is a solid plate serving as the floor of the segmental compartments 236. It will thus be seen that, while the compartments 236 are passing over the solid portion of the support 230, they will retain the merchandise, but upon reaching the aperture 264 the said merchandise will be delivered through the chute 262 to the operator.

Secured to the under side of the cap 222 and directly above the delivery aperture 264 is a spring plate 266. While the dispensing wheel revolves, the spring plate rides on the upper surface of the separating walls 244. As the segmental compartment from which the merchandise is to be delivered reaches a position in direct alignment with the aperture 264, which is substantially the same shape as these compartments, the forward wall of the latter compartment will pass from under the spring plate 266 which, due to its spring action, will snap into the body of the chamber from which the merchandise is to be delivered. This snapping action serves as a positive delivery of the merchandise, should the latter, due to atmospheric conditions, be in a frozen or sticky, coagulated condition. In vending machines of the type heretofore used, when the merchandise, due to freezing or moisture, became a solid mass, the machine was ren-

dered inoperative because of non-delivery. The spring 266 obviates this condition.

A series of brushes 268 are secured to the bottom of the cap in any suitable manner. These brushes are positioned in such a manner that the compartments 236, after being filled, will pass thereunder and the merchandise protruding above the separating walls 244 will be brushed or knocked therefrom. Another brush or other brushes are situated in a position that, should merchandise be resting on the upper face of any wall of the chamber 244 after passing the delivery aperture 264, they will brush such merchandise into the following compartment.

Referring to Fig. 15, which shows a modification of the cap 222 and brushes 268, the cap may be raised to extend into the body of container 16 as shown at 223. Instead of the brushes a device having a flexible band metal support 225 and extending wire prongs 227 may be used. The wires are turned up in the direction of rotation of the dispensing wheel as shown at 229.

The purpose of the above brushes is to prevent any merchandise from taking a position in the mechanism that would allow its shearing and thus clogging or jamming the operation of the vending machine.

A cross arm 270 is fixedly secured to the rod 254. The purpose of this cross arm is to break up the merchandise in the container 16 should it have formed a solid mass due to atmospheric conditions.

The operation of the dispensing apparatus is as follows:

The operator, having inserted a coin in the slot 272, which coin by operation of the handle 152 has been delivered to the coin receiving wheel 74, turns the operating handle 70 which, due to the presence of the coin in the pockets 200 of the coin receiving wheel 74, allows rotation of the latter wheel for one-half a turn, which rotation is transmitted to the pin 216. The rotation of the pin 216, which engages the bell crank 220, is transmitted through the journal 240 to the gear wheel 242. As the gear wheel 242 and the teeth thereof engage the gears 234 of the dispensing wheel, the latter is revolved. The gear wheel 242 and the dispensing wheel 232 are geared together in such a manner that the 180 degree rotation of the coin receiving wheel 74 transmits to the dispensing wheel that amount of rotation necessary to pass one of the compartments 236 over the delivery aperture 264. Thus it will be seen that, by the insertion of one coin, it will be possible to receive merchandise from only one of the merchandise compartments 236.

The operation of my coin controlled mechanism is as follows:

The operator inserts a coin in the slot 166 through which the coin falls and comes to rest in the pocket 162 of the coin carrying slide 60. The coin, being of that denomination for which my machine is built, will extend the entire height of the slide, thereby providing a surface for carrying the tooth lever 128 over the notch 140.

This coin, also being of the proper thickness, that is, of a thickness equal to the depth of the pocket 162, will provide a continuous surface with the adjacent sides of the pocket 162, thus preventing the tip 184 of the lever 182 being forced forwardly by the spring 176 and preventing complete operation of the slide by the abutment of the tip 184 and the side 186 of the pocket 162.

Again assuming the coin to be of normal dimen-

sions and the slide allowed to be moved against the action of spring 156 by means of the handle 152, the pocket, as before described, will be drawn into direct alignment with the slot 170 of the slide support 62. Should the coin inserted be a slug of steel or the like, its further progress will be prevented by the magnet 122. Assuming it to be normal, it will fall through the slot 170 into the pocket 200 of the coin receiving wheel 74 held in a receiving position by means of the lever 86 under the action of spring 94. The presence of the coin in the pocket 200 provides a smooth engaging surface for the lever 208, which surface carries said lever over the notch 206 and allows a 180-degree rotation of the handle 70 with the wheel 74 in the manner hereinbefore described. The 180-degree rotation of the pin 216 is transmitted to the merchandise dispensing apparatus.

Should the slug inserted be of lead, cardboard, fiber, linoleum, or the like, such type of slugs being commonly used in vending machines of this type, the sharp tip of the tooth lever 128 will bite into such soft slugs, thus preventing the operation of the machine by engaging the notch 140 due to said biting into the slug.

When the coin carrying slide 60 is operated by means of the handle 152 against the action of spring 156, the slots 164 and 166 will be covered by the thicker portion 274 of the slide 60. By means of this enlarged portion, it will be seen that during the operation by means of the handle 152, the operator cannot insert another coin but must wait until the operation from the previous coin has been completed.

Should the operator insert a coin into the pocket 162 and by operation of the lever 152 draw the coin into alignment with the slot 170, thereby delivering it to the coin receiving wheel, and then release the handle 152, thereby bringing the pocket 162 back to its normal position, and thereupon insert a second coin in the pocket 162, and again attempt by operation of the handle 152 to deliver the coin into the slot 170 to the coin receiving wheel 74, the second coin, upon attempting to drop into the pocket 200 of the coin receiving wheel, will be prevented from doing so by the presence of the first-mentioned coin.

The second coin, instead of being retained by the mechanism, will be returned to the operator in the same manner as are slugs and other rejected counterfeits by which the machine may be attempted to be operated.

It will be seen that when a coin is of a different material or of different dimensions from the coin for which the machine is built, the levers 128 and 124 serve to prevent such slug of improper material or improper dimensions from progressing beyond the point of resting in the pocket 162. The result of this action of these levers is that the coin, when rejected, is returned directly to the operator and may be easily withdrawn from the machine, obviating any necessity for the presence of a repairman whenever a slug is inserted.

From the foregoing description it will be seen that I have provided a vending machine which cannot be clogged by slugs or by the insertion of a second coin before the first has passed through the control mechanism.

I have also provided a machine in which it is impossible to insert another coin or any foreign matter while a previously inserted coin is being drawn through the control mechanism.

I have provided a coin control mechanism which will not permit counterfeit slugs to leave the con-

trol of the operator but will be necessarily returned to him.

I have also provided means whereby thin slugs and foreign matter cannot wedge between the moving parts of the mechanism and thus jam the mechanism.

I have provided positive delivery means for the merchandise to insure delivery during moist or cold weather.

I have provided means for preventing jamming and mutilation of the merchandise by the mechanism.

I have provided a vending machine assembled in such a manner as to protect it from being pried open and in such a manner that the only exposed disassembling means are the locks themselves and though the merchandise chamber be broken the cash in the machine is still securely locked.

The details of my invention above described are given as illustration and may be changed and modified without departing from the spirit of my invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States:

1. In a vending machine, a hollow base having a lug on one of its walls, said lug having a screw seat therein, said screw seat being adapted to receive one end of a suitable locking element, said base being open at its top and bottom, the bottom opening being bordered in part by vertical lower extremities of the walls of the base, the remaining part being bordered by a lip formed by an inwardly extending lower extremity of the wall, a plate adapted to cover the bottom opening of the base, said plate having a portion of its border a raised lip to coengage with the lip of the base, the remainder of the border being provided with an upstanding wall offset from its edge, said upstanding wall being adapted to fit flush with the inner surface of the vertical extremities of the wall of the base, a container adapted to sit on the top opening of said base and being fastened thereto by means not accessible from the space enclosed by said container.

2. In a vending machine, a hollow base having an opening at its top, said opening being bordered by an inwardly extending flange, a merchandise container adapted to sit on said flange, said container having an open top and bottom, a ring adapted to sit on the open top of said container, said ring having a diametrical integral cross piece, a cap being adapted to cover said ring and the top opening of said container and to lock with said ring, a substantially U-shaped strip having the extremities of its arms turned outwardly, the outwardly turned extremities adapted to fasten to the base, the portion of said U-shaped strip remote from said outwardly turned extremities being adapted to be fastened to said diametrically integral cross piece.

3. In a vending machine, a base, a flange extending inwardly of and bordering an aperture in the top of said base, an open ended merchandise container adapted seated on said base, a closure assembly for the end of said container remote from said base, said closure assembly including a retaining ring and a cap, said cap being adapted to overlie said ring and to be locked therewith, said ring having a cross piece thereon, means for connecting said base, container and closure assembly together comprising an inverted substantially U-shaped element having laterally extending portions on the legs thereof and

a transverse portion remote from said laterally extending portions, members for fastening said laterally extending portions against the underside of said flange and accessible for removal only from within said base, members for securing the transverse portion of said substantially U-shaped member to the underside of said cross piece and being accessible for removal only from above said cross piece when said cap is removed from said retaining ring.

4. In a vending machine, a base, a flange on said base and bordering an aperture therein, a closure assembly including a ring and a cap, said cap being adapted to overlie said ring and be locked therewith, means for securing said base and closure assembly together comprising a connecting means having laterally extending portions, members for fastening said portions to said flange and accessible for removal only from within said base, and members for securing said connecting means to said ring and being accessible for removal only when said cap is removed from over said ring.

5. In a vending machine, a base, a cap assembly including a cap and a ring for receiving said cap, means for connecting said base with said cap assembly, members for securing said connecting means to said base and being accessible for removal only from within said base, members for securing said connecting means to said cap assembly and being accessible for removal only when said cap is removed from said cap assembly.

6. In a vending machine, a cap assembly including a cap and a cap seat to which said cap is adapted to be locked, said cap seat having a transverse member, means for supporting said cap assembly, means for securing said supporting means to said cross piece inserted from the face of said cross piece adjacent said cap and being accessible for removal from said face only when said cap is removed from said cap assembly.

7. In a vending machine, a base and a top a

flange on said base, said flange extending inwardly of and bordering an aperture therein, securing means extending from said base through said aperture and having laterally extending portions, said laterally extending portions being secured to the under surface of said flange by members inserted from within said base and being accessible for removal only from within said base.

8. In a vending machine, a base having an aperture in the top thereof, a merchandise container having an open bottom, a retaining member on the top of said container, said container being adapted to sit on said base so that the aperture in said base and the open bottom of said container are in alignment, dispensing mechanism in said base at said aperture for establishing metered communication between said container and said base, means for securing said base and said retaining member together with said container comprising an element secured to said base by members accessible for removal only from within said base and secured to said retaining member by members accessible for removal only from the side of said retaining member remote from said container.

9. In a vending machine, a base having an open bottom, said open bottom being bordered in part by substantially vertical lower extremities of the walls of the base, a lip bordering the remaining part, said lip comprising an inwardly extending lower extremity of the wall, a closure member adapted to cover the bottom opening of the base, said closure member having at a portion of its border a raised lip, said lip being adapted to coengage with the lip of the base, the remainder of the border being provided with an upstanding wall offset from its edge, said upstanding wall being adapted to fit against the inner extremities of the wall of the base, means for holding said closure member in locked engagement with said base.

ALLAN O. SIMMONS.