March 1, 1938. W. RABKIN 2,109,868

COIN CONTROLLED DISPENSING APPARATUS

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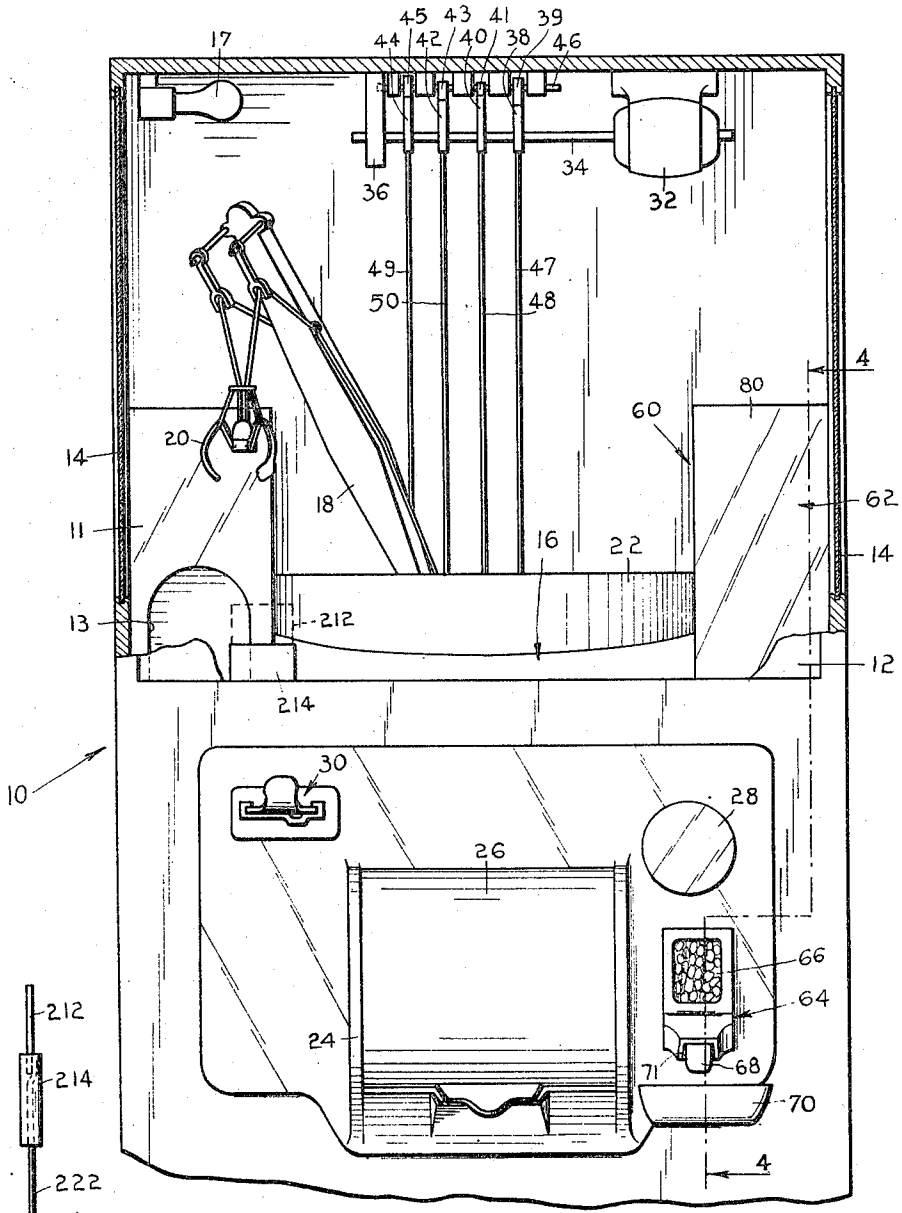


Fig. 1.

Fig. 13.

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COIN CONTROLLED DISPENSING APPARATUS

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Fig. 2.

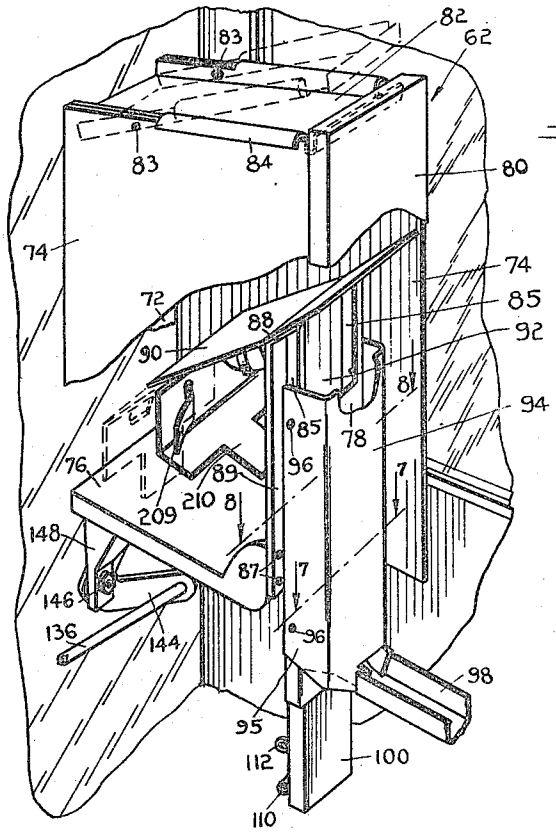


Fig. 11.

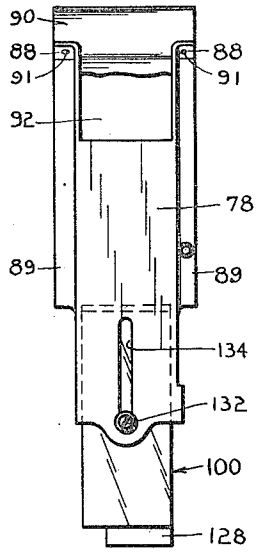


Fig. 9.

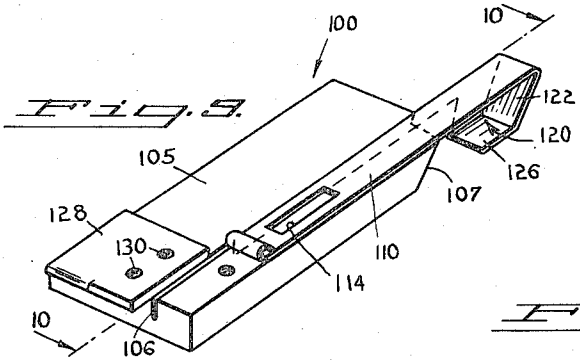


Fig. 8.

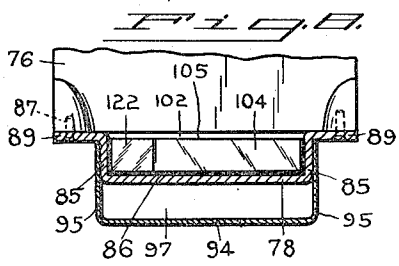


Fig. 7.

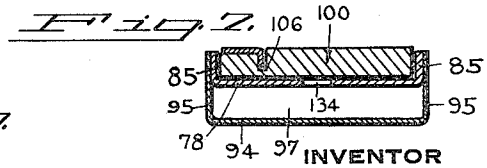
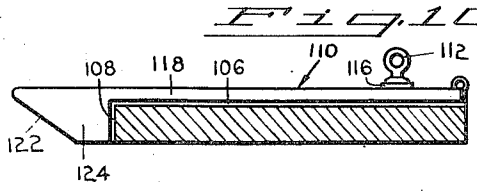


Fig. 10.



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COIN CONTROLLED DISPENSING APPARATUS

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Fig. 3.

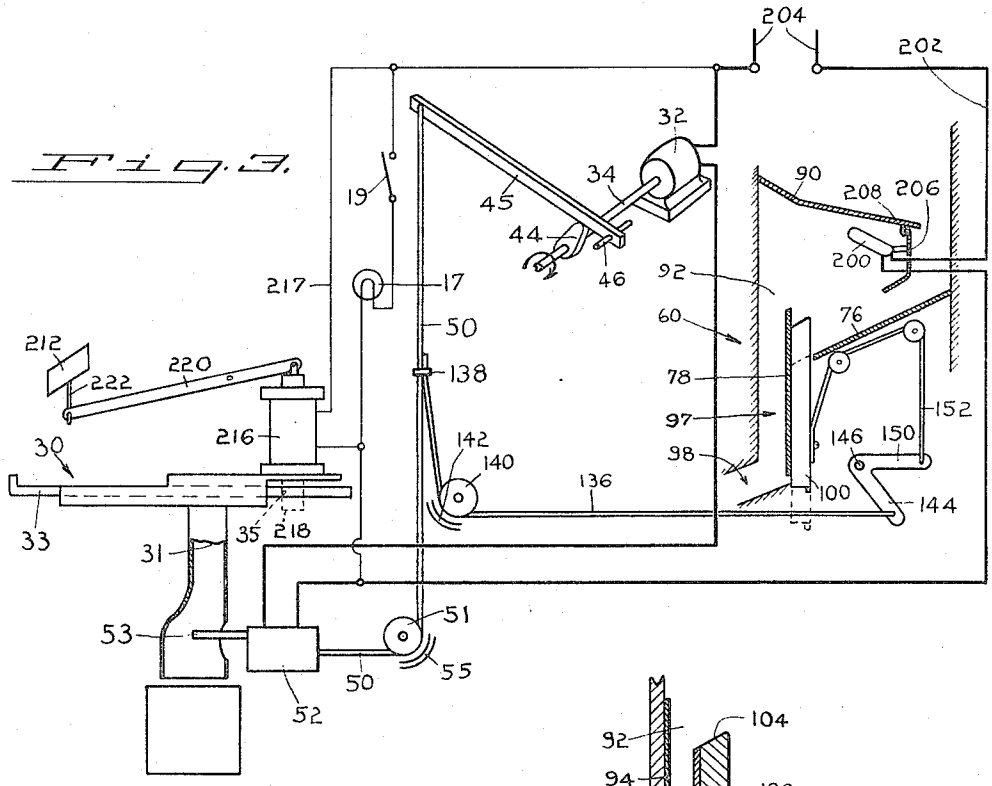


Fig. 3A.

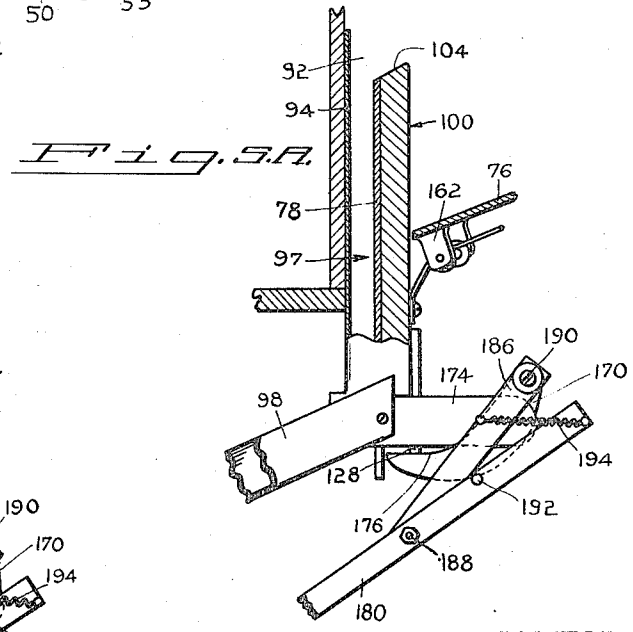
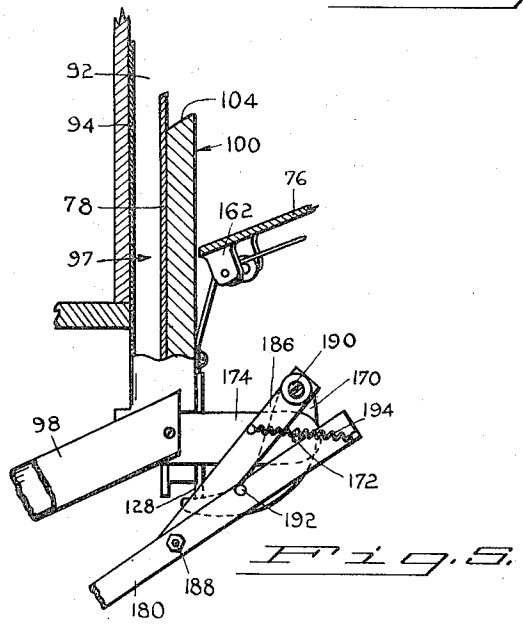


Fig. 5.



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Fig. 6.

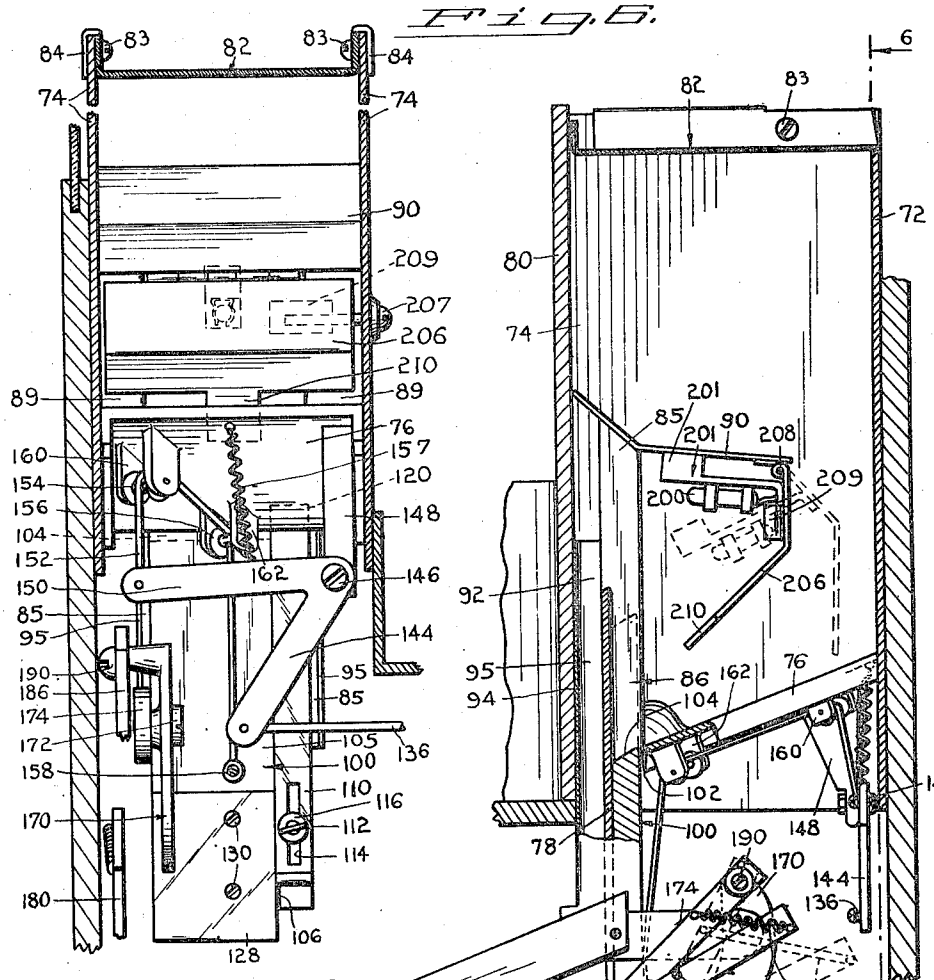


Fig. 4.

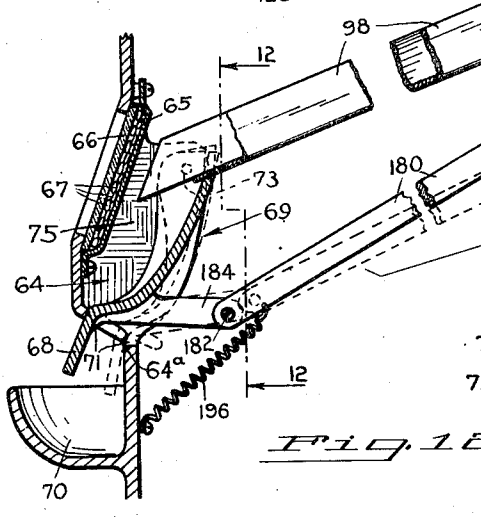
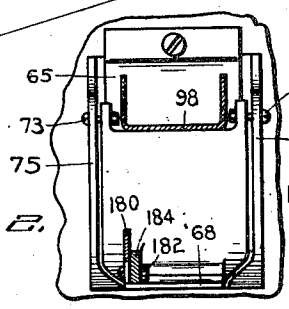


Fig. 18.



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UNITED STATES PATENT OFFICE

2,109,868

COIN CONTROLLED DISPENSING APPARATUS

William Rabkin, New York, N. Y.

Application September 28, 1935, Serial No. 42,577

17 Claims. (Cl. 194—2)

This invention relates to coin-controlled dispensing apparatus and, more particularly, to dispensing apparatus of the type in which the amount or character of the merchandise vended depends to some extent upon the skill of the operator.

One object of the invention is to provide such apparatus with auxiliary or supplementary means to dispense a predetermined quantity of merchandise regardless of the skill of the operator.

Another object of the invention is to subject said auxiliary dispensing means to the control of the coin-controlled mechanism of the apparatus.

A further object of the invention is to provide said apparatus with automatic and manually controlled devices both of which must be successively actuated in the order named in order to dispense said predetermined quantity of merchandise.

A further object of the invention is to provide an auxiliary dispensing means which is adjustable whereby to vary the quantity of merchandise which may be dispensed thereby.

A further object of the invention is to prevent the operation of the apparatus and/or the insertion of a coin if the quantity of merchandise in the auxiliary dispensing means is below a predetermined minimum amount.

A further object of the invention is to provide means to indicate that the apparatus is out of order when the quantity of merchandise in the auxiliary dispensing means is below a pedetermined minimum amount.

A yet further object of the invention is to prevent the insertion of a coin when there is a failure in the supply of energy for operating the motor.

The above objects of the invention and other objects ancillary thereto will best be understood from the following description considered in connection with the accompanying drawings.

In the drawings:

Fig. 1 is a front view in elevation of the dispensing apparatus embodying the present invention;

Fig. 2 is a fragmentary perspective view of the supplementary dispensing apparatus, parts being removed to more clearly illustrate the construction;

Fig. 3 is a diagrammatic view of the supplementary dispensing apparatus and related parts of the main dispensing apparatus;

Fig. 4 is a sectional view on the line 4—4 of Fig. 1;

Fig. 5 is a fragmentary view partly in elevation and partly in section of parts of the supplementary dispensing mechanism illustrating the position of the pusher in intermediate projected position;

Fig. 5a is a view similar to Fig. 5, illustrating the position of the pusher in fully projected or discharge position;

Fig. 6 is a vertical sectional view on the line 6—6 of Fig. 4;

Figs. 7 and 8 are fragmentary cross sectional views on the lines 7—7 and 8—8 respectively, of Fig. 2;

Fig. 9 is a rear perspective view of the pusher;

Fig. 10 is a longitudinal sectional view on the line 10—10 of Fig. 9;

Fig. 11 is a front view in elevation of the front wall of the supplementary dispensing container;

Fig. 12 is a cross sectional view on the line 12—12 of Fig. 4;

Fig. 13 is a detail view of the solenoid actuated indicator.

The present invention is illustrated in connection with a dispensing apparatus of the travelling crane type which is preferably constructed as shown and described in my application Serial No. 642,814, filed November 15, 1932, for Bulk dispensing devices, although the invention can be applied to other types of dispensing apparatus and to other dispensing apparatus of the travelling crane type.

The cabinet 10 within which the dispensing apparatus is housed comprises the front and side walls 12 and 14, respectively, which are of glass, to permit observation of the material or merchandise (not shown) located in the compartment 16. The cabinet 10 may be illuminated by an electric lamp 17. A storage bin 11 provided with an opening 13 is located at one side of the compartment 16 for supplying mechandise such as candy pellets to said compartment. Various articles (not shown) such as cameras, vanity cases, cigarette lighters, etc., may be located in the compartment 16 together with the candy pellets. As is well known, in a dispensing apparatus of this type, the merchandise is dispensed by means of a crane and grapple mechanism, such as the crane 18 and the grapple 20, which lifts the merchandise over the rear wall 22 of the compartment 16 and drops it into a delivery chute (not shown) which communicates with a collection receptacle 24 here shown as provided with

a closure 26. The crane 18 and the grapple 20 may be positioned with relation to the merchandise, as is customary, by means of a hand wheel 28, and then upon insertion of a coin in the coin chute 30, the crane and grapple are actuated by mechanism operated by the electric motor 32 to dispense the merchandise.

The mechanism for operating the crane and grapple comprises a shaft 34, which is here shown as an extension of the motor shaft supported by the hanger 36, a plurality of cams 38, 40, 42 and 44, companion levers 39, 41, 43 and 45, respectively, operated by said cams and pivotally mounted on a rod 46, and companion cables 47, 48, 49 and 50, respectively, connected to and operated by said levers. As the present embodiment of the invention is concerned directly only with the cam 44, lever 45 and cable 50, further description of the construction and operation of the other cams, levers, cables and devices actuated thereby, is unnecessary. Cam 44, lever 45 and cable 50 are, however, directly concerned with the present embodiment of the invention in the manner that will be explained as the description proceeds, but for the present it is sufficient to note that these elements actuated by the motor operated shaft 34 control in conjunction with a coin-controlled switch 52 diagrammatically shown in Fig. 3, the motor 32, by interrupting the main electric circuit to which the motor is connected. As shown in Fig. 3, the cable 50 extends over a guide pulley 51 and is confined thereto by a stationary guide 55.

The switch 52 may be of any suitable construction known in the art but I prefer to utilize the coin-controlled switch shown and described in my above mentioned application. In the operation of this switch, the latter being open, when a coin is inserted in the coin chute 30, it drops through a tube 31 (Fig. 3) and in so doing strikes a lever 53 which is thereby moved to permit the switch to close in order to complete the motor circuit. The motor is thus energized and rotates the shaft 34 thereby operating the crane 18 and the grapple 20, by means of the cams 38, 40 and 42, the companion levers and cables, and the associated mechanism (not shown), to dispense merchandise from the main compartment 16, after which, at the end of one revolution of shaft 34, the cable 50, tensioned by the action of the cam 44 and lever 45, opens the switch 52 to stop the operation of the motor.

As the result of this operation of the crane and grapple mechanism, the quantity or character of the merchandise dispensed by apparatus of this type depends upon the skill or success of the operator in properly locating the crane with respect to the merchandise in the compartment 16 by manipulation of the hand wheel 28. While the operator derives considerable amusement in observing the operation of the apparatus and in testing his skill and hence is adequately remunerated for the cost of operating the apparatus and in addition receives a variable amount of merchandise, it is the purpose of this invention to provide supplementary means, indicated generally at 60, which upon each operation of the crane and grapple mechanism, can be made to dispense a predetermined quantity of merchandise, if the operator so desires.

The supplementary dispensing means 60 comprises a housing 62 positioned at one side of the rear part of the cabinet adjacent the wall 22. By operating certain mechanisms which will be described presently, merchandise is delivered from the housing 62 to a valve controlled receptacle 64 at the front of the cabinet. The receptacle 64 is provided with a compartment defined by a rear wall 65 and a front glass wall 66 (Figs. 1 and 4). Merchandise, such as candy pellets 67 may be placed in said compartment in order to attract the buyer's attention. Candy or other merchandise is delivered to the trough 70 through an outlet opening 71 at the bottom of the receptacle 64 when the finger piece 68 is depressed. The manner in which this is accomplished will be hereinafter more fully described.

The housing 62 comprises a rear wall 72 and side walls 74 which together with an inclined bottom wall or shelf 76 and a front wall 78 spaced rearwardly of the front wall 80 of the housing 62 define a hopper which constitutes a supplementary dispensing container for the mechandise to be dispensed in predetermined quantities. The housing has a top closure 82 pivoted as at 83 to the rear upper end portions of the side walls 74 and provided with downwardly reflexed side portions 84 which engage the top edges of said side walls in closed position to limit the closing movement of said closure.

The front wall 78 has integral inturned flanges 85 which define a channel or guideway 86. The upper portions of said flanges 85 have integral lateral flanges 89, to which the shelf 76 is secured by means of screws 87. The upper ends of the flanges 85 and 89 are defined by forwardly inclined walls 88 to which a rearwardly extending and downwardly inclined plate 90 is secured by means of screws 91 for a purpose which will subsequently be explained. The upper edge of the front wall is spaced from said plate 90 to provide an outlet opening 92 for the hopper. A U-shaped member 94 secured at its sides 95 to the flanges 85 by means of screws 96 defines a discharge passage 97 which communicates with the hopper outlet 92 and a delivery chute 98 which extends to the receptacle 64 on the front wall of the cabinet.

The merchandise is dispensed from the hopper by a transfer or elevator member comprising a pusher 100 which is constructed and arranged to move in the channel 86 through the opening 102 in the bottom of the hopper defined by the forward edge of the shelf 76 and the free ends of the flanges 85. The upper edge 104 of the pusher 100 is inclined at the same angle as the shelf 76 and when in its retracted position, as shown in Fig. 4, forms a continuation of the bottom wall of the hopper. As shown more clearly in Figs. 9 and 10, said pusher 100 comprises a rectangular wooden block provided with a longitudinal groove 106 located adjacent one side of the block and a slot 108 located at the inclined edge 104 of the block in continuation of the groove 106 which of course terminates between the opposite sides of the block. A metal strap 110 is adjustably secured to the block by means of a winged screw 112 which passes through a slot 114 in said strap, bears on a washer 116 overlying the latter, and engages the block. Said strap 110 has a flange 118 which extends into the groove 106 and a socket 120 defined by an inclined end wall 122 and side walls 124 and 126. When the strap 110 is fully retracted, as shown in Fig. 10, the end wall 122 engages the undercut portion 107 of the inclined edge 104 and the exposed surface of said wall is flush with the remaining surface of said inclined edge. Said side wall 124 is long enough to extend into the slot 108 when the strap 110 is in fully projected

position. The quantity of merchandise transferred by the pusher 100 from the hopper to the outlet 92 can be regulated by adjusting the strap 110 to project the end 122 more or less beyond the edge 104 of the block. A flat metal plate 128 is secured to one side of the block 105 by screws 130 and projects below said block. The movement of the pusher 100 in the channel 86 is limited in both directions by a pin 132 which is secured to the block 105 and extends through an elongated longitudinal slot 134 in the front wall 78 (Fig. 11), so that when the pin 132 is at the lower end of said slot 134, the inclined edge 104 is flush with the lower edge of the shelf 76, as shown in full lines in Fig. 4 and when said pin is at the upper end of said slot said inclined edge is in the fully projected position as shown in Fig 5*a*.

The pusher is actuated automatically during the operation of the crane by means of a cable 136 which is attached at 138 to the switch operating cable 50 (Fig. 3). It will be understood however that the cable for opening the switch 52 may be operated by another cam and lever or, in other words, separate cams and levers (not shown) can be provided for operating the cables 50 and 136 in which event the latter will be connected to their respective levers and not to each other.

Said cable 136 extends over a guide pulley 140 to which it is confined by a fixed guide member 142 and is connected at the free end of one arm 144 of a bell crank lever which is pivoted on a pivot screw 146 secured to a bracket 148 which is integral with and depends from the rear end of the shelf 76. The other arm 150 of the bell crank lever is connected to one end of a cable 152 which passes over guide pulleys 154 and 156 and is connected at its other end, as by a screw 158, to the block 105 of the pusher 100. The pulleys 154 and 156 are mounted in brackets 160 and 162, respectively, which are integral with the shelf 76 and depend therefrom. A spring 157 connected at its ends to the arm 150 and to the shelf 76 resiliently supports the bell crank lever and resiliently opposes the movement thereof by the cable 136.

Referring to Fig. 3, it will be observed that when the high point of the cam 44 is in engagement with the lever 45 the cables 50 and 136 hold the pusher 100 in an intermediate projected position above the shelf 76 and below the outlet 92. When the motor 32 is energized in response to the insertion of a coin in the coin chute 30, as hereinbefore described, the shaft 34 rotates in the direction indicated by the arrow, thus permitting the free end of the lever 45 to move downwardly thereby relaxing the cables 50 and 136 and permitting the pusher 100 to move downwardly to the position illustrated in full lines in Fig. 4 and in dotted lines in Fig. 3. In this position of the pusher, candy pellets resting on the shelf 76 of the hopper are moved by gravity onto the inclined edge 104. In the meantime the cam 44 continues to rotate and subsequently raises the lever 45 thereby tensioning the cables 50 and 136 and lifting the pusher 100 and the candy carried thereby to the position shown in full lines in Fig. 3 and in dotted lines in Fig. 4. Thus, while the coin controlled mechanism is effective to initiate the movement of the pusher 100, said mechanism is ineffective to move the pusher to discharge position adjacent the outlet 92, as illustrated in Fig. 5, but for this latter purpose manually actuated mechanism is provided.

The manually actuated mechanism for moving the pusher to discharge position comprises a lever 170 pivoted intermediate its ends on a screw pivot 172 secured to a lug 174 which is integral with the front wall 78 of the hopper and channel 86. The forward edge 176 of the lever 170 is curved and is arranged to engage the lower edge of the metal plate 128 of the pusher 100, as shown in Fig. 5, after the latter has been raised to the intermediate projected position illustrated in dotted lines in Fig. 4. Referring to Fig. 5*a*, it will be observed that the lever 170 engages the lower edge of the metal plate 128 to support the pusher 100 in discharge position adjacent the outlet 92. It will be noticed, however, that the lever 170 cannot be moved to engage the lower edge of the plate 128 of the pusher until after the latter has been raised by the coin-controlled mechanism to the intermediate projected position as above described.

The lever 170 is operated by a rod 180, pivotally connected by a screw pivot 182 to a lug 184 integral with the pivoted valve 69, and a link 186 pivotally connected at its ends to said rod 180 and to said lever by screw pivots 188 and 190, respectively. Relative pivotal movement of the rod 180 and link 186 is positively limited in one direction by a pin 192 projecting from the rod 180 into the path of movement of said link toward said rod, and relative pivotal movement of said link and rod in the opposite direction is resiliently opposed by a spring 194 connected at its ends to the rod and link. A spring 196 connected at its ends to the front of the cabinet and to said rod 180 adjacent the front end of the latter resiliently opposes the movement of said rod and holds the valve 69 in closed position.

The operation of the manually controlled mechanism for moving the pusher to discharge position adjacent the outlet 92 results when the finger piece 68 on the valve 69 is depressed. The consequent movement of the valve 69 about its pivots 73 on the side walls 75 of the receptacle 64 toward the rear of the cabinet results in the movement of the rod 180 against the tension of the spring 196, and by this movement of said rod, link 186 rotates the lever 170 about its pivot 172 to bring the lower free end of the latter into engagement with the lower edge of the plate 128, as shown in Fig. 5. Upon the further movement of the rod 180 in the same direction, the pusher 100 is moved upwardly from the intermediate projected position, shown in Fig. 5, to the fully projected or discharge position shown in Fig. 5*a*. By this movement of the pusher 100, the candy pellets or other merchandise resting on the inclined edge 104, are projected through the outlet 92 into the discharge passage 97, thence into the delivery chute 98, and from the latter into the receptacle 64. The candy thus delivered to the receptacle 64 falls from the latter into the receiving trough 70 while the valve 69 is moved as described above. When the finger piece 68 is released, the spring 196 returns the rod 180 to its retracted position thereby moving the lever 170 out of engagement with the plate 128 and thus permitting the pusher to move downwardly to its intermediate projected position. After this operation has taken place, and the candy on the edge 104 has been pushed through the outlet 92, it is impossible to obtain additional candy from the hop-

per, unless another coin is inserted, because said edge 104 is above the level of the candy in the hopper and cannot be lowered therebelow until the main dispensing mechanism is operated following the insertion of another coin into the coin chute. When another coin is inserted, the pusher 100 is first automatically lowered to fully retracted position, illustrated in Fig. 4, below the level of the candy and then automatically raised to the intermediate projected position illustrated in Fig. 5. Referring to Fig. 4, it will be observed that the pusher 100 is in the path of movement of the lever 170 and projects therebelow and that the latter cannot be moved to engage the lower edge of the plate 128 until the pusher is raised to intermediate projected position by the coin controlled crane operating mechanism previously described. Therefore, if the cable 136 should break, the lever 170 would be ineffective to operate the pusher.

In order to prevent injury to the manually operated mechanism, especially to the rod 180 and its associated parts, provision is made to permit relative movement between said rod and link 186. For this purpose, the spring 194, while normally effective to prevent relative pivotal movement between the rod 180 and the link 186 during the operation of the lever 170 to raise the pusher, is sufficiently resilient to yield in order to permit the rod 180 to be moved with relation to the link 186 when the pusher is fully projected or retracted. The relative movement of the link and lever permitted by the spring 194, as just described, is sufficient to prevent injury to the manually actuated mechanism because the finger piece 68 when fully depressed engages the lower edge 64*a* of the receptacle 64 and acts as a stop member to prevent further movement of the rod 180 toward the rear of the cabinet.

According to the present invention, provision is made to prevent operation of the crane and, if desired, to prevent insertion of a coin into the coin chute when the quantity of merchandise in the supplementary dispensing container is below a predetermined minimum amount. In order to prevent the operation of the apparatus in the event that the quantity of merchandise in the supplementary dispensing container is insufficient, the motor 32, which actuates the crane, is placed under the control of a switch which is responsive to the quantity of candy in the supplementary container. Thus, referring to Fig. 3, it will be observed that a mercury switch 200 is in series with the main lead 202 of the electric circuit having supply terminals 204. Said switch 200 is carried by a weighted bar 201 secured to a plate 206 which is pivotally mounted by a hinge 208 on the rear end of the plate 90. The plate 206 is provided with an integral depending wing 210 which is adapted to be engaged by the merchandise in the hopper resting on the shelf 76. Thus, referring to Fig. 4, when a sufficient quantity of merchandise is present in the hopper, the lower end of the wing 210 is supported in the raised position indicated in full lines, thus holding the switch 200 in elevated or circuit closing positions. On the other hand, when the quantity of merchandise decreases below a predetermined amount, the weighted plate 206 moves by gravity to the dotted line position and the switch 200 moves to lowered or circuit interrupting position, thus breaking the main circuit and preventing operation of the motor 32, and if desired, of other electrical translating devices connected to said circuit.

Upon failure of the supply of merchandise in the supplementary container and the consequent interruption of the motor circuit, the condition of the apparatus is indicated by the darkening of the compartment 16 due to the failure of current for the lamp 17, it being observed, referring to Fig. 3, that the lamp circuit, although in parallel with the motor circuit, is in series with the main circuit controlled by the mercury switch 200. Thus, while the operation of the apparatus is independent of the lamp 17, the failure of the latter to light when the manual switch 19 is closed indicates the lack of merchandise in the supplementary dispensing container. However, in order to more clearly indicate this condition, particularly when the lamp 17 is dispensed with, there is provided an indicator which is actuated under the control of the mercury switch. Referring to Figs. 1, 3 and 13, the indicator comprises a plate 212 slidably mounted in a guide 214 positioned adjacent the front glass wall 12 of the cabinet over the coin chute 30. Said plate 212 may carry a suitable legend such as "Out of Order" whereby to attract the attention of a prospective buyer to the inoperative condition of the apparatus. The indicator plate 212 is normally lowered into the guide 214 and is concealed by the latter, but when the mercury switch 200 is in circuit interrupting position due to the failure of the supply of merchandise in the supplementary dispensing container, a normally energized solenoid 216 in the branch electric circuit 217 becomes deenergized thereby permitting the plunger or solenoid core 218 to drop by gravity and thereby moving the pivoted lever 220 from the dotted line position to the full line position, shown in Fig. 13 and raising the link 222 and the indicator 212 carried thereby. When the solenoid is energized the core 218 is raised thus lowering the link 222 and moving the indicator plate 212 to retracted or concealed position within the guide 214.

The apparatus of the present invention may also include means to prevent the insertion of a coin in the coin chute when the supply of merchandise in the supplementary dispensing container fails. For this purpose, referring to Fig. 3, the slide 33 of the coin chute is disposed to move below the solenoid plunger 218 and is provided with an opening 35 which registers with the plunger 218 when the slide is in coin receiving position. Accordingly, when the solenoid 216 is deenergized the plunger 218 projects through the opening 35 and prevents reciprocation of the slide 33 and thereby prevents a coin from being inserted in the coin chute.

It will be noticed that by virtue of the provision of the solenoid controlled coin chute, it is impossible to insert a coin into the chute when there is a failure in the power supply for operating the motor 32, for upon failure of the power the solenoid will be deenergized and the coin slide 33 will be locked by the plunger 218.

Provision is made for preventing movement of plate 206 and the mercury switch carried thereby, especially when the apparatus is being shipped or moved about, or for maintaining the switch in closed position. For this purpose, as best shown in Figs. 2 and 6, a screw 207 is threaded through the side wall 74 of the housing 62 and engages a cam plate 209. Said plate 209 is secured at one end to the plate 206 and extends at an angle thereto. Thus, when the screw 207

is threaded through the wall 74 its shank is projected between the plate 206 and the cam plate 209 and by engagement with the latter moves the plate 206 into its extreme upper position where it is held against movement in either direction. Before the apparatus is put into operation, the screw 207 may be withdrawn to permit movement of the plate 206 when the supply of merchandise in the housing 62 becomes low or is entirely consumed, as hereinbefore described.

Thus, it is seen that the apparatus constituting the present embodiment of the invention is well adapted to accomplish the several objects of the invention. It will be understood, however, that the invention is capable of other embodiments and that certain changes in the construction and arrangement of parts in the present embodiment may be made and will occur to those skilled in the art in view of the present disclosure. It will be also understood that one or more parts of the present apparatus herein disclosed may be used without one or more other parts. Therefore, I do not wish to be limited to the precise construction herein shown and described, except as may be required by the appended claims and the prior art.

Having described my invention and the manner in which the same operates what I claim and desire to secure by Letters Patent is:

1. In a dispensing apparatus, a hopper for material to be dispensed therefrom, said hopper having a bottom on which said material rests and an outlet above said bottom, a vertically disposed member slidable in said hopper and arranged therein to move from retracted position below the material in the hopper to intermediate position above said material but below said outlet and to discharging position adjacent said outlet, coin-controlled mechanism for moving said member from said retracted position to said intermediate position, and manually-controlled means for moving said member from said intermediate position to said discharging position.

2. In a dispensing apparatus, a hopper for material to be dispensed therefrom, said hopper having a bottom on which said material rests and an outlet above said bottom, a vertically disposed member slidable in said hopper and arranged therein to move from retracted position below the material in the hopper to intermediate position above said material but below said outlet and to discharging position adjacent said outlet, coin-controlled mechanism for moving said member from said retracted position to said intermediate position, manually-controlled means for moving said member from said intermediate position to said discharging position, and means under the control of said slidable member to prevent said manually-controlled means from moving said member to discharging position unless the latter has been moved from said retracted position to said intermediate position.

3. In a dispensing apparatus, a hopper for material to be dispensed therefrom, said hopper having a bottom on which said material rests and an outlet above said bottom, a vertically disposed member slidable in said hopper and arranged therein to move from retracted position below the material in the hopper to intermediate position above said material but below said outlet, and to discharging position adjacent said outlet, coin-controlled mechanism for moving said member from said retracted position to said intermediate position, and manually-controlled means for moving said member from said intermediate position to said discharging position, and means for preventing actuation of said coin-controlled mechanism when the supply of material in said hopper is below a predetermined minimum amount.

4. In a dispensing apparatus, a hopper for material to be dispensed therefrom, said hopper having a bottom on which said material rests and an outlet above said bottom, a vertically disposed member slidable in said hopper and arranged therein to move from retracted position below the material in the hopper to intermediate position above said material but below said outlet and to discharging position adjacent said outlet, coin-controlled mechanism for moving said member from said retracted position to said intermediate position, manually-controlled means for moving said member from said intermediate position to said discharging position, means for preventing actuation of said manually-controlled means to move said member to discharging position unless the latter has been moved from said retracted position to said projected position, and means for preventing actuation of said coin-controlled mechanism when the supply material in said hopper is below a predetermined minimum amount.

5. In a dispensing apparatus, a hopper having a bottom provided within an opening and an outlet above said bottom, an elevator member movable in said opening for transferring material from the hopper through said outlet, coin-controlled means for initiating the operation of said elevator member, and manually operable means for completing the operation of said elevator member.

6. In a dispensing apparatus, a hopper having an outlet, means forming a discharge passage in communication with said outlet, a pusher operable in said hopper to transfer material therefrom through said outlet and into said discharge passage, motor-actuated mechanism for initiating the operation of said pusher, and manually operable means for completing the operation of said pusher.

7. In a dispensing apparatus, a hopper for material to be dispensed, means forming an outlet at the upper part of the hopper, a discharge passage in communication with said outlet, means for raising a portion of the material in said hopper to said outlet and transferring said raised portion of the material, through said outlet to said discharge passage, and means for actuating said raising means including a yieldable connection between said raising means and said actuating means whereby the latter can move in relation to said raising means when the latter is in a predetermined position.

8. In a dispensing apparatus, a hopper for material to be dispensed, means forming an outlet at the upper part of the hopper, a discharge passage in communication with said outlet, means for raising a portion of the material in said hopper to said outlet and transferring said raised portion of the material through said outlet to said discharge passage, and means for actuating said raising means comprising a pivoted lever, a link connected to said lever, a second link pivotally connected to said first mentioned link, a stop member limiting the relative movement of said links in one direction, and spring means connected to said links for resisting their relative movement in another direction.

9. In a dispensing apparatus, a hopper for material to be dispensed therefrom, said hopper hav-

ing an outlet for said material, a delivery chute in communication with said outlet, a discharge valve for said delivery chute, means associated with said hopper for separating a charge of material from said hopper and transferring said charge through said outlet into said delivery chute, coin-controlled mechanism for partially actuating said separating means and means under the control of said valve for completing the actuation of said separating means.

10. In a dispensing apparatus comprising a container for the material to be dispensed, said container having a bottom and an outlet thereabove, said bottom having an opening defining a guideway, an elevator member movable in said guideway for transferring material from said container to said outlet and normally extending to and supported at a point above said bottom but below said outlet, means for lowering said elevator to a point adjacent said bottom and for raising said elevator to said first mentioned point, and additional means for raising said elevator from said first mentioned point to said outlet.

11. In a dispensing apparatus the combination with a compartment for material to be dispensed and coin-controlled means for separating a portion of said material and dispensing the same from said compartment, of a second compartment for material to be dispensed having an outlet, a member movable in said second compartment operable during a first part of its movement to separate a portion of the material from the rest of the material therein and to retain said portion within said second compartment and operable during another part of its movement to transfer said portion through said outlet, means actuated by said coin-controlled means for imparting to said member said first part of its movement but inoperative to impart to said member said other part of its movement, and manually controlled means for imparting to said member said other part of its movement but inoperative to impart to said member said first part of its movement.

12. In a dispensing apparatus the combination with a compartment for material to be dispensed and coin-controlled means for separating a portion of said material and dispensing the same from said compartment, of a second compartment for material to be dispensed having an outlet, a member movable in said second compartment operable during a first part of its movement to separate a portion of the material from the rest of the material in said compartment and to retain said portion within said second compartment and operable during another part of its movement to transfer said portion through said outlet, means actuated by said coin-controlled means for imparting to said member said first part of its movement but inoperative to impart to said member said other part of its movement, and manually controlled means for imparting to said member said other part of its movement but inoperative to impart to said member said first part of its movement, and means for rendering said coin-controlled means inoperative in the absence of a predetermined minimum amount of material in said second compartment.

13. In a dispensing apparatus the combination with a compartment for material to be dispensed and coin-controlled means for separating a portion of said material and dispensing the same from said compartment, of a second compartment for material to be dispensed having an outlet, a member movable in said second compartment operable during a first part of its movement to separate a portion of the material from the rest of the material therein and to retain said portion within said second compartment and operable during another part of its movement to transfer said portion through said outlet, means actuated by said coin-controlled means for imparting to said member said first part of its movement but inoperative to impart to said member said other part of its movement, and manually controlled means for imparting to said member said other part of its movement but inoperative to impart to said member said first part of its movement, said manually controlled means comprising a plurality of pivotally connected members having a limited relative movement.

14. In a dispensing apparatus the combination with a compartment for material to be dispensed and coin-controlled means for separating a portion of said material and dispensing the same from said compartment, of a second compartment for material to be dispensed having an outlet, a member movable in said second compartment operable during a first part of its movement to separate a portion of the material from the rest of the material therein and to retain said portion within said second compartment and operable during another part of its movement to transfer said portion through said outlet, means actuated by said coin-controlled means for imparting to said member said first part of its movement but inoperative to impart to said member said other part of its movement, manually controlled means for imparting to said member said other part of its movement but inoperative to impart to said member said first part of its movement, said manually controlled means comprising a plurality of pivotally connected members having a limited relative movement, and a spring connection between said pivotally connected members.

15. In a dispensing apparatus, two separate compartments for material to be dispensed, means operable under the control of the operator in accordance with the skill of the latter for removing a portion of said material from one of said compartments, the combination with coin-controlled means for actuating said operator-controlled means, and means under the control of said coin-controlled means for discharging a predetermined quantity of material from the other of said compartments independently of the material discharged from said first compartment by said operator-directed means upon each actuation of said coin-controlled means, said means for effecting said independent discharge of material comprising a manually actuated mechanism and a member for engaging and discharging said material from the second compartment, said member being operable only by the successive actuations of said coin-controlled means and said manually-actuated mechanism.

16. In a dispensing apparatus comprising a cabinet, a hopper therein for material to be discharged therefrom, said hopper having an outlet for said material, said cabinet having an outlet in communication with said hopper outlet, means within said cabinet associated with said hopper for separating a charge of material from said hopper and transferring said charge through said hopper outlet, said means comprising a slidable member movable in a rectilinear path, coin-controlled mechanism within said cabinet for moving said slidable member through a part only of said path in one direction, mechanism for

completing the movement of said slidable member through the remaining part of said path in the same direction, and means mounted on the cabinet externally thereof for operating said last mentioned mechanism.

17. In a dispensing apparatus comprising a cabinet, a hopper therein for material to be discharged therefrom, said hopper having an outlet for said material, said cabinet having an outlet in communication with said hopper outlet, means within said cabinet associated with said hopper for separating a charge of material from said hopper and transferring said charge through said hopper outlet, coin-controlled mechanism within said cabinet for partially actuating said separating means, mechanism for completing the actuation of said separating means, and means mounted on the cabinet externally thereof for operating said last mentioned mechanism.

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