Feb. 2, 1960 C. GABRIELSEN ET AL 2,923,433

COLUMNAR PACKET MERCHANDISING MACHINE

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FIG 5

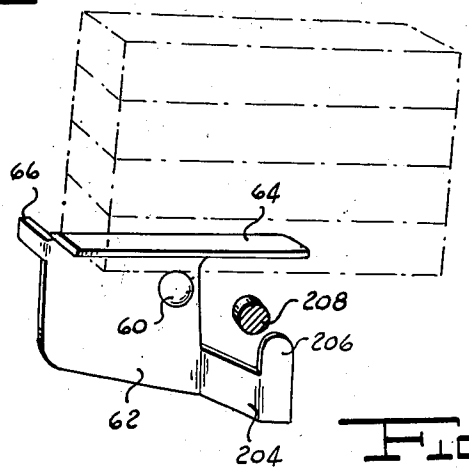
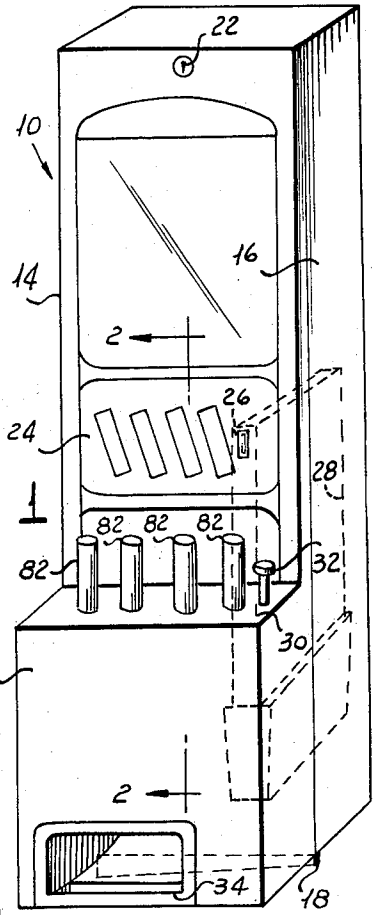


FIG 1



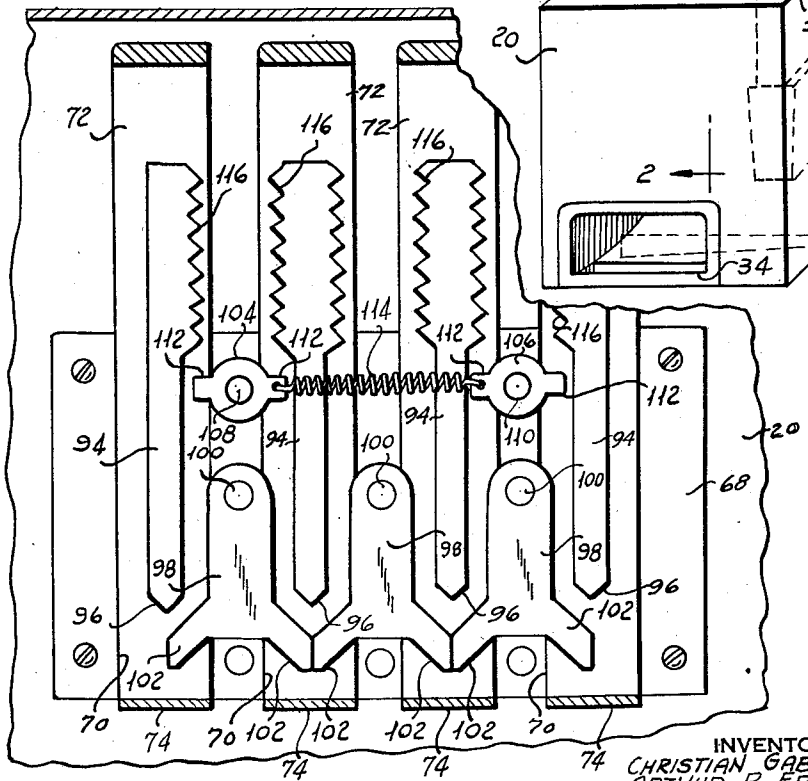


FIG 4

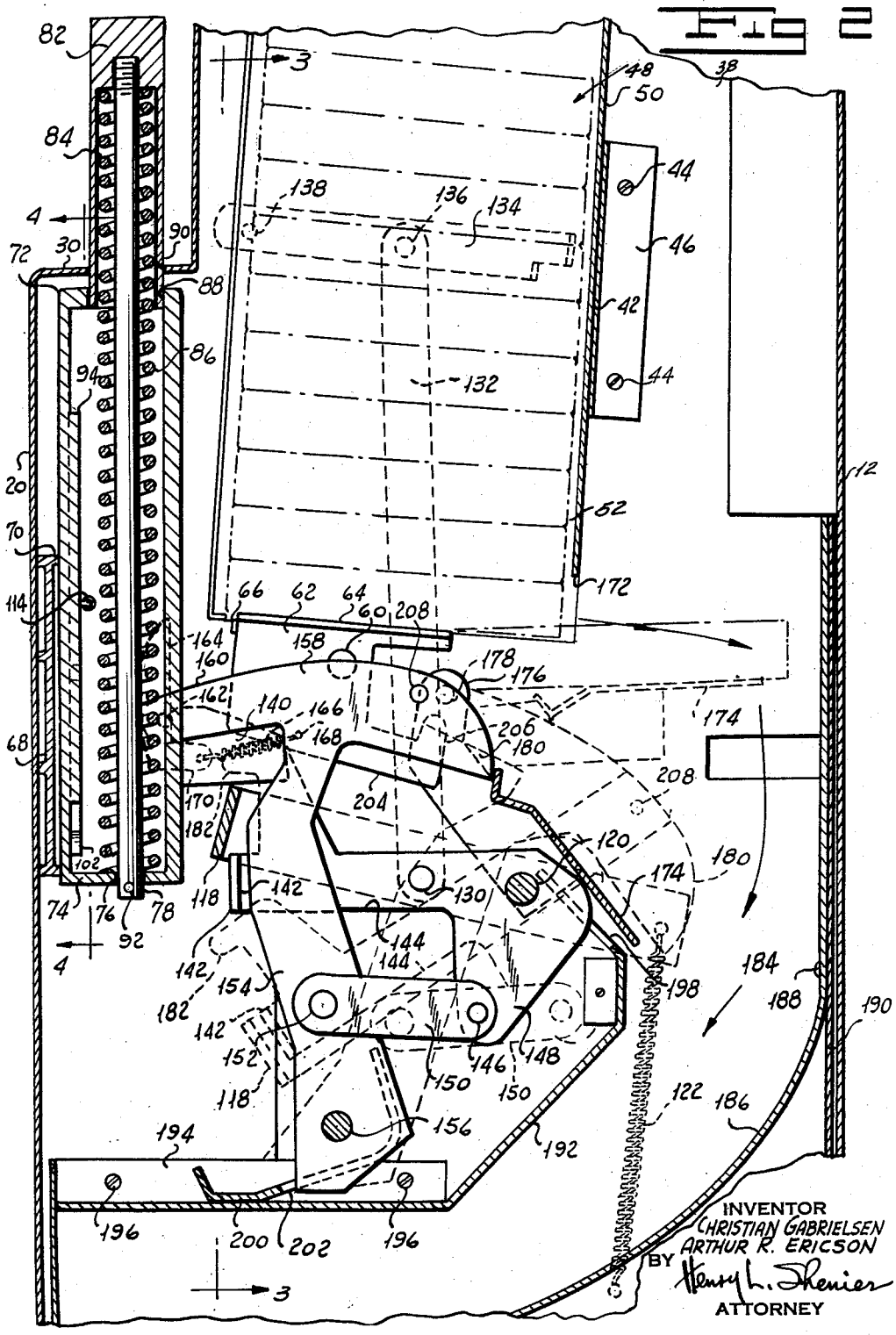
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COLUMNAR PACKET MERCHANDISING MACHINE

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FIG 2



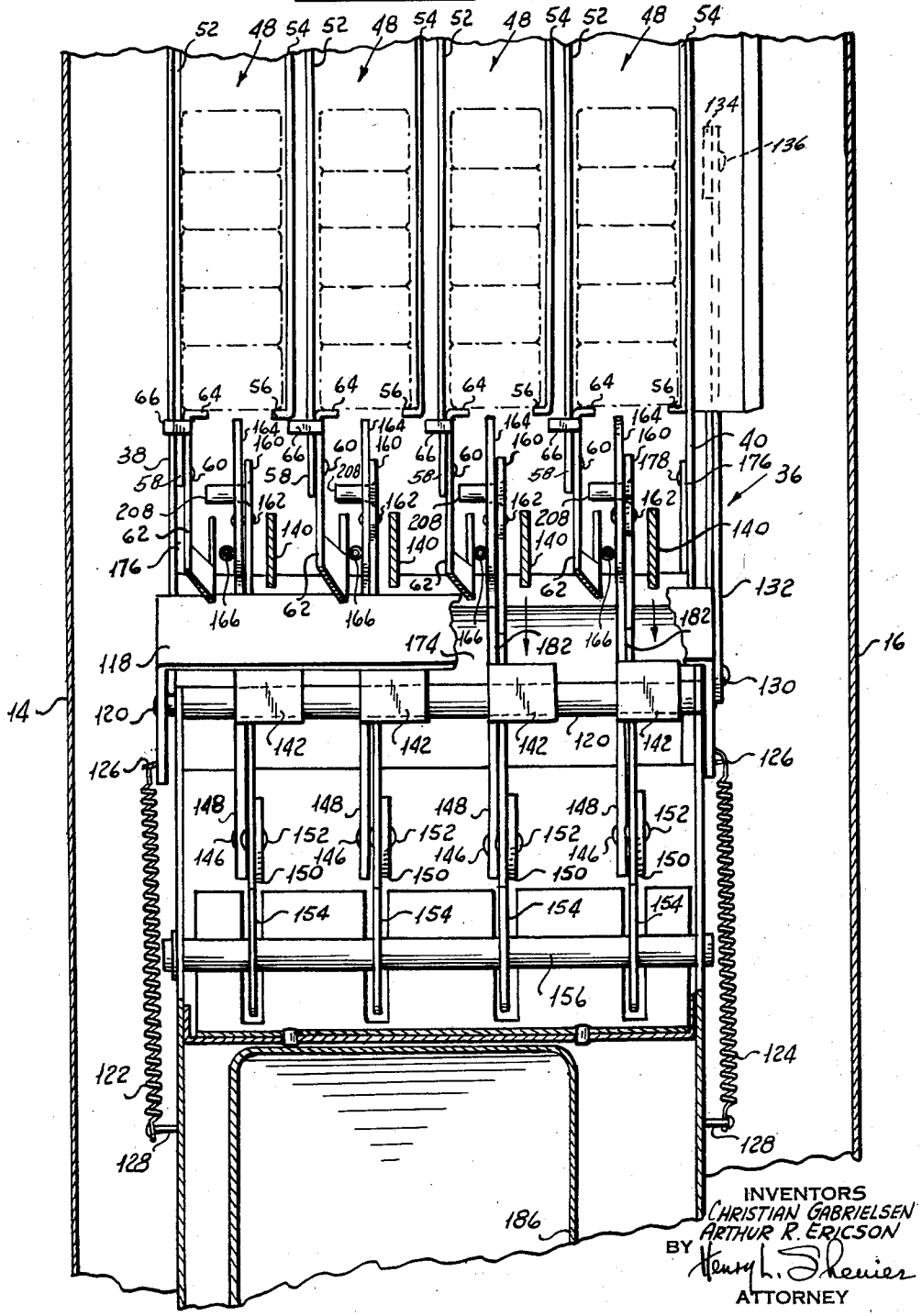
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Fig 3



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COLUMNAR PACKET MERCHANDISING MACHINE

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Application July 26, 1955, Serial No. 524,330

5 Claims. (Cl. 221—19)

Our invention relates to a columnar packet merchandising machine and more particularly to a columnar packet merchandising machine which is simpler in construction and more efficient in operation than are packet merchandising machines of the prior art.

Merchandising machines are known in the prior art for dispensing articles of merchandise, such as packets of gum or the like, in response to the deposit in the machine of coins aggregating the purchase price of an article. These machines employ complex mechanical construction by means of which the packets are dispensed. If, for any reason, the operating mechanism of a machine of the prior art becomes damaged, it is necessary to disassemble a large part of the operating mechanism in order to locate the source of trouble. In other words, the machines of the prior art do not afford ready access to all of the operating parts of the machine.

Packet merchandising machines of the prior art customarily are provided with empty signals for informing a customer when the supply of a particular kind or brand of merchandise is exhausted. Many machines also are provided with relatively complex structures for preventing operation of the machine when the supply of a particular kind of merchandise is exhausted.

Many merchandising machines of the prior art have means including a rack and pawl associated with each individual selecting means for preventing the return of the selecting means once its operation has been initiated.

We have invented a columnar packet merchandising machine which permits ready access to all the operating parts of the machine. Our improvd machine includes means for preventing the operation of a dispensing means associated with a particular kind or brand of merchandise when the supply of the brand of merchandise is exhausted. This empty rack is simpler in construction and more certain in operation than the empty racks of the prior art. Our machine also includes no-return racks and pawls associated with the selecting means. In our construction each pawl serves two selecting means. An individual rack and pawl for each selecting means is not necessary as in the prior art.

One object of our invention is to provide a columnar packet merchandising machine which affords ready access to all of the operating parts of the machine.

Another object of our invention is to provide a columnar packet merchandising machine which includes a simpler and effective empty lock for preventing operation of the selecting means associated with a particular brand of merchandise when the supply of that brand is exhausted.

A further object of our invention is to provide a columnar packet merchandising machine which includes a simple no-return rack and pawl arrangement.

Other and further objects of our invention will appear from the following description.

In general, our invention contemplates the provision of a plurality of columnar merchandise containers each

housing a column of packets of merchandise supported on a platform pivotally carried by the container. An operating bar freed by the deposit in the machine of coins aggregating the purchase price of an article of merchandise permits respective selecting means to operate dispensing means associated with the various columnar containers. We dispose the columnar merchandise containers and the associated dispensing mechanism within the machine cabinet and mount the selecting means on a cover or door hinged to the cabinet. The construction is such that the door carrying the selecting means may be swung away from the cabinet without disassembling any of the machine operating mechanism. Our machine includes means for preventing more than a single operation of a selecting means for a single deposit of coins in the machine. Each of the merchandise column supporting platforms pivots under the influence of gravity when the supply of merchandise in the column is exhausted. Means on the platform prevents operation of the associated dispensing means after the platform pivots.

In the accompanying drawings which form part of the instant specification and which are to be read in conjunction therewith and in which like reference numerals are used to indicate like parts in the various views:

Figure 1 is a perspective view of our columnar packet merchandising machine.

Figure 2 is a fragmentary sectional view, drawn on an enlarged scale, of our columnar packet merchandising machine, taken along the line 2—2 of Figure 1.

Figure 3 is a fragmentary sectional view of our columnar packet merchandising machine, taken along the line 3—3 of Figure 2.

Figure 4 is a fragmentary sectional view, taken along the line 4—4 of Figure 2, of our columnar packet merchandising machine.

Figure 5 is a perspective view of the empty lock provided on our columnar packet merchandising machine.

More particularly referring now to Figures 1 to 3 of the drawings, our merchandising machine includes a cabinet, indicated generally by the reference character **10**, having a back **12** and a pair of sides **14** and **16**. A hinge **18** pivotally mounts a front panel or door **20** on the cabinet **10**. Any suitable means, such as a lock **22** or the like, may be employed to secure cover **20** in place on the cabinet **10**. Cover **20** includes a display panel **24**. We provide the cover with a coin slot **26** for directing coins to the machine coin register **28** which may be of any type well known in the art. A horizontal portion **30** of cover **20** mounts a coin return button **32**, which may be pushed to return coins deposited in the machine to a customer in a manner known to the art. Cover **20** also includes an access opening **34** by means of which a customer may obtain merchandise from the delivery chute, to be described hereinafter, of the machine. We removably mount within the cabinet **10** an assembly, indicated generally by the reference character **36**, including a pair of side plates **38** and **40**. We fix a mounting bracket **42** between plates **38** and **40** by any convenient means such as screws **44** passing through respective flanges **46** formed on bracket **42**. Bracket **42** mounts by any convenient means, such as welding or the like, a plurality of columnar merchandise containers, each of which is indicated generally by the reference character **48**. Each of the containers **48** is formed with a back **50** and a pair of sides **52** and **54**. A transverse lip **56** formed at the bottom of each of the sides **54** retains articles of merchandise within the associated container **48**.

A lug **58** formed at the lower end of each of the sides **52** carries a pin **60** which pivotally mounts a merchandise supporting member **62**. A transverse flange **64** formed at the upper end of each member **62** aids the flange **56**

of a container 48 in supporting articles of merchandise within the container. As can best be seen by reference to Figure 2, the containers 48 are inclined slightly downward toward the back 12 of the cabinet 10. As a result, the articles of merchandise within a container 48 normally tend to pivot the associated member 62 in a clockwise direction as viewed in Figure 2. A stop 66 formed on each of the members 62 limits the pivotal movement of the member under the weight of the packets of merchandise when they are present in the column.

The front panel or door 20 mounts by any convenient means, such as screws or the like, a guide member 68 formed with channels 70 for guiding the selector slides 72 of our machine. Each slide 72 includes a base 74 formed with an opening 76 through which a push-button rod 78 extends. The end of each rod 78 remote from the opening 76 carries a selector push button 82 fixed to the rod 78 by any suitable means, such as screw threads or the like. We form each button 82 with a bore 84 in which we dispose one end of a coil spring 86. Spring 86 extends from bore 84 to the base 74 of its associated slide 72. We dispose each button 82 in an opening 88 in the associated slide 72. The buttons 82 normally extend through respective openings 90 formed in the horizontal portion 30 of front panel 20.

It will be appreciated that each spring 86 normally tends to force its associated button 82 away from the corresponding slide 72. In order to limit this action, we provide each of the rods 78 with a stop pin 92 at its lower end. Each pin 92 engages the base 74 to limit the upward movement of button 82 under the influence of spring 86.

Referring now to Figure 4, we form each of the slides 72 with a member 94, the lower end 96 of which tapers to a point. Between each pair of adjacent slides 72 we pivotally mount an interlock member 98 on a pin 100 mounted on guide 68. Each member 98 includes a pair of laterally and downwardly extending legs 102. When a slide 72 is operated to dispense an article of merchandise in a manner to be described, the end 96 of the member 94 carried by the slide engages a leg 102 of the associated member 98 to pivot the member around its pin 100. This pivotal movement of a member 98 cams the members laterally of the machine to prevent operation of any other of the slides 72 until the actuated slide returns to its initial position.

We provide a pair of no-return pawls 104 and 106 for preventing the return of any slide 72 after its movement in one direction has been initiated until its stroke is completed. A pair of pins 108 and 110 disposed respectively between the left and left center slides 72 and the right and right center slides 72, as viewed in Figure 4, pivotally mount pawls 104 and 106. We form each of the pawls 104 and 106 with a pair of rectangular projection 112 disposed 180 degrees apart on the pawls. A spring 114 fixed between a projection 112 on pawl 104 and a projection 112 on pawl 106 normally urges the pawl to a position in which projections 112 are horizontally disposed. We form each of the members 94 with teeth 116 positioned to engage a projection 112 of a pawl 104 or 106. As a slide 72 moves downwardly as viewed in Figure 4, its teeth 116 engage a projection 112 of pawl 104 or pawl 106. Assuming the left slide 72, as viewed in Figure 4, is moving downwardly, the engagement of teeth 116 with the projection 112 of pawl 104 pivots the pawl against the action of the spring 114 in a counterclockwise direction. The engagement of projection 112 with teeth 116 prevents the return of the slide to its initial position until the downward stroke of the slide is completed by passage of all of the teeth 116 past pawl 104. When all the teeth pass by the pawl projection 112, the pawl returns under the influence of spring 114 to its initial position to permit the slide 72 to return. In the course of the return movement of slide 72, teeth 116 ride over pawl projection 112 pivoting pawl 104 in a clockwise direction. A similar action prevents a second actuation of slide 72 during its return movement.

As can be seen in Figures 2 and 3, our machine includes a U-shaped operating bar 118 pivotally mounted by its legs on a shaft 120 extending between the side plates 38 and 40 of the assembly 36. Respective springs 122 and 124 fixed between pins 126 in the operating bar legs and pins 128 in plates 38 and 40 normally urge operating bar 118 to pivot in a clockwise direction as viewed in Figure 2. A pin 130 pivotally connects one of the operating bar legs to a coin register arm 132 pivotally connected at its other end to an arm 134 by a pin 136. A pin 138 carried by the coin register pivotally mounts arm 134. A latch (not shown) normally prevents pivotal movement of arm 134 in a clockwise direction as viewed in Figure 2. A coin passing into the coin register releases the arm restraining the latch in a manner known to the art to permit pivotal movement of arm 134 under the action of one of the selector slides in a manner to be described.

We form each of the selector slides with an actuating arm 140 which normally rests on the operating bar 118. It will be seen that with the cover 20 closed, the arms 140 position the respective slides 72 and associated buttons 82 on the operating bar 118. Springs 122 and 124 urge bar 118 to a position to support the slides. When a button 82 is pressed to initiate a dispensing operation in a manner to be described, spring 86 resiliently urges slide 72 downwardly and arm 140 urges bar 118 to pivot in a counterclockwise direction, as viewed in Figure 2, against the action of springs 122 and 124. If arm 134 has been released by deposit of coins in the coin register, it permits this pivotal movement of bar 118. If the arm 134 is locked and a selector button 82 is pressed, spring 86 permits lost motion between slide 72 and button 82. This action prevents damage to the operating parts of the machine if no coins have been deposited and an attempt is made to operate the machine.

In its travel downwardly as viewed in Figure 2 after having engaged the freed operating bar 118, the arm 140 of an actuated slide 72 engages a lateral projection 142 formed on an arm 144 of a bell crank pivotally mounted on shaft 120. A pin 146 pivotally connects the other arm 148 of the bell crank to a connecting link 150. It is to be understood that a bell crank having arms 144 and 148 is provided for each of the selector slides 72, which slides correspond in number to the number of containers 48. For purposes of convenience, we will describe the dispensing mechanism associated with only one of the containers 48. A pin 152 pivotally connects the end of link 150 remote from pin 146 to a dispenser 154 pivotally mounted on a shaft 156 carried by plates 38 and 40. As an arm 140 moves downwardly to engage the associated projection 142, it pivots the bell crank including arms 144 and 148 in a counterclockwise direction as viewed in Figure 2. This action moves connecting link 150 to the right as viewed in Figure 2 to pivot dispenser 154 in a clockwise direction about shaft 156.

Dispenser 154 includes a head 158, one end 160 of which carries a pin 162 which pivotally mounts a pusher 164. A spring 166 fixed between a hole 168 on dispenser 154 and a bent lug 170 on pusher 164 urges the pusher to pivot in a counterclockwise direction as viewed in Figure 2. Bent lug 170 limits this pivotal movement by its engagement with the lower edge of head arm 160. As the dispenser 154 pivots in a clockwise direction under the influence of an actuated selector slide 72, the corresponding pusher 164 passes into the associated container, engages the lowermost packet of merchandise, such as gum or the like, and forces it out of the container through an opening 172 in back 50 and toward the back 12.

In order to prevent delivery of the packet to the customer until the return of the operating and selecting

mechanism has been accomplished, we pivotally mount a shelf **174** by its mounting lugs **176** on pins **178** carried by side plates **38** and **40**. As the dispenser **154** pivots in a clockwise direction, the end **180** of head **158** remote from end **160** engages the underside of shelf **174** to cam the shelf to the position shown in broken lines in Figure 2 to support the article of merchandise pushed out of the container by pusher **164**. When the selecting button is released, after slide **72** completes its downward movement, springs **122** and **124** return operating bar **118** to its initial position. It will be understood that the bar **118** returns all the selector slides **72** at this time. As the bar **118** makes its return it engages a return lug **182** formed on bell crank arm **144** to return the bell crank to its initial position. As the bell crank returns, it drives dispenser **154** in a counterclockwise direction about shaft **156** to remove the end **180** of head **158** from under shelf **174** to permit the packet of merchandise being dispensed to fall into the machine delivery chute, indicated generally by the reference character **184**, and thence to opening **34** where it is delivered to the customer. It will be seen that spring **166** permits pivoting of pusher **164** and its return to its initial position through the selected column **48** without disturbing the remaining packets of merchandise in the column.

Delivery chute **184** is formed by a first baffle **186** secured by means such as screws or the like **188** to the rear plate **190** of the assembly **36**. A second plate or baffle **192** formed with flanges **194** secured to plates **38** and **40** by means such as screws **196** completes the delivery chute **184**. Slots **198** formed in the open end of baffle **192**, as viewed in Figure 2, space the bell cranks including arms **144** and **148** properly with respect to the columns **48**. A member **200** fixed to baffle **192** by any convenient means, such as screws or the like, is formed with slots **202** which space the dispensers **154**.

Our merchandise supporting members **62** provide a simple and effective empty lock. Referring now to Figures 2, 3 and 5, we form each of the members **62** with a bent portion **204** including a lug **206**. When the column **48** with which a particular member **62** is associated contains a supply of merchandise, the weight of the articles of merchandise resting on the support **64** urges member **62** to the position shown in full lines in Figure 2. When the supply of articles of merchandise in a column is exhausted, the associated member pivots under the influence of gravity so that bent portion **204** engages a pin **208** carried by the corresponding dispenser head **158**. In this position of a member **62**, lug **206** prevents movement of dispenser **154** in a direction to dispense an article of merchandise. The customer may then make another selection or he may actuate the coin return button **32**.

In operation of our columnar packet merchandising machine, a customer first inserts in coin slot **26** a coin or coins aggregating the purchase price of a desired article of merchandise. The machine coin register frees arm **134** in a manner known to the art and the customer makes his selection by pressing one of the buttons **82**. When a button **82** is pressed with the operating bar free, the associated slide **72** moves downwardly and arm **140** engages projection **142** to pivot the bell crank including arms **144** and **148** in a counterclockwise direction to pivot arm **154** in a clockwise direction through link **150**. In the course of this movement pusher **164** pushes a packet of merchandise out of the corresponding column to the shelf **174** which is cammed upwardly by end **180** of dispenser head **158**. After the teeth **116** on the actuated slide **72** have passed by the projection **112** of one of the pawls **104** or **106**, the mechanism makes its return movement. Operating bar **118** moves upwardly to engage arm **140** to return slide **72** and to engage lug **182** to return dispenser **158**. Shelf **174** drops and the article of merchandise is delivered to the customer. It will be remembered that interlock members **98** prevent operation of more than one selector for a single deposit of coins in the machine.

In the event that the supply of merchandise in any container **48** is exhausted, the associated empty lock member **62** pivots under the influence of gravity to push lug **206** to prevent movement of the corresponding dispenser **154**.

When it becomes necessary for any reason to gain access to the operating parts of the machine, lock **22** is opened and cover **20** is swung away from the cabinet **10** about hinge **18**. The selector buttons **82**, slides **72** and actuating arms **140** are caried away with cover **20** without disassembling any mechanism. Ready access may then be had to all of the operating parts of the machine. The machine may then be reassembled by swinging cover **20** into place with arms **140** resting on operating bar **118**.

It will be seen that we have accomplished the objects of our invention. We have provided a columnar packet merchandising machine which affords ready access to its operating parts without disassembly. Our machine includes a simple and efficient means for preventing operation of the machine when the supply of articles of merchandise in a container is exhausted. It includes a simple means for preventing return of a selecting means once its action has been initiated.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of our claims. It is further obvious that various changes may be made in details within the scope of our claims without departing from the spirit of our invention. It is therefore to be understood that our invention is not to be limited to the specific details shown and described.

Having thus described our invention, what we claim is:

1. A merchandising machine including in combination a container for housing a supply of articles of merchandise, a platform for supporting said supply of merchandise within said container, means pivotally mounting said platform on said container, means for dispensing articles of merchandise from said container, means including a pair of relatively movable members and a resilient connection between said members for operating said dispensing means, and means carried by said platform for sometime immobilizing said dispensing means, said platform being adapted to pivot under the influence of gravity when the supply of articles is exhausted to position said immobilizing means to prevent movement of the dispensing means, said resilient connection permitting relative movement between said operating means and said dispensing means when said immobilizing means prevents movement of the dispensing means.

2. A merchandising machine as in claim 1 including a cabinet and a cover carried by said cabinet and in which said dispensing means and said operating means include respective interengageable means carried by said cover and by said cabinet.

3. A merchandising machine including in combination a plurality of containers for housing supplies of articles of merchandise to be dispensed, a plurality of respective means for dispensing articles of merchandise from the containers, respective means for selectively operating the dispensing means, a respective no-return rack associated with each of said selecting means to form a pair of racks disposed in side-by-side relationship, a double pawl having a pair of respective substantially diametrically opposed rack-engaging teeth, means pivotally mounting said pawl between a pair of adjacent racks whereby each tooth of said pawl is associated with one of said racks and means normally biasing said pawl to a predetermined position.

4. A merchandising machine including in combination a plurality of containers for housing supplies of articles of merchandise to be dispensed, a plurality of respective

means for dispensing articles of merchandise from the containers, respective means for selectively operating the dispensing means, a respective no-return rack associated with each of said selecting means to form a plurality of pairs of racks, a number of double pawls each having a pair of substantially diametrically oppositely disposed rack-engaging teeth, means pivotally mounting said pawls between adjacent racks of alternate pairs of racks whereby each pawl tooth is adapted to engage one of said racks and means biasing said pawls to a predetermined position.

5. A merchandising machine as in claim 4 in which said biasing means is a spring connecting a pair of adjacent pawls.

References Cited in the file of this patent

UNITED STATES PATENTS

2,008,926	Rowe	July 23, 1935
2,099,267	Hackett	Nov. 16, 1937
2,129,322	Hakanson	Sept. 6, 1938
2,142,053	Hoban	Dec. 27, 1938
2,380,093	Wilder	July 10, 1945
2,543,687	Carlson	Feb. 27, 1951
2,607,463	Saigh	Aug. 19, 1952
2,707,543	Stoner et al.	May 3, 1955