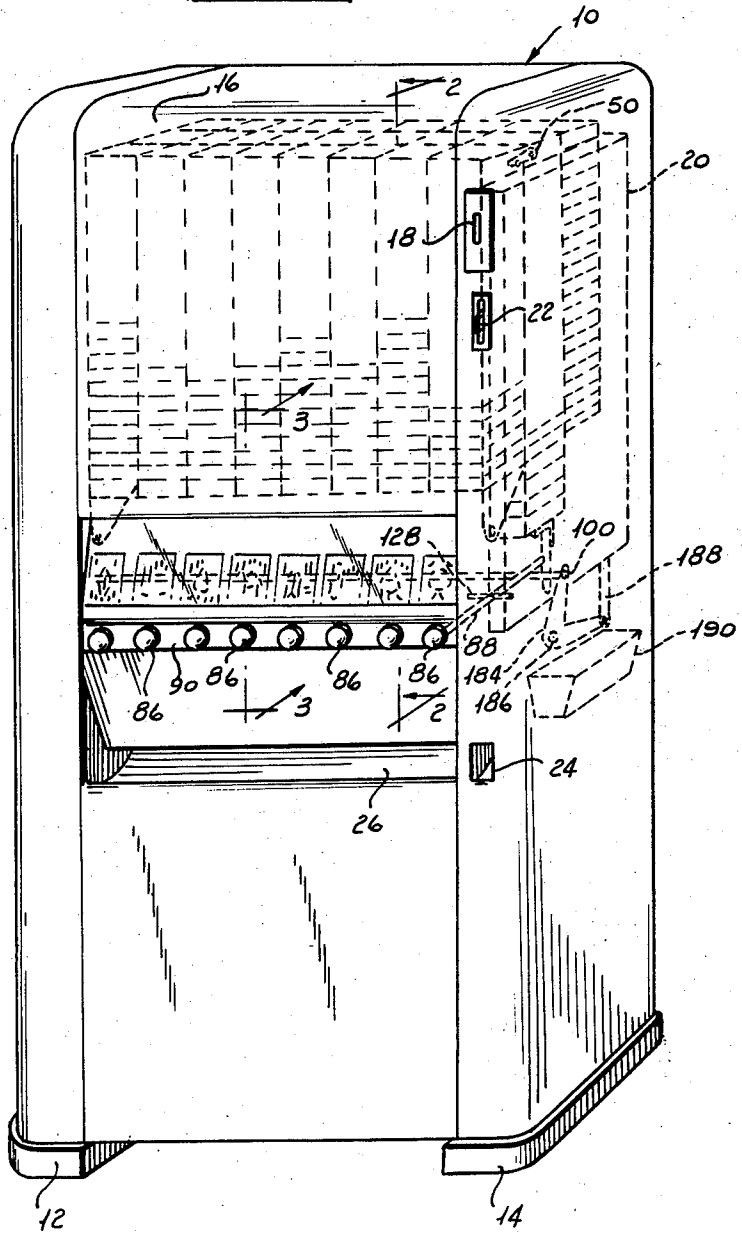
Oct. 8, 1957 C. GABRIELSEN ET AL 2,808,961

MANUAL CONSOLE CIGARETTE MERCHANDISING MACHINE

Filed May 14, 1954 4 Sheets-Sheet 1

Fig 1



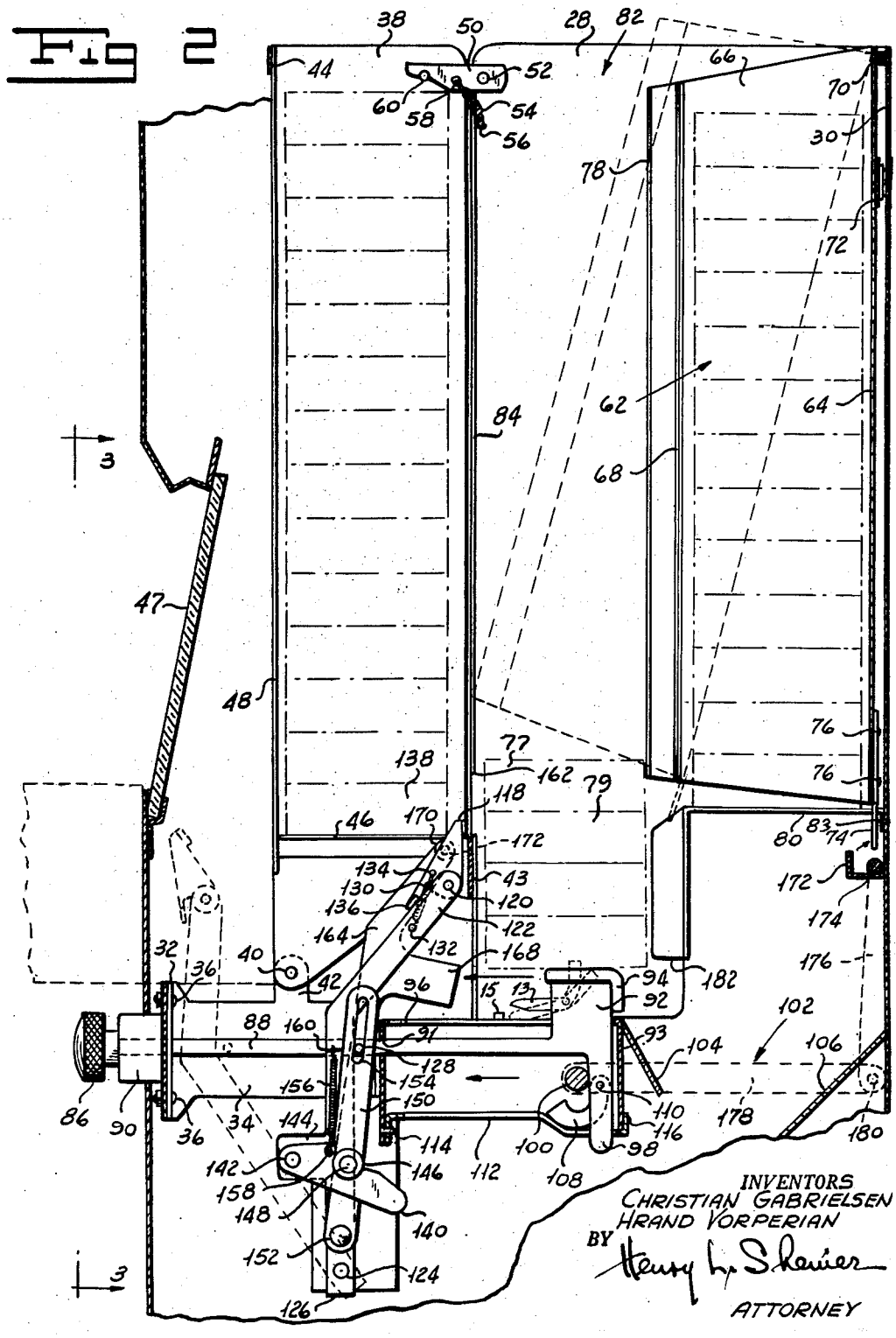

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MANUAL CONSOLE CIGARETTE MERCHANDISING MACHINE

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Fig 2

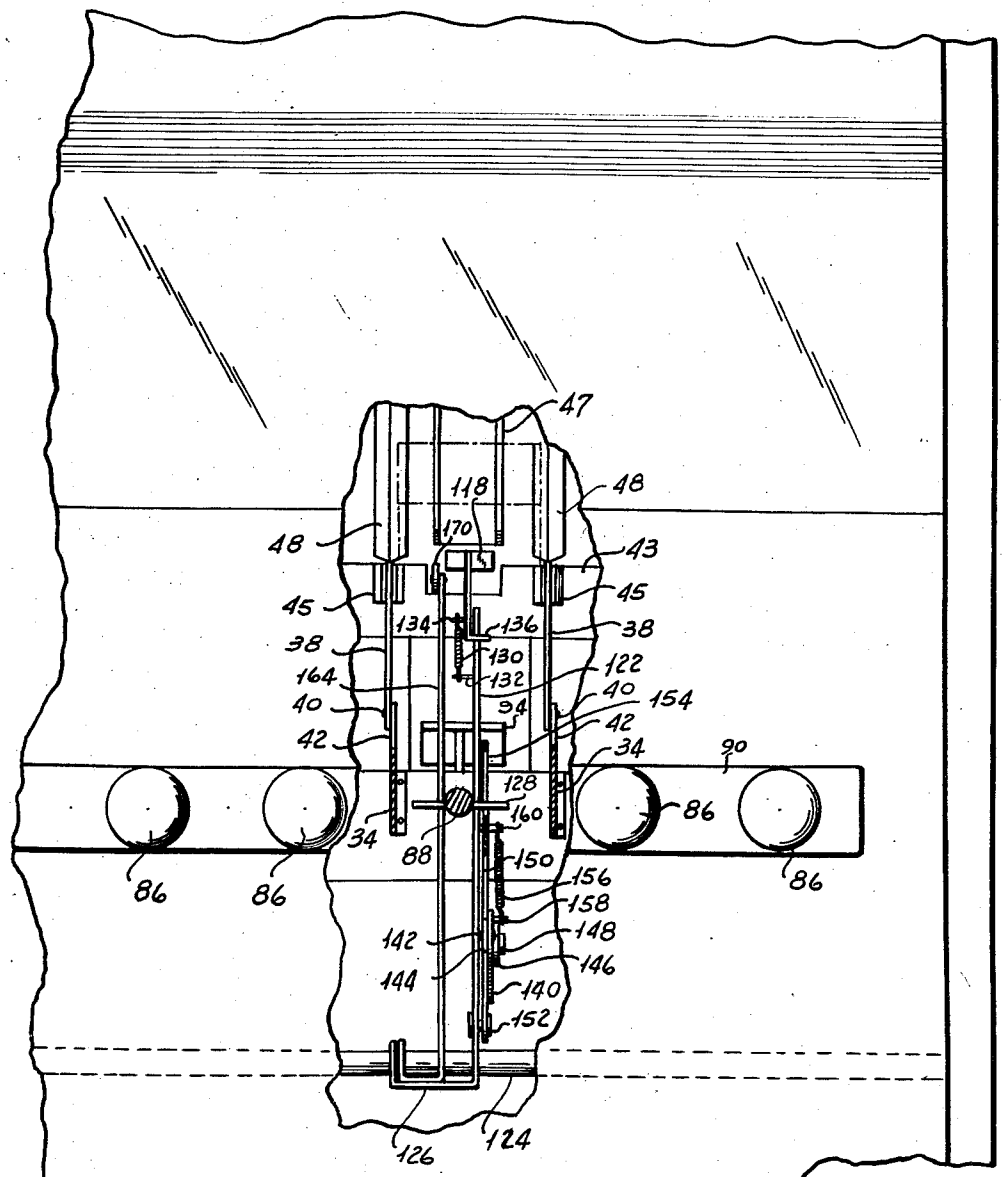


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MANUAL CONSOLE CIGARETTE MERCHANDISING MACHINE

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Fig 3




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MANUAL CONSOLE CIGARETTE MERCHANDISING MACHINE

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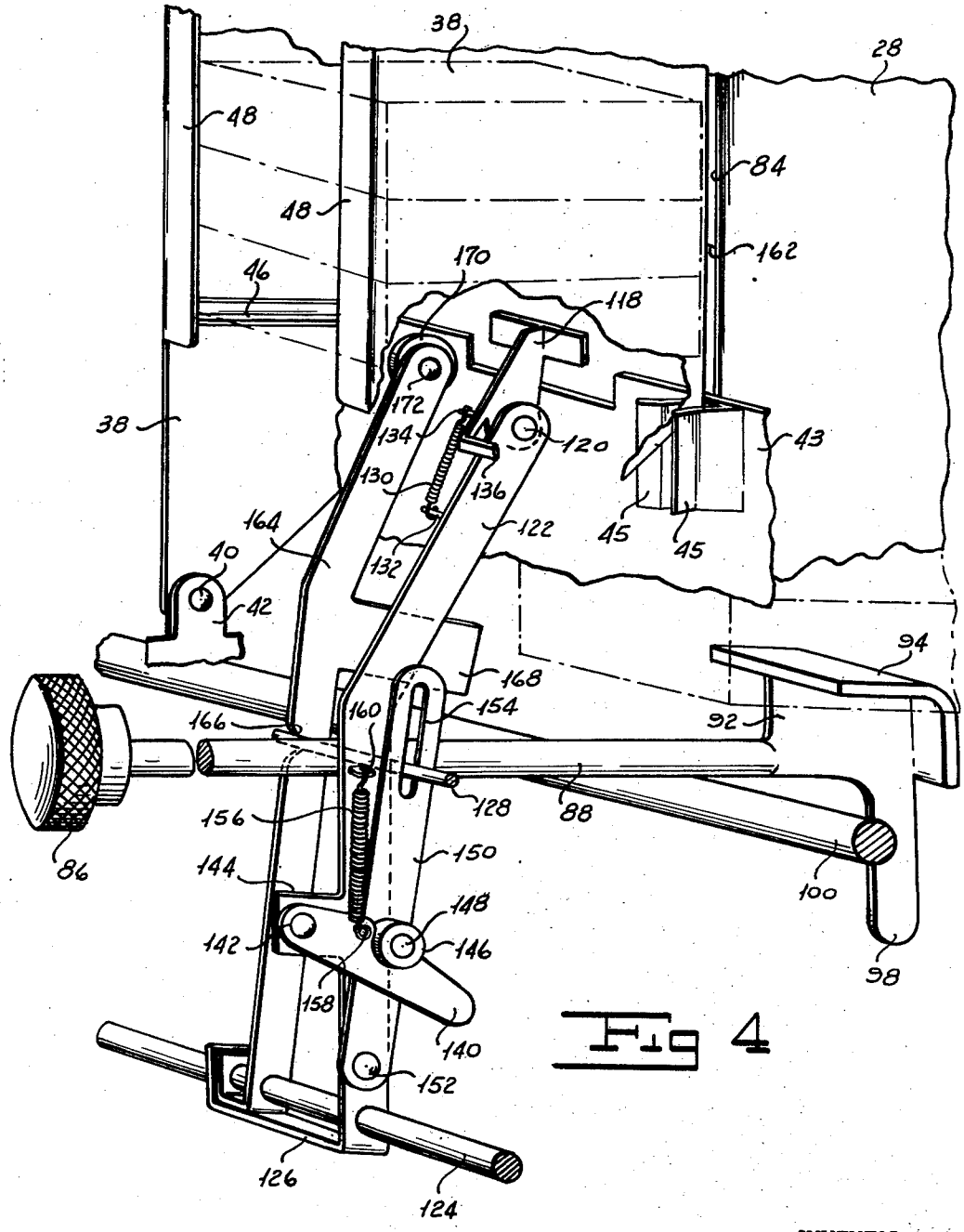



Fig 4

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United States Patent Office 2,808,961 Patented Oct. 8, 1957



2,808,961

# MANUAL CONSOLE CIGARETTE MERCHANDISING MACHINE

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Application May 14, 1954, Serial No. 429,924
5 Claims. (Cl. 221—14)

Our invention relates to merchandising machines and more particularly to a manual console merchandising machine having a large capacity and which is adapted to vend a multiplicity of different brands of articles or packages, such as cigarettes or the like.

Merchandising machines of the prior art and particularly cigarette merchandising machines have a comparatively small capacity. Then, too, they are adapted to vend a limited variety of brands. If it would be attempted to increase the size of the machines to accommodate a larger number of brands, the machines of the prior art become cumbersome, unwieldy, and much too large for most locations. The problem has been complicated by the introduction of "king-size" cigarettes and filter-tip cigarettes. Where we had one brand of cigarettes before, we now have the same brand both in king-size and in the filter-tip variety.

We have invented a merchandising machine which is arranged to dispense a large number of different brands and sizes of merchandise. Our machine is so constructed and arranged that it efficiently utilizes the available cabinet space, so that a large capacity of merchandise may be provided in a machine of reduced height, which is generally known as a "console." Accordingly, our merchandising machine may be installed in locations which are normally inaccessible to merchandising machines, as adjacent the cashier's counter, and other locations where high machines could not be placed. Our machine, furthermore, is manual, requiring no electrical power, thus further increasing the number of locations in which a merchandising machine of our improved construction may be installed. Our novel manual console merchandising machine is constructed of a relatively small number of parts, so disposed as to insure efficient utilization of the cabinet space.

One object of our invention is to provide a merchandising machine which has a large capacity and which is adapted to dispense a great number of different brands of merchandise.

Another object of our invention is to provide a merchandising machine having a relatively small number of operating parts, which parts occupy only a small portion of the cabinet space so that a machine having the same capacity or greater capacity than machines of the prior art may be constructed for installation in locations which are unavailable to merchandising machines of the prior art.

A further object of our invention is to provide a merchandising machine having a large capacity which is adapted to dispense a great number of different brands of merchandise and which may be manually operated so that it may be installed in locations where electrical power is not available.

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

In general, our invention contemplates the provision of a plurality of substantially vertical columns adapted to hold the merchandise to be dispensed in stacked relation. The columns are arranged in three transverse rows extending across the width of the machine. The columns of the rows are aligned from front to back, thus forming tiers. The rear column or container is pivoted adjacent its upper end and biased by a spring or the like to swing forwardly. It is normally prevented from executing this maneuver by two means. The first of these is the cigarettes in the center column or container. During the instant of dispensing, means are provided actuated by the dispensing mechanism for urging the lower end of the rear column to the rear of the machine against the action of the biasing means. At other times the presence of cigarettes or other merchandise of the stack of merchandise in the center column prevents the rear container from pivoting. We provide a dual ejector. The forward one of these ejectors is adapted to yield with a predetermined comparatively small pressure. The yielding ejector acts upon the bottommost package in the front column. This package is urged to move to the center column and is normally prevented from accomplishing this motion by the presence of a package of cigarettes in the center column. When, however, the center column becomes depleted of cigarettes, a package is fed from the front column to the center column. The second ejector normally supports the column of cigarettes in the center column. When a plunger is actuated after being released by the deposit of the correct sum in coins, it is first pulled forwardly. This allows the center column to drop to a suitable support and brings the yielding ejector forward of the bottommost package of cigarettes in the front column. The completion of the dispensing stroke moves both ejectors rearwardly. The second ejector then dispenses the bottommost package of the center column.

Cigarettes are always dispensed to the customer from the center column. The center column is first replenished by the pivoted rear column and then replenished by cigarettes from the front column.

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 improved manual console cigarette merchandising machine.

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

Figure 3 is a fragmentary sectional view drawn on an enlarged scale of our manual console cigarette merchandising machine with a part broken away taken along the line 3—3 of Figure 1.

Figure 4 is a fragmentary perspective view drawn on an enlarged scale with parts broken away of our manual console cigarette merchandising machine showing the dispensing means associated with a section of the machine.

More particularly referring now to the drawings, we provide a cabinet, indicated generally by the reference character 10, which is mounted on a pair of supports 12 and 14. A front panel 16 of our machine is removable during a loading operation. We provide a coin slot 18 at one side of the front of the cabinet 10 which is adapted to feed coins to the machine coin register 20 of a type well known in the art. A coin return lever 22 below the coin slot 18 provides a means for returning coins to the customer through a coin return slot 24 in the event the machine supply of a particular brand of merchandise is exhausted. The front of the cabinet 10 is formed with a tray 26 through which the merchandise is delivered to the customer after a dispensing operation.

Referring now to Figure 2, a number of partitions 28, extending from the rear to the front of the machine, are fixed by any appropriate means such as welding or the like, to a panel 30 adjacent the back of cabinet 10. It can be seen that partitions 28 extend from back panel 30 toward the front of the machine at spaced points across the cabinet to divide the cabinet into sections, each of which may contain a different brand of merchandise.

We mount a transverse bracket 32 by any suitable means such as bolts, rivets, or the like between the sides of the cabinet 10 adjacent the front thereof. A rearwardly extending bracket 34 is secured by bolts 36 to bracket 32 adjacent each of the partitions 28. In front of the respective dividing partitions 28 we pivotally mount a number of panels 38 by means of pins 40 carried by lugs 42 formed on the brackets 34. We secure a transverse strap 44 to all the panels 38 so that they move as a unit. It will be appreciated that each pair of adjacent panels 38 forms a reserve magazine for one of the sections formed by pairs of adjacent partitions 28.

Each of the panels 38 is provided with a pair of transverse horizontal flanges 46 secured adjacent the bottom of the panel by welding or the like. The flanges 46 on a pair of adjacent panels 38 are directed toward each other and form a support for the bottommost of a column of packages of cigarettes arranged within the magazine or column which is formed by the pair of panels 38. Retaining means such as vertical flanges 48 formed on the forward end of each of the panels 38 prevent packages of cigarettes in any of the magazines formed by panels 38 from moving forwardly out of the magazine.

As can be seen by reference to Figures 2 to 4, a bracket 43 is secured to the forward end of the dividing partitions 28 adjacent the lower end of the panels 38 and is formed with a pair of guides 45 adjacent each of the panels 38 to provide a positioning means for the panels whereby the magazines formed by the panels 38 properly register with the sections formed by dividing partitions 28. It is to be noted also that each of the magazines formed by the panels 38 may be provided with a removable spacer 47 which adapts the column to be used for either regular or king-size cigarettes.

In order to retain panels 38 in a vertical position we mount a latch 50 on a pivot pin 52 carried by a partition 28. Latch 50 is normally urged in a counterclockwise direction as viewed in Figure 2, by a spring 54 fixed between a lug 56 in panel 28 and a pin 58 on the latch. In its engaged position, latch 50 coacts with a pin 60 on the corresponding panel 38 to retain the panels 38 in a vertical position. It is to be understood that we may employ a single latch 50 or as many latches as are necessary to hold the panels 38 firmly in a vertical position.

Each tier is provided with a shift column indicated generally by the reference numeral 62. Each shift column 62 is formed with a back member 64 and a pair of side members 66 disposed between a pair of adjacent partitions 28. Side members 66 are formed with a pair of flanges 68 directed toward each other to prevent the packages of cigaretes from moving forwardly out of the shift column. A hinge 70 fixed near the top of the back 64 as viewed in Figure 2 pivotally connects the column 62 to back panel 30. A coil spring 72 disposed between back panel 30 and the back 64 urges column 62 to the broken line position indicated in Figure 2. A depending lug 74 is secured near the bottom of the back 64 by rivets 76 and provides a means by which the shift column 62 is prevented from pivoting during a dispensing operation in a manner which will be described in detail hereinafter. Extending flanges 78, formed on sides 66 adjacent front flanges 68, project forwardly into the center container or column 82. The stacked articles in the center column are normally contacted by the extension flanges 78. It will be thus seen that as long as articles are positioned in the center column, the shift container 62 cannot swing forwardly to its broken line position in Figure 2. In order to relieve the pressure exerted by the spring 72 through the flanges 78 upon the articles in the center column, we provide means for holding the shift column to its rear position against the action of spring 72 during each dispensing operation, as will be described more fully hereinafter. Between dispensing operations, however, the presence of articles in the center column prevents the



shift column from shifting. It will be observed by reference to Figure 2 that the lower ends of the extension flanges 78 project slightly below the position of the fourth package of cigarettes 77. Until this package is dispensed, the shift column will be prevented from shifting. Brackets 80, secured to rear panel 30 by screws 83, extend below the shift columns 62 to support the packages of cigarettes disposed therein before the columns pivot.

From the structure thus far described, it will be appreciated that a center column, indicated generally by the reference character 82, is provided for each section between the second or forward reserve magazine formed by panels 38 and the first reserve or shift magazine formed by the column 62. Each of the partitions 28 is formed with a flange 84 along its forward edge which prevents shifting of packages of cigarettes in center column 82 to a position where they might interfere with packages disposed between panels 38.

We provide a dispensing knob 86, carried by a plunger 88, for each of the sections of the machine. Since the construction of the dispensing and replenishing mechanism is the same for each section of the machine, for purposes of convenience it will be described with reference to only one section or tier thereof. The plunger 88 is slidably mounted in housing 90, in which locking slides, well known to the art, are lodged. These locking slides are so constructed and arranged that when one plunger 88 is actuated, none of the other plungers 88 can be actuated and are all locked against movement. The slide lock assembly 90 is carried by the brackets 34. The plungers 88 project into the plunger housing 93 which extends across the machine from side to side. Openings 91 in the plunger housing are provided for the passage of the plungers 88. The end of plunger 88 remote from the knob 86 is formed with a flange 92 on which we mount ejector 94 by any convenient means such as welding. The flange 92 is disposed within a guide slot 96 formed in the top of plunger housing 93 and is free to reciprocate therein. A depending finger 98 on flange 92 is arranged to cooperate with the operating bar 100 of the machine. Knob 86 is adapted to be pulled outwardly from the machine to slide ejector 94 out from under the lowest package of cigarettes in the center column 82 to permit the pack to fall on the upper surface of plunger housing 93. When knob 86 is returned to the right, as viewed in Figure 2, the ejector 94 engages and pushes the package of cigarettes into the delivery chute of the machine. The delivery chute, indicated generally by reference character 102, is formed by a baffle 104 welded to the rear depending flange of plunger housing 93 and by a guide member 106 secured to back panel 30 by means such as welding or the like. The rear end of brackets 34 may conveniently be secured to the front of the plunger housing 93 by any appropriate means.

As is well known in the art, plunger 88 cannot be operated until the operating bar 100 is freed by the deposit of coins in the coin register 20 to permit movement of finger 98. When coins in the proper sum have been deposited in the coin slot 18, the coin register 20 releases the operating bar 100 by means well known in the art and therefore not shown. A selected knob 86, adjacent the brand of merchandise desired, may then be operated to dispense a package of cigarettes. In order to provide a positive return for the operating bar 100 of the machine, we pivotally mount a latch 108 on a pin 110 carried by the finger 98. Latch 108 cooperates with a cam surface provided by camming plate 112, fixed to the plunger housing 93 by rivets 114 and 116. As knob 86 is pulled outwardly, the cam surface on plate 112 pivots latch 108 to a position where it embraces the operating bar 100. The surface maintains this engagement during the return or rearward stroke of the plunger 88, thus carrying the operating bar 100 back to its initial position. When the dispensing operation is completed, latch 108 again falls out of engagement with the operating bar.

In order to replenish the supply of packages in center column 82 when a predetermined low level has been reached in the center column after the shift column has shifted, we provide a replenishing pusher 118 pivotally mounted on a pin 120 carried by the replenishing lever 122. Referring now to Figures 2, 3, and 4, lever 122 is pivotally mounted on a rod 124 fixed in the respective side panels of the machine by any appropriate means. A U-shaped base 126 formed on the end of the lever provides bearing surfaces for the lever. Lever 122 is disposed in front of a pin 128 carried by the plunger 88. The replenishing pusher 118 is normally urged in a counterclockwise direction by a spring 130 fixed between a pin 132 carried by lever 122 and a pin 134 carried by the pusher 118. A stop lug 136 formed on the pusher limits this pivotal movement whereby the pusher is normally in an upright position as viewed in Figures 2 and 4. It will be appreciated that as ejector 94 is withdrawn from under the center column, pin 128 engages lever 122 to pivot it to the broken line position illustrated in Figure 2. In the course of this movement, replenishing pusher 118 contacts the lowest package of cigarettes 138 in the forward magazine formed by a pair of adjacent panels 38 and pivots clockwise as viewed in Figure 2 against the action of spring 130. When lever 122 is forward of the package 138, pusher 118 returns to the upright position.

Associated with lever 122 we provide a latch 140, pivotally mounted on a pin 142 carried by a lug 144 on lever 122. Latch 140 is adapted to engage a roller 146 rotatably mounted on a pin 148 fixed on a link 150 pivotally carried by a pin 152 fixed on lever 122. The upper end of link 150, as viewed in Figure 4, is formed with a longitudinal slot 154 in which the pin 128 is lodged. A spring 156 fixed between a pin 158 on latch 140 and a lug 160 on lever 122 urges latch 140 into engagement with the roller 146. On the return movement of ejector 94 and plunger 88, pin 128 carries link 150 rearwardly. Lever 122 is also carried rearwardly by virtue of the releasable connection provided by latch 140 and roller 146 between link 150 and lever 122. In the course of its rearward movement, replenishing pusher 118 engages package 138 and pushes it rearwardly. If the supply of packages in the center column 82 is not below the level of flanges 46, pusher 118 can only push package 138 into engagement with a package 79 in column 82. If, however, the supply of packages in column 82 is below the level of flanges 46, pusher 118 is free to push package 138 into the center column 82. It is to be noted that flanges 84 terminate at a point 162 to form a passage for the travel of a package of cigarettes from the forward magazine into the center column 82. If the movement of the package 138 from the forward magazine into the center column 82 is prevented by a package of cigarettes in the center column 82, roller 146 snaps out of engagement with the latch 140 and lever 122 is no longer carried rearwardly with the plunger 88. It is to be noted that latch 140 is of sufficient length that roller 146 remains in engagement with a portion of the latch even after rolling out of the recess of the latch. This construction is necessary in order that the roller again be engaged with the latch recess on the next dispensing operation of the section.

It will be appreciated that even when the package 138 is prevented from moving into the center column 82 by the presence of packages of cigarettes therein, pusher 118 will push the package 138 into engagement with packages 77 and 79 in center column 82. If some means were not provided for returning package 138 to its forward position, this package might prevent packages in the center column 82 from dropping into a position to be dispensed. In other words, it might cause a package in the center column 82 to cockbill. In order to prevent this occurrence, we provide a package return lever 164 pivotally mounted on the rod 124. Lever 164 is formed with a re-entrant portion 166 which is engaged by the pin 128 during the return movement of plunger 88 to carry lever 164 rearwardly. It will be appreciated that at the end of a dispensing operation, package 138 may be in a position where it engages a package or packages in column 82 and lever 164 is in its rearward position illustrated in Figure 2. On the next dispensing operation, as knob 86 is pulled forwardly, the dispensing ejector 94 engages an extension 168 formed on the rear edge of lever 164 to move the lever forwardly. A roller 170 is fixed on a pin 172 on the end of lever 164 and is in engagement with the lowest package 138 of cigarettes in the forward magazine. As the lever 164 is moved forwardly by the engagement of ejector 94 with the extension 168, the friction roller 170 returns the package 138 to its forward position. The arrangement is such that during the forward stroke of ejector 94 and plunger 88, pin 128 engages lever 122 to move the replenishing pusher 118 out of engagement with the package 138 before ejector 94 engages extension 168. The return of the package 138 is thus accomplished with ease. When all three columns are filled with cigarettes, successive deposits of coins aggregating the correct sum by a user will free the operating bar successively, thus permitting the ejector 94 to be moved from under the center column of cigarettes and eject the bottommost package upon its return stroke in the manner described hereinabove. When the supply of packages in center column 82 falls below the predetermined level, the shift column 62 pivots under the action of spring 72 to a position, indicated by broken lines in Figure 2, where the packages contained therein may fall into the center column 82. To prevent interference of the shift column with the packages in the center column during the dispensing operation, we fix an angle bracket 172 to a rod 174 by any appropriate means. Rod 174 is pivotally mounted in the respective side panels of the machine and has a pair of cranks 176 fixed thereto adjacent the respective side panels. Cranks 176 are connected respectively by pins 180 to links 178 connected to the operating bar 100 for movement therewith. It will be appreciated that as the operating bar 100 is moved forwardly, rod 174 pivots to move bracket 172 into engagement with the lugs 74 on each of the shift columns 62, thereby effectively preventing pivoting of the shift columns. When the operating bar is returned to its initial position, bracket 172 is moved out of engagement with lugs 74 to permit the pivoting of any shift column.

It will be seen that during the dispensing stroke the shift column is prevented from exercising pressure against cigarettes in the center column through spring 72. This permits packages in the center column to fall freely by gravity and obviates jams or tilting of packages of cigarettes in the center column which might cause jams. As soon as the package of cigarettes in the position of package 77 in a center column is dispensed and the dispensing stroke completed, the operating bar 100 will return to the position shown in Figure 2. In this position the cranks 176 will rotate the bracket 172 to the position shown in Figure 2. This releases the restraint upon the shift column. Inasmuch as the package in position 77 has been dispensed, the shift column will now shift by rotating around its pivot 70 to the broken line position in Figure 2. Cigarettes will then fall by gravity to the center column and the dispensing operations will continue.

During each dispensing stroke, the bottom package 138 is returned to its position in the forward container when the plunger is pulled toward the customer. On the return stroke, the replenishing plunger 118 tends to urge the bottommost package 138 of the forward column into the center column. The presence of packages 77 and 79 in the center column, however, prevents package 138 from moving into the center column. As soon as only three packages of cigarettes are left in the center column—that is, those which were the top three packages of the rear column—package 138 is pushed into the center column at the same time as the bottommost package of the center

column is being given to the customer. In other words, when the plunger is pulled forwardly, the package **79** will drop along with the bottom two packages of the center column to the plunger housing. The return stroke of the plunger will move the ejector **94** to the rear, dispensing the bottom package. The replenishing plunger will simultaneously eject a package from the forward column to the center column.

Referring now to Figure 1, it will be seen that the bell crank **184** pivoted on pin **186** at the side of the machine has one of its arms connected to the operating bar **100**. The other arm of the bell crank is pivotally connected to a link **188** adapted to operate the device of the coin register for accepting the money, which is not shown since it is well known to the art. The arrangement is such that upon each dispensing operation, the coins in the coin register are permitted to fall into the coin box **190**.

Let us consider that our merchandising machine has been completely loaded with cigarettes and that various brands are positioned in the various tiers. Transparent window **47** is provided so that the purchaser may view the brand of merchandise he desires. The correct amount in coins is deposited in the coin slot **18**, thus enabling the coin register to free the operating bar **100**. The user then pulls a knob **86** adjacent the column or tier of merchandise he desires. The pulling of the knob **86** moves its associated plunger **88** forwardly. It is to be understood, of course, that the plungers are provided with the customary cycle-completing mechanism well known to the art and therefore not shown. The actuation of one of the plungers **88** will prevent any of the other plungers from being operated, owing to the action of the locking slides positioned in the locking slide housing **90**. Movement of the plunger carries with it its associated ejector **94**, which heretofore has been supporting the center column of cigarettes. The shift column which was resting against the stack of cigarettes in the center column under the influence of its shift spring **72** is now pivoted rearwardly, owing to the action of bracket **172**. This bracket is rotated in a clockwise direction as viewed in Figure 2 when the operating bar moves forwardly under the action of the plunger and the finger **98** connected thereto. The forward motion of the operating bar pulls the links **176**, thus rotating the cranks **170** and the rod **174** to which the bracket **172** is secured. The bracket **172** contacts the lugs **74** which are attached to the rear or shift column **62**.

It will be understood, of course, that as the plunger moves forwardly it carries the pin **128** forwardly. This pivots the replenishing lever **122** in a counterclockwise direction as viewed in Figures 2 and 4. The replenishing pusher **118** is allowed to rotate in a clockwise direction under the influence of the thrust of the lowermost package of cigarettes **138** in the forward column. The ejector **94** abuts the extension **168** formed on the lever **164** and rotates this lever in a counterclockwise direction. This enables the friction roller **170** to re-position the bottommost package **138** in the forward column in a forward position. In this manner, no obstructions are presented to the uniform downward movement of all of the articles in a center column, thus bringing the bottommost package of cigarettes of the center column in a position to be dispensed upon the return movement of the plunger.

The return movement of the plunger moves the ejector **94** directly dispensing the bottommost package of cigarettes in the center column to the customer. The pin **128** pivots the lever **150** in a clockwise direction. The link **140** is carried with the lever owing to the inner action between the roller **146** and the notch in the lever **140** caused by spring **156**. The link **140** is connected to the replenishing lever **122** and thus rotates this lever in a clockwise direction as viewed in Figures 2 and 4. The replenishing pusher **118** is thus carried into contact with the front end of the bottommost package of cigarettes **138** in the forward column. The package moves into contact with cigarettes in the center column. When this occurs, the connection between the plunger pin **128** and the replenishing pusher **118** is broken at the frictional engagement between the roller **146** and the link **140**, owing to the resistance to movement of the bottommost package **138** brought about by its contact with the articles present in the center column. It will also be observed that the plunger is cooperated with the operating bar by the cooperating member **108** and mounted in cooperating position throughout the dispensing cycle by the camming plate **112**.

Upon the return movement of the plunger, not only are both the main ejector and the replenishing ejector operated, but the bracket **172** is pivoted free of the lugs **74**. This permits the spring **72** again to urge the shift column in a forward direction. When the package of cigarettes in position **77** of Figure 2 has been dispensed, the shift column will shift into action and proceed until the cigarettes in the shift column have moved out of it by gravity and only three packages of cigarettes remain in the center column. The operation of the machine at this point will permit the three remaining packages in the center column to fall to the plunger housing **93**. The return stroke of the plunger will then not only eject the bottommost package **138** of the three in the center column but will also move one package from the position **138** in the forward column into the center column.

When the last package of cigarettes has been dispensed, the empty lock **13** is allowed to fall by gravity to engage a lug **15** carried on the plunger housing. This effectively locks the plunger so that even though the operating bar **100** is freed by coins, the plunger cannot be operated and the user must either operate another plunger or the coin return **22**.

It will thus be seen that we have accomplished the objects of our invention. We have provided a merchandising machine which has a large capacity numerically and which furthermore is adapted to dispense a large variety of merchandise, as, for example, different brands of cigarettes, both in king-size and standard size. Our merchandising machine has a relatively small number of parts. These parts occupy a comparatively small portion of the cabinet space. In this manner we are able to produce a machine having greater capacity than machines of the prior art occupying the same space. Furthermore, we may maintain capacities of machines of the prior art while producing smaller size machines and thus make them available in locations where machines of the prior art cannot be placed. Though our machine is adapted to dispense a great variety of merchandise, that is to say, a large number of different brands of merchandise, yet our machine may be manually operated. This equips it to be used in locations where electrical power is not available.

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 for dispensing merchandise in packages including in combination means forming a column in which packages of merchandise are arranged, an ejector normally disposed below said column in a position to support the packages of merchandise therein, means for reciprocating the ejector with a forward and a rearward stroke, a delivery chute adjacent the ejector, the arrangement being such that on the forward stroke of the ejector a package from said column is permitted to fall behind the ejector and on the return stroke said package is pushed into the delivery chute by the ejector, means forming a reserve magazine containing packages

of merchandise adjacent said column, a replenishing pusher, drive means for the replenishing pusher actuated by said means for reciprocating the dispensing member, and a releasable connection between said drive means and said replenishing pusher, the arrangement being such that said replenishing pusher urges a package of cigarettes from said reserve magazine into said column when the supply of packages in the column reaches a predetermined low level, said supply of packages in the column preventing said replenishing pusher from urging a package into said column whereby said releasable connection is released when the supply of packages in the column is above said predetermined low level.

2. A merchandising machine for dispensing merchandise in packages including in combination means forming a first column in which packages of merchandise are arranged, an ejector normally disposed below said column in a position to support the packages of merchandise in the column, a delivery chute, means for reciprocating said ejector to permit a package of cigarettes from the column to fall therebehind and to urge said package into the delivery chute, means forming a reserve magazine containing packages of merchandise adjacent the first column, a replenishing pusher, means actuated by the ejector reciprocating means for driving the replenishing pusher, a releasable connection between the drive means and the replenishing pusher, the arrangement being such that said replenishing pusher urges a package of cigarettes from said reserve magazine into said first column when the supply of packages in the first column reaches a predetermined low level, said supply of packages in the column preventing said replenishing pusher from urging a package into said column whereby said releasable connection is released when the supply of packages in the column is above said predetermined low level, a shift column containing packages of merchandise pivotally mounted adjacent the first column, means urging said shift column to a position where the packages contained therein fall into said first column, said shift column being normally prevented from pivoting by contacting the packages of merchandise in the first column when the supply of packages in the first column is above a predetermined low level, and means for preventing the pivoting of the shift column during a dispensing operation.

3. A merchandising machine for dispensing merchandise in packages including in combination means forming a first column in which packages of merchandise are arranged in a stack, an ejector normally disposed below said column in a position to support the stack of merchandise in the column, an operating bar for preventing the movement of said ejector, a coin register for freeing the operating bar to permit movement of the ejector upon the deposit of a predetermined sum in coins in the coin register, a delivery chute, means for moving the ejector in one direction to permit a package of cigarettes from the column to fall therebehind and then in the opposite direction to urge said package into the delivery chute when said operating bar is freed, the arrangement being such that on the first stroke of the ejector the operating bar is carried along by the ejector, a latch pivotally mounted on the ejector and a means for coupling said latch to the operating bar to maintain the engagement between the ejector and the operating bar on the return stroke of the ejector to provide a positive return for the operating bar, a second means forming a column in which packages of merchandise are adapted to be stacked, means for pushing packages from said second column into the first column when the supply of packages in said first column falls below a predetermined low level, and releasable means connecting the ejector with said pushing means, said releasable means being released to prevent operation of said package pushing means when the supply of packages in said first column is above said predetermined low level.

4. A merchandising machine for dispensing merchandise in packages including in combination means forming a column in which packages of merchandise are arranged, a dispensing member normally disposed below said column in a position to support the packages of merchandise in the column, a delivery chute adjacent the dispensing member, means for moving said dispensing member first forwardly to permit a package from the column to fall behind the dispensing member and then rearwardly to push the package into the delivery chute, means forming a reserve magazine containing packages of merchandise adjacent the column, a replenishing pusher, means operated by said dispensing member moving means for driving said replenishing pusher to urge a package from the reserve magazine into the column, a releasable connection between said drive means and said replenishing pusher, said replenishing pusher urging a package from the reserve magazine into engagement with the packages in the column whereby the releasable connection is released when the supply of packages in the column is above a predetermined low level and a friction member pivotally mounted adjacent said reserve magazine in a position to contact the package from the reserve magazine which has been urged into engagement with the packages in the column by the replenishing pusher, said dispensing member adapted to pivot the friction member during its forward movement on each dispensing operation to draw said package out of engagement with the packages in the column.

5. A merchandising machine for dispensing merchandise in packages including in combination means forming a first column in which packages of merchandise are arranged, means forming a reserve column containing packages of merchandise adjacent said column, a dispensing member slidably mounted below said column and normally disposed in a position to support the packages of merchandise in the column, a delivery chute adjacent the dispensing member, means for moving the dispensing member first forwardly to permit a package of cigarettes from the column to fall behind the dispensing member and then rearwardly to push the package into the delivery chute during a dispensing operation, a replenishing pusher for urging packages from said reserve column into said first column when the supply of packages in said first column is below a predetermined low level, means pivotally mounting the replenishing pusher adjacent the reserve magazine, drive means for said replenishing pusher mounting means, a releasable connection between the drive means and the replenishing pusher mounting means, said releasable connection being released to prevent operation of said replenishing pusher when the supply of packages in said first column is above said predetermined low level and a friction member pivotally mounted on said replenishing pusher mounting means, said means for moving the dispensing member moving said replenishing pusher drive means forwardly and said dispensing member moving said friction member forwardly during the forward movement of the dispensing member, said means for moving the dispensing member moving said replenishing pusher drive means and said friction member rearwardly during the rearward movement of the dispensing member, the arrangement being such that a package of merchandise from said reserve column is moved into engagement with the supply of packages in said first column when said supply is above a predetermined low level, said friction member moving said reserve column package out of engagement with said supply during its rearward movement.

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