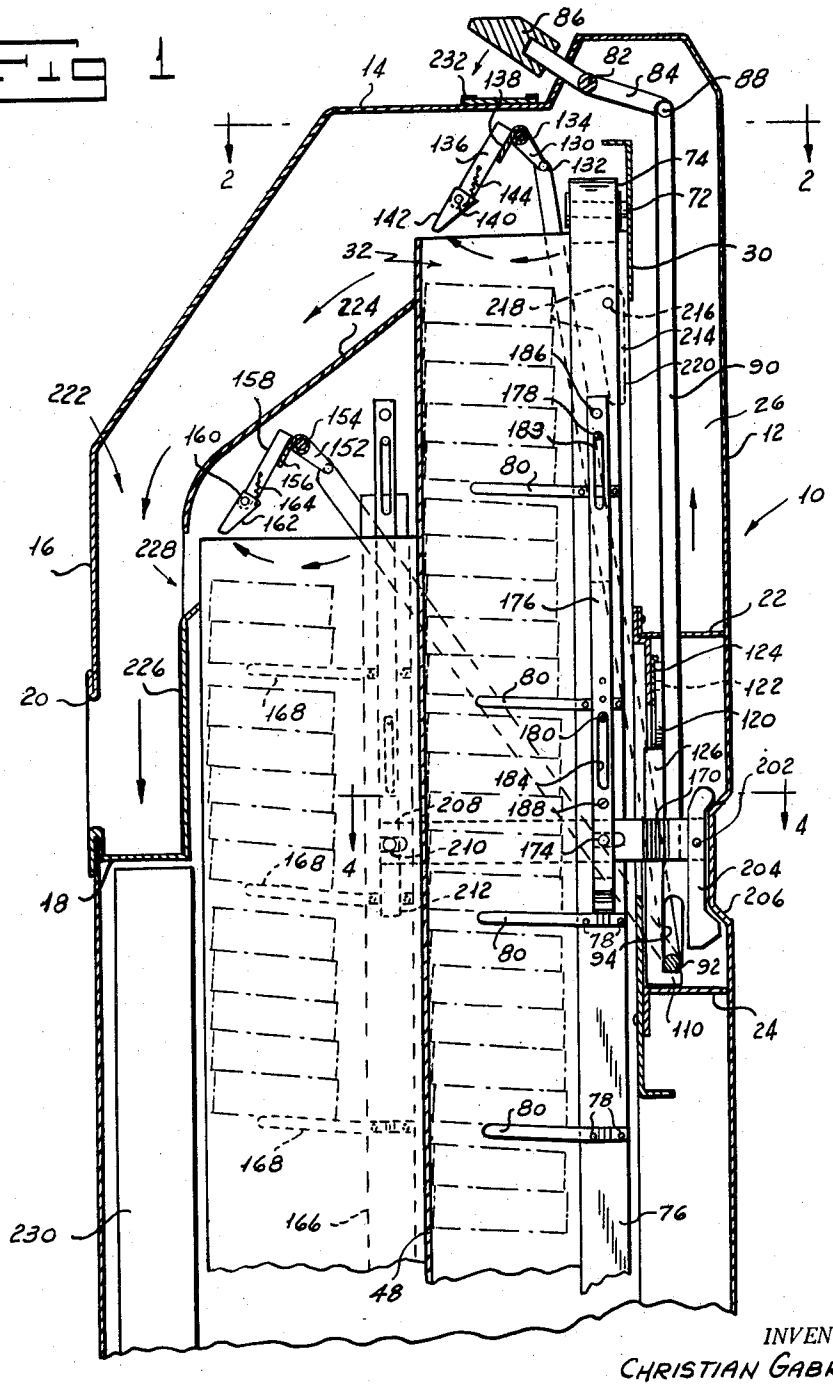
May 26, 1959 C. GABRIELSEN 2,888,166

ELEVATING COLUMN CONSOLE CIGARETTE MERCHANDISING MACHINE

Filed May 16, 1955 4 Sheets-Sheet 1

Fig 1




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ELEVATING COLUMN CONSOLE CIGARETTE MERCHANDISING MACHINE

Filed May 16, 1955 4 Sheets-Sheet 2

Fig 2

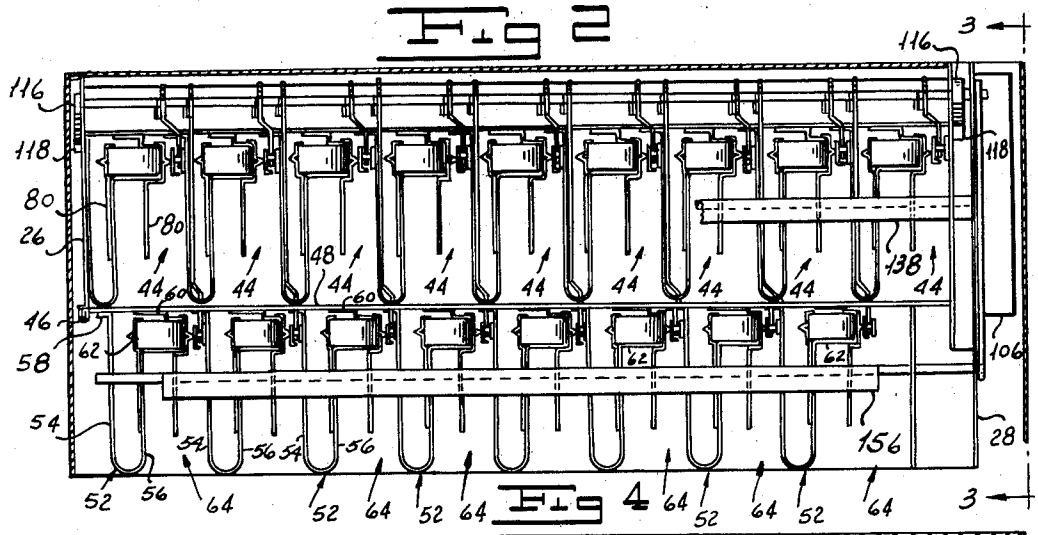
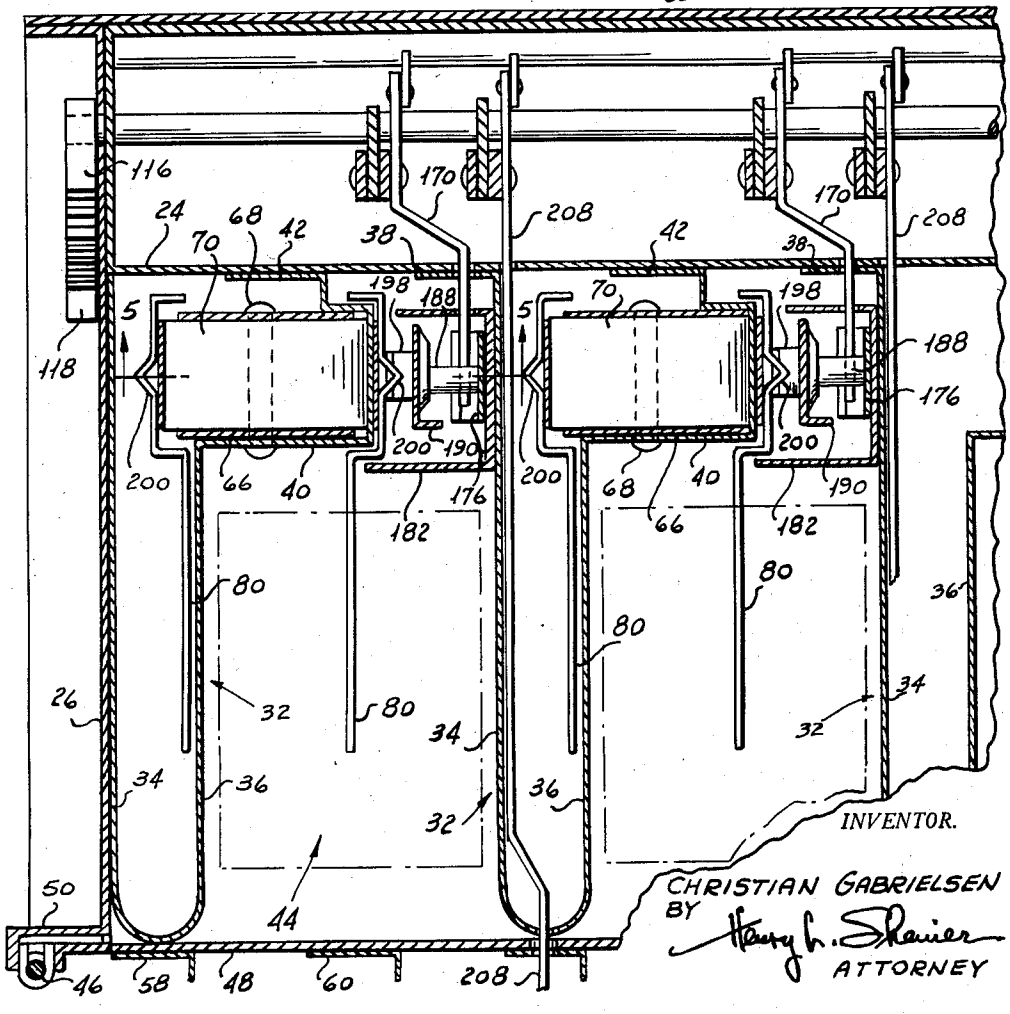



Fig 4



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ELEVATING COLUMN CONSOLE CIGARETTE MERCHANDISING MACHINE

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Fig 3

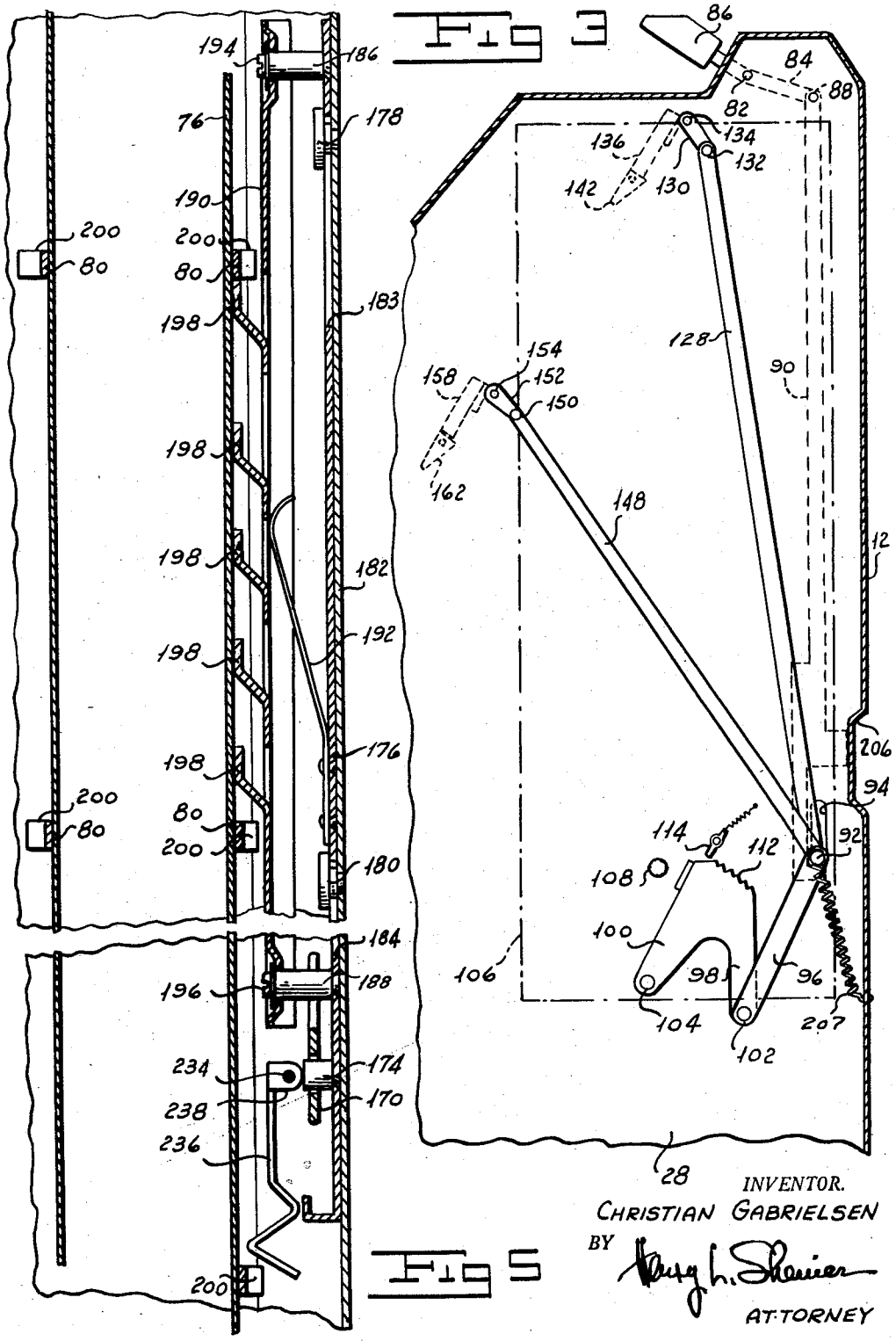



Fig 5

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May 26, 1959 C. GABRIELSEN 2,888,166

ELEVATING COLUMN CONSOLE CIGARETTE MERCHANDISING MACHINE

Filed May 16, 1955 4 Sheets-Sheet 4

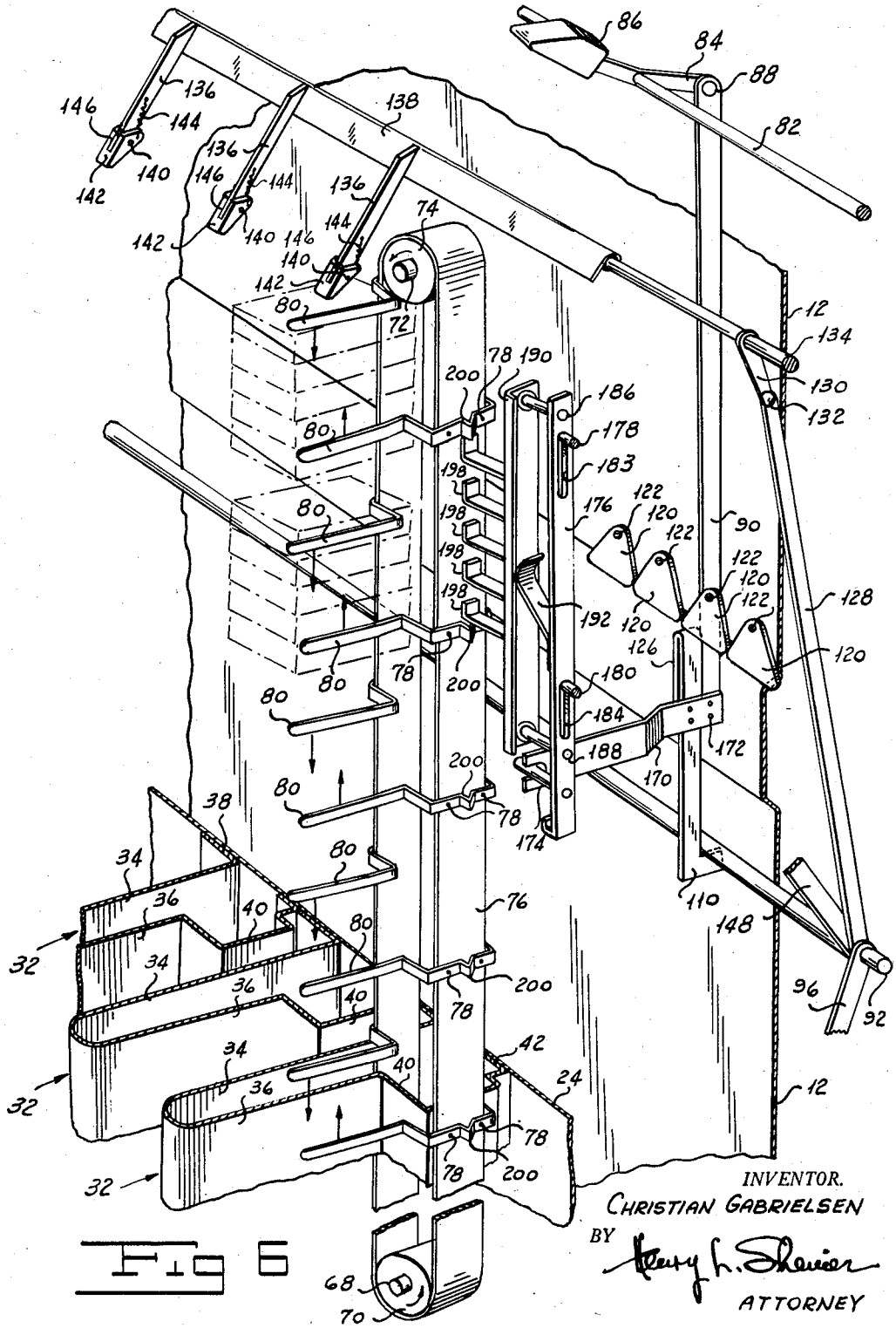



Fig 6

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United States Patent Office 2,888,166 Patented May 26, 1959



2,888,166

# ELEVATING COLUMN CONSOLE CIGARETTE MERCHANDISING MACHINE

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Application May 16, 1955, Serial No. 508,652

1 Claim. (Cl. 221—81)

My invention relates to a merchandising machine and more particularly to an elevating column console cigarette merchandising machine which is low and which makes efficient use of the available space in the machine cabinet.

Many locations in which it is desirable to locate a merchandising machine require that the machine cabinet be low. For example, a machine such as a cigarette merchandising machine or the like located next to a cashier's counter should not be higher than the counter. A high machine might obscure the counter or cashier or both. It is desirable also that a merchandising machine be neither too deep nor too wide. It will be appreciated that the height, thickness, and width considerations limit the available volume within a merchandising machine cabinet. In any merchandising machine the delivery tray must be readily accessible to a customer so that he is not required to bend over or stoop to reach a dispensed article of merchandise. In a machine having a low cabinet the delivery tray must be located near the center or adjacent to the top of the machine cabinet. With this disposition of the delivery tray the articles of merchandise such as packages of cigarettes or the like must be dispensed from the tops of the columnar merchandise containers. This dispensing operation requires an upward feed of the columns of packages in the containers. Merchandising machines of the prior art employ long compression springs to feed articles of merchandise upwardly to the dispensing mechanisms located at the tops of the columnar containers. These springs lose their resilience after a period of time in use and become unreliable and uncertain in operation. It is a further requirement for merchandising machines which dispense merchandise which may become spoiled or stale that articles first loaded in the machine be dispensed first. Columnar containers in merchandising machines of the prior art normally are loaded from the top. Where coil springs are employed for upward feed to dispensing mechanisms at the tops of the containers, article of merchandise remaining in the columns must first be removed before the machine is reloaded and then placed above the newly inserted articles if the articles are to be dispensed in the proper order to prevent spoilage or staleness. It will be appreciated, therefore, that the compression spring feed construction renders loading of the machine inconvenient and difficult.

I have invented an elevating column console cigarette machine which includes a positive feed for feeding articles of merchandise in the machine containers to dispensing mechanisms located at the tops of the containers. My machine is low so as to be suitable for installation in many locations unavailable to machines of the prior art. My machine makes efficient use of the available cabinet space. It is adapted to contain an equal number of articles of merchandise to the supply contained in higher machines of the prior art without an appreciable increase in cabinet volume. My machine may readily and expeditiously be loaded. It dispenses first the articles loaded in the machine first.



One object of my invention is to provide an elevating column console cigarette machine which is low as to be suitable for installation in locations unavailable to machines of the prior art.

A further object of my invention is to provide an elevating column console cigarette machine which may be readily and expeditiously loaded.

Another object of my invention is to provide an elevating column console cigarette machine which makes efficient use of the available machine cabinet space.

A still further object of my invention is to provide a elevating column console cigarette machine in which articles of merchandise first loaded in the machine are dispensed first.

Yet another object of my invention is to provide an elevating column console cigarette machine which includes a positive feed for feeding articles of merchandise disposed in columnar containers to dispensing mechanisms at the tops of the containers.

In general, my invention contemplates the provision of an elevating column console cigarette merchandising machine including staggered rows of columnar compartments for housing articles of merchandise. I provide selecting means for operating dispensing means selectively to dispense articles of merchandise from the tops of the columnar compartments. My machine includes positive feeds responsive to the actuation of the selecting means for feeding articles of merchandise to the dispensing mechanism. The arrangement of my dispensing means is such that articles of merchandise first loaded in the machine are dispensed first. I accomplish this without the necessity of removing remaining articles of merchandise from a column before loading fresh articles in the 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 fragmentary sectional side view of my elevating column console cigarette merchandising machine.

Figure 2 is a sectional view, taken along the line 2—2 of Figure 1, of my elevating column console cigarette merchandising machine.

Figure 3 is a fragmentary side view, taken along the line 3—3 of Figure 2, of my elevating column console cigarette merchanising machine.

Figure 4 is a fragmentary sectional view, drawn on an enlarged scale, taken along the line 4—4 of Figure 1, of my elevating column console cigarette merchandising machine.

Figure 5 is a fragmentary sectional view, taken along the line 5—5 of Figure 4, of my elevating column console cigarette merchandising machine.

Figure 6 is a fragmentary perspective view with parts removed and other parts broken away of my elevating column console cigarette merchandising machine.

More particularly referring now to Figures 1 and 2 of the drawings, my elevating column console cigarette merchandising machine includes a cabinet, indicated generally by the reference character **10**, having a back **12**, a top **14**, and a door or removable front panel **16**. Cabinet **10** supports by any convenient means, such as welding or the like, a delivery tray **18** to which access may be had through an opening **20** formed in door **16**. Back panel **12** of the cabinet **10** supports a pair of spaced mounting brackets **22** and **24** by any convenient means such as welding or the like. Brackets **22** and **24** extend substantially across the width of the machine between panels **26**

and 28 supported in cabinet 10 adjacent the sides thereof. A third mounting bracket 30 is carried by any convenient means between panels 26 and 28.

Referring now to Figures 1, 2, 4, and 6, I spot weld a plurality of vertically extending supply-container-forming members, each indicated generally by the reference character 32, to the mounting brackets 22, 24, and 30. Each of the members 32 is substantially U-shaped and includes legs 34 and 36. The leg 34 of each member 32 except the member 32 adjacent panel 26 is formed with a flange 38 welded to mounting brackets 22, 24, and 30. A U-shaped housing 40 formed in each leg 36 of members 32 provides a support for the merchandise feeding mechanism, to be described hereinafter. I weld a flange 42 formed in the leg 36 of each housing 40 adjacent the rear of the machine to mounting brackets 22, 24, and 30. The portion of each leg 36 of a member 32 extending toward the door 16 of the machine cabinet, together with a similarly extending portion of the leg 34 of an adjacent member 32, forms one rear columnar container, indicated generally by the reference character 44, of my machine. From the foregoing it will be seen that the members 32 supported by brackets 22, 24, and 30 form a plurality of rear columnar containers 44 of my machine.

In order to make full use of the space available within the cabinet 10 I provide a row of columnar containers in front of the row of containers 44. As can be seen by reference to Figures 1, 2, and 4, a hinge 46 pivotally mounts a panel 48 on a flange 50 fixed to panel 26 by any convenient means such as welding or the like. Panel 48 supports a plurality of compartment-forming members, each of which is indicated generally by the reference character 52. Compartment- or container-forming members 52 are substantially the same as the compartment- or container-forming members 32. Each member 52 includes a pair of legs 54 and 56 formed with respective flanges 58 and 60 fixed by means such as welding or the like to the panel 48. I form each of the legs 56 with a U-shaped housing 62 for the article-supporting mechanism, to be described hereinafter. The leg 56 of each of the members 52, together with the leg 54 of an adjacent member 52, forms a respective front columnar container or compartment, indicated generally by the reference character 64. It is to be especially noted that I fix the members 52 to panel 48 so that the row of front compartments 64 is staggered with relation to the compartments 44 of the rear row. This staggered arrangement permits the dispensing mechanism associated with the front compartments 64 to extend from its actuating mechanism located behind brackets 22, 24, and 30 to the front compartments 64. As will be explained hereinafter, this arrangement makes efficient use of the space available within the machine cabinet 10.

I provide means for supporting groups of articles of merchandise such as packages of cigarettes or the like for upward feeding movement within each of the compartments 44 and 64. As can be seen by reference to Figures 1, 2, 4, and 6, each of the housings 40 formed in a leg 36 of a member 32 supports a U-shaped bracket 66, the legs of which carry a pivot pin 68 on which I mount a roller 70 adjacent the bottom of the compartment. A second pivot pin 72 carried by the mounting bracket 30 pivotally supports a second roller 74 adjacent the top of the compartment. From the foregoing it will be seen that a pair of rollers 70 and 74 is associated with each compartment 44. Each pair of rollers 70 and 74 carries an endless flexible belt 76. Belt 76 may be formed of any suitable flexible material such as steel tape, nylon, chain, or the like. At spaced locations along the length of belt 76 I fix by means such as rivets 78 or the like a plurality of article-supporting fingers 80. The disposition of belts 76 and fingers 80 with respect to the compartments 44 is such that the fingers 80 carried by the right-hand stand of the belt as viewed in Figures 2 and 4 are disposed substantially centrally of compartments 44. The fingers 80 carried by the left-hand stands of the belts as viewed in Figures 2 and 4 pass between the legs 34 and 36 of a member 32. The spacing between a pair of adjacent fingers 80 is such that a predetermined number of articles of merchandise may be carried by each finger 80. In the case of a cigarette merchandising machine by way of example I select the spacing between adjacent fingers 80 to be such that five packages of cigarettes with their largest surfaces substantially horizontal may be supported by a finger 80. As will be explained in detail hereinafter, the groups of packages of cigarettes carried by a finger 80 on the right-hand stand of belt 76 as viewed in Figures 2 and 4 are dispensed as the belt is advanced to elevate the packages toward the top of a compartment 44. After the packages carried by a finger 80 have been dispensed, the finger passes downwardly between the legs 34 and 36 of a member 32 as the belt advances. If desired, as can be seen by reference to Figure 1, fingers 80 are inclined slightly downwardly toward the back 12 of the cabinet 10 so that the packages of cigarettes do not tend to slide off the fingers 80.

I provide drive means for advancing the belt 76 supporting packages of a selected brand of cigarettes or the like to move a fresh package of cigarettes to a position where it may be dispensed by the machine dispensing mechanism on each operation of the selecting means corresponding to that brand. A rod 82 supported between the sides of cabinet 10 by any convenient means pivotally carries a plurality of selecting levers 84 corresponding in number to the number of columnar containers 44 and 64 in the machine. When an article of merchandise is to be selected, the customer pushes a selecting button 86 carried by a lever 84 to pivot the lever in a counterclockwise direction as viewed in Figure 1. Each of the levers 84 carries a pin 88 which pivotally connects the lever to an operating bar actuating link 90. As can be seen by reference to Figure 3, the operating bar 92 of the machine is mounted for vertical reciprocating movement in slots 94 formed in the support panels 26 and 28 adjacent the sides of the cabinet 10. As is known in the art, the operating bar 92 is normally locked until freed by deposit of coins in the coin register 106 of the machine. A link 96 connects the operating bar 92 of my machine with an extension 98 of an arm 100 by means of a pin 102. I pivotally mount arm 100 on a pin 104 carried by panel 28. The panel 28 mounts the coin register 106 of the machine. As can be seen in Figure 3, this register 105 includes a stop 108. Each of the links 90 is formed with a foot 110 extending under the operating bar 92 of the machine. When a lever 84 pivots in a counterclockwise direction about rod 82, as viewed in Figure 1, link 90 moves upwardly and foot 110 tends to draw operating bar 92 upwardly. As operating bar 92 moves upwardly, link 96 pivots arm 100 in a counterclockwise direction about the pin 104. Stop 108 of the coin mechanism normally prevents this movement. When a sum in coins aggregating the purchase price of an article is deposited in the machine, stop 108 is released in a manner known to the art to permit movement of the operating bar under the action of a selecting lever 84. Arm 100 carries teeth 112 for engagement with an antireversal ratchet 114 which prevents a change in direction of operation of the machine once its action has been initiated, in a manner known to the art. As is also known in the art, the operating bar 92 of the machine carries gear segments 116 on its ends for rotation therewith. Segments 116 engage racks 118 to constrain the operating bar of the machine to move with parallel motion when actuated by a selecting link 90.

As can be seen by reference to Figures 1 and 6, I provide an interlock for preventing operation of the remaining selecting levers 84 of the machine when one selecting lever 84 has been actuated. This interlock in-

cludes a plurality of triangular members **120** pivotally supported on respective pins **122** carried by a bracket **124** fixed to the mounting bracket **22** by any convenient means. Each of the selecting links **90** is formed with a cam portion **126**. I arrange the members **120** in a horizontal line across the width of the machine over the cam portions **126** of selecting links **90**. Members **120** pivot to permit passage of one cam portion **126** between a pair of adjacent members **120** when a selecting link **90** is operated. Movement of a cam portion **126** upwardly between a pair of adjacent members **120** cams the members laterally of the machine about their pivots **122**. This movement of members **120** with each other under the action of a single cam portion **126** prevents entry of another cam portion **126** between a pair of adjacent members **120**. In other words, when one selecting link **90** moves upwardly, no other link may be moved upwardly and a customer may obtain only one selected article of merchandise on each operation of the machine.

Operating bar **92** carries for movement therewith a first dispenser push rod **128** associated with the rear columar containers **44**. I pivotally connect the end of push rod **128** remote from operating bar **92** to a crank **130** by a pin **132**. A shaft **134** pivotally supported in panels **26** and **28** adjacent the sides of the machine mounts crank **130** for rotation therewith. Shaft **134** also supports by any convenient means such as a sheet metal flange **138** fixed on shaft **134** for rotation therewith a plurality of dispenser arms **136** associated with rear columnar containers **44**. A pin **140** on each arm **136** pivotally supports a dispenser **142**. A spring **144** connected between dispenser **142** and the associated arm **136** normally biases the dispenser **142** to rotate in a counterclockwise direction about pin **140** as viewed in Figure 1. Each arm **136** extends into a slot **146** formed in the dispenser **142** carried thereby. The end of arm **136** within slot **146** below pivot pin **140** limits the movement of dispenser **142** under the action of the associated spring **144**. From the structure thus far described, it will be appreciated that as operating bar **92** moves upwardly as viewed in Figures 1, 3, and 6, drive rod **128** drives crank **130** to pivot shaft **134** in a counterclockwise direction. This action pivots arms **136** with shaft **134** to move the dispensers **142** carried thereby behind the columns of cigarettes in the containers **44**. On the return downward movement of operating bar **92**, shaft **134** and arms **136** pivot in a clockwise direction to dispense a package of cigarettes which has been moved upwardly in front of the dispenser **142** corresponding to the operated selecting lever **84** as the dispenser moves rearwardly of the column in a manner to be described hereinafter. It is to be noted that the pivotal mounting of each dispenser **142** permits it to move to the rear behind the column of cigarettes in the associated container **44** even though it engages the upper surface of a package being fed upwardly in the associated container. From the structure thus far described it will be seen that on each operation of the dispensing bar **92** all the dispensers **142** move first rearwardly and then forwardly of their associated containers **44**. The arrangement of my machine is such, however, that only in a container corresponding to an operated selecting lever will there be an article of merchandise in a position to be engaged by a dispenser **142** during the return movement of the dispensers.

I mount a second dispenser push rod **148** on operating bar **92** for movement therewith. As can be seen by reference to Figures 1 and 3, a pin **150** pivotally connects push rod **148** with a crank **152** fixed on a shaft **154** for rotation therewith. I rotatably support shaft **154** by any convenient means within the machine cabinet **10**. Shaft **154** carries for rotation therewith a mounting flange **156** on which I mount a plurality of dispensing arms **158** associated with the front containers or compartments **64** of the machine. Each arm **158** carries a pivot pin **160** for supporting a dispenser **162**. A spring **164** connected between a dispenser **162** and the associated arm **158** normally biases the dispenser **162** to pivot in a counterclockwise direction as viewed in Figure 1. This pivotal movement is limited by the end of arm **158** within a slot in the associated dispenser **162**. Arms **158** and dispensers **162** act in the same manner as do arms **136** and dispensers **142**. Each time the operating bar **92** moves upwardly and then downwardly in its slots **94**, shaft **154** and the arms **158** carried thereby oscillate to move dispensers **162** first rearwardly and then forwardly of the containers or compartments **64**. I provide means similar to the tape **76** and associated structure for supporting groups of packages of cigarettes or the like within the front containers or compartments of my machine. As can be seen by reference to Figure 1, this means includes a tape **166** and fingers **168** fixed to tape **166** at spaced points along its length. The supporting structure for tape **166** is the same as that described in connection with tape **76**.

I provide respective drive means operated by links **90** for moving the tape **76** corresponding to an operated selecting link **90** to move a package of cigarettes or the like to a position where it may be acted upon by the dispenser **142** corresponding to the operated selecting link **90**. Each selecting link **90** associated with a rear compartment or container **44** of my machine carries a horizontally extending arm **170** by means such as rivets **172** or the like. The end of each arm **170** remote from link **90** is bifurcated and engages a pin **174** carried by a drive rod **176**. A pair of pins **178** and **180** carried by a bracket **182** fixed to a leg **34** of a member **32** supports drive rod **176** for vertical reciprocating movement. Respective slots **183** and **184** formed in rod **176** permit movement of rod **176** on pins **178** and **180**. When a selecting lever **84** is operated, the associated link **90** moves upwardly as viewed in Figures 1 and 6. When a link **90** moves upwardly, the arm **170** carried thereby moves drive rod **176** upwardly by reason of the engagement of the bifurcated end of arm **170** with pin **174**. Respective pins **186** and **188** carried by rod **176** support a lifting finger mounting member **190** for horizontal sliding movement. A leaf spring **192** carried by rod **176** normally biases member **190** to the left as viewed in Figures 4 and 6. Respective heads **194** and **196** on pins **186** and **188** limit this movement of member **190** under the influence of spring **192**. Mounting member **190** carries a plurality of lifting fingers **198** at spaced locations along its length by any convenient means. When drive rod **176** moves upwardly under the action of arm **170**, it carries the member **190** and fingers **198** upwardly. The number of fingers **198** corresponds with the number of packages of cigarettes or the like supported by a finger **80**. The spacing of fingers **198** on the support **190** is such that one finger **198** is always in engagement with projection **200** formed on the portion of a finger **80** secured to tape **76**. When fingers **198** move upwardly, the finger in engagement with projection **200** drives the tape **76** to move a fresh package of cigarettes or the like carried by a finger **80** to a position where it may be acted upon by a dispenser **142**. The direction of movement of the tape **76** is indicated by the arrows on the rollers **70** and **74** in Figure 6.

As can be seen by reference to Figure 1, each of the arms **170** carries a pin **202** which pivotally mounts a cam member **204**. When the operating bar **92** moves upwardly, cam member **204** engages a re-entrant portion **206** formed in the back **12** of the machine, which cams member **204** in a clockwise direction as viewed in Figure 1. When a selecting lever **84** is released, the weight of the mechanism associated therewith tends to return the selecting lever **84** to its initial position. In the course of this return, link **90** moves downwardly. As link **90** moves downwardly, cam member **204**, which was moved over the operating bar **92** when the selecting lever was actuated, provides a positive return for the operating bar to its initial position. This return of the operating bar

may be assisted by means such as weights or springs 207 secured to the ends of the operating bar.

When the selecting mechanism returns to its initial position, the mounting member 190 carrying fingers 198 moves downwardly as viewed in Figures 5 and 6. In the course of this movement a finger 198 must pass over a projection 200 to be properly positioned to drive belt 76 on the next operation of the machine. The passage of a finger 198 over a projection 200 as member 190 moves downwardly during the return of the selecting mechanism is permitted by the slidable mounting of member 190. This action takes place against the action of spring 192. It is to be understood that the inertia of the article supporting arrangement and the friction of the feeding mechanism are sufficient to prevent a backing up or reverse feed of belt 76 during the return movement of the selecting mechanism. If desired, some means, such as a ratchet on roller 70 or 74, may be provided for positively preventing the reverse feed of belt 76.

I provide a similar mechanism for driving the tape 166 associated with a front container or compartment 64 when a selecting lever 84 corresponding to a front container or compartment has been operated. Each of the selecting links 90 corresponding to a front column carries for movement therewith an arm 208 extending between the legs 34 and 36 of a rear compartment forming member 32 to engage a pin 210 carried by a drive rod 212 associated with a front compartment 64 of the machine. The remaining selecting and advancing mechanism associated with a front compartment 64 is the same as that described in connection with the rear compartment. For purposes of convenience and to avoid confusion, it will not be described in detail.

As can be seen by reference to Figure 1, I pivotally mount a plurality of empty locks 214 on respective pins 216 carried by brackets 182. Each empty lock 214 includes a first arm 218 normally in engagement with the articles of merchandise, such as packages of cigarettes or the like, in a compartment or container 44. This engagement positions the empty lock so that the second arm 220 of the lock is clear of the pin 186 carried by drive rod 176. When the supply of articles of merchandise in a compartment or container 44 is exhausted, empty lock 214 pivots under the influence of gravity to position arm 220 over pin 186 to prevent the upward movement of drive rod 176 under the influence of the associated selecting link 90. It will be understood that as many locks 214 are provided as there are compartments 44. Similar locks may be provided for the front compartments 64.

Referring to Figure 1, I form a delivery chute, indicated generally by the reference character 222, in my machine over the delivery tray 18. Chute 222 is formed by a sheet metal member 224 fixed by any convenient means between the sides of the cabinet 10 and by an upstanding portion 226 of delivery tray 18. Articles of merchandise, such as packages of cigarettes or the like, dispensed from the rear compartment 44 are directed down through the chute by member 224 to the delivery tray 18. Articles of merchandise, such as packages of cigarettes or the like, dispensed from the front compartments or containers 64 pass through an opening 228 between member 224 and portion 226 to the delivery tray 18. The cabinet 10 of my machine also houses a match delivery mechanism 230 which may be of any suitable type known to the art. As can be seen by reference to Figure 1, suitable display cards or the like may be placed in a carrying means 232 below the buttons 86 to inform the customer of the brands of merchandise associated with the various respective buttons 86.

It is to be noted that the staggered arrangement of the front row of compartments or containers 64 with respect to the rear compartments or containers 44 enables me to make efficient use of the available space within the cabinet 10. My machine houses a large supply of merchandise for the volume occupied by the machine. It also dispenses a great number of different brands of merchandise such as cigarettes or the like. The staggered arrangement permits the arms 208 associated with the front row of compartments 64 to extend between the legs 34 and 36 of a member 32 forming a side of each of its adjacent compartments 44 without interference with the packages of cigarettes or dispensing mechanism of the rear row of compartments.

As can be seen by reference to Figure 5, a pin 234 supported in the flanges of bracket 182 pivotally mounts a member 236 by means of ears 238. In the course of a loading operation it is sometimes necessary to move belt 76 with respect to the lifting fingers 198. To accomplish this I move member 236 in a clockwise direction about pin 234 to move the belt and the fingers carried thereby away from fingers 198.

In operation of my machine, a customer first deposits a sum in coins aggregating the purchase price of an article of merchandise into the coin register 106 of the machine through an appropriate coin slot. When this sum of coins has been deposited, the coin register operates in a manner known to the art to move stop 108 to permit movement of the operating bar 92 of the machine. In order to select a brand of merchandise, a customer presses a selecting button 86 downwardly to pivot a selecting lever 84 in a counterclockwise direction about rod 82 to raise the associated selecting link 90. As selecting link 90 moves upwardly, its cam portion 126 pivots a pair of adjacent members 120 to prevent operation of any of the remaining selecting levers 84 of the machine. Movement of a selecting link 90 upwardly also moves the freed operating bar 92 upwardly in its slots 94 by the selecting link foot 110. The gear segments 116 at the ends of the operating bar cooperate with the racks 118 to provide parallel motion for the operating bar. At the same time, the ratchet 114 engages teeth 112 on arm 100 to prevent a change in direction of operation of the machine once a dispensing cycle is initiated. As bar 92 moves upwardly, it drives the front and rear dispensing drive rods 148 and 128 to pivot cranks 152 and 130 in a counterclockwise direction as viewed in Figure 3. This movement of cranks 152 and 130 rotates shafts 154 and 134 to move the dispensers 162 and 142 carried by respective arms 158 and 136 to the rear of the rows of the front and rear compartments or containers 64 and 44. At the same time during the upward movement of operating bar 92 under the action of an actuated selecting link 90, the arm 170 or 208 carried by the selecting link drives the associated package carrying tape to move a package of cigarettes to a position where it may be acted upon by a dispenser on the return stroke of operating bar 92. For purposes of convenience, I will assume that a customer has selected his article of merchandise in one of the rear containers or compartments 44. As the corresponding selecting link 90 moves upwardly, the arm 170 carried thereby moves drive rod 176 upwardly as viewed in Figure 6. As rod 176 moves upwardly, it carries the finger mounting member 190 upwardly. In the course of this movement a finger 198 engaging a projection 200 on a finger 80 moves tape 76 to elevate a package of cigarettes or the like carried by a finger 80 to a position where it may be acted upon by a dispenser 142.

The movement of dispensers 142 to the rear of compartments 44 takes place concomitantly with the elevation of a package of cigarettes to a position where it may be acted upon by a dispenser. The pivotal mounting of dispensers 142 permits the dispenser to slide over the upper surface of a package being elevated during this movement.

After button 86 is released, the selecting link 90 returns to its initial position under the influence of the weight of the selecting mechanism. Member 204 carried by the returning selecting link positively returns operating bar

92 to its initial position in the manner described hereinabove. This return of bar 92 may be assisted by weights or springs 207 acting on the ends of the bar. As the bar returns, drive rods 143 and 128 pivot shafts 154 and 134 to move dispensers 162 and 142 to their forward positions. At this time the package of cigarettes elevated by the actuated selecting link 90 is pushed out of its compartment 44 by a dispenser 142 and into the delivery chute 222. From the chute 222 the package falls to the delivery tray 18 where it is readily accessible to the customer.

During the return of the selecting link 90 to its initial position, one of the associated fingers 198 cams downwardly over a projection 200 on a finger 80. In the course of this movement mounting member 190 slides away from belt 76 against the action of spring 192. As has been explained hereinabove, the inertia of belt 76 and the articles of merchandise carried thereby and the friction of the parts are sufficient to prevent a back feed of belt 76 when a finger 198 passes downwardly over a projection 200. When the dispensing cycle is complete, all parts are in their initial positions and the coin register 106 is set to prevent operation of the machine until a sum in coins aggregating the purchase price of an article of merchandise is deposited therein.

When it is desired to load my machine, the front panel or door 16 is removed. The front containers or compartments 64 are loaded by placing groups of packages of cigarettes on the support fingers 168 on one stand of the belt 166 corresponding to the fingers. If it is necessary to move belt 166 to accomplish loading, a member such as member 236 is actuated to move the belt away from the associated belt drive mechanism. When the front compartments or containers have been loaded, the supporting panel 48 may be swung about its hinge 46 away from the rear containers or compartments 44. It is to be noted that panel 48 is so formed as to permit this movement without interference with arms 208. After the panel is swung out, the rear containers or compartments are loaded in the same manner as were the front containers or compartments. Groups of packages of cigarettes are placed on the empty fingers 80. If it becomes necessary to move belt 76, member 236 is actuated to move the belt away from fingers 198. When the loading operation is completed, panel 48 is swung into place and the front panel or door 16 is replaced.

It is to be noted that with my construction articles of merchandise such as packages of cigarettes or the like first placed or loaded into the machine are first dispensed. As fingers 80 carrying groups of articles of merchandise move up toward the top of their container or compartment 44, empty fingers travel around roller 70 in a position to be loaded with fresh articles of merchandise. When the machine is loaded, the fresh articles of merchandise are below the articles of merchandise remaining in a container 44 and are consequently not dispensed until after the remaining articles are dispensed.

It will be seen that I have accomplished the objects of my invention. I have provided an elevating column console cigarette merchandising machine which is low and yet which contains an equal supply of articles of merchandise to taller machines of the prior art without an appreciable increase in cabinet volume. The delivery tray of my machine is conveniently located. I provide a positive upward feed for the articles of merchandise in my machine. My machine does not include compression feed springs such as are used in machines of the prior art. My machine may readily and expeditiously be loaded. Articles of merchandise first loaded into my machine are dispensed first.

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 my claim. It is further obvious that various changes may be made in details within the scope of my claim without departing from the spirit of my invention. It is therefore to be understood that my invention is not to be limited to the specific details shown and described.

Having thus described my invention what I claim is:

A merchandising machine including in combination a cabinet, an endless belt, means mounting said belt for continuous unidirectional movement in a vertical direction in said cabinet, means carried by said belt for supporting a supply of articles of merchandise to be dispensed, an ejector, means mounting said ejector adjacent the top of said belt for movement to dispense an article carried by the belt, means for advancing said belt to move an article carried by said belt upwardly to a position to be acted upon by said ejector and drive means for said ejector and for said belt advancing means, said article supporting means comprising a plurality of spaced fingers each adapted to support a plurality of articles, said belt advancing means including engageable means carried by said fingers and means for engaging said engageable means to move said belt under the influence of said drive means through a distance approximately equal to the dimension of an article to be dispensed.

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