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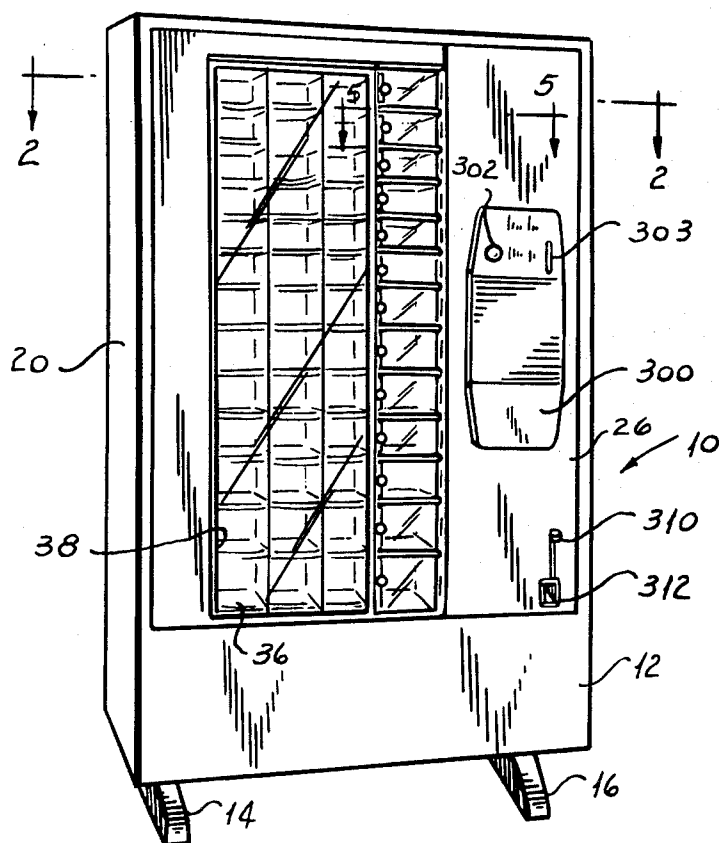
3,243,034

GENERAL MERCHANDISING MACHINE

Original Filed Feb. 25, 1959

4 Sheets-Sheet 1

Fig 1



INVENTORS

RICHARD J. MUELLER

CARL WEBER

PETER KATZ

BY

Shenier & O'Connor

ATTORNEYS

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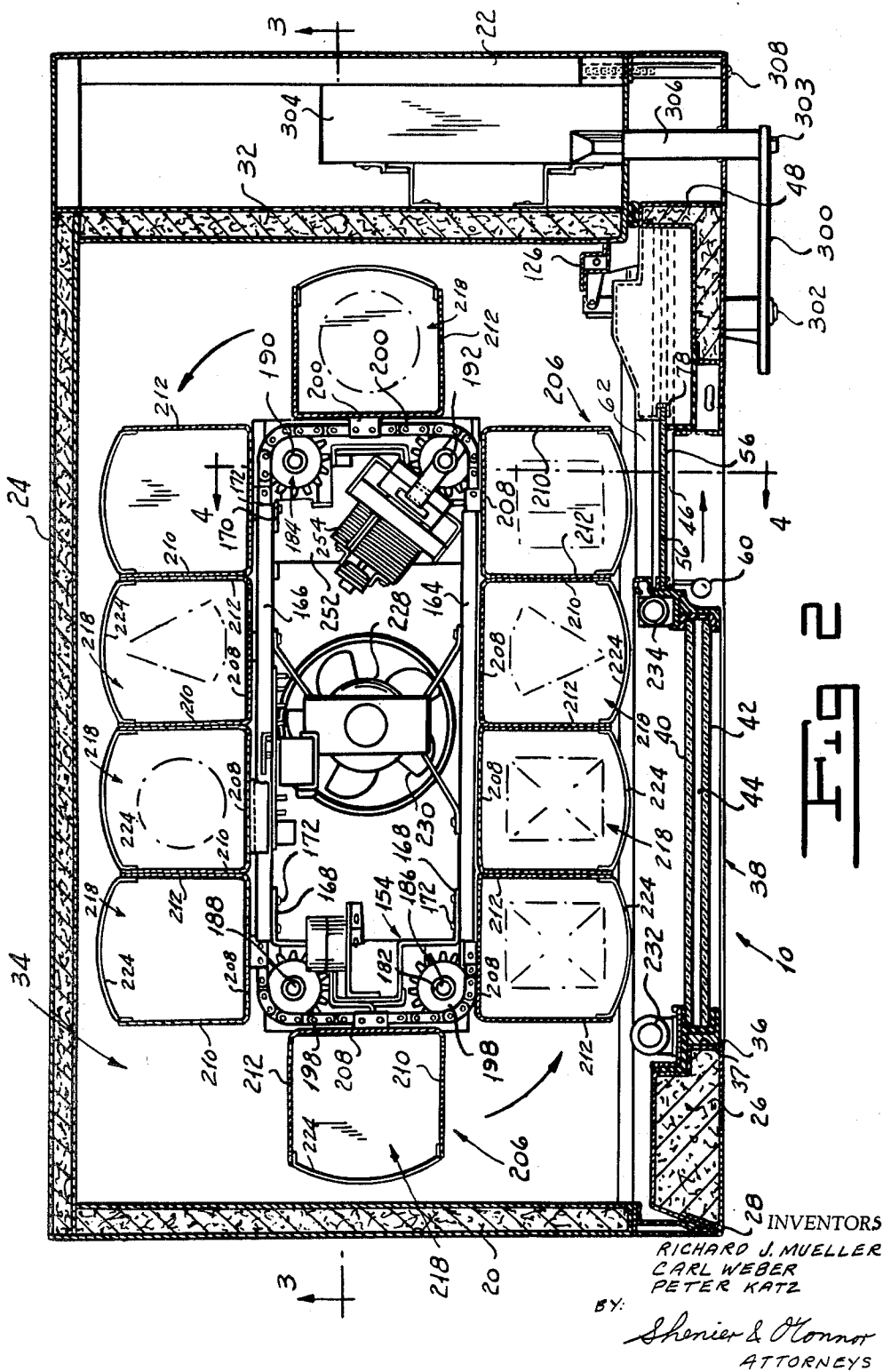
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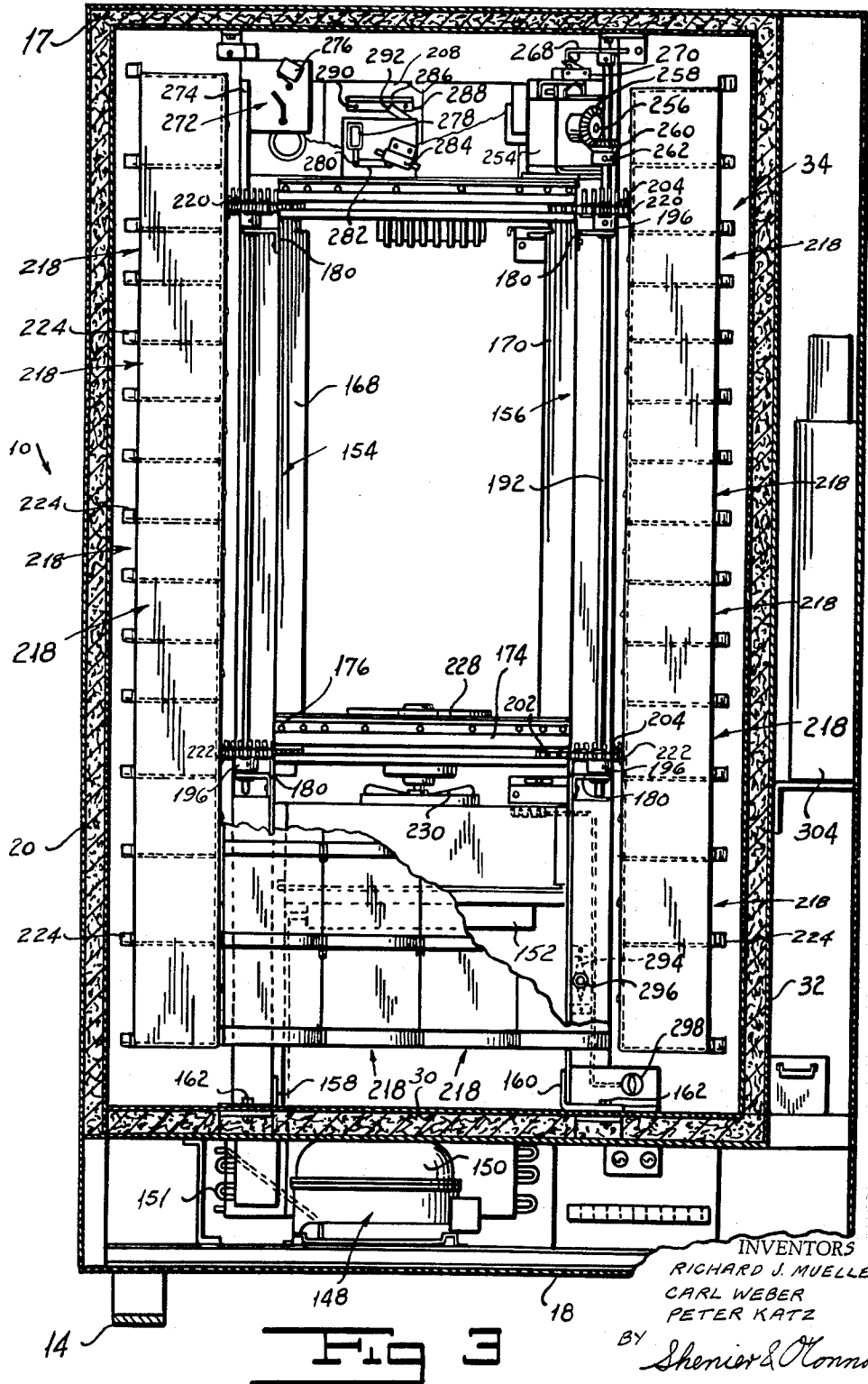
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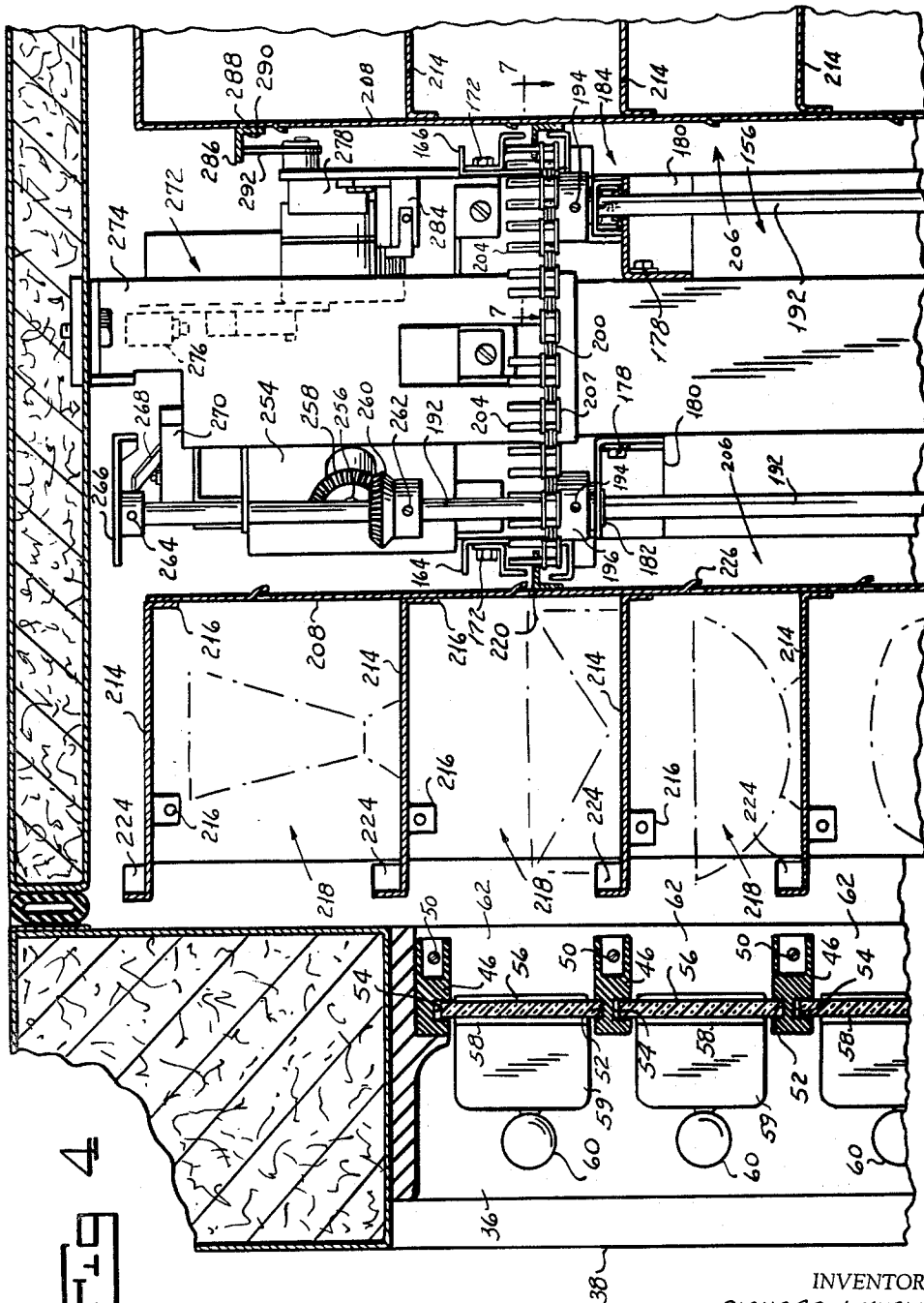


FIG 4

INVENTORS
RICHARD J. MUELLER
CARL WEBER
PETER KATZ
BY *Shenier & O'Connor*
ATTORNEYS

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3,243,034

GENERAL MERCHANDISING MACHINE

Richard John Mueller, Franklin Park, and Carl Weber, Chicago, Ill., and Peter Katz, Livingston, N.J., assignors to Automatic Canteen Company of America, Chicago, Ill., a corporation of Delaware

Original application Feb. 25, 1959, Ser. No. 795,543, now Patent No. 3,147,838, dated Sept. 8, 1964. Divided and this application Aug. 28, 1963, Ser. No. 310,187

2 Claims. (Cl. 198—154)

This application is a division of our copending application, Serial No. 795,543 filed February 25, 1959 for a General Merchandising Machine, now Patent No. 3,147,838, issued September 8, 1964.

Our invention relates to a merchandising machine and more particularly to an improved merchandising machine which is more easily cleaned and more readily repairable than are merchandising machines of the prior art.

There are known in the prior art merchandising machines having chains or the like to which merchandise carriers are permanently secured to support articles of merchandise for movement with the supporting chain or the like toward a dispensing station. One of the difficulties which has been experienced with merchandising machines of that type is the difficulty of cleaning the machine properly owing to the fact that many of the parts are not readily accessible. Moreover, when an individual support or carrier is damaged it cannot easily be replaced.

We have invented a merchandising machine which overcomes the difficulties of machines of the prior art pointed out hereinabove.

Our machine provides ready access to most of the parts of the machine. It is more easily cleaned than are machines of the prior art. Damaged carriers can be replaced in a rapid and expeditious manner.

One object of our invention is to provide a merchandising machine which is more easily cleaned than are merchandising machines of the prior art.

Another object of our invention is to provide a merchandising machine, the carriers of which are readily replaceable.

A further object of our invention is to provide a merchandising machine, the parts of which are more accessible than are the parts of machines of the prior art.

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

In general our invention contemplates the provision of a merchandising machine having spaced upper and lower generally horizontally disposed pitch chains each of which has pins extending above the level of the chain and merchandise carriers provided with a plurality of superposed compartments and brackets on the carriers formed with holes adapted to be slipped over the pins of the chains detachably to mount the carrier on the chains for movement therewith.

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 indicate like parts in the various views:

FIGURE 1 is a perspective view of our general merchandising machine.

FIGURE 2 is a sectional view of our general merchandising machine taken along the line 2—2 of FIGURE 1 and drawn on an enlarged scale.

FIGURE 3 is a sectional view of our general mer-

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chandising machine taken along the line 3—3 of FIGURE 2.

FIGURE 4 is a fragmentary sectional view of our general merchandising machine taken along the line 4—4 of FIGURE 2 and drawn on an enlarged scale.

Referring now more particularly to FIGURES 1 to 3 of the drawings, our general merchandising machine, indicated generally by the reference character 10, includes a cabinet 12 supported on feet 14 and 16. The cabinet 12 is formed by a top 17, a bottom 18, sides 20 and 22, a back 24, and a door 26 carried by a hinge 28 which permits the door to be swung outwardly from the cabinet to afford access to the interior of the cabinet. A horizontal partition 30 and a vertical partition 32, both formed of insulating material, co-operate with top 17, side 20, and back 24 to form an insulated compartment indicated generally by the reference character 34. It will be understood that we insulate the portions of top 17, back 24, and side 20 around a compartment 34. A generally rectangular frame 36, secured in an opening 37 in the door 26 by any convenient means, supports a window indicated generally by the reference character 38 formed by a pair of panes 40 and 42 of glass separated by an insulating space 44.

Referring now to FIGURES 1 and 2, a plurality of vertically spaced horizontal guides 46 extend between the right side of the frame 36, as viewed in FIGURE 2, and a flange 48 extending rearwardly of the door 26 generally in line with the vertical partition 32. We employ any convenient means, such as screws 50 or the like, to secure the guides to the frame 36 and to the flange 48. Each of the guides 46, intermediate the top and bottom guides, is formed with a pair of oppositely extending slots 52 and 54. The upper guide 46 has only a slot 54, while the lower guide 46 has only a slot 52. We dispose respective doors 56 formed of a suitable transparent material, such as glass or the like, between each pair of adjacent guides 46. The respective slots 54 and 52 of an upper and lower guide of an adjacent pair receive the upper and lower edges of a door 56 in such a manner that the lower guide slot 52 forms a track along which the door may slide while the slot 54 of the upper guide retains the door in its track.

We secure a bracket 58 to one edge of each of the doors 56. A flange 59 on the bracket carries a handle 60 by means of which the door may be moved across a respective access opening 62 formed in the cabinet door 26 between a pair of adjacent guides 46. The guides 46 are of sufficient length to permit a door to be moved to the right, as viewed in FIGURE 2 to afford access to the interior of the cabinet through the opening 62.

Referring now to FIGURE 3, we mount a refrigerating unit compressor, indicated generally by the reference character 148 on the bottom 18 below partition 30. The unit 148 includes a motor driven compressor 150, the coils 151 of which are connected to an expansion coil unit 152 within the compartment 34. It is to be understood that while we have illustrated a machine including a refrigerated compartment 34 adapted to vend articles which must be kept under refrigeration, we could as well adapt our machine to dispense hot articles.

Referring now to FIGURES 2 to 4, we mount a pair of laterally spaced upright posts indicated generally by the reference characters 154 and 156 and formed of sheet

metal or the like on brackets 158 and 160 secured to the partition 30 by any suitable means such, for example, as by bolts 162. We mount a pair of upper chain guide brackets 164 and 166 on flanges 168 and 170 formed on the posts 154 and 156 by means of bolts 172 or the like. We mount a pair of lower chain guide brackets, one of which brackets 174 is shown in FIGURE 3, on the flanges 168 and 170 by means of bolts 176. Any suitable means such, for example, as screws 178 or the like secure a plurality of bearing brackets 180 to the posts 154 and 156. We provide four brackets 180 at the four corners of the frame formed by posts 154 and 156 and by the chain guide brackets 164, 166, and 174 adjacent the upper chain guide brackets 164 and 166. We provide a second set of bearing support brackets 180 at the four corners of the frame adjacent the lower chain guide brackets including the bracket 174. All the brackets 180, save the brackets at the upper right-hand corner of the frame as viewed in FIGURE 2, carry fixed bearings 182. The brackets 180 at the upper right-hand corner of the frame, as viewed in FIGURE 2, support floating bearings indicated generally by the reference character 184 to be described in detail hereinafter. We mount four vertically extending shafts 186, 188, 190, and 192 at the four corners of the frame in the bearings 182 and 184 supported by the frame. Any suitable means, such as set screws 194 or the like, secure the hubs 196 of sprocket wheels 198 to the shafts 186, 188, 190, and 192. We provide an upper set of sprocket wheels 198 and a lower set of sprocket wheels 198 making eight wheels in all disposed at the four corners of the frame adjacent the upper chain guide brackets 164 and 166 and the lower chain guide brackets including the bracket 174. The upper set of sprocket wheels 198 carry a pitch chain 200, while the lower set of sprocket wheels 198 carry a pitch chain 202. Each chain 200 and 202 includes elongated pins 204 which connect the chain links 207 in a manner known to the art. We make the pins 204 of the upper chain 200 somewhat longer than the pins 204 of the lower chain 202 for a reason which will be apparent from the description given hereinafter.

Our machine includes a plurality of columnar merchandise carriers indicated generally by the reference character 206. Each carrier is generally U-shaped in cross section having a back 208 and sides 210 and 212. We secure a plurality of partitions 214 to each of the carriers 206 by any suitable means such, for example, as by spot welding a plurality of tabs 216 formed on the partitions to the sides 210 and 212 and to the back 208 of the carrier. In this manner we divide each carrier 206 into a plurality of respective compartments indicated generally by the reference characters 218. We vary the space between adjacent partitions 214 to provide a number of compartments 218 of different size to accommodate articles of various sizes. It will be appreciated that the partitions 214 between the extreme upper and lower partitions form shelves for supporting articles of merchandise. We secure a pair of vertically spaced mounting brackets 220 and 222 to the back 208 of each of the columnar containers 206. We form the brackets 220 and 222 with holes for receiving a pair of adjacent pins 204 of the upper chain 200 and a pair of adjacent pins 204 of the lower chain 202 to hang the container on the chain. It will be appreciated that the provision of relatively longer pins 204 on the upper chain facilitates the operation of hanging a compartment on the chain. We provide the outboard edge of each partition 214 with an upstanding flange 224, which prevents an article of merchandise from accidentally sliding out of its compartment. We form the back 208 of each container with a plurality of vents 226 which assure good refrigeration of the articles. A fan 230, driven by a motor 228, circulates air within the container 34. A pair of fluorescent lamps 232 and 234 carried by the door 26 adjacent the window 40 illuminate the articles contained in the compartments 218.

Referring now to FIGURES 2 to 4, as has been explained hereinabove, the shaft 190 is supported in a pair

of floating bearings indicated generally by the reference character 184.

A platform 252, carried by the frame adjacent the upper chain guide bracket 164 and 166, carries a motor 254 having a shaft 256. We secure a bevel gear 258 to shaft 256 for rotation therewith. Gear 258 engages and drives a bevel gear 260 secured to shaft 192 for rotation therewith by means of a set screw 262 or the like. It will be seen that upon the energization of motor 254, shaft 192 is driven to drive chains 200 and 202 to move all the containers 206 around a vertical axis. A set screw or the like 264 secures a container positioning arm 266 on shaft 192 for rotation therewith. Arm 266 is adapted to engage an arm 268 of a switch 270 to actuate the switch once in the course of a revolution of shaft 192.

We provide our machine with a timer indicated generally by the reference character 272 secured to a bracket 274 carried by the top of post 154. Timer 272 is adapted to actuate a switch 276 at predetermined intervals to energize the motor 254 in a manner to be described hereinafter. A solenoid 278, adapted to be energized in a manner to be described when switch 276 closes, has an armature 280 pivotally connected to a link 282. When the solenoid is energized, it moves link 282 to close a switch 284 to energize motor 254 in a manner to be described. A flange 286, formed on a bracket 288 secured to the back 208 of one of the containers 206 by means of screws 290 or the like, actuates an arm 292 in one position of the container carrying the bracket 288 to open switch 284 to interrupt the motor circuit in a manner to be described. Our machine includes a thermostatic switch 294 carried by the post 156. In the event that the refrigerating system breaks down for any reason, the switch 294 renders the machine inoperative. When the machine has been repaired, a manual reset button 296 may be pushed to reset the thermostatic switch 294. We provide the machine with an automatic thermostat 298 of any type known to the art for regulating the temperature within the refrigerator compartment 234.

Referring to FIGURES 1 and 2, panel 300 carried by the door 26 is provided with a transport motor button 302 and with a coin slot 303 through which coins may be inserted to pass into a coin register 304 of any suitable type known to the art through a coin tube 306. The coin register 304 may be of any suitable type known to the art. We employ any convenient means, such as screws 308, for securing the door 26 in a closed position on the cabinet 12. A coin return lever 310 may be actuated to cause coins to be returned to the customer through a coin return opening 312.

It will be seen that we have accomplished the objects of our invention. We have provided a merchandising machine, the parts of which are more accessible than are the parts of machines of the prior art. Our machine is more easily cleaned than are machines of the prior art. Damaged carriers on our machine may be replaced in a rapid and expeditious manner.

It will be understood that certain features and sub-combinations 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. In a merchandising machine for dispensing articles of merchandise, apparatus including a pair of generally horizontally disposed pitch chains having links connected by pins, the pins of the respective chains extending above the level of the chains, means mounting said chains in vertically spaced relationship, an elongated merchandise carrier, means forming a plurality of superposed merchan-

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dise compartments on said carrier, brackets on said carrier, said brackets being spaced by a distance corresponding to the spacing of said chains, said brackets being formed with holes for receiving said pins removably to hang said carrier on said chains with said brackets hooked over said pins.

2. Apparatus as in claim 1 wherein said chains comprise upper and lower chains and in which the pins of said upper chain extend thereabove for a greater distance than the distance by which said pins of the lower chain extend thereabove.

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EVON C. BLUNK, *Primary Examiner.*

WILLIAM B. LABORDE, SAMUEL F. COLEMAN,
Examiners.

R. E. AEGERTER, *Assistant Examiner.*