

Sept. 26, 1944.

I. H. WILSEY

2,359,183

DISPENSING MACHINE

Filed July 13, 1940

6 Sheets-Sheet 1

Fig. 3.

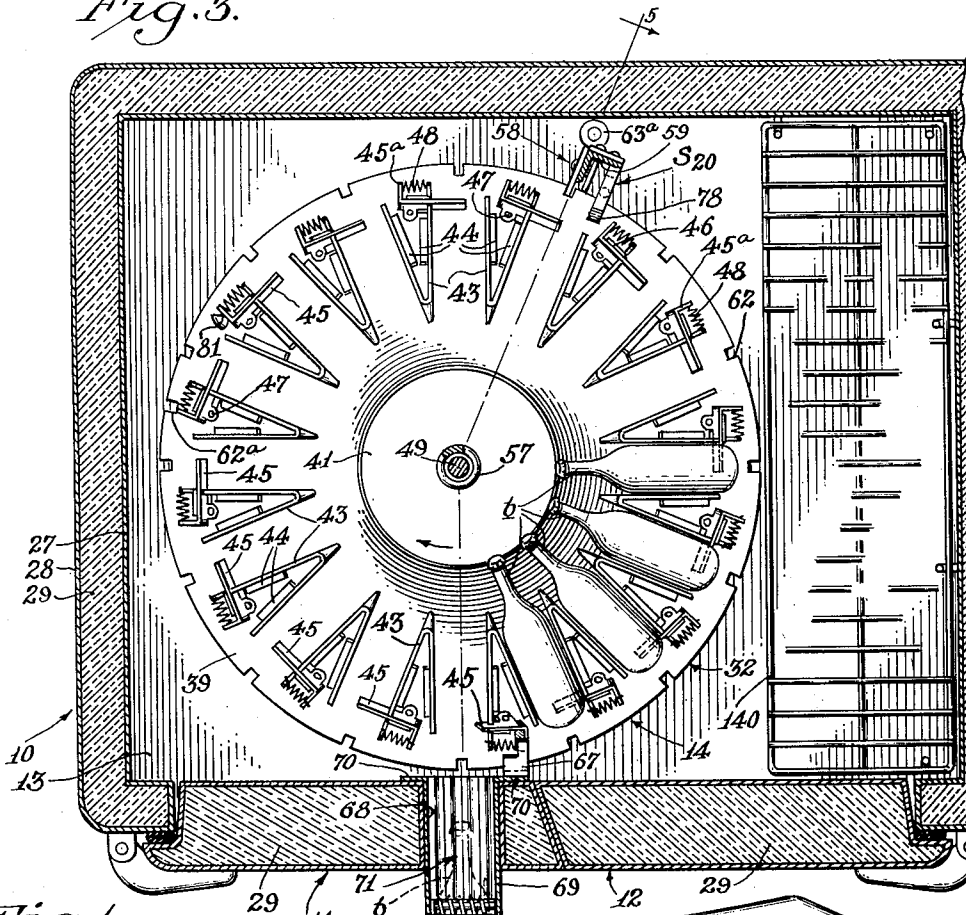


Fig. 1.

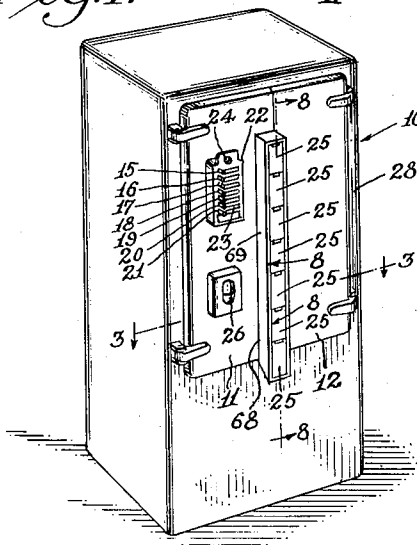
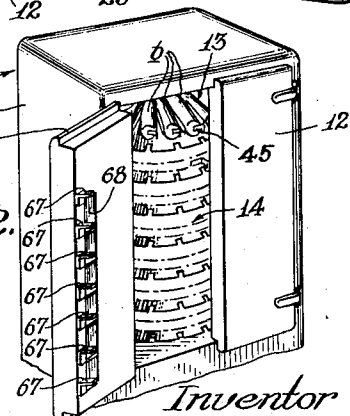


Fig. 2.



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6 Sheets—Sheet 2

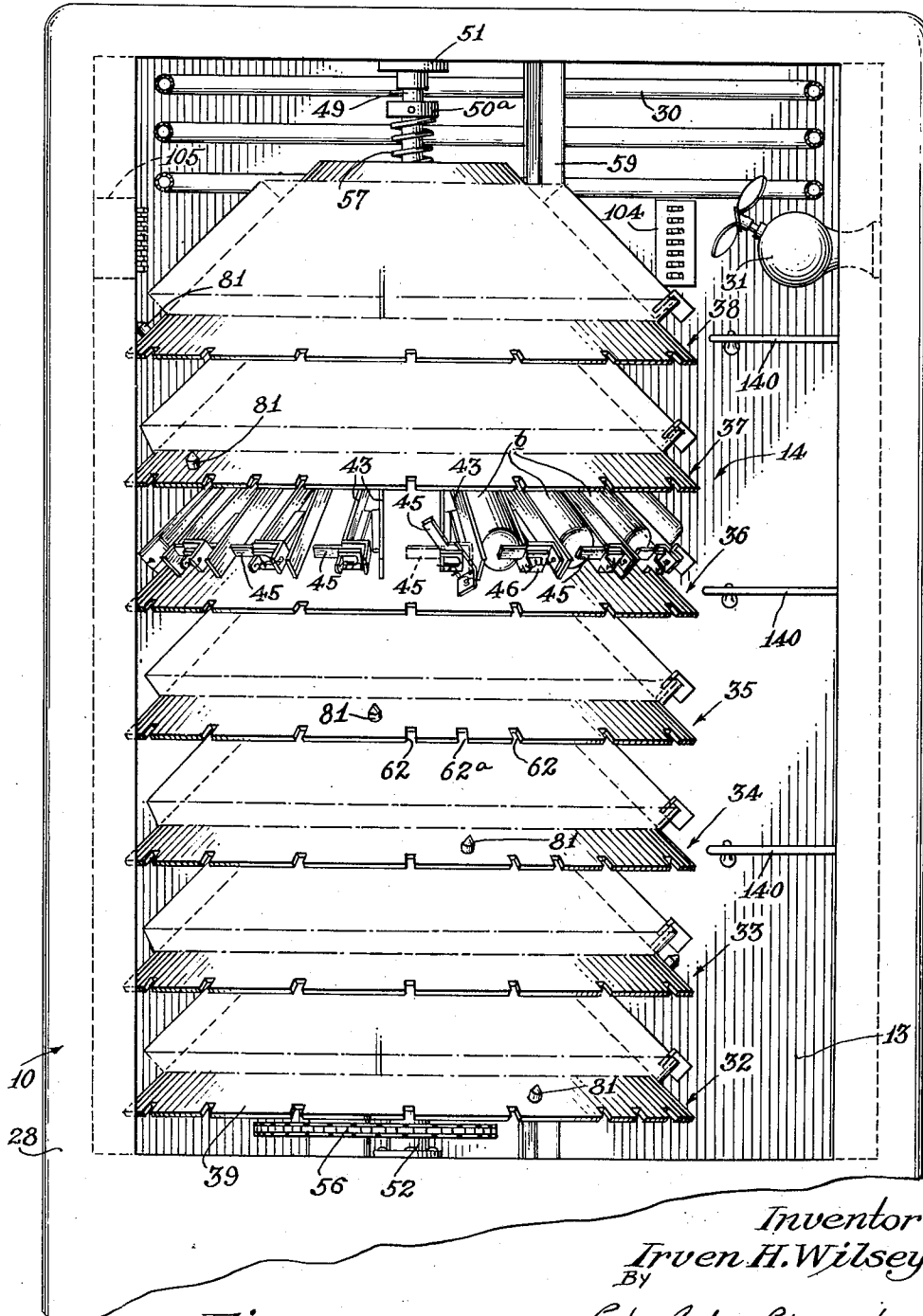


Fig. 4.

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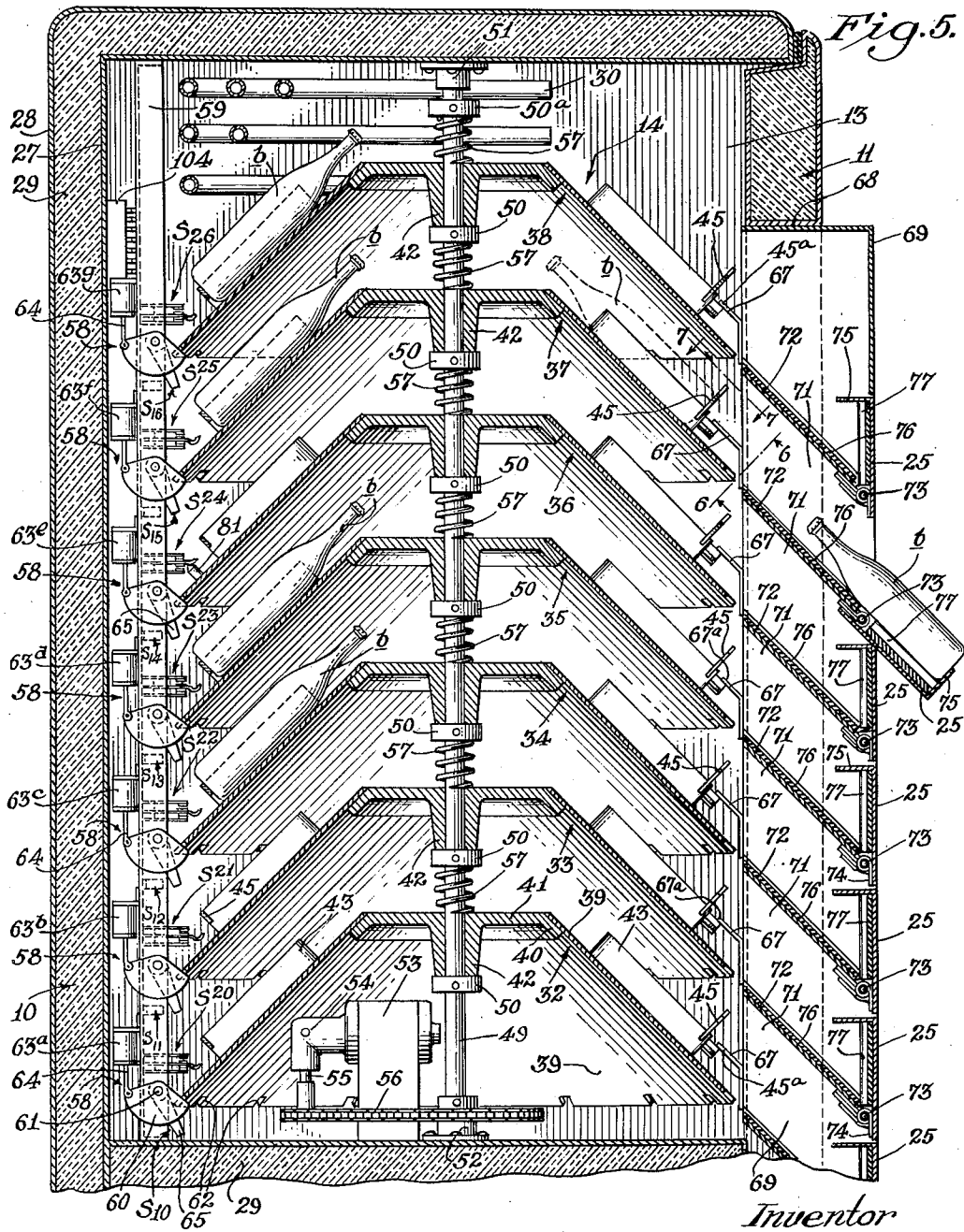
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DISPENSING MACHINE

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6 Sheets—Sheet 3



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DISPENSING MACHINE

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Fig. 6.

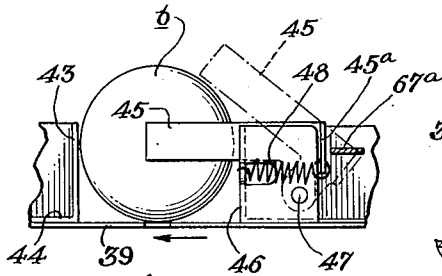


Fig. 7.

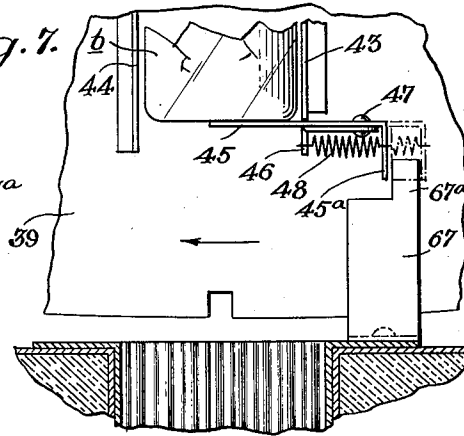


Fig. 8.

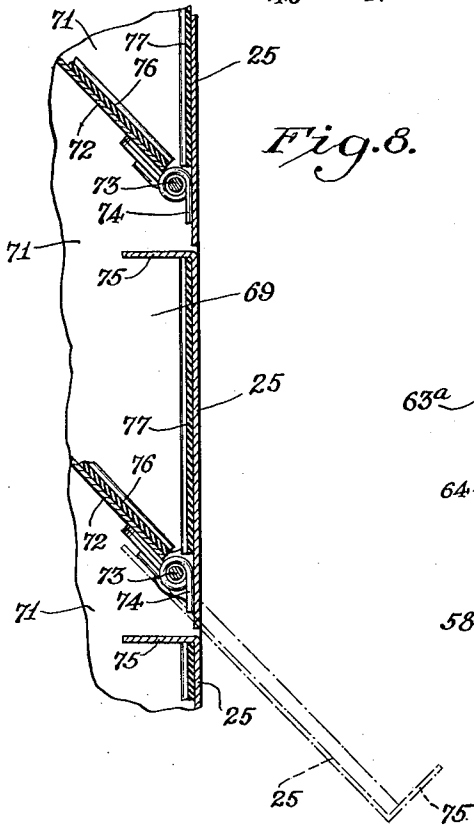
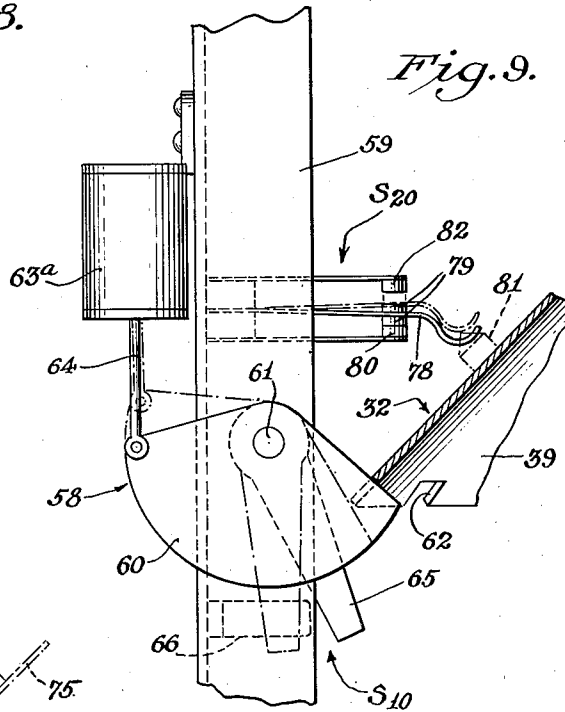


Fig. 9.



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Fig. 10.

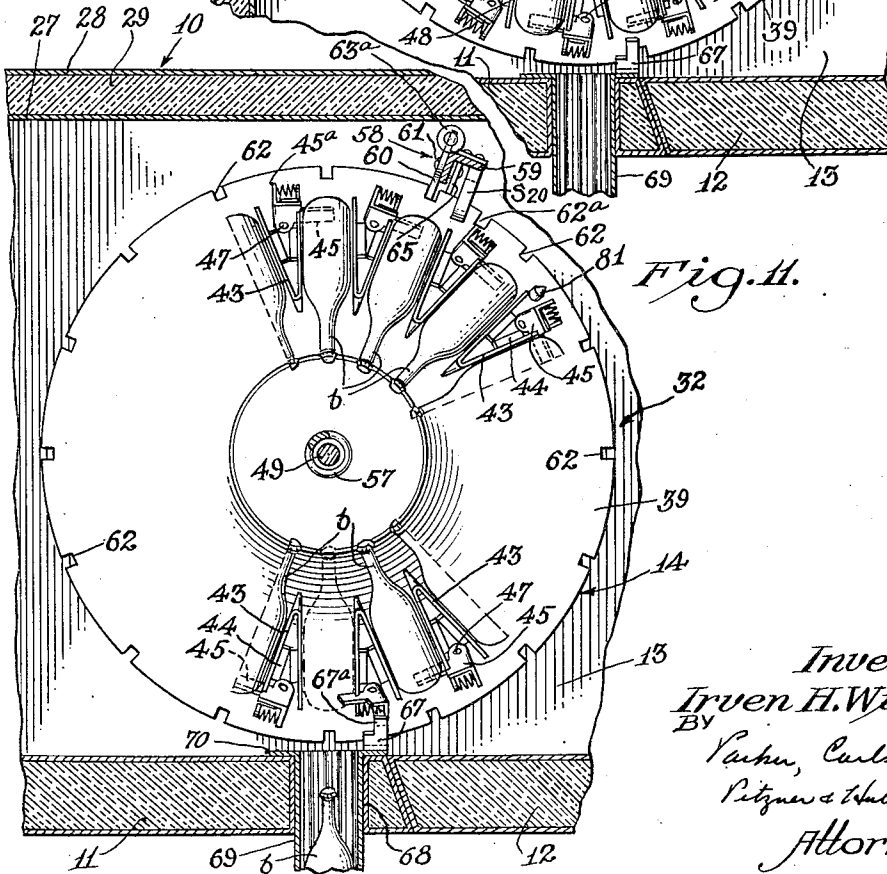
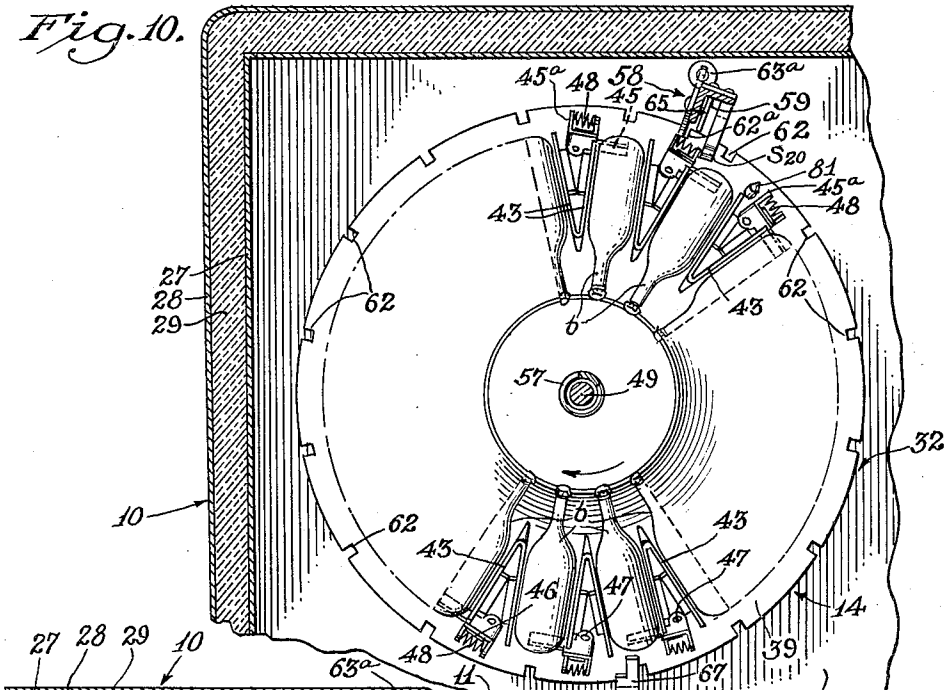


Fig. 11.

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DISPENSING MACHINE

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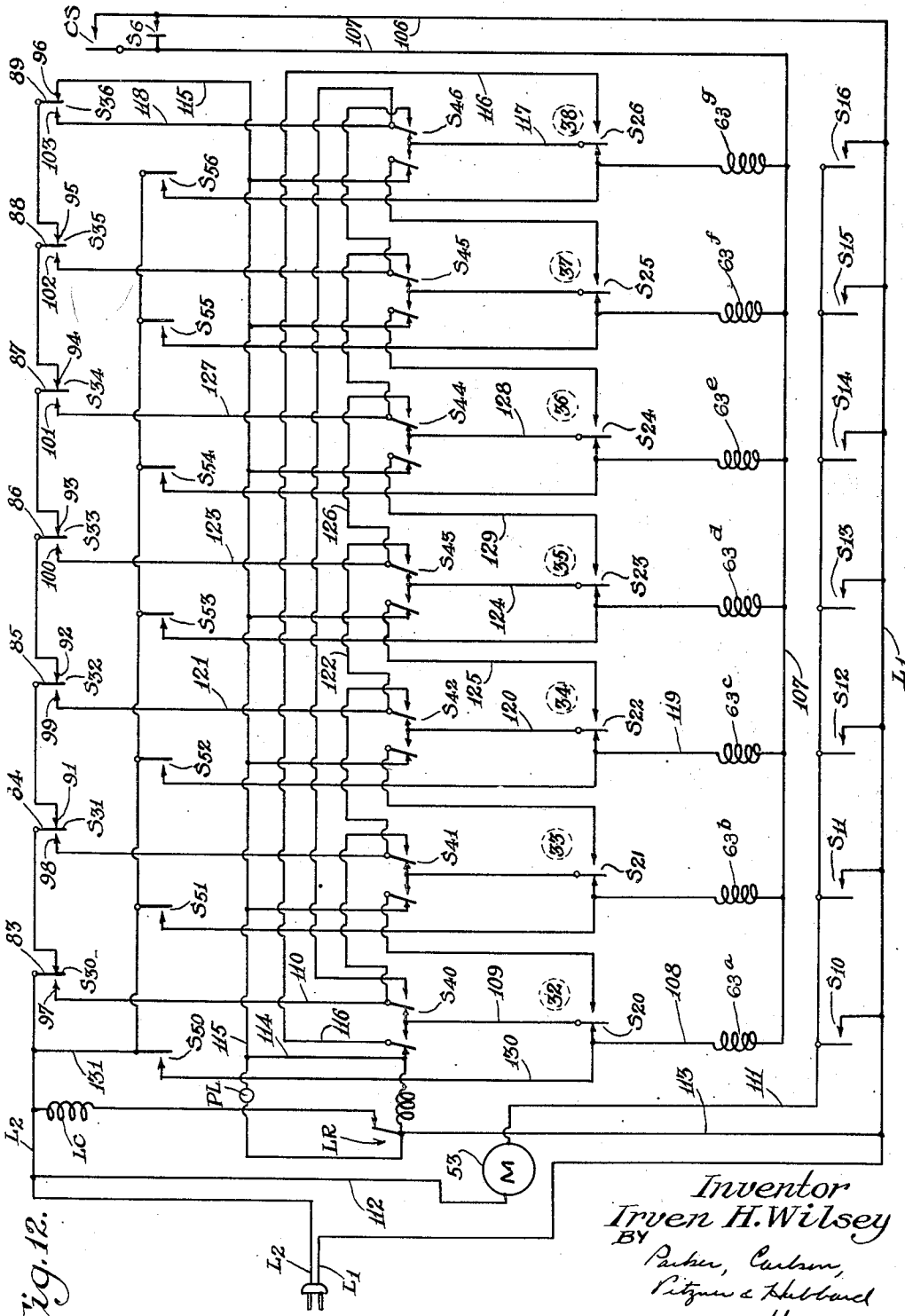


Fig. 12.

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UNITED STATES PATENT OFFICE

2,359,183

DISPENSING MACHINE

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executrix of said Irven H. Wilsey, deceased

Application July 13, 1940, Serial No. 345,288

25 Claims. (Cl. 194—10)

The invention relates to dispensing machines and has particular, though by no means exclusive, utility as applied to coin operated machines for dispensing chilled bottled drinks. For purposes of orientation in the art, the machine herein disclosed may be considered as an improvement on that disclosed in my copending application Serial No. 341,448, filed June 20, 1940.

One general object of the present invention is to provide a novel apparatus for the selective dispensing of articles of different varieties from a single machine. For example, the presently disclosed machine may be used for the sale of a series of different kinds of bottled drinks, the machine being arranged for selection by the purchaser of the particular kind of beverage which will be delivered to him when he drops his coin into the machine.

A more specific object of the invention is to provide a novel selective type dispensing machine in which but a single drive mechanism is required for delivering an article of any of the series of varieties available.

Another object is to provide such a selection type dispensing machine in which the storage capacity of the machine can be proportioned with great flexibility, at the proprietor's option, among a series of different varieties of articles to be dispensed. For example, if one particular brand of beverage happens to be a "best seller" the proprietor can devote a larger portion of the machine's capacity to that beverage than to others for which there is a substantial but lesser demand.

Another object is to provide in a selective type dispensing machine having a series of independent carriers, and on which different varieties of articles can be respectively loaded with one or more carriers for each variety, a novel control system of such character that if a user elects to purchase an article from a carrier which happens to be empty at the time, although a supply of the same variety of article is available on another carrier, one of the articles of the desired variety will be automatically delivered to him from such other carrier. In other words, the effect of his selection manipulation of the machine is automatically transferred to control another part of the machine by virtue of which he will receive, nevertheless, the desired variety of article.

Another object is to provide a selective type dispensing machine with a series of selection buttons, one of which should be pushed to condition the machine to deliver the corresponding variety of article when a coin is inserted in the

coin slot, having a novel interlock arrangement such that if two or more of the selection buttons are pushed at the same time the machine will not be cheated but will only deliver one article of one of the selected varieties.

Still another object is to provide a dispensing machine embodying a novel arrangement for stripping from a rotatable carrier in the machine, successive articles being dispensed.

The invention also resides in various structural improvements in the machine, particularly in the carrier units and associated article-releasing mechanism, by virtue of which low cost, ruggedness and effectual operation are combined.

Further objects and advantages of the invention will become apparent as the following description proceeds taken in connection with the accompanying drawings in which:

Figure 1 is a general perspective view of a dispensing machine embodying the invention.

Fig. 2 is a fragmentary perspective view of the machine of Fig. 1 with one of the doors swung open.

Fig. 3 is an enlarged transverse sectional view through the machine, taken substantially along the line 3—3 in Fig. 1.

Fig. 4 is an enlarged front elevation of the upper portion of the machine, the cabinet being shown with the doors removed to expose the interiorly located parts.

Fig. 5 is a vertical sectional view taken substantially along the line 5—5 in Fig. 3.

Figs. 6 and 7 are enlarged detail views taken substantially along the lines 6—6 and 7—7, respectively, in Fig. 5.

Fig. 8 is an enlarged sectional view along line 8—8 in Fig. 1.

Fig. 9 is an enlarged fragmentary detail view of one of the carrier latch mechanisms.

Figs. 10 and 11 are stop-motion views of one of the carriers, the views being taken in transverse section through the machine substantially like Fig. 3.

Fig. 12 is a wiring diagram of the control system for the machine.

Simply by way of exemplification, the invention has been disclosed herein as embodied in a selective type dispensing machine especially designed for the sale of refrigerated bottled drinks. This particular illustrative form has been chosen because in some of its more limited aspects the invention has particularly to do with that class of machine. In its broader aspects, however, the invention is, as will be readily apparent to those skilled in the art, applicable to other classes of

dispensing machines. Consequently even though the particular form of the machine shown has been described in some detail, there is no intention thereby to limit the invention to this specific embodiment, but on the other hand, I intend to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

As to the general arrangement of the illustrative machine, it will be seen upon reference to Fig. 1 that it includes a cabinet 10 of rectangular cross section. The cabinet has a pair of front doors 11, 12 which are customarily locked, but which, when unlocked by the proprietor, can be swung open to expose a compartment 13 (Figs. 2 and 3). In this compartment is mounted a unit, designated generally as 14, on which bottles to be dispensed are racked up in storage. To operate the machine, a purchaser punches one of a series of selection push buttons 15 to 21 (Fig. 1) on a coin box 22, the selected button corresponding to the particular drink he wants (tickets 23 on the coin box are arranged opposite the selection buttons to designate the various kinds of drinks available) and then drops his coin in the coin slot 24 of a coin box. Thereupon a bottle of the selected variety of beverage automatically pops out of one of the series of delivery doors or hatches 25 on the front of the machine. In the event that the machine is all out of the selected variety of drink his coin is automatically returned to him in a return cup 26.

The cabinet 10 shown herein resembles in general construction the familiar refrigerator cabinet and comprises inner and outer steel shells 27 and 28, respectively, separated by a layer of heat insulation 29 (Fig. 3). To cool to a predetermined temperature the bottled goods in the heat insulated compartment 13, any suitable well known refrigerating apparatus may be used. The one shown in the present instance comprises an evaporator coil 30 (Figs. 4 and 5) in the upper portion of the compartment 13. This coil is supplied with vaporizable liquid refrigerant from a compressor-condenser unit (not shown) housed in the lower cabinet beneath the compartment 13. The usual thermostatic controls (not shown) may, of course, be used to govern the operation of the refrigeration system. An electric fan 31 (Fig. 4) serves to circulate air within the cabinet and over the evaporator coil 30.

In a general sense, the unit 14 within the cabinet is adapted to receive and store bottles *b* in the same general manner as the machine described and claimed in my copending application Serial No. 341,448 referred to above. In common with the machine illustrated in said copending application, the presently disclosed one is designed to receive the bottles in a series of generally conical groups, each group being seated on one of a series of independently revoluble carriers, and the carriers are nested down one over the other. By virtue of this arrangement a maximum storage capacity is achieved. Also in common with the machine of said copending application, the carriers in the present machine are all connected by individual slip or friction drive connections with a single power driven vertical shaft and are controlled by associated latch mechanisms so that the carriers can be stepped around to present successive bottles *b* thereon to the delivery stations for the several carriers, where they are stripped from the carrier automatically as an incident to such movement. The machine disclosed in said copending application

was adapted for the dispensing of only one kind of drink, however, while the presently disclosed machine is of the selective type and embodies a novel arrangement adapting it for the selective dispensing of a series of different varieties of drinks. Also, in accordance with another aspect of the present invention, novel forms of carrier construction and article-discharge mechanism have been incorporated in the machine herein shown.

Turning now to the details of the presently disclosed machine, it will be observed upon reference to Fig. 4 that the unit 14 comprises a series of superimposed carriers (here shown as seven in number) 32 to 38. These carriers are arranged for individual rotational indexing movement about a common vertical axis and since they are of identical construction a description of one will suffice for all. By way of example, the lower carrier 32 (see Fig. 5) comprises a frusto conical sheet metal hood 39 fixed to a similarly shaped peripheral flange 40 on a disk shaped central web 41 integral with a hub 42. Bottle-receiving pockets are defined in a continuous annular series about the exterior surface of the hood 39 by sheet metal barrier strips 43. These strips are doubled upon themselves in V-shape (see Fig. 3) and have small integral feet 44 on their lower edges which are spot welded or otherwise rigidly fixed to the hood. The spacing between these barrier strips 43 is such that bottles of a maximum width likely to be encountered can be received in the pockets. Of course, this use of such a maximum width pocket affords some extra clearance for smaller bottles, but, even so, they are properly supported and the loss in storage capacity entailed is compensated by the resulting versatility of the machine.

The bottles *b* are releasably held in place in the carrier pockets by pivoted detents or gates 45 as shown in Figs. 6 and 7 (see also Figs. 3, 4 and 5). These detents are fashioned in the form of elongated sheet metal fingers pivoted on brackets 46 on the carrier by pivot pins 47 so as to swing from the bottle-holding position shown in full lines in Fig. 6 to the bottle-release position shown in dot dash lines. Contractile springs 48, each anchored at one end to its bracket 46 and at the other end to a lug 45^a projecting from the butt end of a finger 45, serve to yieldably urge the detent fingers 45 into their bottle-holding positions. It will be noted that when these detents are swung to their released positions that the bottles, which they previously engaged, are freed so that they can slide outward and downward from the hood by gravity, thus affording an easy means of stripping the bottles from the carrier during dispensing.

In order to support the carriers 32 to 38 in the desired superimposed spaced relation (see Fig. 5) their hubs 42 are loosely journaled on a vertical drive shaft 49 having collars 50 pinned to it at spaced points and on which the various carrier hubs rest. The shaft 49 is journaled in bearings 51 and 52, fixed, respectively, to the top and bottom walls of the cabinet compartment 13. This shaft 49 constitutes a drive shaft for the various carriers and is itself driven by an electric motor 53 having a speed reduction gearing contained in a housing 54 with an outlet shaft 55 connected by an endless chain 56 with a sprocket on the vertical drive shaft.

When the motor 53 is running the vertical drive shaft 49 is revolved and this shaft is in

turn, arranged to yieldably urge all of the carriers 32 to 38 to rotate. For this purpose individual slip or friction drive connections are provided between the respective carriers and the drive shaft 49, these connections being in the present instance, of the friction type and constituted simply by the frictionally engaging surfaces between the tops of the collars 50 and the opposed bottom end surfaces of the carrier hubs 42. To augment the weight of the carriers in holding these mating frictional surfaces together, helical compression springs 57 are provided (Fig. 5). These springs are interposed between the upper sides of the respective carriers and the lower sides of the next adjacent fixed collars. The spring 57, which presses against the uppermost carrier 38, is held in position by an extra collar 50^a.

As noted above the drive connections 42, 50 serve to yieldably urge all of the carriers to rotate when the shaft 49 is revolving. In order that the desired selective type of operation may be achieved, latch means is provided for holding all but a selected one of the carriers against rotation, when a delivery is being made, so that only this selected carrier will turn to deliver a bottle. These latch means also cooperate with the drive mechanism to effect a step-by-step motion of even the selected carrier so that it will, upon each actuation of the controls, permit an advance of only one step for the selected carrier. In the present instance a latch mechanism 58 is provided for each carrier, these latch mechanisms being fixed to an upright angle iron 59 at the rear of the cabinet (see Figs. 5 and 3).

Referring to the latch mechanism 58 for the lower carrier 32 (Fig. 9), which will serve as an example for all since they are all alike, it includes a sector shaped latch plate 60 pivoted by a pin 61 on the upright 59 to swing into and out of engagement with notches 62 in the lower edge of the sheet metal carrier hood 39. Retraction of the various latch plates 60 is accomplished by corresponding solenoids, designated as 63^a to 63^c for the respective latch mechanisms (see Fig. 5). Each of these solenoids has a vertical armature (not shown) connected to the outer corner of its associated latch plate by a link 64 (Fig. 9). When the solenoid is deenergized the link 64 drops down and the latch plate is gravitationally urged into engagement with the periphery of the associated carrier. Upon energization of the solenoid the latch plate is shifted from its engaging position shown in full lines in Fig. 9 to its disengaged position shown in dot dash lines. After the latch is thus disengaged the carrier hood 39 can start to rotate, whereupon the nose of the latch plate 60 rides along the lower edge of the hood. With the presently disclosed controls, the solenoid is again deenergized during the progress of the carrier so that the latch plate drops into the next adjacent notch 62, when it reaches it, to arrest further motion of the carrier.

A series of motor control switches S₁₀ to S₆ (Fig. 12) are also associated with the respective latch mechanisms 58. Upon reference to Fig. 9 it will be seen that the exemplary switch S₁₀, as shown, comprises a movable blade 65 insulatingly mounted on the pivot pin 61 of the latch plate 60, and connected to the latter, and arranged to enter between a pair of stationary jaw contacts 66 insulatingly mounted on the upright 59. The blade 65 thus swings with the latch plate

so that the switch is closed when the latch is released and conversely is opened when the latch is engaged. As will hereinafter appear in greater detail, these motor switches serve to retain the carrier drive motor 53 energized so long as one of the latches 58 is released. Accordingly, in starting the machine to deliver a bottle, when any one of the latch-releasing solenoids 63^a to 63^c is even substantially momentarily released, its corresponding motor switch will be closed and the motor started so that the carrier rotation is initiated and maintained until the released latch reengages. Hence, even though the latch-releasing solenoid becomes deenergized after such momentary energization, the latch will be retained disengaged (by the edge of the carrier hood along which it rides) and the motor switch will remain closed, until the next notch 62 on the carrier hood reaches the latch. Then as the latch drops into this next notch the motor switch is simultaneously opened and the motor stopped, thereby arresting further rotation of the carrier. In this general manner the carriers can be notched around step-by-step upon successive actuations of the control mechanism.

Discharge of the bottles *b* from the carriers 32 to 38 is accomplished at the delivery stations by a series of stationary dogs 67 (Figs. 2, 3 and 5). These dogs are, in general, arranged to actuate, to their bottle-releasing positions, successive ones of the detents 45 presented thereto during the rotation of the carriers so that the bottles *b* are released to slide from their carrier pockets one by one as the carriers are stepped around. Upon reference to Figs. 5 and 7 it will be seen that each of the dogs 67 is fashioned from a strip of sheet metal of distended V-shape and is fixed with its nose portion 67^a (Figs. 6 and 7) disposed to project into the path of the forwardly projecting lugs 45^a on the detent fingers 45. In normal operation the carriers rotate in a clockwise direction (as viewed from the top of the machine). Hence, during each step of advance for a carrier, one of its detents 45 will be raised as its lug 45^a rides under the corresponding dog 67. As the carrier moves on in the next step of advance, the detent finger 45 swings still farther to the right (as viewed in Fig. 6), thus sliding under the nose 67^a of the dog and moving free of it, to snap back into its normal position while the next detent lug 45^a comes into contact with the dog to elevate the corresponding detent.

By mounting the dogs 67 on the cabinet door 11 (see Fig. 2) they are all automatically moved into a position remote from the carriers whenever the cabinet doors are swung open. In this way they are removed from operative relation with the carriers so that the latter can be freely rotated during reloading without danger of having one of the dogs inadvertently strip the bottles from its carrier. This forms a very simple and effectual interlocking system. Furthermore, this system is one which does not require any electrical interlocks between the dogs and the switches which control rotation of the carriers during reloading of the machine since the cabinet simply cannot be opened for reloading without at the same time swinging the dogs 67 into inoperative position.

At the delivery stations for the various carriers 32 to 38 hatchways or discharge openings are provided to receive the successive bottles stripped from the carriers as they are stepped around. For this purpose a long vertical slot

68 is formed in the cabinet door 11 (see Figs. 2 and 3) and in it is fixed a hollow sheet metal housing 69, which projects from the front of the cabinet (see Fig. 1). Outturned flanges 70 on the inner edges of the side walls of this housing (Fig. 3) are fixed to the inner face of the door 11 to hold the housing in place. The interior of the housing is divided into a series of discharge throats 71 (Fig. 5), one for each carrier, by a corresponding series of inclined partitions or slides 72. These slides are inclined at substantially the same angle as the surfaces of the carrier hoods 39 and form, in effect, continuations thereof down which the released bottles can slip. The trap doors 25 are of simple rectangular form and are pivoted at the lower edges of the corresponding slides 72 by pintles 73. The series of trap doors 25 form, in effect, the front wall of the housing 69.

Each of the trap doors 25 (see Fig. 8) is yieldably urged to its closed position by a torsion spring 74 encircling the pintle 73.

Whenever a bottle *b* moves down one of the slides 72 it thrusts open the corresponding trap door 25 and swings the latter down to the full open position shown in dot dash lines in Fig. 8. Engagement of the lower edge portion of the door with the underside of the slide limits the opening of the trap door to an angle at which it is aligned with the slide. As the bottle moves down the opened door it comes to rest against a flange 75 at the free edge of the door (see Fig. 5) and remains in this convenient delivery position until picked up by the purchaser. As soon as the bottle is removed the door is snapped shut by its spring 74. Desirably the top surfaces of the slides 72 and doors 25 are covered by rubber mats 76 and 77, respectively, so as to limit the speed of the bottles as they emerge.

In order to disable the carriers 32 to 38 against further rotation after they have been notched around to predetermined "stop" positions, a series of carrier switches S_{20} to S_{28} is provided (Fig. 5). These switches are mounted on the upright 59, which carries the latch mechanisms 58, and are all identical in construction. Upon reference to Fig. 9 it will be observed that the switch S_{20} , there shown for the lower carrier 32, comprises a resilient tongue 78 carrying a central double contact point 79, the tongue being normally flexed downward to maintain this contact point closed against a lower contact point 80. A cooperating pin 81 on the carrier hood 39 is arranged to thrust the tongue 78 upward, upon contacting it, so as to open the contacts 79, 80 and close the contact 79 against an upper contact point 82. As will hereinafter appear in greater detail, such actuation of one of the carrier switches serves to disable its carrier against further rotation during the normal dispensing operation.

Unauthorized removal of bottles from the machine is effectively prevented even though the trap doors 25 on the front are unlocked and can be easily pried open. In this connection it should be noted that when one of the carriers is fully loaded (see Fig. 10) and in its starting position ready to begin dispensing, it is disposed with the outer end of one of the pocket-separation barriers 43 centered at the discharge opening in the door 11. When in such position there is insufficient clearance for a bottle to be pulled out through the discharge opening. An extra notch 62^a is provided in the carrier periphery intermediate two of the regular notches 62 so that the

latch 58 can hold the carrier effectually in this initial or starting position. Upon the first release of the latch to notch the carrier around, the latter moves only a half-step, in other words, from the position of Fig. 10 to that of Fig. 11. This movement is, however, sufficient to present a bottle to the discharge opening and causes it to be released from the carrier. After this bottle is discharged there is, of course, simply an empty pocket presented in the discharge opening. Upon each succeeding actuation of the carrier latch the carrier is moved around a full step but after the resultant delivery of each bottle an empty pocket is always presented to the discharge opening so there is no danger of the machine being robbed through this opening. The initial half-step arrangement takes care of the only instance in which unauthorized removal of a bottle would otherwise be possible.

The automatic control system for the machine is, in general, such that when any one of the selection buttons 15 to 21 (Fig. 1) is depressed, and a coin dropped in the coin slot 24, the latch-releasing solenoid of the corresponding carrier will be released more or less momentarily. Release of the latch causes the drive motor to be energized through closure of the corresponding motor switch, as heretofore noted, so that the released carrier starts to turn and hence the latch, riding along the edge of the carrier, stays retracted until it drops into the next notch. This reentry of the latch not only positively stops the carrier but also shuts down the motor. Each such step of advance causes the corresponding dog 67 to free a bottle *b* for delivery. In addition to this general cycle of operation it should be observed, by way of synopsis before proceeding to the details of the controls, that the system also provides for the following special features:

(a) Several of the carriers can be loaded with the same variety of beverage and the circuits preliminarily set up by the proprietor so that when the stock of bottles on one of these carriers is exhausted, the effect of actuating its selection switch, will automatically be transferred to another of the carriers loaded with the same beverage so that a bottle will be delivered from the latter.

(b) A simple electrical interlock is provided between the various selection push buttons 15 to 21 so that if an unscrupulous person attempts to cheat the machine by pressing two or more of the selection buttons simultaneously, before dropping a coin, the machine will nevertheless deliver only one bottle corresponding to one of the several selected varieties.

Other means can be provided for preventing cheating of the machine in the manner noted generally in item (b) above as, for example, by the well known mechanical interlocks between the push buttons so that only one can be depressed at a time. The simple electrical system herein shown has, however, the advantage of cheapness and in addition increases sales somewhat in that people who would not otherwise purchase a bottle, except for the apparent possibility of defeating the machine by pressing several buttons, will be goaded into expending at least one coin. Despite any such unscrupulous action by the purchaser, and it may in fact at times be accidental, the machine delivers a bottle with scrupulous honesty.

Other exceptional features for which provision is made in the present selective type control system, but which have also been incor-

porated in the somewhat simpler non-selective system disclosed in my pending application mentioned above, are:

(a) Provision is made for free rotation of the various carriers by the drive motor during re-loading so as to speed up this operation.

(b) If desired any one or more of the carriers can be initially cut out of service so that if the bottles on them have not been previously chilled they can be withheld from sale for a suitable length of time in the refrigerated cabinet.

(c) The carriages can be initially positioned so that they can only be stepped around a fraction of a revolution. In this way a portion of the load of bottles on each carrier can be withheld from sale for further cooling or, if only a limited number of bottles are available for loading, that condition is taken care of by this same type of initial adjustment.

In the control circuits shown (Fig. 12) the motor switches S_{10} to S_{18} and the carrier switches S_{20} to S_{28} will be familiar, having been previously identified. Also included in this system are a series of selection switches S_{30} to S_{38} arranged to be actuated by corresponding ones of the selection push bottoms 15 to 21 referred to above. These selection switches are of the two-position type and each embodies a movable contact 83 to 89, respectively, which is normally biased into closed position against their back contacts 90 to 96, respectively. Upon actuation of the selector buttons 15 to 21 the corresponding movable contacts are shifted to close against what may be termed the forward contacts 97 to 103, respectively. Also included in the control system is a set of combination switches S_{40} to S_{48} , these switches being of the double-pole double-throw tumbler type and are mounted on a panel 104 (see Fig. 4) in the back of the cabinet compartment 13 so as to be inaccessible except when the cabinet doors are open. Also mounted within the cabinet is a set of latch-release switches S_{50} to S_{58} , these switches being of the single-pole tumbler type and mounted on a switch box 105 within the cabinet (see Fig. 4). On the same switch box is mounted a refill switch S_6 which also is a single-pole tumbler switch. The coin box 22 and the associated coin control switches may be of well known standard form. In the present instance the control system in Fig. 12 indicates a coin switch CS adapted to be closed generally momentarily upon the insertion of a coin or check in the coin slot of the coin box. Also included is a lockout coil LC adapted to be energized when a lockout relay LR picks up. When the lockout coil LC is energized the coin box is conditioned to return coins, inserted in it, to the coin return cup 26. A pilot light PL, in shunt with the lockout relay LR indicates that the lockout coil is on. Current for the drive motor 53 and for the various control devices, etc., is furnished from supply lines L_1 , L_2 which may be plugged into any suitable source of current such as an ordinary lighting system.

Operation with different variety of beverage on each carrier

As to the operation of the control system (Fig. 12), it will first be assumed that all of the carriers 32 to 38 have been filled with bottles, that all of the bottles are chilled ready for sale and that all of the carriers have been positioned a full revolution away from their predetermined

stop positions. Further it will be assumed that the proprietor has placed a different variety of bottled goods on each carrier. In such case the proprietor will have shifted all of the combination switches S_{40} to S_{48} to their left hand positions as shown in Fig. 12. The cabinet is, of course, closed and locked. For convenience of designation, it will be assumed that beverages A, B, C, D, E, F and G are racked up, on the carriers 32 to 38, respectively. Under these circumstances if a purchaser wishes to obtain a bottle of beverage A he presses the selection button 21, thereby shifting the selection switch S_{30} to the left (as viewed in Fig. 12) and drops a coin in the coin slot. Thereupon the coin switch CS is momentarily closed, thereby energizing the latch-release solenoid 63^a (through a circuit $L_1-106-CS-107-63^a-108-S_{20}-109-S_{40}-110-97-83(S_{30})-L_2$) so that the latch releases the corresponding carrier 32 and also closes the motor switch S_{10} to energize the drive motor 53 (through a circuit $L_1-S_{10}-111-53-112-L_2$). The carrier 20 thus starts to revolve and continues this revolving motion until the now de-energized latch drops into the next notch on the carrier, thereby opening the motor switch S_{10} and positively stopping the carrier. During this step of advance a bottle of beverage A from the carrier 32 is, of course, ejected from it by the corresponding dog 67 as previously described.

It may be that the next purchaser will want a bottle of beverage C from carrier 34. In such case he makes his selection by pressing the corresponding button 19 to shift the selection switch S_{32} and then drops his coin in the coin box to close the coin switch CS momentarily. Thereupon the latch-release solenoid 63^c is energized in the same general manner as described above and the motor switch S_{12} closed to start the motor. As a result the carrier 34 is advanced one step to deliver a bottle of beverage C from it. This operation is repeated from time to time for various carriers until they have been notched around to their final or "stop" positions. As soon as one of the carriers reaches its stop position it opens the corresponding one of the carrier switches S_{20} to S_{28} . Since these carrier switches are included in the solenoid energizing circuits previously traced it will thus be clear that opening of them disables the latch of the corresponding carrier against subsequent release so that the carrier can move no farther.

The operation described above presupposes that the person making a purchase from the machine will understand it well enough to press one of the selection buttons 15 to 21 as a preliminary to inserting a coin in the coin box 22. The control circuits are arranged so that if he should, however, fail to do so, the coin will be automatically returned to him in the return cup 26 (Fig. 1). To this end the lockout coil LC (Fig. 12) is used, this coil being arranged in the coin box in the conventional manner and being adapted when energized, to cause the diversion of a coin inserted in the coin box to the return cup. Upon reference to the wiring diagram in Fig. 12 it will be observed that whenever all of the selection switches S_{30} to S_{38} are in their normal positions as shown that the lockout relay LR is energized (through a circuit $L_1-113-LR-114-115-S_{30}-S_{35}-S_{34}-S_{33}-S_{32}-S_{31}-S_{30}-L_2$). Consequently the lockout relay LR remains energized until one of the selection switches S_{30} to S_{38} is actuated and as a result the lockout coil LC also remains energized, being connected across the

supply lines L₁, L₂ by the relay LR. As soon, however, as one of the selection switches is actuated the energizing circuit for the lockout relay LR is interrupted so that it drops out and de-energizes the lockout coil LC.

The lockout coil LC also serves to return a prospective purchaser's coin to him when the contents of the carrier which he selects is exhausted. For example, it may be assumed that all of the bottles have been dispensed from carrier 38 so that it has been stepped around until it has reached its "stop" position and its switch S₂₈ shifted to the right (as viewed in Fig. 12). In such case if the purchaser actuates the corresponding selection switch S₃₈ the lockout relay LR will remain energized (through a circuit L₁—113—LR—S₄₀—116—S₂₈—117—S₄₆—118—103—89 (S₃₈)—S₃₅—S₃₄—S₃₃—S₃₂—S₃₁—S₃₀—L₂) so that the coin is automatically returned. In the same way if any of the other carriers 32 to 37 have been revolved to their "stop" positions the shifting of their carrier switches S₂₀ to S₂₈ respectively will have set up energizing circuits for the lockout relay LR which will be completed upon actuation of the corresponding selection switches, thereby effecting an automatic return of the coin.

Operation when several carriers are stocked with same variety of beverage

In some instances the proprietor's experience may indicate that a particular brand of beverage is a "best seller" and in such case it is desirable to provide an extra amount of that beverage in the machine. For example, if beverage C is a best seller the proprietor may wish to provide three carriers full of bottles of that beverage and only single carriers loaded with the other beverages made available. In such case he may, for example, load the machine as follows:

Carrier	Beverage
32	A
33	B
34	C
35	C
36	C
37	D
38	E

When the machine is so loaded the combination switches S₄₃ and S₄₄, for the carriers 35 and 36 respectively, will be preliminarily thrown to their right hand positions (as viewed in Fig. 12), the other combination switches being left in their left hand positions shown. With the circuits preliminarily arranged in this manner, actuation by purchaser of any one of the selection switches S₃₂, S₃₃ and S₃₄ corresponding to the three carriers designated as being loaded with beverage C will cause a bottle of beverage C to be delivered to the purchaser so long as any of it remains on any one of the three carriers 34, 35 or 36 and irrespective of whether or not the purchaser fortuitously selects the button corresponding to the one of these three carriers which happens still to have a bottle left on it.

In tracing out the operation of the machine initially loaded as described above, let it be assumed first of all that all three of the carriers 34, 35 and 36 are fully loaded. In such case if a purchaser actuates selection switch S₃₂ and drops a coin in the coin slot the carrier 34 will be notched around one step by a momentary energization of its latch-release solenoid 63^c (through a cir-

cuit L₁—106—CS—107—63^c—119—S₂₂—120—S₄₂—121—99—85 (S₃₂)—S₃₁—S₃₀—L₂). Similarly if the purchaser actuates the selection switch S₃₃ and drops a coin in the coin slot the same carrier, namely 34, will be notched around a step by momentary energization of its latch-release solenoid 63^c (through a circuit L₁—106—CS—107—63^c—119—S₂₂—120—S₄₂—122—S₄₃—123—100—86 (S₃₃)—S₃₂—S₃₁—S₃₀—L₂). In the same manner actuation of the selection switch S₃₄, and dropping a coin in the coin slot will cause the same carrier 34 to be notched around a step. Such operation continues until the supply of bottles on the carrier 34 is finally exhausted, or in other words, until it reaches its "stop" position. Thereupon its switch S₂₂ is shifted to the right (as viewed in Fig. 12) and this conditions the circuits so that actuation of any of the selection switches S₃₂ to S₃₄ will thereafter cause the next carrier 35 to be notched around a step.

As to the operation of the carrier 35 after carrier 34 has been indexed to its "stop" position, note that when the selection switch S₃₂ is actuated and a coin dropped in the slot the carrier 35 will be notched around a step by virtue of a momentary energization of its latch-release solenoid 63^d (through a circuit L₁—106—CS—107—63^d—S₂₃—124—S₄₃—125—S₂₂—120—S₄₂—121—99—85 (S₃₂)—S₃₁—S₃₀—L₂). On the other hand if the purchaser happens to actuate selection switch S₃₃ and drops a coin in the slot the carrier 35 will again be notched around a step upon energization of its latch-release solenoid 63^d (through a circuit L₁—106—CS—107—63^d—S₂₃—124—S₄₃—125—S₂₂—120—S₄₂—122—S₄₃—123—100—86 (S₃₃)—S₃₂—S₃₁—S₃₀—L₂). Finally, if the third available selection switch, namely, S₃₄ is actuated, still the same carrier 35 will be advanced a notch, its latch-release solenoid 63^d being energized (through a circuit L₁—106—CS—107—63^d—S₂₃—124—S₄₃—125—S₂₂—120—S₄₂—122—S₄₃—126—S₄₄—127—101—87 (S₃₄)—S₃₃—S₃₂—S₃₁—S₃₀—L₂).

The operation noted above continues until the carrier 35 has been stepped around to its "stop" position, whereupon its carrier switch S₂₃ is also shifted to the right thereby conditioning the circuits for dispensing of the bottles from the final one of the three carriers, namely carrier 36, in response to actuation of any one of the three selection switches S₃₂ to S₃₄. Thus when a purchaser actuates the selection switch S₃₂ and drops a coin in the coin slot the carrier 36 is notched around a step by energizing of its latch-release solenoid 63^e (through a circuit L₁—106—CS—107—63^e—S₂₄—128—S₄₄—129—S₂₃—124—S₄₃—125—S₂₂—120—S₄₂—121—99—85 (S₃₂)—S₃₁—S₃₀—L₂). Actuation of the selection switch S₃₃ also causes the same solenoid 63^e to be energized (through a circuit L₁—106—CS—107—63^e—S₂₄—128—S₄₄—129—S₂₃—124—S₄₃—125—S₂₂—120—S₄₂—122—S₄₃—123—100—86 (S₃₃)—S₃₂—S₃₁—S₃₀—L₂) and in the same manner actuation of the selection switch S₃₄ also causes this same solenoid 63^e to be energized (through a circuit L₁—106—CS—107—63^e—S₂₄—128—S₄₄—129—S₂₃—124—S₄₃—125—S₂₂—120—S₄₂—122—S₄₃—126—S₄₄—127—101—87 (S₃₄)—S₃₃—S₃₂—S₃₁—S₃₀—L₂). When the contents of the third and last carrier 36 is exhausted it shifts its carrier switch S₂₄ and of course thereafter the lockout coil LC remains energized whenever any one of the three selection switches S₃₃—S₃₄ for the beverage C is actuated so that the inserted coin is returned to the prospective purchaser.

In the example of load distribution described above, namely, that in which three of the carriers are loaded with beverage C, the description has been confined to the operation of these three carriers. It will be understood, however, that the operation for the other carriers to dispense beverage A, B, D and E from them is, of course, the same as that previously described in the first example of loading for the machine and in which a different beverage was placed on each carrier.

Any desired number of carriers can be loaded with a particular brand of "best seller" drink and set up for the interdependent type of dispensing operation described above. In such instance the multiplicity of carriers stocked with the same beverage should follow each other in the series, rather than being interspersed throughout the machine, and furthermore the combination switch for the first one of the special group of carriers should be put in its left hand position as shown and the others shifted to the right hand positions as was done with the combination switches S₄₃ and S₄₄ in the example explained in detail above.

Restocking the machine

In replenishing the stock of bottles within the machine the cabinet doors 11, 12 are swung open, thereby automatically disabling the delivery dogs 67 as previously described (see Fig. 2). This opening of the cabinet makes available to the operator the set of latch-release switches S₅₀—S₅₆ as well as the refill switch S₆. These switches can be manipulated to cause the drive motor 53 to revolve any or all of the carriers 32 to 38 freely and continuously for purposes of re-loading, as distinguished from notching them around step by step as is the case in dispensing. For example if the proprietor wishes to revolve the carrier 32 during reloading, he closes the latch-release switch S₅₀ as well as the refill switch S₆. Thereupon the latch-release solenoid 63^a is continuously energized (through a circuit L₁—106—S₆—107—63^a—108—130—S₅₀—131—L₂) and the drive motor 53 is continuously energized (through a circuit L₁—S₁₀—111—53—112—L₂), the motor switch S₁₀ being closed to complete the latter circuit upon withdrawal of the latch from engagement with the carrier 32. It will be observed that the circuit traced just above for the solenoid 63^a does not include the associated carrier switch S₂₀ so that the carrier can be freely revolved around and around past its "stop" position without this motion being interrupted by the actuation of the carrier switch S₂₀. In the same manner any or all of the other carriers 33 to 38 can be freely revolved simply by closing the refill switch S₆ and the corresponding ones of the latch-release switches S₅₁ to S₅₆.

Loading the bottles onto the carriers is a very simple matter in view of the construction of the latter. In loading a bottle onto the carrier the operator simply thrusts it, neck foremost, upwardly into the desired carrier pocket through the lower end of the latter. The nose of the bottle is entered beneath the detent finger 45 (see Fig. 6) at the lower end of the pocket and as the bottle is thrust up into the pocket it raises the detent finger to permit the bottle to move freely into the pocket. After the bottle has passed the detent finger the latter is snapped back down into holding position by its biasing spring 46. By proceeding in this manner the operator can shove the bottles into the carrier pockets one after the other about as fast as his hands can move.

In the illustrative examples set out above it was

assumed that it was desired to dispense the entire capacity of the machine. In many instances, however, less than that number of bottles may be available for filling the machine, or perhaps some of them will not have been in the machine long enough to reach the proper temperature. To meet such contingencies provision has been made for cutting out of operation not only desired ones of the carriers, but also for limiting the number of bottles that can be dispensed from any one of the carriers. To cut out a carrier it is simply necessary to rotate it, during loading, to its "stop" position and in which its carrier switch (S₂₀ to S₂₆) is actuated by the stop pin on the carrier. As was previously described such actuation of the carrier switch disables the corresponding carrier against rotation during the subsequent dispensing operation of the machine. In the same manner, if the operator wishes to deliver, say, only six bottles from carrier 32, he preliminarily positions it only six steps away from its "stop" position. Then when its turn comes to rotate during the dispensing operation it will be indexed only through these six steps and then the shifting of its carrier switch S₂₀ will disable it against further movement. Hence any other bottles that may be on the carrier 32 will be withheld from sale and retained in the refrigerating zone. To accommodate additional preliminary storage of bottles, shelves 140 (Figs. 3 and 4) have been provided in cabinet compartment 13 in the clearance space at the side of the unit 14.

Safeguards for unattended machine

Though the machine is commonly left unattended it is thoroughly guarded against breakage if any of the moving parts stick, and against unauthorized removal of the bottles. As to the first point, it should be noted that the frictional type drive connections for the carriers, previously described, effectually protect the drive motor 53 against dangerous and continuous overloading in case one or more of the carriers become jammed. In such case the jammed carrier merely remains stationary just as if it were latched and the motor shaft 49 continues to turn, with slippage in the mating frictional surfaces of the drive connection, so no harm is done. The arrangement of the carriers, with their initial half-step motion, was previously described and by means of which unauthorized removal of a bottle through one of the delivery doors 25 is prevented.

The control system is also so arranged as to prevent either an awkward or an unscrupulous person from obtaining two or more bottles for a single coin by retaining depressed a plurality of the selection buttons 15 to 21 simultaneously when he drops a coin in the coin box 22. Cheating of the machine in the manner noted is prevented by the simple electric interconnections between the selection switches S₃₀ to S₃₆. Upon reference to Fig. 12 it will be observed that each of these selection switches has a normally closed back contact 90 to 96, respectively. These back contacts serve to connect the switches in cascade or series so that for any one of them to be effective to connect its normally open or forward contact to the source of power (i. e., to supply line L₂) all of the other switches between it and the source of power must be in their normal or unactuated positions. A review of the operations described above will reveal, however, that only by connection of its forward contact to the source of power does the selection switch become effective in the control circuit. Specifically, actuation

of selection switch S_{31} is effective only when the switch ahead of it, namely, switch S_{30} is in normal position as shown, for otherwise its movable contact 34 is disconnected from the supply line L_2 and simply dead-ended. In the same way S_{32} is only effective when S_{30} and S_{31} are both in normal position, and so on, down the line.

Bearing in mind the interconnection of the selection switches S_{30} to S_{38} described above, it will be apparent that if a purchaser actuates, say, both switches S_{30} and S_{31} when he drops his coin, only the switch S_{30} will be effective to unlatch its associated carrier 32. The other switch S_{31} does nothing. Consequently, he will receive one bottle from carrier 32 and that is all. In the same manner, actuation of any other combination of a plurality of the selection switches will result in the delivery of only one bottle, and that, from the carrier whose selection switch is, of all those actuated, closest to the source of power.

I claim as my invention:

1. A selective type dispensing machine, comprising in combination, a plurality of carriers each adapted to receive a plurality of articles to be dispensed, each of said carriers being revoluble to present articles thereon to a discharge station, power actuated means for revolving said carriers, individual slip type drive connections between said power actuated means and respective ones of said carriers, a plurality of stop means, one for each carrier, for releasably holding the corresponding individual ones of said carriers against rotation, and selectively operable control means for actuating selected ones of said stop means to release their corresponding carriers for rotation.

2. In a selective type dispensing machine, the combination of a plurality of independently rotatable rotors each adapted to receive a series of articles to be dispensed, a single drive motor, individual slip type drive connections between said motor and each of said rotors, whereby all of the rotors are yieldably urged to rotate when said motor is running, a plurality of latch means for the respective rotors normally urged to their respective engaged positions to stop the corresponding rotors in successive angular positions thereof, and control means operable upon each actuation thereof to start said motor and to release the latch means for a selected one of the rotors only sufficiently to permit a step of advance thereof by said motor, the other latch means associated with the non-selected rotors retaining the latter stationary.

3. In a selective type dispensing machine, the combination of a plurality of revolubly mounted rotors, each adapted to receive a plurality of articles to be dispensed, a plurality of latch means, one for each rotor, for releasably latching the same against movement in a succession of angularly spaced positions for the corresponding rotors, each of said latch means being engageable to hold its associated rotor only when the latter is in one of said positions, an electric drive motor, individual slip type drive connections between said motor and each of said rotors, control means for energizing said motor substantially simultaneously with the disengagement of any one of said latch means and again deenergizing said motor upon reengagement of such latch means, and means for releasing any selected one of said latch means to free the corresponding rotor for one step of advance and for substantially simultaneously causing said control means to energize said motor, the non-selected rotors being re-

tained stationary by their latch means during such advance of the selected rotor.

4. In a selective type dispensing machine, the combination of a plurality of carriers each adapted to receive a series of articles to be dispensed, means supporting said carriers for individual motion to present successive articles thereon at corresponding delivery points in their respective paths of travel, a single power actuator, individual slip type drive connections between said actuator and each of said carriers, means for individually and releasably latching each of said carriers against movement, and selectively operable control means for starting said actuator and releasing the latching means for only a selected one of said carriers, the non-selected carriers being retained stationary by their latching means.

5. In a selective type dispensing machine, the combination of a plurality of carriers each adapted to receive a series of articles to be dispensed, means supporting said carriers for individual motion to present successive articles thereon at corresponding delivery points in their respective paths of travel, a single drive motor, individual slip type drive connections between said motor and each of said carriers, means for individually and releasably latching each of said carriers against movement, a plurality of electric control circuits for said latching means, one corresponding to each carrier, and each circuit being adapted upon completion thereof to release the latching means for the corresponding carrier, switch means for starting said drive motor, conditioning control means having a separate setting for each carrier and adapted upon actuation thereof to condition the control circuit corresponding to its setting for subsequent completion, and a main control switch operable upon actuation thereof to complete any one of said circuits previously conditioned for completion by a preliminary setting of said conditioning control means and the completion of such circuit serving to release the latching means for the corresponding carrier and substantially simultaneously to operate said switch means to energize the motor to drive the released carrier, the remaining carriers being held stationary by their latch means.

6. A selective type dispensing machine, comprising in combination, a plurality of carriers each adapted to receive a series of articles to be dispensed, means supporting said carriers for individual motion to present successive articles thereon at corresponding delivery points in their respective paths of travel, a power actuator, a plurality of electric control circuits for said actuator, one corresponding to each carrier, and each circuit being adapted upon completion thereof to condition said actuator to advance the corresponding carrier, conditioning control means having a separate setting for each carrier and adapted upon actuation thereof to condition the control circuit corresponding to its setting for subsequent completion, and a main switch operable upon actuation thereof to complete any one of said circuits previously conditioned for completion by a preliminary setting of said conditioning control means.

7. A selective type dispensing machine comprising, in combination, a plurality of rotors each having thereon an annular series of pockets adapted to receive a corresponding series of articles to be dispensed, means supporting said rotors for independent rotation, a plurality of selection control devices corresponding to respective ones of the rotors, a check controlled device, and

power actuated means operable under the joint control of said check controlled device and any selected one of said selection control devices for rotating the corresponding one of said rotors for presentation by the latter of an article on it to a delivery station adjacent the rotor while retaining the remaining rotors stationary.

8. In a selective type dispensing machine, the combination of a plurality of individually energizable electric devices, means operable in response to energization of individual ones of said devices for delivering an article of a corresponding variety, a series of selection switches, one for each of said devices, each of said switches being of the two-position type and shiftable manually from a normal position to a second position, a check controlled switch, and means for establishing through said check controlled switch individual energizing circuits for respective ones of said devices in response to shifting of their corresponding selection switches from said normal to said second position thereof, said energizing circuit for each device being established through the selection switches of the device ahead of it in the series and only when the latter are in normal position so that if more than one selection switch is shifted at the same time to its second position only that one which is first in the series of those shifted will be effective to set up a circuit for its associated device, whereby simultaneous energization of two or more of said devices upon actuation of said check controlled switch is prevented even though several of the selection switches are simultaneously actuated.

9. In a dispensing machine, the combination of a plurality of individually energizable electric devices, means operable in response to energization of individual ones of said devices for delivering an article of a corresponding variety, a series of selection switches, one for each of said devices, each of said switches having a back contact and forward contact as well as a movable contact normally closed against the back contact but shiftable away from it into engagement with the forward contact, means for connecting the movable contact of first switch in said series to a source of power and for connecting the back contact of that switch to the movable contact of the next switch in the series, the back contact of each successive switch in the series being connected to the movable contact of the next switch in the series so that the forward contacts of the switches can only be connected to said source of power when the movable contacts of the switches ahead of it in the series are in normal closed position against the corresponding back contacts, a normally open check controlled switch, and means forming individual energizing circuits for respective ones of said devices through said check controlled switch and through the forward contact and movable contact of their respective selection switches so that such energizing circuit for a selected device will be completed upon actuation from its normal position of the corresponding one of said selection switches plus actuation of said check controlled switch but only when the other selection switches ahead of its selection switch in the series are in normal position.

10. In a dispensing machine, the combination of a plurality of individually energizable electric devices, means operable in response to energization of individual ones of said devices for delivering an article of a corresponding variety, a check controlled switch, means including a plurality of selection switches for setting up energizing cir-

cuits for respective ones of said devices, all of said circuits being common to the check controlled switch and finally completed upon actuation of it, and interlock means in said circuits for preventing the completion of all but that corresponding to the first one in the series of those switches which are actuated, when more than one are actuated simultaneously.

11. A selective type dispensing machine comprising, in combination, a plurality of separately actuatable devices each adapted to receive a plurality of articles and operable upon each actuation thereof to deliver one of said articles, means for actuating said delivery devices, a plural-setting manually-operable selection control apparatus having a separate setting corresponding to each of said delivery devices, means normally operable in response to the setting of said selection control apparatus for conditioning said actuating means to actuate the corresponding delivery devices, and means presettable at will for conditioning said control apparatus to in turn condition said actuating means for actuating a predetermined one of said delivery devices other than that corresponding to said predetermined setting upon the exhaustion of the supply of articles on the delivery device normally corresponding to such setting.

12. A selective type dispensing machine, comprising in combination, a plurality of carriers advanceable with a step-by-step motion and each adapted to receive a plurality of articles to be dispensed, means operable upon each step of advance of each of said carriers for delivery of an article therefrom, power actuated means for yieldably urging all of said carriers to advance simultaneously, latch means associated with individual ones of said carriers for releasably holding them against advancement, individually energizable electrical actuators for said latch means operable upon energization thereof to release the associated latch means, a plurality of selection control devices, one for each carrier, means responsive to actuation of each of said control devices for partially completing an energizing circuit for the corresponding one of said latch actuators to permit a step of advance of the corresponding carrier by said power actuated means, means responsive to the positioning of a predetermined one of said carriers in a predetermined stop position therefor for automatically conditioning the means actuated by the control device corresponding to said predetermined carrier to partially complete the energizing circuit of the latch actuator of the latch means of another predetermined one of said carriers upon a subsequent actuation of such control device, and a master switch for finally completing the energizing circuit for any one of said latch actuators which has been partially completed by said control devices.

13. In a dispensing machine, the combination of a carrier including a sheet metal hood of generally frusto conical shape, means supporting said hood for rotation about its axis with the latter vertical, means defining a plurality of article-receiving pockets on the exterior of the hood and including a plurality of barriers thereon extending generally radially from the hood axis down the face of the hood, the lower ends of said pockets being located above the lower edge of said hood to leave the latter unobstructed, said lower edge of the hood having a plurality of notches therein spaced peripherally of the hood, and a latch member movably mounted adjacent said lower edge of the hood to ride along the same and drop into successive ones of the notches

as the hood revolves and thereby hold the hood against rotation upon engagement with each successive notch until released therefrom.

14. In a dispensing machine, the combination of a revolubly mounted carrier having means thereon defining an annular series of pockets to receive articles to be dispensed, a corresponding series of detents each movably mounted on the carrier and yieldably urged into position to hold an article in its corresponding pocket from falling free of the latter by gravity, means for revolving the carrier step by step to present successive pockets on the latter to a delivery station, and means stationarily mounted adjacent said carrier to shift successive detents to released position upon movement of the pockets corresponding to said detents past the delivery station.

15. In a dispensing machine, the combination of a vertically disposed frusto conical carrier hood revoluble about its vertical axis, a plurality of barriers on the outer surface of said hood lying generally radially to said axis and defining between them pockets adapted to receive a series of bottles or the like disposed in a conical group with the necks of the bottles tilted upwardly and inwardly toward said axis, the lower ends of said pockets being open, a plurality of detent fingers, one for each pocket, means pivotally supporting said fingers at the lower ends of respective ones of said pockets to swing from a bottle-engaging position in which they project across the ends of the pockets to an upwardly tilted bottle-releasing position in which they are elevated sufficiently to permit the bottles to slide by gravity down off the hood and out of the open lower ends of the pockets, means for yieldably urging each of said fingers individually to its bottle-engaging position, each of said fingers having a forwardly projecting lug thereon, a means for revolving the carrier step by step to present successive pockets on the latter to a delivery station, and a dog stationarily mounted adjacent said carrier and projecting toward it to engage successive ones of said lugs and thereby lift successive ones of said fingers to their bottle-releasing positions upon movement of the pockets corresponding to said fingers past the delivery station.

16. In a dispensing machine, the combination of a vertically disposed frusto-conical carrier hood revoluble about its vertical axis, a plurality of barriers on the outer surface of said hood lying generally radially to said axis and defining between them pockets adapted to receive a series of bottles or the like disposed in a conical group with the necks of the bottles tilted upwardly and inwardly toward said axis, a plurality of detents, one for each pocket, pivotally mounted on said carrier and adapted to engage the bottoms of the bottles in the corresponding pockets and hold them against sliding down off of the hood, a means for revolving the carrier step by step to present successive pockets on the latter to a delivery station, and means stationarily mounted adjacent said carrier to shift successive detents to released position upon movement of the pockets corresponding to said detents past the delivery station.

17. In a machine of the type described, the combination of an upright shaft, a frusto conical sheet metal carrier hood having an axis coincident with that of the shaft, means revolubly supporting said hood on the shaft, a plurality of strips of sheet metal doubled upon themselves in V-shape and fixed to the exterior of said

hood at circumferentially spaced points with the noses of the V's pointing upwardly toward the hood axis, said strips defining bottle-receiving pockets between them, detent fingers pivotally mounted at the lower ends of said pockets to swing from a bottle-retaining position in which they extend across the lower ends of the pockets to an elevated bottle-releasing position, and spring means for yieldably urging respective ones of said detent fingers to their bottle-retaining positions.

18. A dispensing machine comprising, in combination, a cabinet having a door giving access to its interior, a carrier revolubly mounted within said cabinet and having a plurality of pockets thereon for receiving articles to be dispensed, means for advancing said carrier step by step, means including a dog positioned adjacent said carrier for effecting the discharge from the carrier of the articles successively presented to the dog during advance of the carrier, and means supporting said dog on said door whereby said dog will automatically be swung back away from the carrier into inoperative position whenever the door is opened.

19. A dispensing machine comprising, in combination, a cabinet having a door giving access to its interior, a carrier revolubly mounted within said cabinet and having a plurality of pockets thereon for receiving articles to be dispensed, means for advancing said carrier step by step, said door having a delivery opening therein adjacent the carrier periphery, means including a dog positioned adjacent said carrier for effecting the discharge from the carrier of the articles successively presented to the dog during advance of the carrier, for delivery of the same through said opening, and means supporting said dog on said door adjacent said opening whereby said dog will automatically be swung back away from the carrier into inoperative position whenever the door is opened.

20. A dispensing machine comprising, in combination, a revolubly mounted rotor presenting a continuous annularly disposed series of circumferentially spaced article-receiving pockets for the reception of articles to be dispensed, an enclosure for said rotor having a discharge opening therein, said rotor also presenting an annular series of notches, one for each pocket, means including a latch withdrawably projectable into successive ones of said notches for stepping said rotor around to present successive ones of said pockets to said discharge opening, the latter being sufficiently small as to register with only one pocket at a time and thereby preventing unauthorized removal of articles through said opening from pockets other than that registering with the opening, and said rotor having an additional notch therein engageable by said latch to hold the rotor initially in a position with the space between two adjacent pockets centered in said disadvantage opening to prevent unauthorized removal of articles through such opening even when all of the rotor pockets are fully loaded initially.

21. In a selective type dispensing machine, the combination with a plurality of article carriers, means supporting said carriers for individual movement to present successive articles thereon to a delivery point, and means including a single power-operated actuator for urging all of said carriers to move simultaneously, of means for releasably holding all but a selected one of said

carriers against movement by said actuator means.

22. A selective type dispensing machine comprising, in combination, a plurality of separately actuatable devices each adapted to receive a plurality of articles and operable upon each actuation thereof to deliver one of said articles, means for actuating said delivery devices, a plurality of selection control devices corresponding to respective ones of said delivery devices, control means normally operable in response to actuation of various ones of said selection control devices to condition said actuating means to actuate the delivery device corresponding to the actuated selection control device, and means pre-settable at will for preliminarily conditioning said control apparatus to in turn condition said actuating means to actuate a predetermined one of said delivery devices other than that corresponding to a predetermined one of said selection control devices upon the exhaustion of the supply of articles in the delivery means actually corresponding to said predetermined one of said selection control devices.

23. A selective type dispensing machine comprising, in combination, a plurality of separately actuatable devices each adapted to receive a plurality of articles and operable upon each actuation thereof to deliver one of said articles, power actuating means for said devices, a plurality of electric supply circuits, one corresponding to each of said devices, means operable in response to completion of individual ones of said circuits for causing said power actuating means to actuate a corresponding one of said devices, each of said supply circuits having a normally open selector switch interposed therein, manual means for closing desired ones of said selector switches, a plurality of stop switches corresponding to respective ones of said delivery devices and each having a pair of normally closed contacts and a pair of normally open contacts, each of said supply circuits also having said normally closed contacts of the corresponding stop switch interposed therein, means operable in response to arrival of each of said delivery devices at a predetermined stop position therefor for opening the normally closed contacts and closing the normally open contacts of its corresponding stop switch, and means including a plurality of pre-

settable combination switches for connecting corresponding ones of said selection switches in shunt with a predetermined other one of said selection switches but with the normally open contacts of the stop switch associated with said predetermined selection switch interposed in such shunt connection.

24. A selective type dispensing machine comprising, in combination, a plurality of separately actuatable devices each adapted to receive a plurality of articles and operable upon each actuation thereof to deliver one of said articles, means for actuating said delivery devices, a plurality of selection control devices corresponding to respective ones of said delivery devices, first control means operable in response to successive actuations of any one of a predetermined group of said selection control devices for conditioning said actuating means to operate in predetermined sequence the delivery devices of the group of the latter corresponding to said group of selection control devices, and second control means operable in response to actuations of the remainder of said selection control devices for conditioning said actuating means to operate corresponding ones of said delivery devices.

25. A selective type dispensing machine comprising, in combination, a plurality of separately actuatable devices each adapted to receive a plurality of articles and operable upon each actuation thereof to deliver one of said articles, means for actuating said delivery devices, a plurality of selection control devices corresponding to respective ones of said delivery devices, control means normally operable in response to actuations of the individual ones of said selection control devices for conditioning said actuating means to operate corresponding ones of said delivery devices, and pre-settable means for conditioning said control means to effect the operation of any desired two or more of said delivery devices as an interrelated series in which articles are delivered in sequence from first one device until its supply is exhausted and then the next until its supply is exhausted and so on through the series, all in response to successive actuations of any of the said selection control devices corresponding to the delivery devices in the series.

IRVEN H. WILSEY.

CERTIFICATE OF CORRECTION.

Patent No. 2,359,183.

September 26, 1944.

IRVEN H. WILSEY.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 5, first column, line 13, for "carriages" read --carriers--; page 10, second column, line 64, claim 20, for "disadvantage" read --discharge--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 5th day of December, A. D. 1944.

Leslie Frazer

(Seal)

Acting Commissioner of Patents.