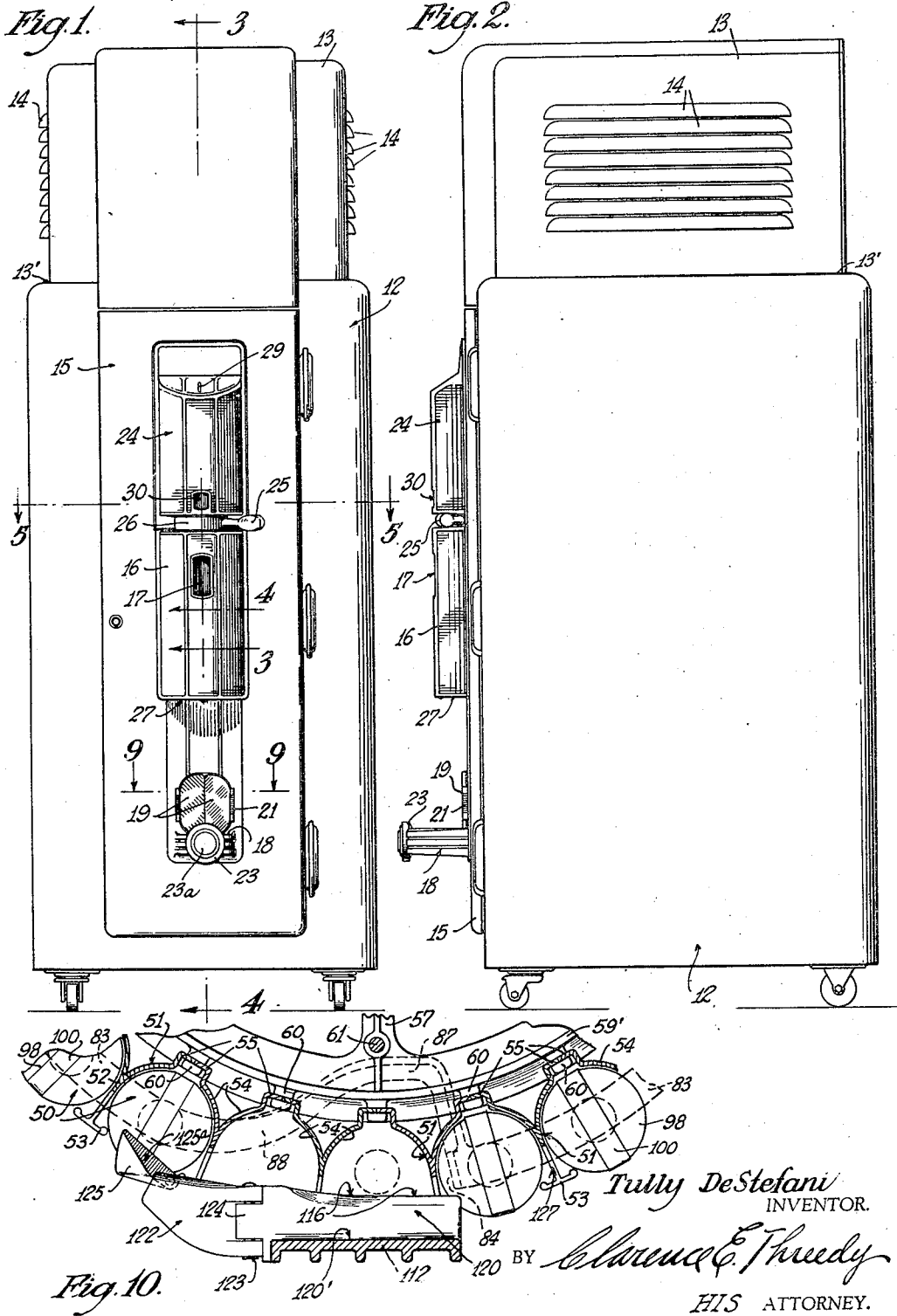


July 1, 1941.

T. DE STEFANI
DISPENSING APPARATUS
Filed March 25, 1938

2,247,575

4 Sheets-Sheet 1



July 1, 1941.

T. DE STEFANI

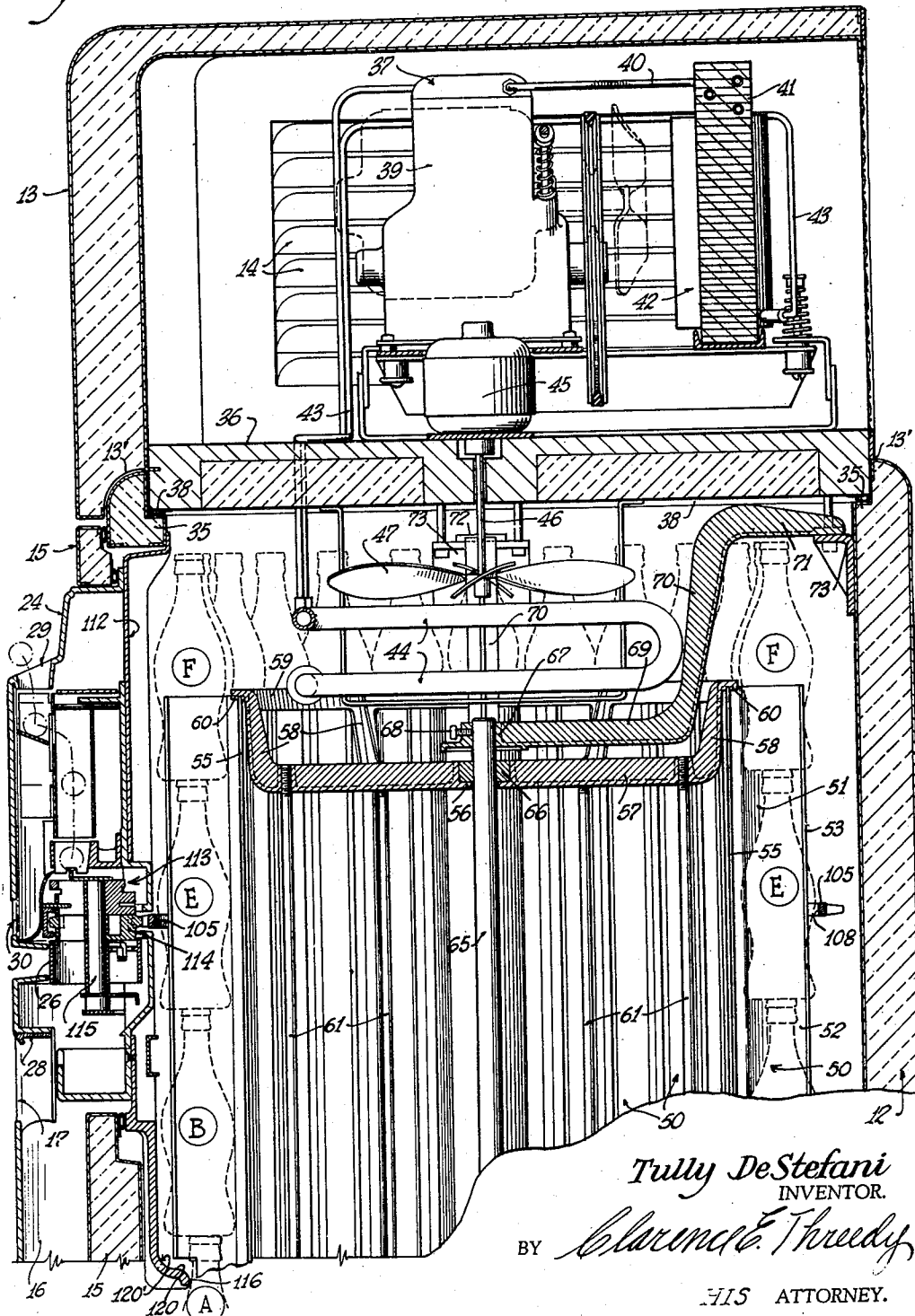
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DISPENSING APPARATUS

Filed March 25, 1938

4 Sheets-Sheet 2

Fig. 3.

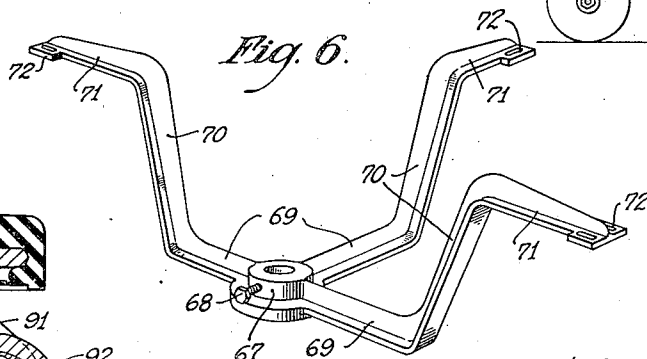
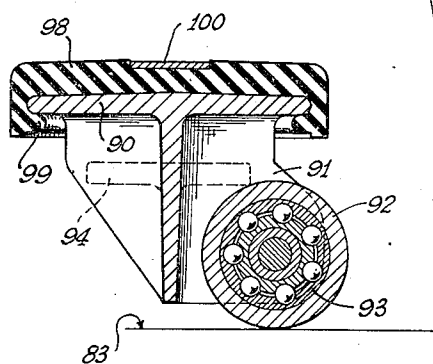
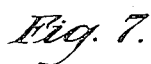
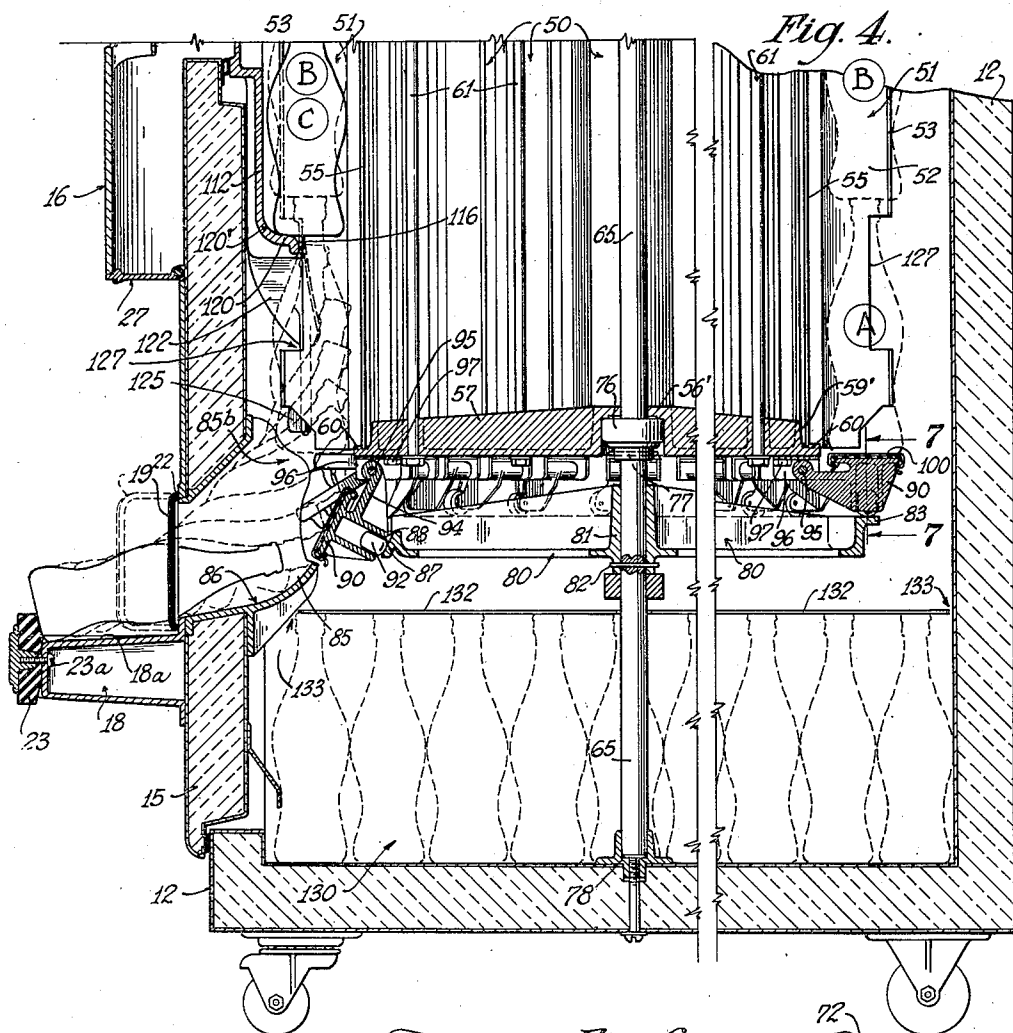


T. DE STEFANI

DISPENSING APPARATUS

Filed March 25, 1938

4 Sheets-Sheet 3



Tully DeStefani
INVENTOR.

BY *Clarence E. Threedy*
HIS ATTORNEY.

UNITED STATES PATENT OFFICE

2,247,575

DISPENSING APPARATUS

Tully De Stefani, Chicago, Ill., assignor, by mesne assignments, to The Bastian-Blessing Company, Chicago, Ill., a corporation of Illinois

Application March 25, 1938, Serial No. 198,155

8 Claims. (Cl. 62-102)

This invention pertains to improvements in dispensing apparatus, particularly of the coin-controlled variety, and includes among its important objects the provision of a dispensing machine adapted particularly to dispense a wide variety of packaged items, including merchandise in containers, such for example as packaged ice cream and various kinds of bottled goods including beverages, milk and the like, there being, practically speaking, no restriction as to the nature of the merchandise or article to be vend- 10 ed other than that such article be of a unitary nature so that individual units, packages or containers of the same may be dispensed, as distinguished from commingled or bulk goods from which a portion of a mass is segregated.

Another of the important objects is the provision of dispensing apparatus in the form of a compact, attractive cabinet unit including improved drum type magazine means adapted to be loaded with merchandise to be vend- 20 ed and so constructed as to facilitate the provision of compartments at opposite axial ends of the magazine drum, one of these compartments providing a storage chamber, and another of the same providing an overhead refrigerator compartment with cooling means arranged closely adjacent an axial end of the magazine drum and the drum being of an improved open-work or skeletonized construction providing passage therethrough for cold air to be distributed to the storage compartment for the purpose of precooling commodities in the latter. The construction of the magazine drum is further particularly adapted to distribute the cooling medium or air from the refrigerating system about the articles in the magazine in a most efficient manner.

A further object of the invention is the provision of article-feeding means cooperable with the improved magazine drum for feeding articles from the drum into position for movement toward a dispensing station or outlet.

A further object is the provision of improved article ejecting or dispensing means cooperable with the drum magazine for automatically releasing an article for dispensing movement into a discharge chute when such article reaches the aforesaid station or dispensing outlet.

Still another object resides in the arrangement of a magazine dispensing drum of the type heretofore characterized for movement about a vertical axis, with drive means arranged peripherally of the drum and adapted for driving engagement with a manually operable control for 55

advancing the drum either freely, or in steps in a particular direction.

Another object is the provision of a drum with a peripheral drive of the type hereinbefore characterized and means arranged at the axial ends of the drum and mounting the same for rotation in a manner to leave the region at the axial ends of the drum substantially unobstructed, whereby storage and refrigerating compartments may be provided adjacent opposite ends of the drum for the particular purpose and in the manner hereinafter to be described.

Yet another object is the arrangement of a magazine drum in a dispensing cabinet with compartments at the axial ends of the drum, in the manner hereinbefore characterized, a compartment at the lower end of the drum constituting a precooling chamber and having removable deflecting means positioned above or on vendible articles therein, whereby to limit the rate of heat transfer between said articles and the cooling medium.

A still further object is the provision of dispensing apparatus and cabinet means housing the same for the accomplishment of the objects heretofore recited, and wherein there is additionally provided a heat exchange unit in a removable cabinet section constituting a part of the housing and removably seated above an axial end of the magazine drum.

Certain details of the drum structure are described and claimed in applicant's copending U. S. application, Serial No. 198,157, while certain details of the dispensing structure cooperable with the drum are described and claimed in my copending U. S. application, Serial No. 198,156.

Additional objects include the provision of a cabinet or housing structure especially adapted for cooperation with means for accomplishing the several objects such as heretofore characterized, and in which there is a door structure providing access to the dispensing mechanism and having an open section through which an operating control unit is arranged to project when the door is in closed condition, there being a panel on the door movable into alignment with the control unit when the door is closed and including a novel discharge or dispensing chute and other means such as a cap puller and receiver or like means facilitating the immediate use or utilization of the article dispensed.

Other objects and novel aspects of the invention reside in certain details of construction, form, location and operation of the various parts and arrangements hereinafter to be described,

such for example, as the construction and assembly of the parts constituting the magazine drum and the means employed for mounting the same; the particular arrangement of the heat exchange means relative to the drum; the automatically tripping dolly means constituting a dispensing support at the bottom of the drum for articles stacked about the periphery of the latter; together with means for automatically feeding articles from higher levels of the stack onto the dolly means, all of which will appear more particularly as the following description develops in view of the annexed drawings, wherein:

Fig. 1 is a front elevation of the dispensing apparatus;

Fig. 2 is a side elevation of the device of Fig. 1;

Fig. 3 is an enlarged fragmentary vertical section through the cabinet and dispensing mechanism, as viewed along line 3-3 of Fig. 1;

Fig. 4 is an enlarged fragmentary vertical section complementary to the section of Fig. 3, showing the lower part of the cabinet structure and dispensing mechanism, omitted in Fig. 3, as the same would be viewed in the direction of line 4-4 of Fig. 1;

Fig. 5 is a fragmentary horizontal section through the magazine drum with the dolly dispensing and peripheral drive means shown in plan, looking down along line 5-5 of Fig. 1;

Fig. 6 is a perspective view of a spider hanger or mounting bracket for the magazine drum;

Fig. 7 is an enlarged vertical sectional detail of one of the dispensing dollies;

Fig. 8 is a fragmentary front perspective of the dolly tripping means opposite the dispensing station or discharge chute and also showing a detail of the automatic article-feeding means;

Fig. 9 is an enlarged top plan detail, showing parts in horizontal section, of the article discharge chute or basket;

Fig. 10 is a fragmentary horizontal section through a portion of the magazine drum and the article sustaining ledge and ramp means down from above the flange 120 in Fig. 8; and

Fig. 11 is a perspective view of a temporary bridging strap to be placed on the dolly or carriage trackway.

In the preferred embodiment of the invention illustrated in Fig. 1, there is provided an upstanding cabinet member 12 surmounted by a removable dome section 13 having a plurality of ventilating baffles 14 arranged on its sides and communicating with the interior of the dome.

Mounted by suitable hinge means on the front wall of the cabinet is a closure or door 15 providing access to the dispensing mechanism and also constituting a control panel. Mounted in the lower region of the door is a delivery panel section in the form of a casting bolted to the door and having a horizontally extending shelf or tray 18 (see also Figs. 4 and 9) which is hollow and which extends outwardly from a discharge opening communicating from within the cabinet and normally closed by a pair of gates or doors 19. The uppermost surface of the shelf structure 18 is provided with a pair of spaced beads or ribs 18a constituting a guideway for an article, such as a bottle or other container, descending past the gates 19, the shelf being tilted outwardly to facilitate such movement, and there being provided a resilient stopping buffer in the form of an annulus 23 of sponge rubber or the like secured to the outermost vertical surface portion of the shelf or tray 18 by bolt and cap means 23a secured from within the shelf casting;

Mounted above the shelf casting 18 is a canister 16 of semicylindrical shape, also forming part of a casting which is bolted to the door, and in which there is provided an opening 17 into which the neck of a bottle or the like may be inserted for engagement with a de-capping device 28 (or other instrumentality facilitating the immediate use of the dispensed article), so that the cap of a carbonated beverage, for example, may be conveniently removed, the cap remaining in the canister and the latter having a bottom trap door 27 through which accumulated caps may be removed (Fig. 4).

Above the canister 16 is a rectangular opening, the margins of which are trimmed by a bezel or frame casting secured by any suitable means to a stationary, vertically hanging face plate 112 secured to the door frame within the cabinet behind the door (see also Figs. 3 and 5).

Projecting from behind the door through the frame or bezel is a coin control unit 24, also having a semi-cylindrical front cover plate to conform the overall design to that of the canister 16. In the top of the control cover plate is a coin depository 29, there being a coin return opening 30 in the lower region thereof above an operating handle 25 adapted to oscillate in a horizontal plane above the canister 16.

Referring particularly to Fig. 9, it will be observed that each of the doors 19 is pivotally mounted upon pintles 20 at opposite sides of the discharge opening, there being spring means 21 extended into respective door or gate members and embracing the pintles to urge the doors into closed position. Each door is also provided with an integral boss 22 adjacent its pivotal mounting and engageable with the adjoining body portions of the basket structure to ease off the spring-urged closing movement of the individual door or gate members. As seen in Figs. 4 and 9, the foremost end portion of the receiving basket 18 is provided with yieldable buffer means 23 constructed of some resilient material, such as sponge rubber or the like, and adapted to soften the stopping engagement of the end of a discharged article or bottle descending thereagainst down the discharge chute and past the gate members 19.

The cabinet structure 12 of the present embodiment of the invention is designed particularly for use with refrigerating apparatus and is therefore constructed in accordance with approved heat-insulating practices employed in the construction of refrigerator cabinets and the like. The upper end of the cabinet 12, as seen particularly in Fig. 3, is open and provided with a top ledge portion 35 onto which is fitted the bottom panel portion 36 of a refrigerating mechanism unit 37, there being a sealing gasket 38 interposed between the bottom support 36 and the ledge 35.

The construction of the bottom support 36 for the refrigerating unit 37 is such as to insulate the transfer of heat from one side of the same to the other to prevent the heat developed by the refrigerating mechanism from being communicated to the main interior of the cabinet. The dome shell or removable top structure 13 is placed over the refrigerating unit 37 and rests along edge portions 13' upon uppermost edge portions of the open top of the cabinet 12 adjacent the ledge portions 35, suitable fastening means being applied, where desired, to prevent unauthorized removal of the dome cover, the weight of the cover, however, being entirely adequate to main-

tain the same in mounted position. The baffles 14 supply adequate quantities of cooling air for the refrigerating mechanism, the latter being equipped with the customary cooling fan arrangement for effecting forced draft.

The refrigerating unit 37 may be of a type employing the usual compressor 39 with a compression line 40 communicating with a condenser 41 discharging condensed refrigerant into a receiver 42. The refrigerant is fed into a delivery line 43 with a set of cooling or expansion coils 44 arranged below the mounting base or bottom 36 centrally in the upper portion of the main cabinet chamber.

Mounted by suitable means on the refrigerating unit base 36 is a motor 45 having a shaft 46 extending downwardly through the base with a circulating fan 47 rotatable thereby immediately above the cooling coils 44 and adapted to circulate air downwardly into the cabinet.

The invention provides an improved drum type article magazine shown in part in Fig. 3 and including a plurality of circumferentially arranged vertically extending magazine compartments 50 (see also Fig. 5) formed by a plurality of adjacently positioned Y-shaped partition members 51 of elongated form and preferably constructed of drawn metal so as to have a main partition portion 52 provided along its outer edge with a retaining flange 53, and along its opposite edge with divergently curved projections 54, each of which terminates in an offset mounting flange 55.

The simplified construction of the magazine drum provides for assembling the Y-shaped partition members 51 between a pair of annular end castings each having a hub portion 56 (see also Fig. 3) with radial spoke elements 57 (Fig. 5) extending therefrom, the spokes of the upper bracket being offset upwardly near their respective end portions 58 for integral engagement with a raised annular rim or flange 59, the spokes of the lower end plate terminating in an annular flange 59'.

Disposed in circumferentially spaced relation about the flange portions 59 and 59' of the drum end plate casting are a plurality of stud formations 60 having slots cut therein to receive the offset lug formations 55 of adjoining pairs of partition elements 51 at the opposite extremities of the latter, so that the several partition members are held in assembled relation as viewed in Figs. 3 or 5, for example, between the opposite axial end plates or castings, the latter being clamped together by a plurality of tie rods 61 threaded or otherwise mounted at their respective opposite ends in spoke portions 57 of the castings, these tie rods being drawn up so as to clamp the partition members securely in position as aforesaid.

The novel magazine drum is rotatably mounted or journaled at its upper end on a vertical shaft 65 (Fig. 3) which extends upwardly through a roller bearing element 66 seated in the hub portion 56 of the upper end casting or spider, so that the latter may turn freely upon the shaft, the shaft extending a short distance upwardly of the bearing 66 and projecting into the bore of the hub portion 67 of the hanger or mounting spider, there being a set screw 68 in the hub portion 67 of the hanger clamping the upper end of the shaft 65 securely for support by the hanger. The hanger or mounting spider is shown in perspective in Fig. 6 and includes a plurality of radially extending arms 69 disposed within the recessed

portion of the upper end casting of the drum below the annular flange or rim portion 59 thereof, the arm 69 having upwardly offset portions 70 with lateral feet or projections 71 terminating in apertured flanges 72, the latter resting upon brackets 73 (Fig. 3) secured to the inner wall portions of the cabinet adjacent the upper ledge portion 35 therein, the brackets 73 having lugs (not shown) which project into the apertures or slots in the flange portions 72 on the hanger or spider to prevent the latter from shifting on its mounting.

The axle or shaft 65 for the magazine drum extends downwardly through the latter and is provided with a bearing member 76 secured thereto by pin means 77 substantially at the level of the hub portion 56' of the lower drum mounting spider or casting, in such manner that the latter rides freely on the bearing 76. (Observe that the reference character 56 in Fig. 3 indicates the hub of the upper end plate casting, while the hub of the lower casting is indicated at 56' in Figs. 4 and 5.)

At its lowermost extremity, the vertical shaft 65 rests in a stanchion 78 secured in the bottom portion of the cabinet 12. Thus, the shaft 65 is held stationary by the upper hanger or spider, the magazine drum rotating thereabout on the bearing means 56 and 76.

Below the lower drum end casting (Fig. 4), there is a stationary spoked track casting 80 having a hub portion 81 embracing the shaft 65 and secured thereto by pin means 82 so as to be immovable, its weight resting on a collar 82' shrunk on the shaft. The track casting 80 is of annular shape and has an annularly extending horizontal track portion 83 (see also lower part of Fig. 8) interrupted through a short discharge portion 84 through its peripheral extent at a position substantially behind the inner mouth 85 of a discharge chute 86 communicating with the discharge basket 18 through the door escutcheon panel heretofore described.

The track flange 83 is offset at its terminal discharge portion 84 to provide a resetting track portion 87 arranged in part of its length in a substantially vertical plane and having a gradually curved portion 88 descending back into a horizontal plane in the region 89 thereof, the track thereafter continuing in its horizontally extending disposition through the remainder of its circumferential length.

The several vertical magazine pockets or compartments around the drum are open at both top and bottom and in order to retain articles of merchandise in the same, there are provided a plurality of traveling bottom sections or dollies movable conjointly with the drum on the track member 83 and constituting means for releasably retaining articles in the several compartments.

The traveling bottom carriers or dollies are shown in detail in Fig. 7, each being in the form of a casting having a horizontal platform portion 90 with depending spaced legs 91 (see also the dotted line representation of Fig. 8) between which are mounted rollers 92 provided with roller bearing means 93. Each dolly has a laterally projecting arm 94 (Figs. 4 and 8) pivotally connected as at 95 between opposite flange portions of individual mounting brackets 96 secured by screw means 97 to the under side of the annular flange portion 59' of the bottom drum casting at a position substantially corresponding to the vertical juncture line between adjoining magazine partitions 51, so that the platform portions

90 of the several dollies provide bottoms for the several magazine compartments.

Each of the dolly platform portions 90 is provided with a resilient cover preferably in the form of a rubber cap 98 stretched over the same and having an annular internal flange portion 99 securing the same to the under side of the platform. In addition, each rubber cap or buffer has a diametric groove across its top surface, in which is seated a metal sliding strap 100 extending in a radial sense beneath the corresponding magazine compartment. This arrangement provides a relatively soft landing for the descending bottle, yet the metal strap also provides a smooth gliding surface which facilitates the sliding discharge of the bottle off of the rubber cap to speed up the release of the merchandise.

The several pivoted bottom travelers or dollies 90 turn with the magazine drum, with their roller or wheel elements 92 riding on the track flange 83 and as each magazine column or vertical magazine section 50 approaches the dispensing station or position opposite the mouth of the discharge chute 85 (Figs. 4 and 8), moving in a clockwise direction as seen in Fig. 8, the roller portion 92 of the corresponding dolly will ride off the end 84 of the main track section 83, thereby permitting the dolly to drop or pivot into the dotted line position seen in Figs. 4 and 8 so that any article of merchandise thereon will gravitate into the discharge chute 85 past the doors 19, and ultimately into the delivery tray 18.

It may be observed (Fig. 9) that the discharge chute is a casting having opposite pairs of yoke-like flanges 85a supportably embracing portions of the door structure. Also, the chute casting has a side wing or flange 85b (Figs. 4 and 9) arranged at the far side of the mouth of the chute in the direction of advance of the drum. This flange constitutes a guard preventing reinsertion of empty bottles in empty magazine compartments advanced beyond the discharge station.

Meanwhile, the roller member 92 of the dolly thus tripped or pivoted will bear against the offset portion 87 of the track opposite the discharge chute, and the succeeding clockwise movements of the drum will cause the tripped or tilted dolly to be restored to a normal horizontal riding position, by virtue of the fact that the roller 92 of the tilted dolly will ride onto the curved portion 88 of the track and thus pivot the dolly back into its normal position for continued travel through another cycle around to the tripping or discharging position.

Driving means for rotating the drum in steps includes (Fig. 5) a peripheral driving element or gear 105 and comprised of a plurality of cast segments divided at convenient circumferentially spaced points, as for example at 106, each gear segment being attached by a plurality of screws 107 extended therethrough into threaded engagement with opposite flange portions 53 of the magazine partitions, the gear assembly being dimensioned to fit flush against these flange portions or around the drum. The gear segments are preferably cast with arcuate cut-out portions 108 opposite each magazine compartment so as to accommodate a circular article in the compartment in the region behind the inner periphery of the gear assembly.

Mounted upon a face plate 112 behind the door in the cabinet 12 is a coin control unit 113 preferably of a type such as described and claimed in the United States application of one Joseph Srodulski, Serial No. 198,105. Such a control unit

includes a driving member or pinion 114 (Figs. 3 and 5) rotatable about a vertical shaft 115 in the control unit and having coin-operated means for coupling or interconnecting the pinion 114 with the oscillable control handle and drum 25-26, whereby the pinion 114 is advanced in unidirectional steps, in the present instance in an anticlockwise direction (it being necessary to oscillate the handle 25 from and back to the position shown in Fig. 5), whereby the ring gear or peripheral driving element 105 on the magazine drum is correspondingly moved in steps in a clockwise direction. Each oscillation of the control handle 25 is effective to advance the drum a distance sufficient to position the next succeeding magazine column 50 and its traveling bottom element or dolly 90 before the dispensing station or position on the track 83 in front of the discharge chute 85, whereby to trip the dolly and discharge a vendible object supported thereon.

In the present embodiment of the invention, the magazine drum and cooperating dispensing mechanism has been particularly designed to accommodate vendible articles in the nature of bottled beverages provided with the customary crown cap, and it is a feature of the invention to provide for stacking the vendible articles, whether they be bottles or other package units, one upon another in the several magazine compartments or tiers, the lowermost bottle or article resting upon the platform 90 of the corresponding dolly in all compartments or tiers save the one opposite the dispensing position, the latter exception being hereafter particularly explained. The coin control unit 113 is provided with a releasing detent (not shown herein—for details see the aforesaid application, Serial No. 198,105) which is manually operable by the attendant to release the pinion 114 for free movement so that the magazine drum may be turned directly to permit stacking the bottled or other goods in the several compartments.

To facilitate loading of the drum, there is provided the auxiliary track bridge shown in Fig. 11, which is an arcuate plate constituting a section of track 110 long enough to bridge the interrupted discharge portion of the dolly track 83. The opposite ends of the track bridge are turned down to provide clamping fingers 111 which fit over the dolly track to hold the bridge in place. By this means, the drum may be freely rotated to inspect and replenish the magazines, without any danger of bottles being discharged, since the dollies will simply ride over the gap in the track on the bridge 110.

Means for automatically lowering vendible articles from a higher level to a lower level onto the dolly or carriage corresponding to the compartment in which the article is situated and from which the lowermost article has been dispensed, includes (Fig. 8) a short segmental sustaining flange 120 forming a horizontally offset ledge on the lower part of the face plate casting or bracket 112, which is secured to the door frame behind the door.

The sustaining flange 120 slopes out as at 120' from the vertical part of the plate 112 so that the bottles glide onto the ledge instead of dropping abruptly, and is positioned at a level above the dolly track 83 so as to be engaged by the bottoms of articles or bottles B (e. g., B and C, Fig. 8) at the second level above the track 83, that is to say, at a level corresponding to the

tops of the bottles A resting upon the several dollies.

As the magazine drum is rotated in steps toward the left, (Figs. 8 and 10) the retaining flange 120 projects beneath the bottoms of those bottles at the second level opposite the discharge position, the flange having a curved leading edge 116 (Fig. 10) over which the bottles ease onto the ledge, the flange being of a length adequate to support the second-level bottles during that portion of their travel across the interrupted part or tripping section 84 of the track 83 until such bottles reach a position corresponding to that indicated by the bottle D. By this means, the bottles situated at next higher levels are prevented from suddenly dropping down or out of the compartments due to the tripping of corresponding dollies and the discharge of the supporting bottles from beneath them.

Attention is also directed to the fact that the curved leading edge portion 116 of the sustaining flange 120 is so proportioned that it is engaged by the tops or necks of the bottles riding into discharge position, and is effective to tilt such bottles inwardly of the drum so that their bottoms will quickly slide on the metal straps 100 off of the tripped carrier or dolly.

At the far terminal of the retaining flange 120 (Figs. 8 and 10), there is a ramp in the form of a downwardly inclined arm 122 pivotally mounted as at 123 to a boss 124 on an end of the bracket flange 112. Downward movement of the ramp is limited by bearing of the upper pivoted end of the ramp against the end of flange 112. Thus, as the drum is advanced and the temporarily supported bottles B, C and D approach the ramp arm 122, the several bottles (e. g., the bottle D) ride down the ramp and onto the previously tripped dolly which has been restored to upright position by movement across the curved restoring portion 88 of the track. In this manner, all of the second level bottles are temporarily supported during a part of their cycle of travel by the offset flange means 120 until they have passed over the tripping section of the dolly track, so as to permit the dollies to be restored to normal bottle-supporting position, the temporarily sustained bottles thereafter being lowered one by one down the ramp 122 and onto the restored dollies.

Pivotally mounted on the underside of the ramp 122 is a spring-urged bottle guiding fin which has a gently scooped or curved surface 125a (Fig. 10) providing a means for positively guiding the descending bottles well into the magazine compartment on the restored dolly. Attention is also called to the fact that each of the marginal flange portions 53 of the compartment partitions has a cut-away portion or slot 127 formed therein at the level of the retaining flange 120 to provide clearance for the latter when the drum rotates.

It will be observed that the foregoing arrangement provides for successively dispensing the articles at the lowermost level and represented, for example, by the bottle A in Fig. 8, with the bottles or articles at the second level and represented, for example, by the bottle B, automatically transferred to lower level positions to replace dispensed bottles, while the bottles or articles at the higher levels and represented, for example, by the bottles E and F in Fig. 3 are successively lowered for replacement of the bottles in the second and first levels in the order named.

Referring to Fig. 4, it will be observed that the lower region of the cabinet provides a lower compartment space 130 between the bottom side of the drum and track plate 80 and the bottom-most part of the cabinet in the region surrounding the lower end of the vertical shaft 65. This compartment provides a precooling chamber into which vendible objects or bottles may be stored in addition to those loaded into the magazine so that a stack of refrigerated goods will be immediately available for reloading the magazine at such time as may be necessary.

It is contemplated that whenever the reserve stock of goods in the precooling compartment is transferred to the magazine, replacement objects or bottles are to be inserted in the precooling compartment at once, and since these replacement objects or bottles are invariably at room temperature, it is necessary to prevent too rapid a transfer of heat between the cooled articles in the magazine and the relatively warm articles inserted in the precooling compartment. To this end there is provided a simple but very effective heat energy reflecting means in the form of a pair of complementary metal reflector panels 132 adapted to be positioned edge to edge along a center line extending through the shaft 65, the confronting edge portion of each reflector panel having a semicircular cut near its midpoint adapted to fit closely around the shaft 65 in order to permit the confronting edge portions to fit flush.

In the embodiment of Fig. 4, the objects in the precooling compartment are illustrated in dotted line as bottles, and the heat reflecting means or panels 132 rest upon the tops of these bottles, it being apparent that very few bottles are necessary to support these panels so that should less than the whole number be removed for any reason prior to a complete precooling of the bottles, the panels would nevertheless be maintained in effective position.

Attention is also called to the fact that the precooling compartment may be of a size adequate to accommodate stacks of bottles or the like arranged one upon another, each level of bottles resting on a deflecting panel means 132 placed upon the tops of the next lower level. Adequate clearance is left around the free edge portions 133 of the reflecting panels to permit a predetermined rate of heat transfer, the cooling medium in this instance being air circulated downwardly from the refrigerating means at the upper axial end of the magazine, through the skeletonized magazine structure and around the free edge portions of the reflecting panel means.

It will thus be apparent that the invention provides an improved cabinet structure for dispensing mechanism wherein a refrigerating unit is removably seated in an open top portion of the cabinet, the latter being provided with a removable dome structure permitting easy access to the refrigerating mechanism and at the same time lending a finished appearance to the cabinet structure or housing. The invention further provides improved dispensing mechanism including a rotatable magazine of novel construction, characterized in part by circumferentially spaced vertical compartments formed by partition members of a special construction clamped between spoked or skeletonized end castings to permit circulation of air through and around the magazine. The magazine structure further provides novel hanger means mounting the same for rotation about a vertical axis so as to minimize

the obstructions at the axial open end portions thereof to facilitate the circulation of cooling air and accommodate cooling means at one end of the magazine and the collection of vendible objects to be precooled at the other end of the magazine.

Other objects accomplished by the invention herein disclosed include the provision of tiltable bottom sections for the magazine compartments arranged to ride on a stationary track structure beneath the magazine for movement successively over interrupted track portions to effect a tilting of the bottom members so as to discharge a vendible object therefrom.

These and other objects of the invention are preferably accomplished by the means and in the manner herein specified; however, various modifications and rearrangements of the illustrative embodiment set forth herein may be effected without departing from the scope and spirit of the invention, and it is therefore a condition of the present disclosure that the invention is not to be restricted to any details of form, location or operation except as may be expressly provided hereinafter in the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. In a dispensing machine having a cabinet with refrigerating heat exchange means suspended from its top and a fan above the heat exchange means for directing air downwardly therepast, the combination with said cabinet and heat exchange means of a dispensing drum of skeletonized construction with means for retaining articles about its outer periphery and mounted in said cabinet for rotation about a vertical axis by journal means situated near the opposite axial ends of the drum, the journal means near the upper end of the drum being attached to said cabinet at a point offset from said heat exchange means and the axis of the drum and being further offset inwardly of the drum so as not to obstruct the upper end of the latter with respect to the heat exchange means, said upper end of the drum being mounted in close proximity to said heat exchange means.

2. In a refrigerated dispensing machine of the type including cooling means depending from an upper portion of a cabinet adapted to house a magazine drum and dispensing mechanism coacting therewith, the combination with said cooling means of a magazine drum and means supportably engaging the same for rotation about a vertical axis at points adjacent the upper and lower axial ends thereof, said means being in turn supported by said cabinet and the supporting means at the upper end of the drum fitting down into the drum without substantially obstructing passage of air for cooling purposes, said upper supporting means projecting axially out of the end of the drum near the periphery thereof and projecting in a direction away from the axis of the drum for supporting engagement with the cabinet as aforesaid, whereby to leave said upper end of the drum unobstructed for the purpose aforesaid, said upper end of the drum being mounted with respect to said cooling means so that the latter is disposed close above said portion of the upper supporting means, which fits down into the drum as aforesaid.

3. In a dispensing machine, the combination with a cabinet having cooling means suspended from the top thereof, of a magazine drum of

open-work or skeletonized construction at its ends and sides, and means mounting the same for rotation about a vertical axis within said cabinet below said cooling means, said drum having an upper end situated close to said cooling means and bracket means attached to a side portion of the cabinet offset from the cooling means and the axis of the drum and projecting downwardly into the drum close to the upper periphery thereof, and journal means for the upper end of said drum engaged with said bracket, said bracket means being of open-work construction so as not to obstruct passage of air through said upper end into the drum from the cooling means, and means for blowing air downwardly against said cooling means and into said upper end of the drum for circulation therethrough.

4. In a dispensing machine, the combination with a refrigerating coil suspended from the top of a cabinet, of a magazine drum of skeletonized construction and means mounting the same at top and bottom for rotation about a vertical axis, said means mounting the drum at the top being offset inwardly of the upper end of the drum and having a portion projecting toward and beyond for attachment to said cabinet toward the periphery of the drum, and said upper end of the drum being situated close to said refrigerating coil, and blower means arranged above said coil for operation to direct air past the same downwardly through said drum.

5. The combination, with a refrigerated dispensing machine of the type including a cooling coil mounted near the top of a cabinet and adapted to cool a magazine, of a magazine in the form of a drum of open-work or skeletonized construction at its ends and sides and adapted to carry merchandise on said sides, and means journaling said drum for rotation about a vertical axis in the cabinet and comprising a vertical shaft mounted at its lower end on a floor portion in the cabinet, the upper end of the shaft being supportably engaged in a mounting spider supported by the cabinet and having an offset part disposed below and in close proximity to said cooling coils, said offset part extending into the upper end of said drum and supportably engaging an upper part of said shaft, fitting over the portion of said spider bracket which is below said cooling coils so as to lie in close proximity to the latter.

6. In a dispensing apparatus of the type including a cabinet with refrigerating coils arranged beneath a horizontal support therein, the combination of a magazine drum and means mounting the same for rotation about a vertical axis beneath said support, said means comprising a stationary vertical shaft supported at its lower end in said cabinet and supportably engaged near its upper end by an open-work spider bracket having a depending hub portion embracing said upper end of the shaft and divergent arm portions attached to the cabinet in a region offset from the axis and periphery of the drum, said drum including open-work axial end castings at its opposite ends arranged to rotate about said shaft with the drum, the upper end casting being recessed inwardly of the drum to fit around the depending hub portion of said spider bracket whereby to provide an unobstructed upper end region for the drum, said upper end region being spaced in close proximity to said coils.

7. In a refrigerated dispensing machine, a magazine drum and means mounting the same for operation relative to heat exchange means

arranged axially opposite an end of the drum, said mounting means comprising a stanchion fixed in upright position beneath said heat exchange means and extending upwardly with said drum disposed thereabove and having an upper axial end situated above the upper end of the stanchion immediately beneath said heat exchange means, means spaced relative to the ends of the drum and journalling the same for rotation on said stanchion, said means at the end of the drum near the upper end of the stanchion being disposed substantially within the upper end part of the drum, and a spider bracket extending into said upper end of the drum and supportably engaging the upper end of said stanchion beneath said heat exchange means without materially obstructing passage of air between the latter and said drum.

8. In a dispensing machine, in combination, an

open-top cabinet, a heat insulating closure for said top and adapted to support refrigerating mechanism on its upper side, heat exchange means cooperable with said refrigerating apparatus and mounted on the underside of said closure, and a magazine drum mounted for rotation about a vertical shaft in said cabinet and having an open upper end disposed close beneath said heat exchange means, and skeletonized bracket means attached to sidewall portions of said cabinet beneath said top and offset to extend into said upper end of the drum in substantially unobstructing condition with respect to passage of heat exchange air into the drum, said drum being of open-work construction in its sides as well as ends, and said bracket means supportably engaging said shaft.

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