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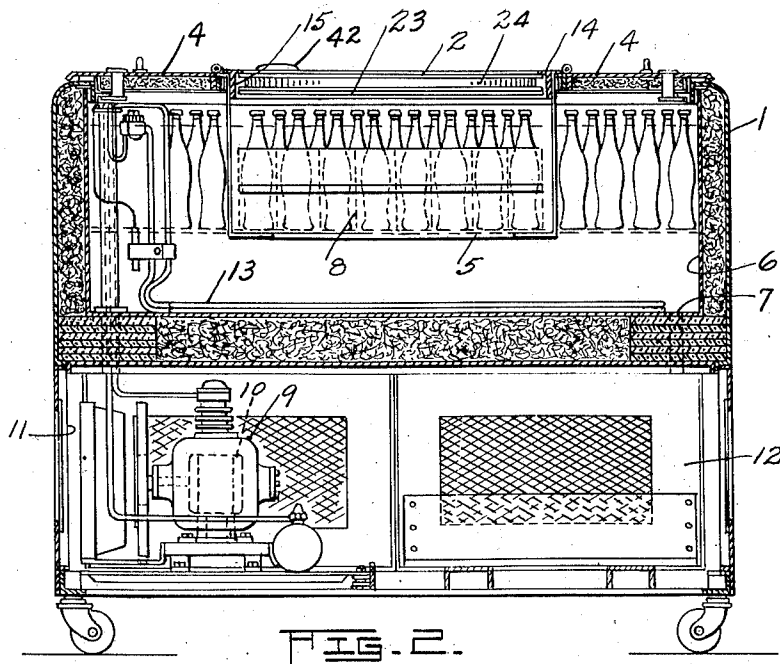
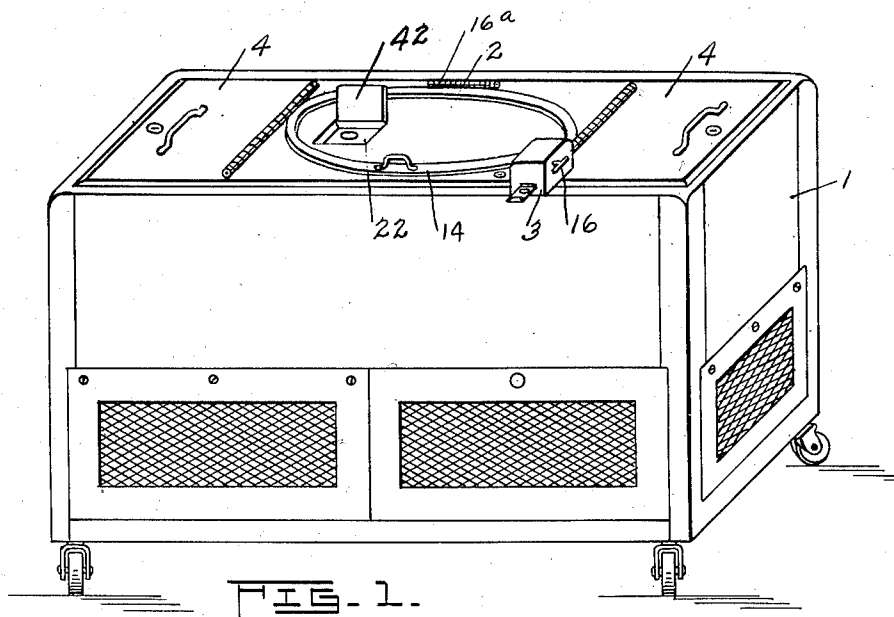
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2,137,031

DISPENSING APPARATUS

Filed Sept. 17, 1936

5 Sheets-Sheet 1



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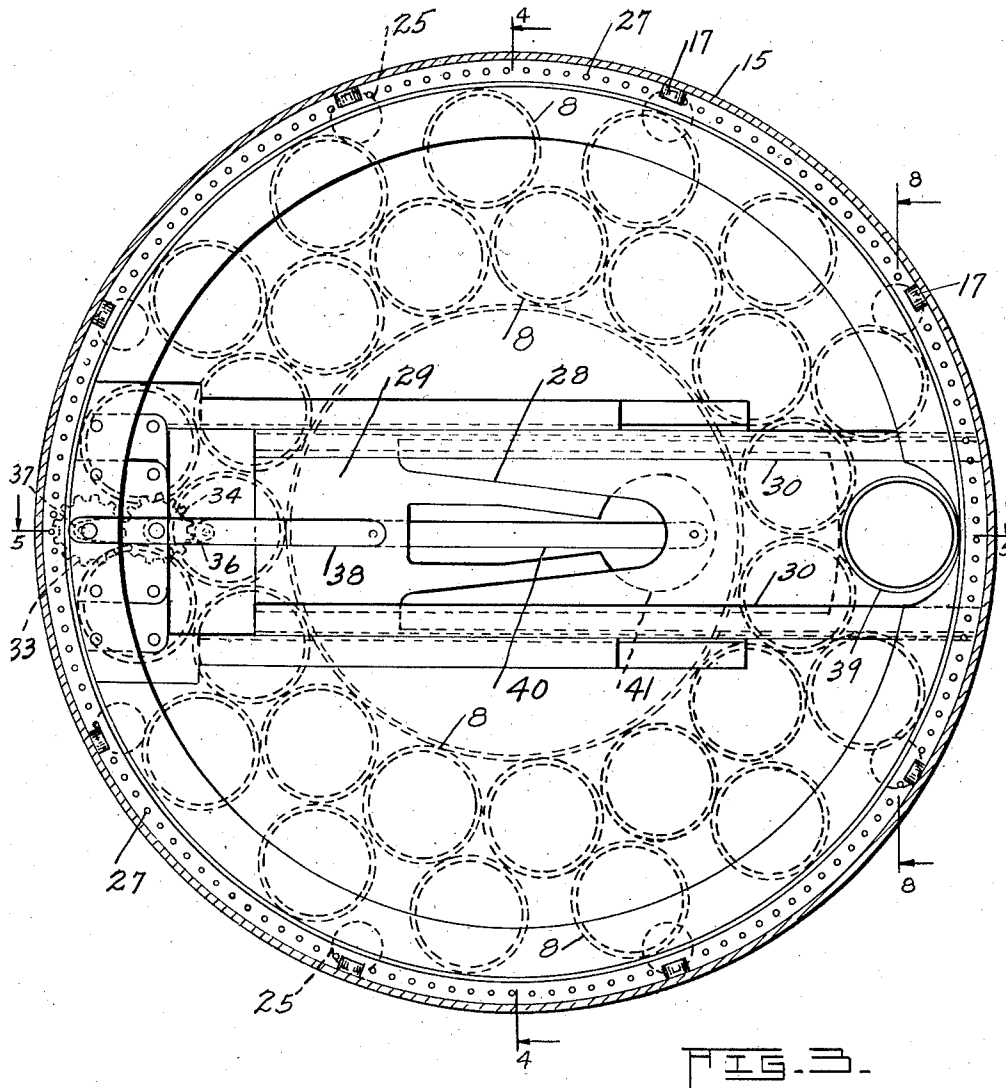
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DISPENSING APPARATUS

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5 Sheets-Sheet 2



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DISPENSING APPARATUS

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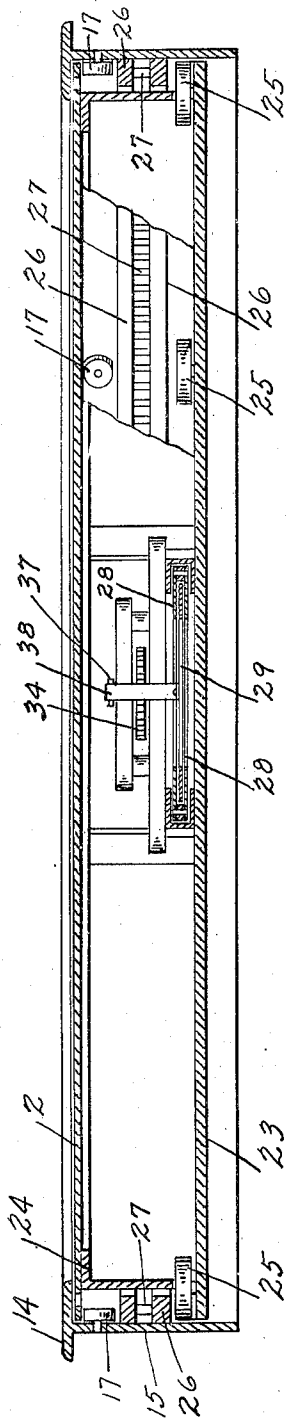


FIG. 4-

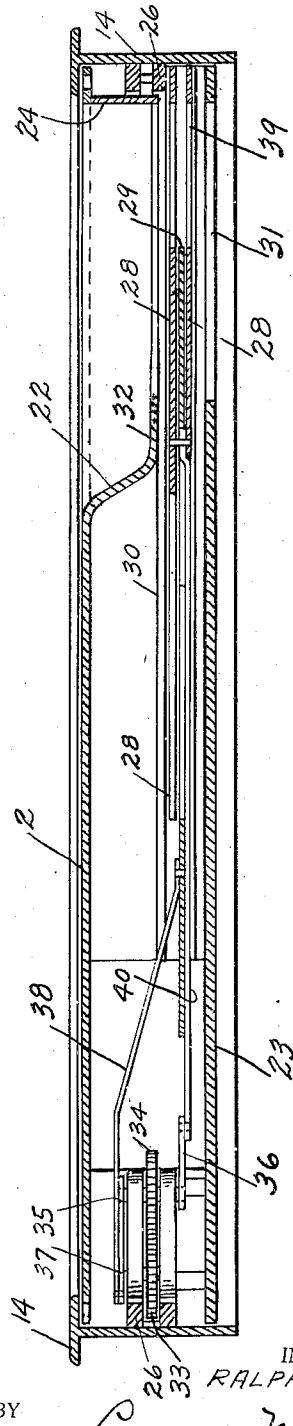


FIG. 5-

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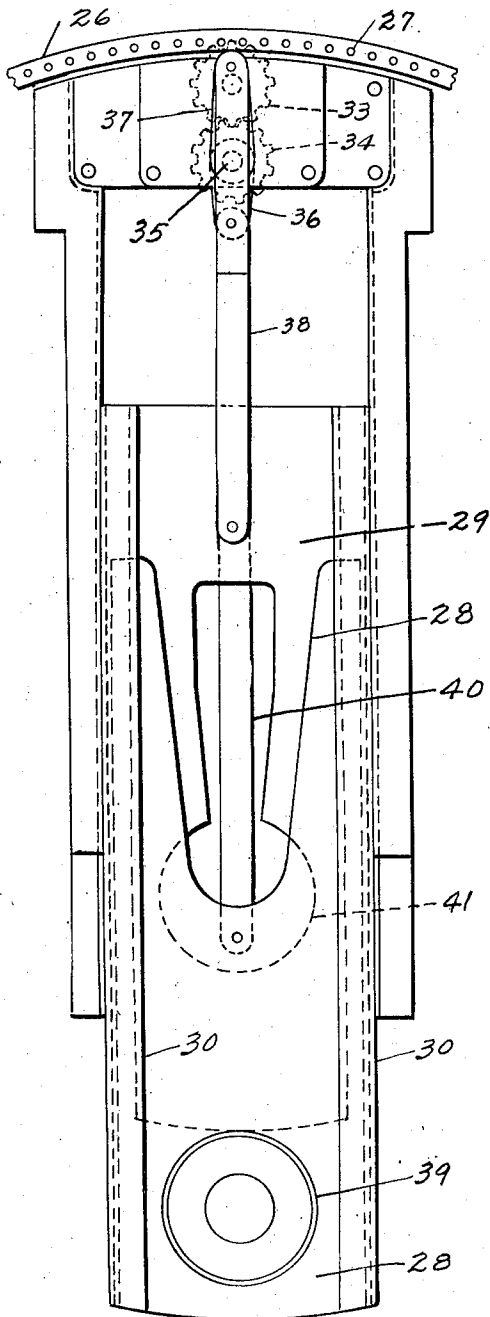


FIG. 6.

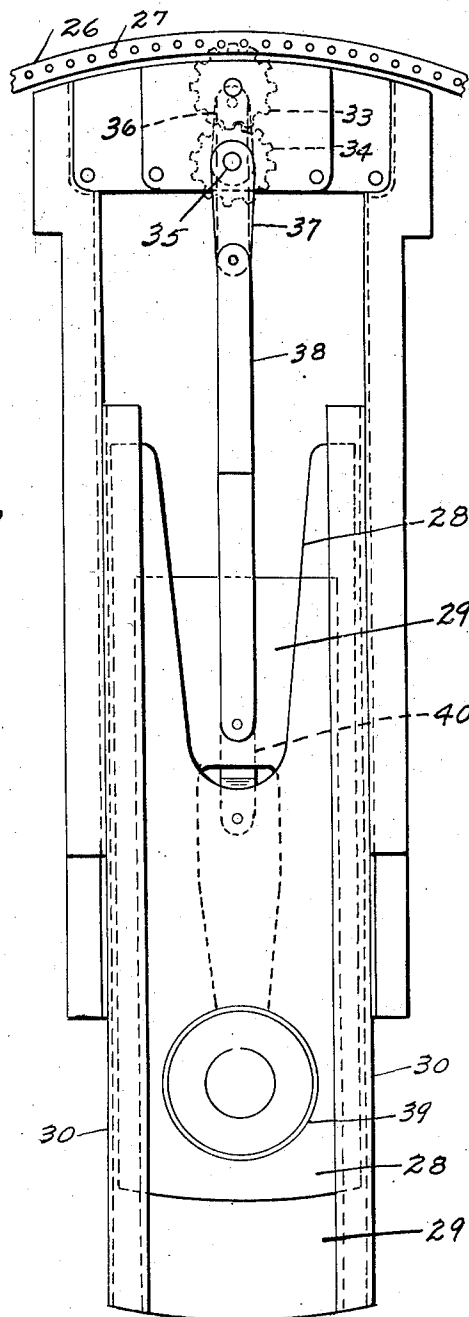


FIG. 7.

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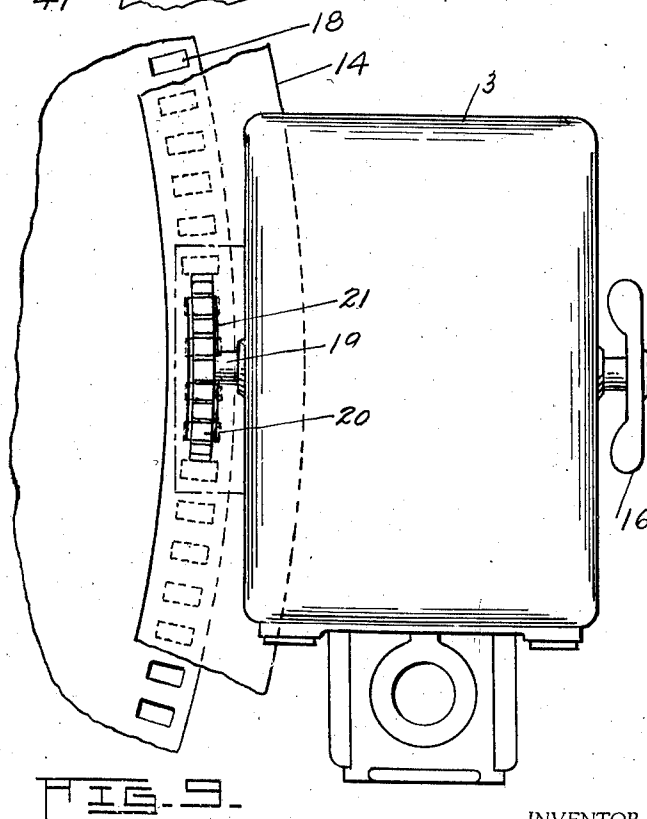
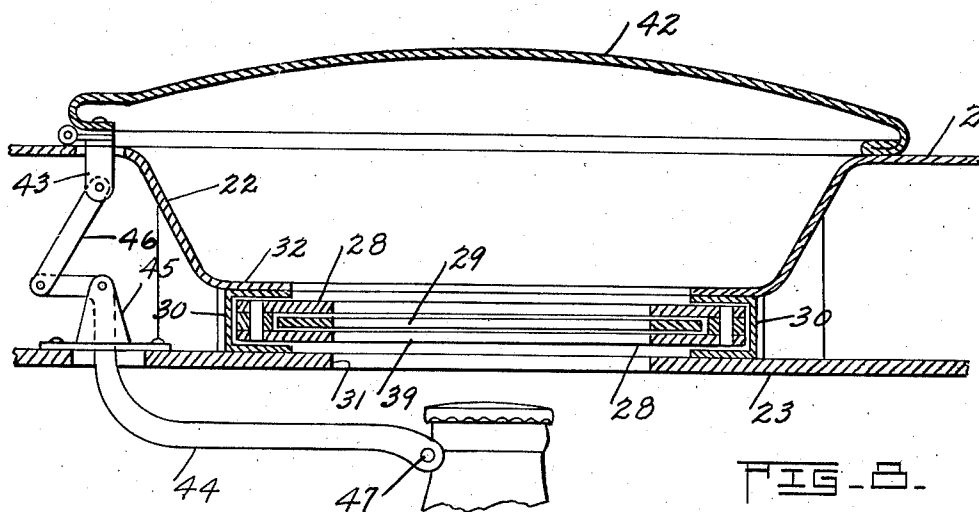
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DISPENSING APPARATUS

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5 Sheets-Sheet 5



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UNITED STATES PATENT OFFICE

2,137,031

DISPENSING APPARATUS

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Application September 17, 1936, Serial No. 101,254

5 Claims. (Cl. 312—36)

This invention relates to improvements in dispensing apparatus and more particularly to a coin-controlled dispensing mechanism readily applied to a cabinet containing a refrigerating compartment for the bottled goods to be dispensed by said apparatus.

It is an object of this invention to provide a cabinet which presents an attractive appearance adapted to contain bottled goods and support the same in such a position as to be readily dispensed by the operation of this improved dispensing apparatus. It is a further object of this invention to maintain the bottled goods at a cool temperature either by natural ice or by a refrigerating apparatus. It is a further object of this invention to provide this cabinet with storage space for additional bottles other than those in the position to be dispensed, and also storage space for the cases from which the bottles have been removed. It is a still further object to so construct the dispensing apparatus that only one bottle at a time may be removed from the refrigerating compartment after the disposing of a coin in the coin-controlled apparatus which allows a manual operation of the apparatus to allow a bottle to be removed from the refrigerating compartment. It is a further object of this invention to so construct the cabinet that the refrigerating compartment will contain water and, when desired, the space therebelow may contain the motor and compressor of a compression type refrigerating apparatus connected to cooling coils submerged in the refrigerating compartment.

With these and other objects in view, reference is made to the accompanying sheets of drawings which illustrate a preferred form of this invention with the understanding that detail changes may be made without departing from the scope thereof.

In the drawings:

Figure 1 is a view in perspective of a preferred form of cabinet which mounts a preferred form of this improved dispensing apparatus.

Figure 2 is a view in central, transverse vertical section of Figure 1.

Figure 3 is an enlarged detail top plan view of this improved dispensing apparatus with the cover or top plate removed and the bottles to be dispensed indicated by dotted lines.

Figure 4 is an enlarged view in vertical section taken on the line 4—4 of Figure 3.

Figure 5 is an enlarged view in vertical section taken on the line 5—5 of Figure 3.

Figure 6 is an enlarged detail plan view of the

sliding cover in the position to uncover a bottle in the outside row for removal.

Figure 7 is a view similar to Figure 6, illustrating the position of the sliding cover when a bottle in the inside row is uncovered.

Figure 8 is a fragmentary, enlarged detail view in vertical section taken on the line 8—8 of Figure 3.

Figure 9 is an enlarged, fragmentary, detail top plan view of the coil-controlled apparatus and the cover plate of the dispensing apparatus.

It is preferable to mount this improved dispensing apparatus in the oblong casing 1 preferably made of metal and mounted upon rollers, as shown in Figure 1. The dispensing apparatus is circular in form and is provided with a cover plate 2 shown at the center of the top of the casing 1. A coin-controlled mechanism for operating the dispensing apparatus is shown mounted within a housing 3 at one side of the cover plate 2. The casing, as shown, is provided with hinged covers 4 mounted upon the top of the casing at each side of the dispensing apparatus. As shown in Figure 2, the bottled goods to be dispensed are supported upon a bottle rack 5 within a refrigerating compartment 6. This bottle rack is preferably perforated or expanded metal and is preferably arranged several inches above the bottom 7 of the refrigerating compartment and is also arranged a sufficient distance below the top of the cabinet to support the tops of the bottles so that they may be readily removed by hand when the dispensing apparatus uncovers a bottle.

The refrigerating compartment is preferably provided with insulating walls and the bottles below the circular dispensing apparatus are maintained in proper position by a plurality of bottle-receiving cups 8 secured upon the bottle rack. The doors 4 open into the refrigerating compartment so that a plurality of bottles may be stored upon the rack about the bottle cups 8. Sufficient water is placed within the refrigerating compartments and reduced in temperature by ice or by the cooling coil of a refrigerating machine to reduce the temperature of the bottled goods to the desired degree when the refrigerating compartment is filled with bottles both within and without the cups 8. The cabinet shown in Figures 1 and 2 employs a compression type of refrigerating apparatus, the compressor 9 and motor 10 of which are shown mounted within the compartment 11 in the casing 1 below the refrigerating compartment, and as this compartment does not take up the entire space, an addi-

tional storage space 12 is provided for the empty cases from which the bottled goods have been removed. In this type of cooling means, the evaporator coils 13 are arranged between the bottom 7 of the refrigerating compartment and the bottle-supporting rack 5.

The bottle dispensing apparatus is supported upon an annular plate 14 having a depending central circular flange 15 adapted to be received within a circular opening in the top of the cabinet with the outer portion of the circular plate 14 resting upon the body of the cabinet. This circular plate may be hinged to the top of the cabinet whereby it may be rotated about the hinge to uncover the bottle cups 8 arranged thereunder so that the empty cups may be refilled with filled bottles.

The dispensing apparatus is mounted to rotate within the circular flange 15 and below the annular plate 14 by the manual operation of a handle 16. It is preferable that the manually operable handle assume a locked position after a bottle has been removed from the dispensing apparatus and is released for another operation by a coin-controlled mechanism, of commercial design, mounted in the housing 3 on the plate 14. The manually operable handle 16 is shown as extending from the housing 3 and may be locked and released by the coin-controlled apparatus in any well-known or desired manner. The dispensing apparatus is provided with a rotatable cover plate 2 mounted upon a plurality of rollers 17 arranged about the inner side of the circular flange 15 with a portion of the circular plate 14 overlapping the upper edges of the cover plate. The cover plate is provided with a plurality of equally spaced-apart rectangular openings 18 arranged parallel and adjacent the periphery of the cover plate and normally overlapped by the annular plate 14. The housing 3 of the coin-controlled apparatus mounts a shaft 19 extending to one side thereof operatively connected to the handle 16. A gear wheel 20, mounted upon the outer end of the shaft 19, is provided with teeth adapted to extend through a slot 21 in plate 14 to engage within the rectangular openings 18.

The housing 3 is preferably secured to the annular plate 14 and is provided with an extension, indicated in dot and dash lines in Figure 9, extending over the gear 20 and shaft 19. The manual operation of the handle 16 will, through gear 20 and openings 18, impart a rotative movement to the cover plate 2.

The top or cover plate 2 is provided with a radial opening 22. It is preferable to arrange the bottles to be dispensed in two concentric rows with the rows in staggered relation to each other and concentric to the circular plate 14 of the dispensing apparatus, as indicated in dotted lines in Figure 3. The opening 22 in the cover plate is of sufficient length that as the plate is rotated, a bottle from either row may be removed. Mechanism is provided and actuated by the rotation of said cover plate at each operation of the coin-controlled operating handle 16 to uncover one bottle in one row for manual removal, while the next adjacent bottle in the other row is covered. The cups 8 not only position the bottles upon the rack but also prevent the removal of the bottles, except when directly under the opening 22.

The mechanism for covering and uncovering the respective bottles is mounted upon a bottom plate 23 which in turn is carried by the top plate

2 in spaced-apart relation therefrom a sufficient distance to contain the said mechanism. The bottom plate 23 is secured to the top plate 2 by a circular Z-bar 24 having an external annular flange in engagement with the bottom plate and an internal annular flange in engagement with the top plate. The top plate is supported upon the rollers 17 and the bottom plate is provided with a plurality of rollers 25 arranged adjacent the periphery of said plate and adapted to bear against the circular flange 15. The circular flange 15 mounts an internal gear 26 between the rollers 17 and 25. The internal gear shown in Figures 4 and 5 comprises two spaced-apart annular members mounted upon the inside of the circular flange 15, the teeth of which are provided by a plurality of equally spaced-apart studs 27 mounted between said annular members. The means for alternately covering and uncovering the respective rows of bottles includes two reciprocating members 28 and 29 mounted to travel in guides 30 carried in spaced-apart relation upon the bottom plate 23. The bottom plate 23 is provided with an opening 31 in alignment with the opening 22 of the top plate and the guides 30 extend on opposite sides of the opening 31. Inasmuch as the top and bottom plates are spaced apart and the reciprocating members travel over the bottom plate, the top plate is provided with an integral depending skirt 32 to surround the opening 31 in the bottom plate and is attached to the upper portions of the guides 30, as shown in Figures 1, 5 and 8.

As shown in Figures 5, 6, and 7, the members 28 and 29 are reciprocated by a gear 33 mounted on a pinion carried in a housing secured to the bottom plate 23, which gear extends through an opening in the web of the circular Z-bar 24 so that its teeth mesh with the internal gear 26 on one side and on the other side mesh with an operating gear 34 similarly mounted. The shaft 35 of said latter gear mounts on its opposite ends operating arms 36 and 37 which extend in line with each other on opposite ends of the operating shaft 35. The reciprocating member 28 comprises two spaced-apart plates traveling in the guides 30 which are connected by a link 40 to the operating arm 36 upon the lower end of the shaft 35. This operating member 28, link 40, and operating arm 36 are of such dimensions that when the operating link has been rotated to cause the member 28 to reach the end of its travel farthest from the shaft 35, the free ends of the member will close the openings 31 and 22 in the bottom and top plates respectively. This member 28, when in this position, is provided with a circular opening 39 above a bottle in the outer row. The member 29 includes a plate mounted to reciprocate between the spaced-apart members 28 and is connected to the operating arm 37 by a link 38, and as the link 37 extends in the opposite direction from the link 36 in this position of the member 28, as shown in Figure 5, the member 29 will be withdrawn, and the operating arm 37, link 38, and member 29 are so constructed that in the withdrawn position the opening 39 in the member 28 will be uncovered and a bottle may be removed therethrough by hand. When the shaft 35 has rotated 180 degrees, the member 28 will be withdrawn and the member 29 extended between the spaced-apart members forming the member 28, and the opening 39 in the member 28 will be over the center of the next adjacent bottle in the inner row. The member 28 is provided with an opening 41 75

so arranged that when this member is in the extended position, the opening 41 will be alined with the opening 39 allowing a bottle to be removed from the inner row while the bottles in the outer row are covered.

The various parts are so constructed that when a coin is deposited in the coin-controlled mechanism, the handle 16 is unlocked and may be rotated a definite distance which is sufficient to impart rotation to the top plate 2, which in turn rotates the bottom plate and gear 33, meshing with the fixed internal gear 26 to cause the reciprocation of the members 28 and 29 to alternately uncover one bottle in one row under the opening 22 and at the same time cover the next adjacent bottle in the other row, whereby only one bottle may be dispensed at each operation of the handle 16.

This invention also contemplates the provision of a hinged cover 42 normally closing the opening 22 on the top plate 2. As shown in Figure 8, this cover 42 is hinged to the top plate 2 at one side of the opening 22 and is provided with an arm 43 extending through a slot provided therefor in the top plate 2. A lever 44 is fulcrumed upon a stud 45 mounted on the bottom plate 23 and is pivotally connected at one end to a link 46 pivotally connected to the free end of the arm 43. The lever extends through an aperture provided therefor in the bottom plate 23 and is so formed that as the plate 2 is rotated, a pin 47 carried transversely through the free end of the lever 44 will contact the top of the bottle next the line to be removed and upon further movement will initiate an opening of the cover 42 which is then completed by hand as the openings 31 and 22 uncover the bottle for removal.

In practice, a bottle dispensing apparatus is preferably of such size that the cups 8 upon the bottle rack 5 will contain fifteen bottles in each row, but it is necessary to remove one filled bottle in the uncovered row so that upon the next operation of the coin-controlled handle, a filled bottle will be ready for dispensing. It is necessary to provide a lock of some description to lock the dispensing apparatus to the casing 1 when filled and ready for coin-controlled operation, and likewise provide locks upon the doors 4. In filling the cabinet, these three locks are unlocked and the dispensing apparatus rotated about its hinge 16a which allows not only the replenishing of the cups 8 with filled bottles, but additional bottles may be stored within the inner row. Likewise, upon opening the doors 4, additional bottles may be placed within the cabinet between its walls and the outer row of bottles in the cups 8. This is of particular advantage in cases where an individual desires to purchase several bottles at a time without operating the coin-controlled mechanism for each bottle, as the attendant may unlock one of the doors and fill the order without operating the coin-controlled mechanism, and if the storage space under the doors 4 contain bottles insufficiently cooled, the same result may be accomplished by unlocking the dispensing mechanism and filling the order by bottles taken from within the inner row of bottles.

What I claim is:

1. A bottle dispensing apparatus, including a cabinet to contain the bottles with a dispensing apparatus rotatably carried in a circular member non-rotatably mounted in the top of the cabinet, a mechanism mounted upon the non-rotatable member including an operating handle to rotate the dispensing apparatus, means within the cabinet to support two rows of bottles in position to be dispensed below said rotating apparatus, an opening in said apparatus for the removal of a bottle from either row therethrough, and means within said apparatus to uncover a bottle in one row to be removed while covering the next adjacent bottle actuated by the rotation of the apparatus.

2. The structure of claim 1, wherein the dispensing apparatus comprises two spaced-apart plates and the top plate is supported upon rollers carried upon the non-rotatable member.

3. The structure of claim 1, wherein the means for rotating the apparatus includes an annular rack upon the top of the apparatus meshing with a pinion carried by the mechanism and rotated by the operation of the manual handle.

4. The structure of claim 1, wherein the last named means includes two overlapping reciprocable slides, an internal gear mounted upon the non-rotatable member, a gear carried by the dispensing apparatus meshing with said internal gear, an operating shaft carrying a gear meshing with said first gear, and operating arms mounted upon said shaft pivotally connected to said respective reciprocating slides.

5. A bottle dispensing apparatus, including a bottle containing cabinet with a dispensing apparatus rotatably carried in a circular member non-rotatably mounted in the top of the cabinet, a mechanism mounted upon the non-rotatable member, means within the cabinet to support two concentric staggered rows of bottles to be dispensed below said dispensing apparatus, said dispensing apparatus having an aperture through which bottles from both rows may be dispensed, manually operable means included in said mechanism to rotate said opening step by step over a bottle in each row, an internal gear mounted upon the non-rotatable member, an idle gear meshing with a power gear mounted upon an operating shaft, both the idle gear and the shaft being carried by the dispensing apparatus, said idle gear meshing with said internal gear, two overlapping slides mounted to reciprocate oppositely over said dispensing aperture operated by said power shaft, one slide in external position being extended across said aperture and having an aperture therein adapted to uncover a bottle of the outer row while the other slide is retracted and upon reciprocation to the other end of travel the aperture in said one slide is adapted to uncover a bottle in the inner row and the said other slide having an aperture therein to register and uncover a bottle in the inner row while extended to cover the bottle in the outer row.

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