Feb. 12, 1935. C. A. FRICK 1,990,987

REFRIGERATOR

Filed April 2, 1932 3 Sheets-Sheet 1

Fig. 1.

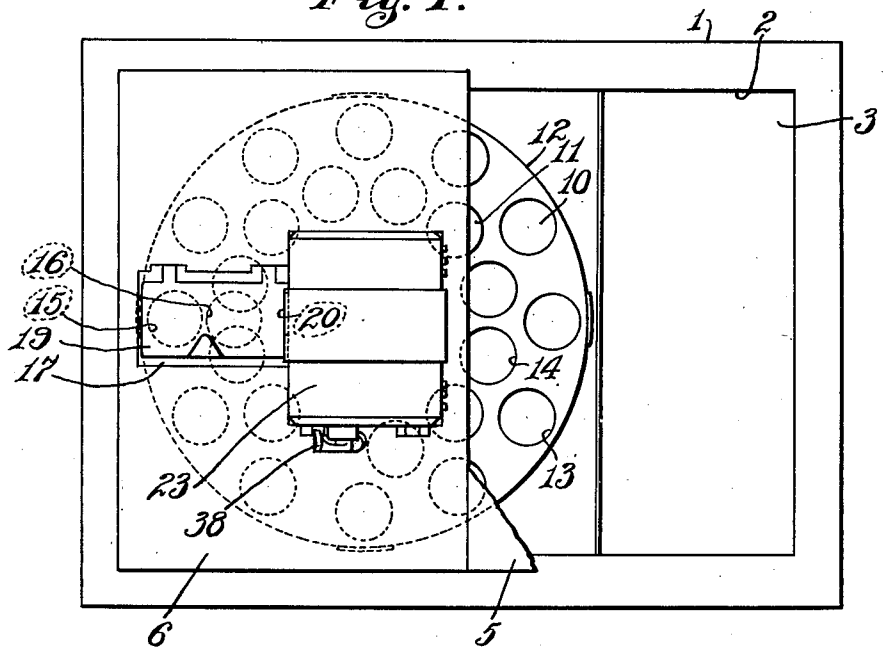
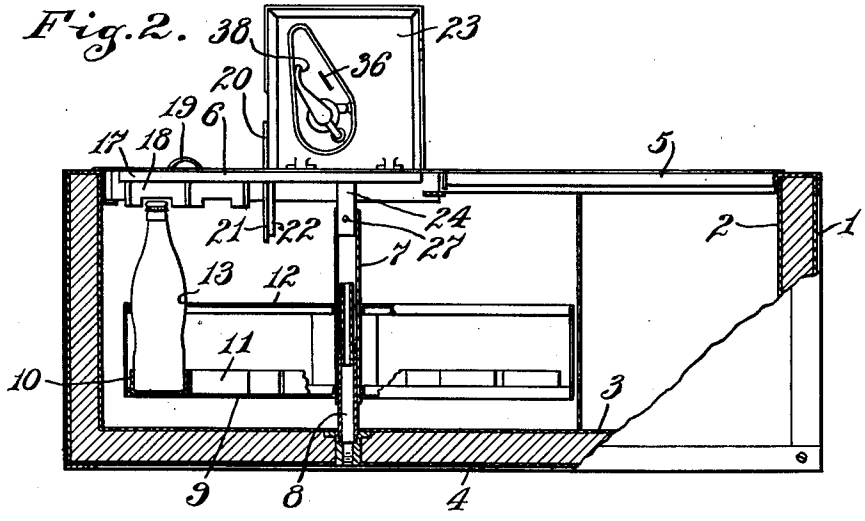


Fig. 2.



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Fig. 3.

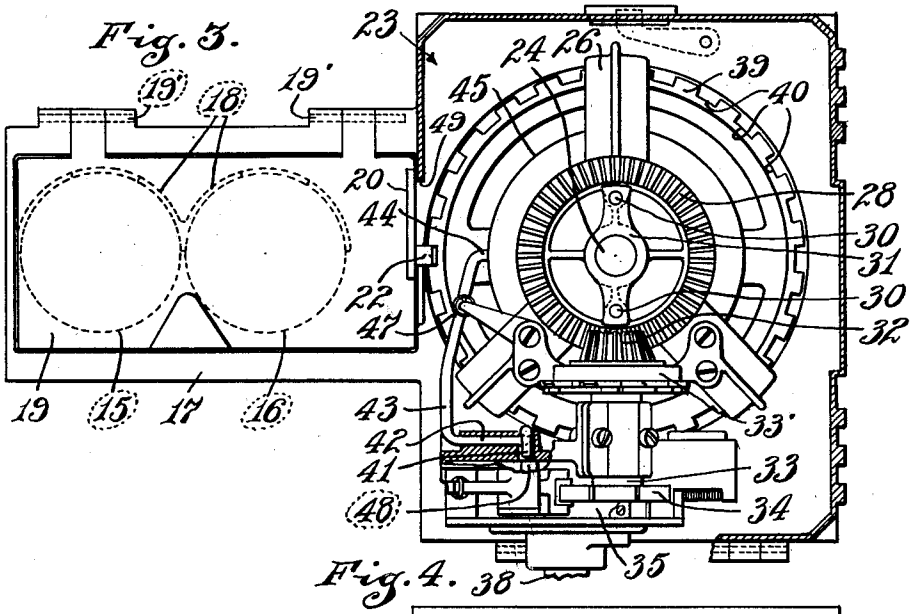
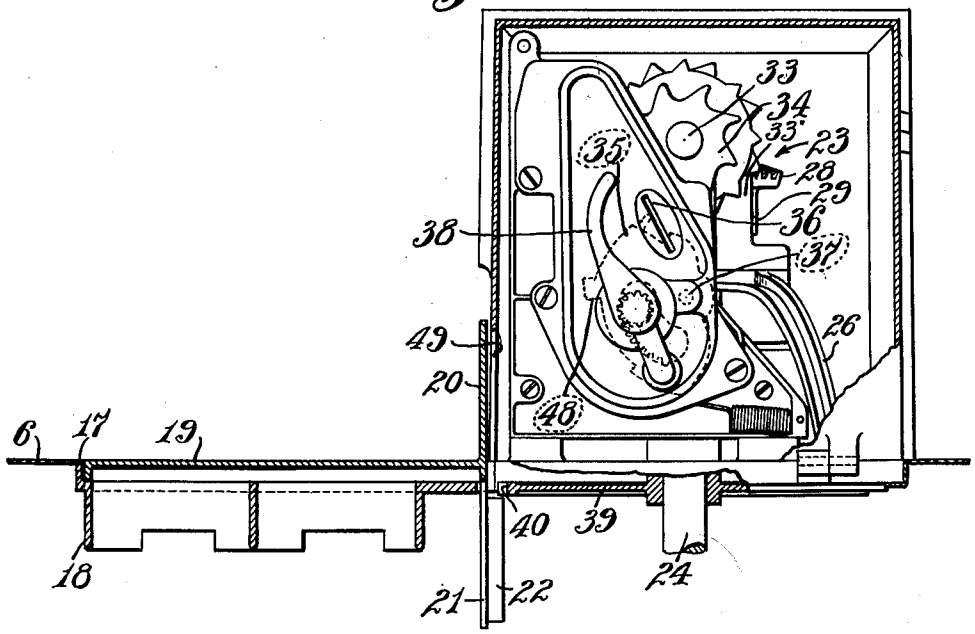


Fig. 4.



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Fig. 5.

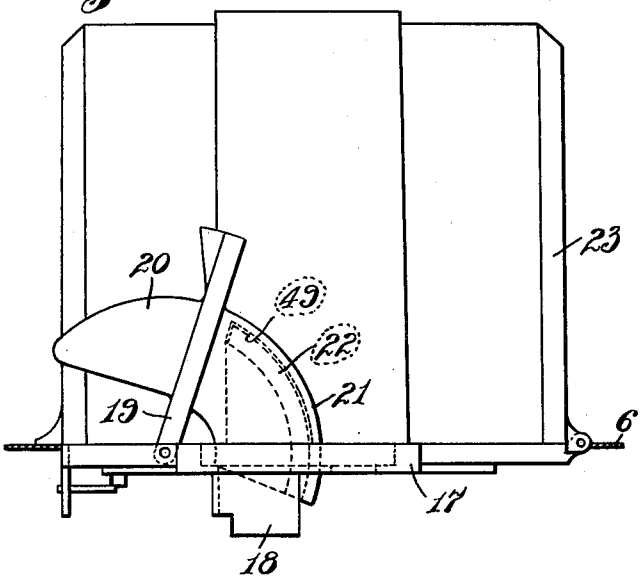
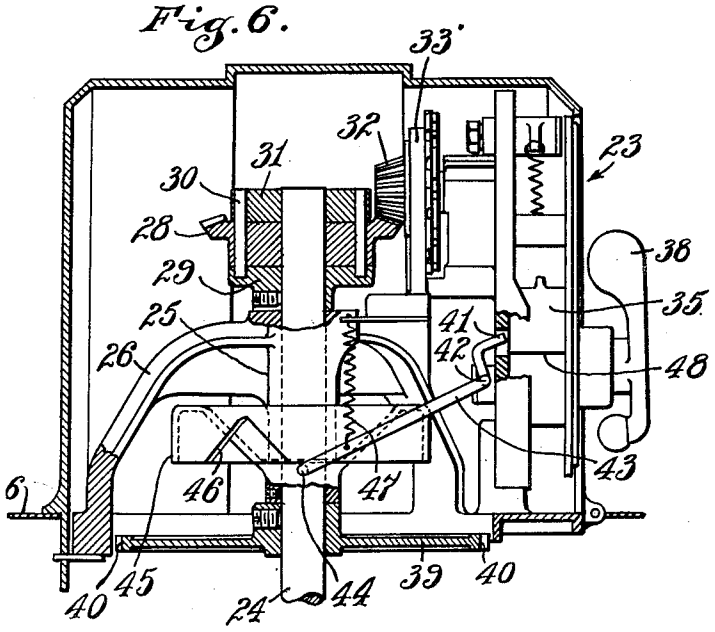


Fig. 6.



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UNITED STATES PATENT OFFICE

1,990,987

REFRIGERATOR

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Application April 2, 1932, Serial No. 602,655

10 Claims. (Cl. 194—1)

My invention relates to improvements in dispensing refrigerators particularly designed for dispensing bottled beverages and the like and more particularly my invention relates to coin controlled refrigerators of the above character.

One of the objects of my invention is to provide a coin controlled dispensing refrigerator wherein upon the deposit of a coin in the coin controlled mechanism and the manipulation of the mechanism, a beverage bottle will be brought into dispensing position. Another object of my invention is to provide a structure of the above character wherein after the last bottle has been dispensed from the refrigerator means will be provided for preventing the insertion of another coin until the supply has been replenished.

Another object of my invention is to prevent the operation of the positioning means for the beverage bottles during the removal of one of the bottles from the refrigerator.

For the purpose of disclosing my invention I have illustrated one embodiment thereof in the accompanying drawings, in which:

Fig. 1 is a plan view, part of the cover being removed, of a refrigerator embodying my invention;

Fig. 2 is a sectional view thereof showing the coin operating mechanism in side elevation;

Fig. 3 is a plan view, the cover being in section, of the coin operating device and closure mechanism;

Fig. 4 is a front elevation of a structure illustrated in Fig. 3, parts of the same being shown in section;

Fig. 5 is a side elevation of the coin operating mechanism and closure member, and

Fig. 6 is a detail section of the drive connection between the coin operating mechanism and the bottle carrier mechanism.

In the structure illustrated I provide a suitable refrigerating container which may be a box like construction having outer panels 1 and an inner tub 2, the space between the same being filled with suitable insulating material. The bottom of the tub 3 is likewise covered with suitable insulating material interposed between the bottom of the tub and a bottom panel 4.

Two cover sections cover the top of the container, the section 5 being adapted to close about one-half of the container. The section 6 is adapted to support the coin controlled mechanism and is disposed over the one-half. Any desired means may be provided for locking these cover sections against unauthorized opening.

Within the container I mount a rotatable bottle supporting drum for carrying the bottles to be cooled and dispensed. This bottle supporting drum is mounted on a hollow spindle 7, adapted to be slipped over the drain pipe 8 and rotatably supported thereon. The drum comprises a bottom member 9 provided with two rows of bottle receiving cups 10 and 11. Mounted above the bottom member and the cups is a positioning disc 12 having openings 13 and 14 disposed therein corresponding in vertical alignment with the cups 10 and 11. The cup 11 and openings 14 it will be noted are staggered with relation to the cups 10 and openings 13, the purpose of which will more fully appear hereinafter.

The cover section 6 is provided with a suitable dispensing opening, or rather two openings, 15 and 16 which are formed in a casting frame 17 suitably inset in the cover section. This casting frame has two sets of annular downwardly extending flanges 18 surrounding the rear portion of the openings 15 and 16. The openings 15 and 16 are closed by a hinged cover 19, hingedly connected at 19' to the frame 17 and this cover, as shown particularly in Figs. 3 and 5, on one side, is provided with a vertical upwardly extending plate 20 preferably arcuate in shape and a downwardly extending plate 21, the downwardly extending plate being provided with an arcuate rib 22. The purpose of this plate or rib will appear more fully hereinafter.

For rotating the bottle supporting drum, in order to bring the bottles supported thereby into position beneath the dispensing openings 15 and 16, I provide a coin controlled rotating mechanism 23. This mechanism is provided with a vertical spindle 24 suitably supported in a bearing 25 carried by a spider 26 and the lower end of this spindle 24 is connected to the spindle 7 by means of a removable locking pin 27 whereby any rotative movement of the spindle 24 will be imparted to the spindle 7. The upper end of the spindle or shaft 24 is provided with a beveled driving gear 28 loosely mounted on the spindle and adapted to be connected thereto by a clutch mechanism. This mechanism consists of a bottom clutch member 29 rotatably rigid on the spindle 24. The clutch member 29 is provided with pin receiving openings adapted to receive a series of locking pins 30 passing through the beveled gear 28 and mounted on a supporting member 31. This member is axially movable on the shaft 24 and it will be noted that by raising the supporting member 31 the pins 30 will be disengaged from the clutch member 29 whereby the

shaft or spindle 24 may be rotated independently of the beveled gear 28.

This beveled gear 28 meshes with and is driven by a beveled gear 32 driven from the coin controlled mechanism and adapted to drive the spindle 24. The shaft 33 on which is mounted the bevel gear 32 extends through a bearing member 33' extending upwardly from the spider 26 to rigidly hold the beveled gear 32 against deflection. This shaft 33 is provided with a star wheel 34 which is connected to an operating lever 35 of a coin controlled mechanism, by the insertion through the slot 36, of a coin into a position between the lever 35 and the teeth of the star wheel 34. When the coin is inserted in this position, a rotation of the lever 35 on its shaft 37 through the medium of the operating handle 38 and a suitable gear train will rotate the star wheel 34 a distance of one tooth which is a sufficient distance to move the bottle supporting drum one step for the purpose of bringing a bottle beneath one of the delivery openings.

I have not gone into specific details as to the construction of the coin controlled mechanism as this is of standard commercial structure.

In order to prevent the rotation of the bottle supporting drum while the cover member 19 is open and thereby prevent the removal of more than one bottle through the dispensing opening of the refrigerator the spindle 24 has fixed thereon a disc 39 having notches 40 in the periphery thereof which notches are adapted to coincide with the rib 22 on the plate 21 of the cover member so that when the cover member 19 is raised to open position the rib 22 will enter one of the notches 40 and so long as the cover is raised rotation of the drum will be prevented.

In order to prevent the deposit of a coin in the coin operated device, after the bottles supported in the support drum have been exhausted I provide a latching mechanism including a latch pin 41 pivoted at 42 and having extending rearwardly therefrom an operating arm 43. This arm 43 is provided with an inturned end 44 bearing on a cam member 45 fixed on the spindle 24 and rotating therewith. This cam member is provided with a cam slot 46 and the arm 43 is biased to its raised position by a coiled spring 47, being maintained in its lowered position by the bottom edge of the cam member 45. The latch member 41 in its projected position is adapted to engage behind a shoulder 48 on the lever 35, and with the latch 41 projected into the path of the shoulder 48, the lever cannot return to its retracted position and will therefore block the coin opening 36.

In operation a coin is deposited in the coin receiving slot 36, the operating lever 38 is then manipulated to the right looking at Fig. 4, by the operator and through the connection of the lever 35 and star wheel 34 by the coin, the beveled gear 32 will be rotated, in turn rotating the shaft or spindle 24 thus rotating the bottle carrier one step to position a bottle in the outer row beneath the delivery opening 15 as shown in Fig. 1. By this rotation of the spindle one of the notches 40 in the disc 39 is positioned opposite the rib 22 and upon the raising of the cover member 19 this rib will engage in the recess 40, preventing further rotation of the spindle 24. The raising of the cover member 19 opens both the openings 15 and 16. The bottle of the outer row of bottles, however, being in position immediately beneath the opening 15 may be removed through the opening. It will be noted, however, that the bottles of the inner row, see particularly Fig. 1, are out of alignment with the opening 16 and due to the fact that these bottles, at their bottoms are supported in the cups 10 and extend through openings 14 in the top member they cannot be tilted sufficiently to bring them into a position to be removed through the opening 16. The next operation of the handle 38 will rotate the supporting drum one step to bring the bottle of the inner row beneath the delivery opening 16. This, however, leaves its next succeeding outer row bottle short of the opening 15 so that it cannot be removed. By the time the disc 39 has made one complete revolution the supply of bottles will have been exhausted and the cam portion 46 will be brought into a position to permit the arm 43 to be raised under the influence of the spring 47 and project the fingers 41 into the path of the shoulder 48 preventing a return movement of the lever 35. This blocks any further insertion of a coin in the coin control apparatus and the subsequent operation of the device until the drum has been refilled with bottles.

In order to refill the drum the cover member for the coin controlled mechanism is thrown back to permit access to the supporting member 31 and by raising this member the beveled gear 28 is disconnected from the spindle 24 to permit free rotation of the spindle without affecting the coin controlled mechanism. Furthermore, due to the fact that the cover of the coin controlled mechanism is thrown back the cover member 19 may be raised sufficiently far to disengage the rib 22 from one of the recesses 40 so that, the bottle supporting drum may be freely rotated. It will be noted that with the cover for the coin controlled mechanism closed the rib 22 operates in a slot 49 in the cover which prevents the closure 19 from being thrown to releasing position. The operator then inserts a fresh supply of bottles through the opening 15 into the cups 10 and 11 rotating the bottle supporting drum after each bottle has been inserted in position, until all of the cups have been filled, then by dropping the pin supporting member 31 the beveled gear is again non-rotatably connected with the spindle 24 and upon the closing of the cover of the coin controlled mechanism the apparatus is in a position to be again manipulated for the delivery of bottles.

I claim as my invention:

1. In a device of the character described, the combination with a container having a dispensing opening therein, a closure member for said dispensing opening, means within said container for progressively moving each of a series of bottles in said container to a position to be dispensed through said opening, coin controlled operating means for said means and means operated by the opening of said closure member for preventing the movement of the bottles in said container, said means preventing the opening of the closure member during the operation of the coin controlled device until the bottle has been moved to full dispensing position.

2. In a device of the character described, the combination with a container having a dispensing opening therein, of a closure member for said opening, means within said container for moving each of a series of bottles to a position to be removed through said opening, coin controlled operating means for said moving means and means operated by the opening of said closure member for preventing the operation of said moving means by said coin operated means,

said means preventing the opening of the closure member during the operation of the coin controlled device until the bottle has been moved to its final dispensing position.

3. In a device of the character described, the combination with a container having a delivery opening therein, of a closure member for said opening, means within said container for progressively moving each of a series of bottles in said container to a position to be moved through said opening, a coin controlled driving means for said moving means, a separable connection between said coin controlled driving means and said moving means to permit a movement of said moving means independently of said coin controlled driving means, a cover member for said coin controlled driving means, interlocking means between said moving means and said container closure member for preventing the operation of said moving means when the closure member is open to permit the withdrawal of an article and means permitting a disconnection between said interlocking means and closure when the coin controlled cover member is opened to permit a disconnection between said coin controlled driving means and moving means.

4. In a device of the character described, the combination with a refrigerating container, of a drum rotatably mounted in said container constructed to support a series of bottles in an upright position, a cover for said container having a dispensing opening therein, a coin controlled driving means for rotating said drum mounted on said cover and a separable connection within said container between said coin controlled driving means and said drum.

5. In a device of the character described, the combination with a refrigerating container, a cover therefor having a dispensing opening therein, a drum rotatably mounted within said container constructed to support a series of bottles in an upright position, a coin controlled driving means for said drum for rotating the same to position the bottles beneath said dispensing opening and locking means for preventing the rotation of said drum operated by the opening of said closure member, said locking means preventing the opening of the closure member during the operation of the coin controlled device until the bottle has been moved to its full dispensing position.

6. In a device of the character described, the combination with a container, of means within said container for moving each of a series of articles to dispensing position, a coin controlled operating means for said moving means including an operating lever, a stop member adapted to be projected into the path of said lever to prevent the operation thereof and means moving with said article moving means for projecting said stop member in the path of said lever when the article moving means arrives at a predetermined position.

7. In a device of the character described, the combination with a refrigerating container, of a rotatable drum mounted therein having a plurality of circularly disposed rows of bottle receiving receptacles for maintaining the bottles received thereby in an upright position, said container having a dispensing opening therein, the receptacles of one row on said drum being so disposed relatively to the receptacles on the other row so that when the bottles of one row are in a position to be dispensed through said opening the bottles of the other row will be out of dispensing position, a coin controlled driving means for rotating said drum to position the bottles thereof in dispensing position relative to said dispensing opening and a separable connection between said coin controlled driving means and said drum to permit the separate drum to be rotated independently of the coin controlled means.

8. In a device of the character described, the combination with a container, of an article supporting drum mounted therein, said container having a dispensing opening therein, a closure member for said dispensing opening, a driving spindle for said drum, a disc on said spindle having a plurality of notches therein, means on said closure member engaging in one of said notches for preventing the rotation of said drum when the closure member is opened, a coin controlled driving means for said spindle and a separable connection between said driving means and said spindle to permit an independent rotation of said spindle.

9. In a device of the character described, the combination with a container having a dispensing opening therein, of an article carrier rotatably mounted in said container, a spindle for rotating said article carrier, a coin controlled means for rotating said spindle to position the articles of said carrier in dispensing position relative to said dispensing opening, a stop member for preventing the operation of said coin controlled driving means and a cam member mounted on said spindle for operating said stop member when the article carrier has reached a predetermined position in its rotative movement.

10. In a device of the character described, the combination with a container having a dispensing opening therein, a closure member for said dispensing opening hinged to said container to permit said closure member to be opened vertically, means within said container for progressively moving each of a series of articles therein to a position to be dispensed through said opening, coin controlled operating means for said means and means preventing the opening of said closure member except when said articles are in dispensing position and operated by the vertical opening of the closure member for preventing movement of the articles in said container.

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