

Oct. 30, 1928.

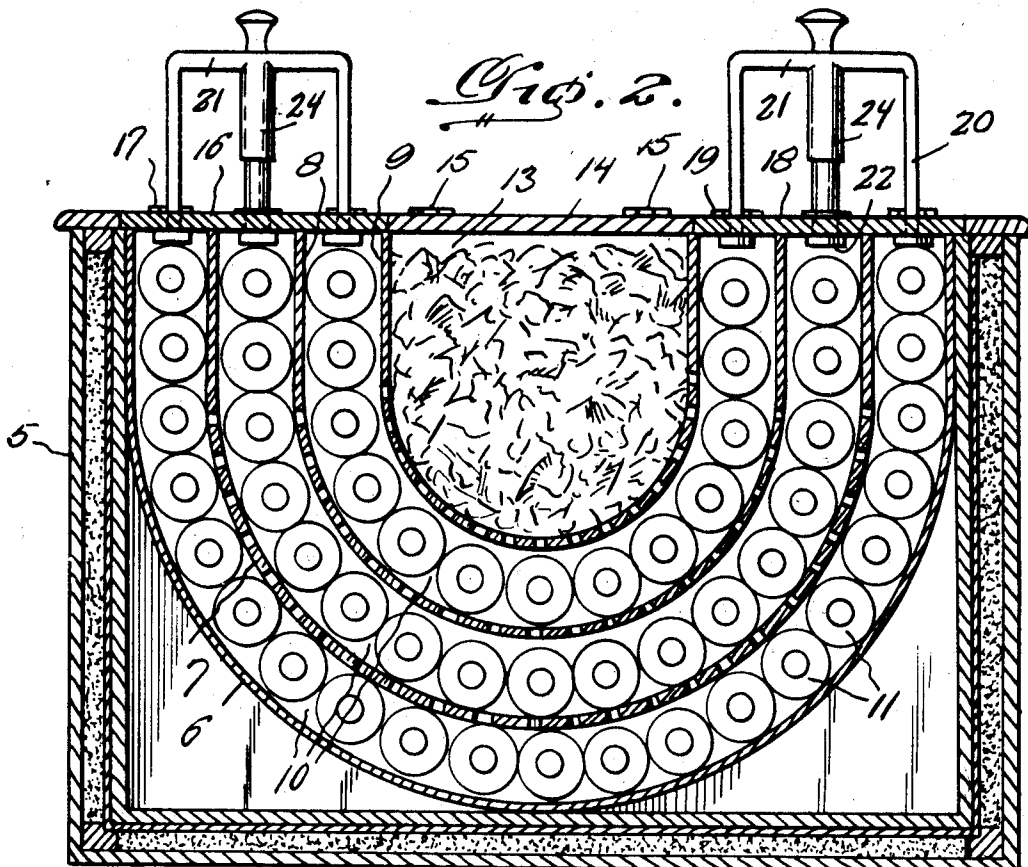
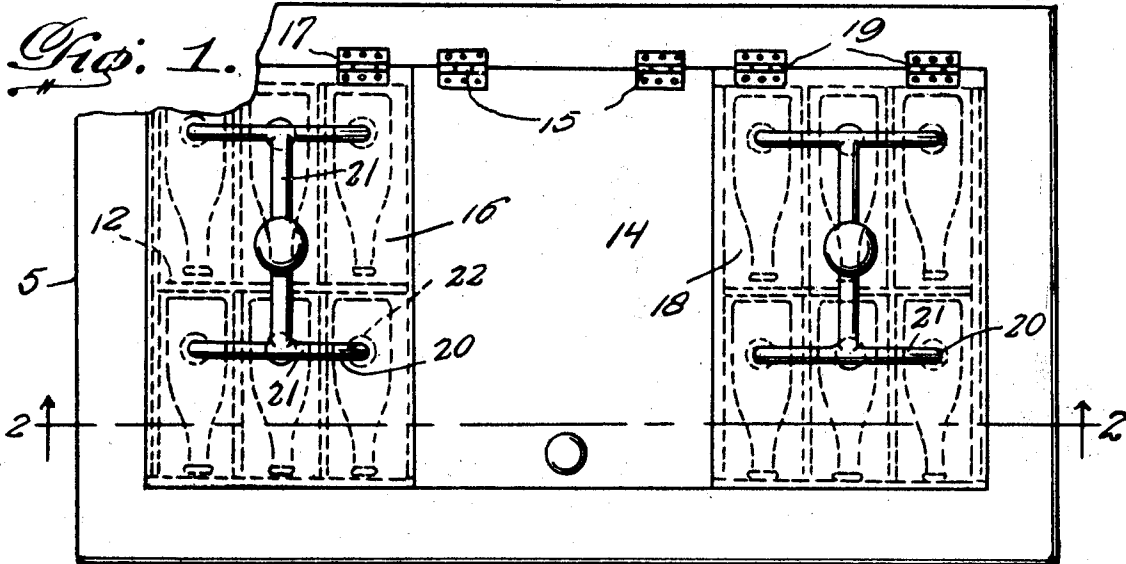
1,689,256

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BOTTLE DISPENSING REFRIGERATOR

Filed April 2, 1928

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

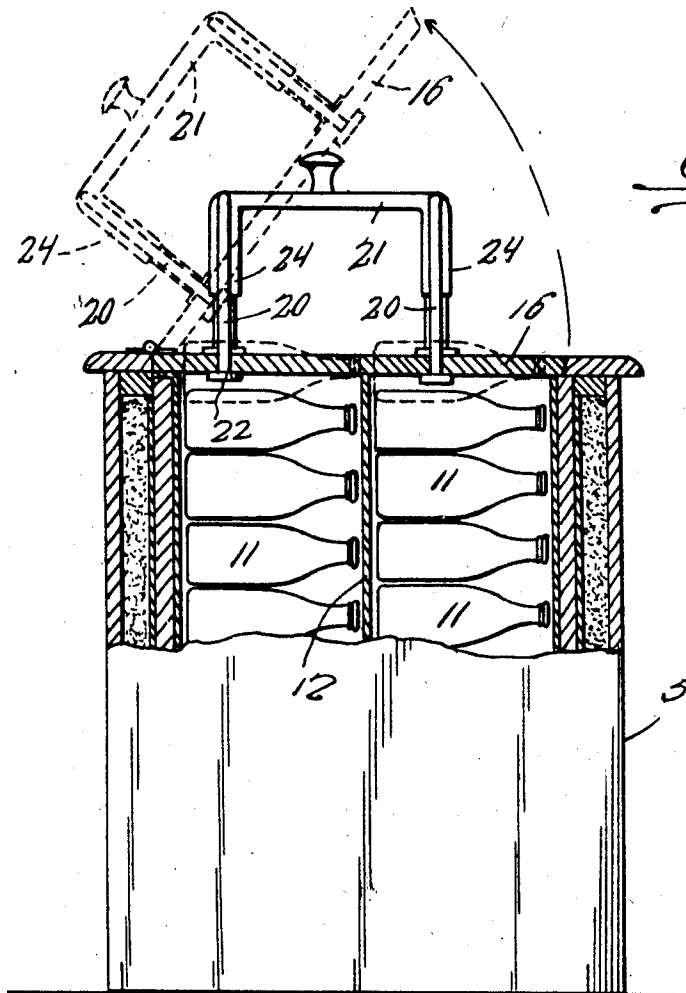


Fig. 3.

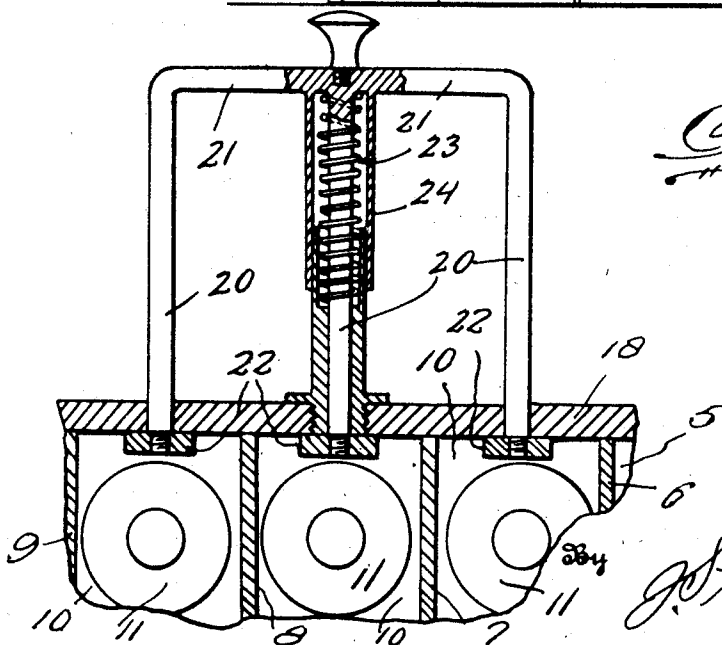


Fig. 4.

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UNITED STATES PATENT OFFICE.

JAMES E. SAPP, OF BAINBRIDGE, GEORGIA, ASSIGNOR OF ONE-HALF TO FERRY D. RICH, OF BAINBRIDGE, GEORGIA.

BOTTLE-DISPENSING REFRIGERATOR.

Application filed April 2, 1928. Serial No. 266,684.

My invention relates to improvements in bottle dispensing refrigerators, and particularly to that type wherein there is provided a plurality of U-shaped channels through which the bottles are adapted to be passed, each bottle being inserted in the channel at one end and being forced through the channel and out the other end by the insertion of succeeding bottles.

In the above type of refrigerator, it has been customary to form the channels of tubular shape and to insert the bottles endwise or end to end in the channel. With such an arrangement, difficulty has been experienced in dispensing the bottles due to the same jamming in the channels. Moreover, with such usual construction, the bottle capacity of each channel is quite limited and the arrangement of the bottles is such that maximum cooling effect cannot be attained in a minimum amount of time.

I overcome the above objections by forming the channels of substantially semi-cylindrical form so as to accommodate the bottles in horizontal side by side relation instead of end to end relation, thereby increasing the bottle capacity of each channel and insuring easy feeding of the bottles through the channels in such manner as to reduce breakage to a minimum and insure maximum cooling in a minimum amount of time.

By reason of the present improvement, the nested channel-forming tubs may be cheaply and conveniently formed of curved strips of metal of flat cross section throughout instead of from corrugated tubs which are usually provided to form tubular channels, thereby enabling the present construction to be most economically manufactured in extremely simple and durable form.

A further object of the present invention is to provide simple and efficient means for ejecting the bottles at corresponding ends of the channels to permit the operator to readily grasp the desired bottle.

A still further object is to provide means for permitting dispensing or ejection of the bottles at either end of the channel to permit serving of a slightly cooled bottle or a quite cold bottle to the customer according to his desire.

Other objects will become apparent as the nature of the invention is better understood, and the same consists in the novel form, combination and arrangement of parts herein-

after more fully described, shown in the accompanying drawings and claimed.

In the drawings:

Figure 1 is a top plan view of a bottle dispensing refrigerator embodying the present invention.

Figure 2 is a vertical section taken on line 2-2 of Figure 1.

Figure 3 is a view partly in end elevation looking toward the right of Figure 1 and partly in vertical section; and

Figure 4 is an enlarged fragmentary detail view partly in vertical section and partly in elevation, showing details of the ejecting means.

In the structure illustrated, I provide a suitable box or casing 5 carrying an outer imperforate semi-cylindrical tub 6 and a plurality of perforated inner tubs 7, 8 and 9 which are nested in spaced relation within the outer tub 6 so as to form a plurality of water-communicating U-shaped or semi-cylindrical passageways 10. The tubs are all in the nature of curved strips of flat cross section throughout and of sufficient width to accommodate one or more rows of bottles 11 in horizontal side by side contiguous relation as shown clearly in the several views. As shown, the tubs are of sufficient width to accommodate two rows of bottles (Figure 3), the rows being separated by a suitable partition 12 vertically disposed intermediate the front and back walls of the casing 5. It will thus be seen that each passage or channel is adapted to contain a maximum number of bottles, many of which are at all times located in the lowest portion or coldest zone of the passage or channel, thereby insuring maximum cooling in a minimum amount of time. Furthermore, as the bottles are arranged in smooth runways or channels in horizontal side by side relation, they will readily roll and slide freely so as to insure easy feeding of the bottles through the channels without causing breakage.

The space within the innermost tub 9 forms a chamber 13 for the reception of crushed ice whereby the water maintained at the required level within all of the passages or channels is kept at the desired refrigerating or cooling temperature. A door 14 is provided centrally of the top wall of the casing 5 to close the ice chamber 13, and this door is hinged as at 15 to swing upwardly and rearwardly for permitting most convenient access to the

chamber 13 for replenishing the supply of ice from time to time as found necessary.

The delivery ends of the channels or passageways 10 are closed by a hinged cover 16 having its hinges 17 located at the back thereof whereby the cover is adapted to swing upwardly and rearwardly to open position as indicated in Figure 3. A similar hinged cover 18 is provided to close the intake ends of the channels 10, the same being hinged as at 19 at the back edge thereof to swing upwardly and rearwardly to open position. It will be understood that the covers 16 and 18 will automatically lower or close by gravity when released, and due to their direction of swinging in opening, free access is had to the partially ejected bottles. Moreover, when the bottles are raised at corresponding ends of the channels or passageways, the uppermost bottles in the rear rows will press against the adjacent door so as to automatically swing it upwardly to open position as shown by dotted lines in Figure 3.

In the normal use of the device the bottles are to be inserted in the ends of the channels at the right of Figures 1 and 2 and to be ejected from the ends of the channels at the left of these figures in extremely cold condition. However, in some instances, it is desired by a customer that the bottle goods be only in a slightly cool condition, and in order to accommodate such customers, the present device permits dispensing of the last-inserted bottles from the ends of the channels at the right of Figures 1 and 2. For this purpose ejecting means is associated with both of the covers 16 and 18.

In order to move the rows of bottles through the channels 10 in either direction ejecting means is associated with both of the covers 16 and 18, and as these ejecting means are identical in construction, description of one will suffice for both. As shown, each ejecting or bottle moving device consists of a plurality of vertical push rods 20 slidable through the associated cover 16 or 18, one for each bottle channel, and rigidly connected at their upper ends for simultaneous operation as at 21, heads or enlarged portions 22 being provided upon the lower ends of the push rods 20 to contact with the end bottles in the rows or channels. Spring means as at 23 may be provided to normally yieldingly elevate the ejecting devices or push rods 20 to inoperative position, and it will readily be seen that when one of the ejecting devices is depressed manually the several rows of bottles will be moved a slight distance through the channels 10 so as to cause partial ejection of a bottle at the opposite end of each of the several rows and simultaneous opening of the opposite door so that the desired bottle may be readily grasped and removed. If an extremely cold bottle of goods is desired the ejecting device at the right will be manipu-

lated, and if a slightly cool bottle is required the ejecting device at the left of Figures 1 and 2 will be operated to eject the desired bottle at the right of these figures where the bottles have been placed in the refrigerator most recently.

From the above description it will be seen that the partially ejected bottles which are not removed will immediately settle to a lower level when the manipulated ejecting device is released, thereby permitting the door which has been opened to again and automatically return to closed position. Naturally, it is to be understood that whenever a bottle is removed from any row, another bottle is inserted in that row to take the place of the removed bottle, the duly inserted bottle being always introduced at the end of the row at the right hand side of the refrigerator as viewed in Figures 1 and 2. The spring 23 is preferably employed about the intermediate push rod 20 of the three push rods for each of the three front and rear rows of bottles as shown clearly in Figure 4, and a tube 24 houses each spring and is movable with the push rod downwardly into engagement with the associated cover 16 or 18 to limit the downward movement of the rods 20 and correspondingly limits the ejection of the bottle to partial ejection as indicated by dotted lines in Figure 3. In this way the bottles are not completely forced out of the ends of the channels and cannot roll out of the refrigerator to become accidentally broken.

Minor changes may be made without departing from the spirit and scope of the invention as claimed.

What I claim as new is:

1. A bottle refrigerator comprising a casing, and a plurality of semi-cylindrical tubs nested in spaced relation within said casing to form water-communicating U-shaped channels through which rows of bottles are adapted to be passed in horizontal side by side relation, a single hinged cover for the intake ends of all of the channels, and a manually depressible ejecting device carried by said cover for simultaneously moving all of the rows of bottles and partially ejecting a bottle at the delivery end of each of said channels.

2. A bottle refrigerator comprising a casing, and a plurality of semi-cylindrical tubs nested in spaced relation within said casing to form water-communicating U-shaped channels through which rows of bottles are adapted to be passed in horizontal side by side relation, a single hinged cover for the intake ends of all of the channels, and a manually depressible ejecting device carried by said cover for simultaneously moving all of the rows of bottles and partially ejecting a bottle at the delivery end of each of said channels, said ejecting device embodying push rods vertically slidable through said cover and having members on their lower ends to contact the

uppermost bottles in the rows, and means rigidly connecting the upper ends of said push rods.

3. A bottle refrigerator comprising a casing, and a plurality of semi-cylindrical tubs nested in spaced relation within said casing to form water-communicating U-shaped channels through which rows of bottles are adapted to be passed in horizontal side by side relation, and manually operable ejecting means for moving the rows of bottles through said channels in either direction.

4. A bottle refrigerator comprising a casing, and a plurality of semi-cylindrical tubs nested in spaced relation within said casing to form water-communicating U-shaped channels through which rows of bottles are adapted to be passed in horizontal side by side relation, a single hinged cover for the intake ends of all of the channels, and a manually depressible ejecting device carried by said cover for simultaneously moving all of the rows of bottles and partially ejecting a bottle at the delivery end of each of said channels, said ejecting device embodying push rods vertically slidable through said cover and having members on their lower ends to contact the uppermost bottles in the rows, means rigidly connecting the upper ends of said push rods, and yieldable means to normally elevate said push rods.

5. A bottle refrigerator comprising a casing, and a plurality of semi-cylindrical tubs

nested in spaced relation within said casing to form water-communicating U-shaped channels through which rows of bottles are adapted to be passed in horizontal side by side relation, a single cover for the normal delivery ends of said channels, and a single cover for the normal intake ends of said channels, said covers being hinged to swing upwardly and rearwardly to open position and arranged to be swung open by bottles moving to partially discharged position from certain of said channels.

6. A bottle refrigerator comprising a casing, and a plurality of semi-cylindrical tubs nested in spaced relation within said casing to form water-communicating U-shaped channels through which rows of bottles are adapted to be passed in horizontal side by side relation, a single cover for the normal delivery ends of said channels, and a single cover for the normal intake ends of said channels, said covers being hinged to swing upwardly and rearwardly to open position and arranged to be swung open by bottles moving to partially discharged position from certain of said channels, and an ejecting device carried by each of said covers adapted for selective operation to simultaneously move the rows of bottles in either desired direction through said channels.

In testimony whereof I affix my signature.

JAMES E. SAPP.