

Oct. 20, 1925.

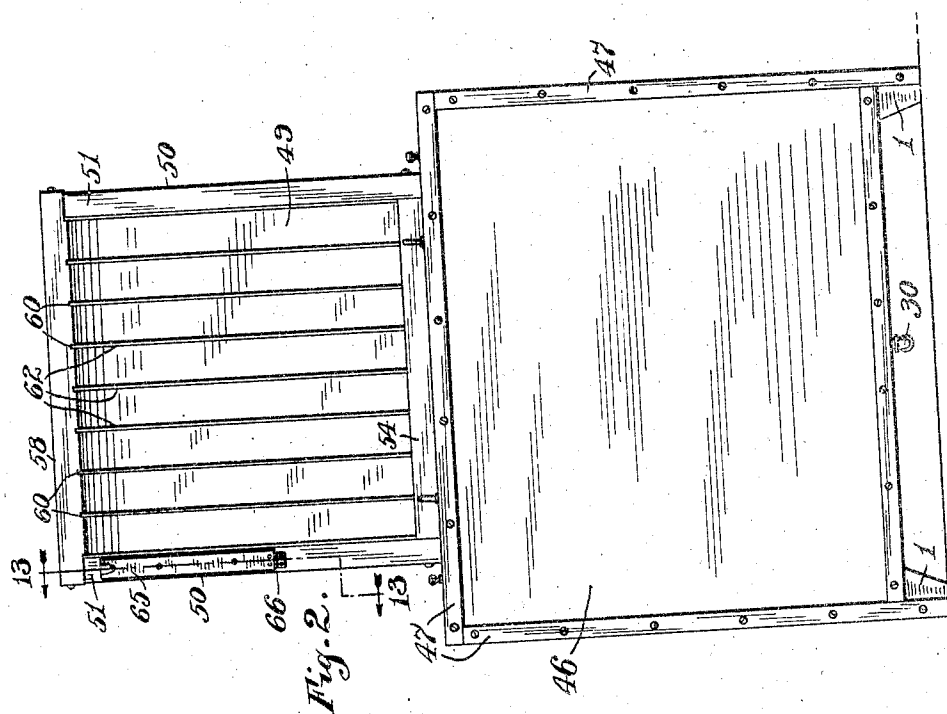
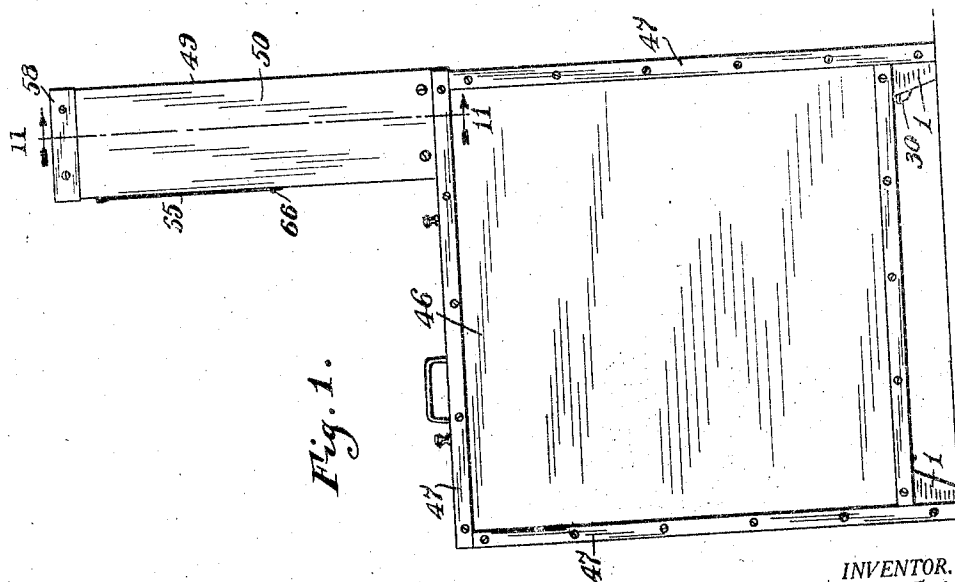
1,557,578

C. A. FRICK

BOTTLE REFRIGERATOR

Filed Jan. 10, 1925

5 Sheets-Sheet 1



INVENTOR.

INVENTOR.
Chester A. Frick,

 $\bar{B}\bar{Y}$

Hood & Hahn
ATTORNEYS

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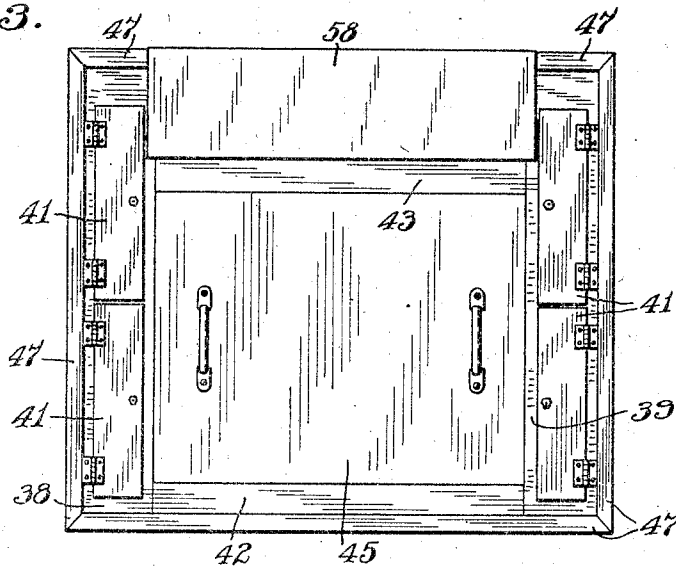
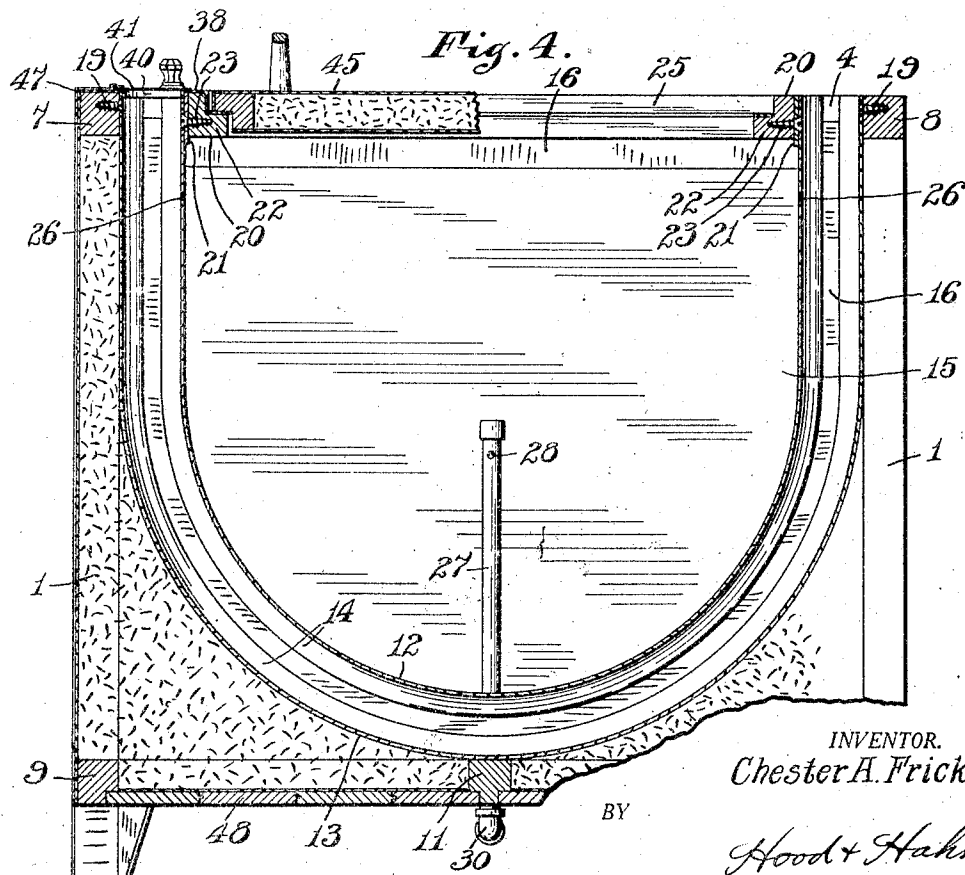
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Fig. 3.



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Fig. 7.

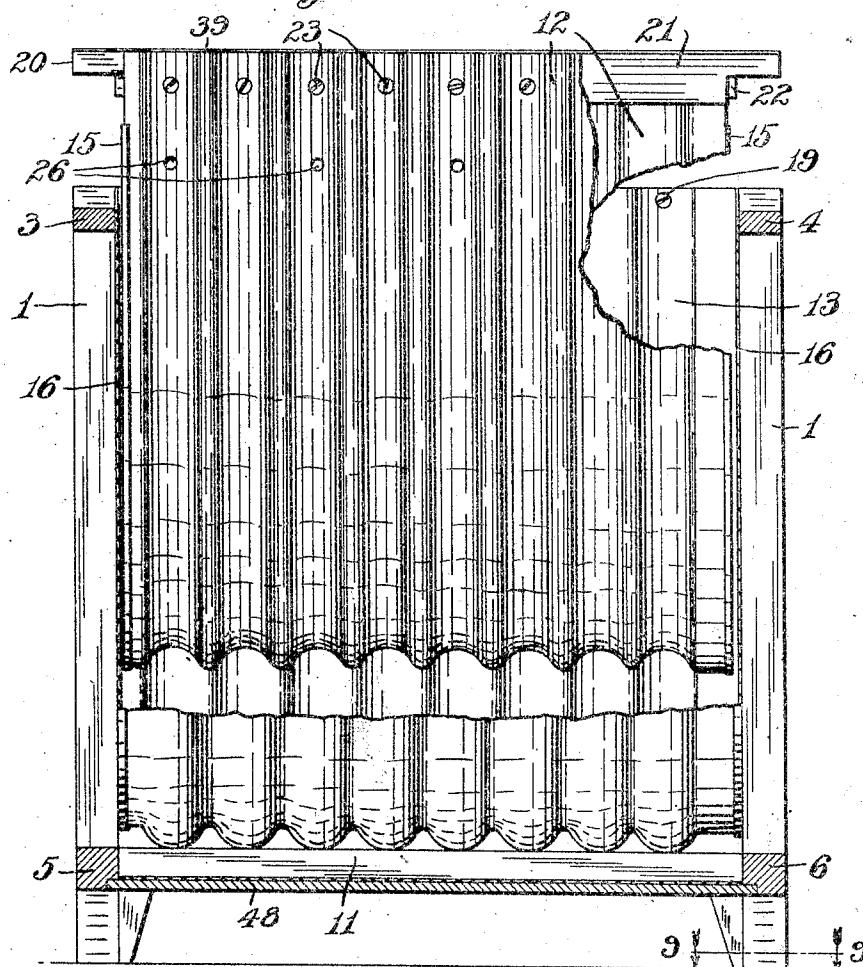


Fig. 8.

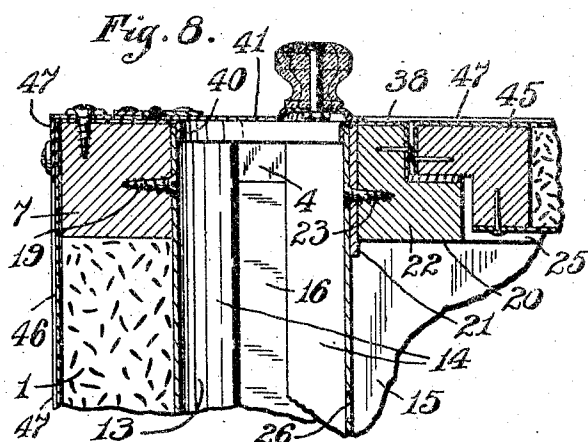
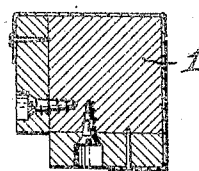


Fig. 9.



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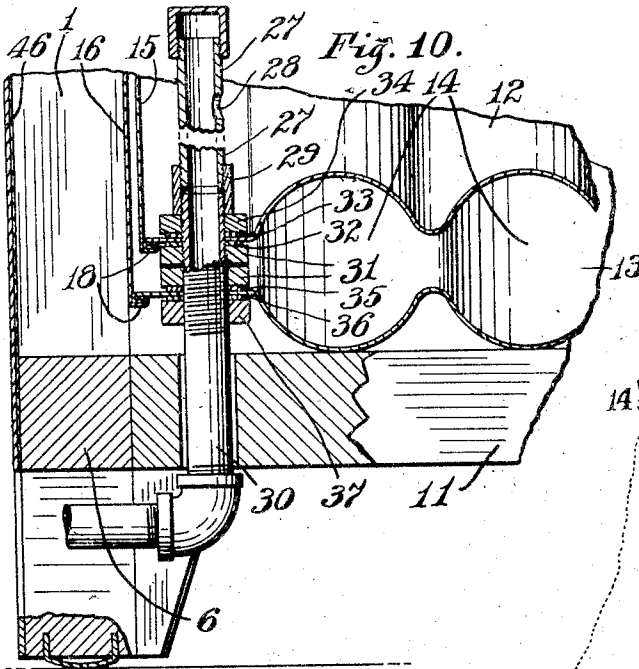


Fig. 13.

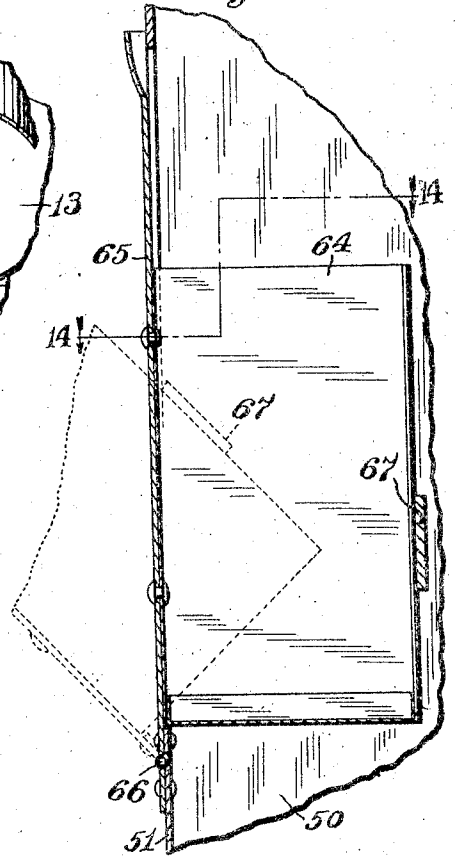
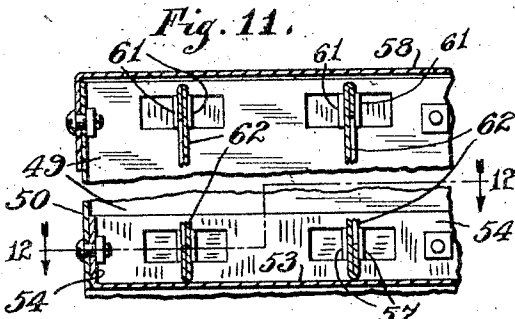


Fig. 12.

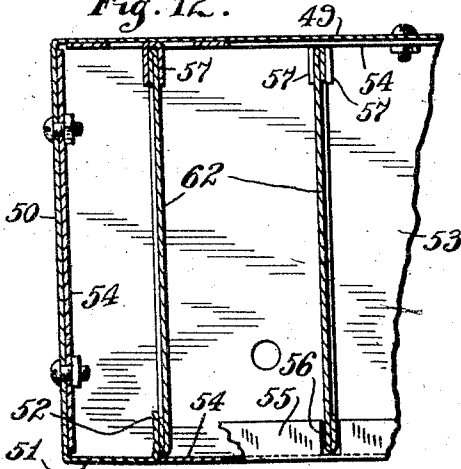
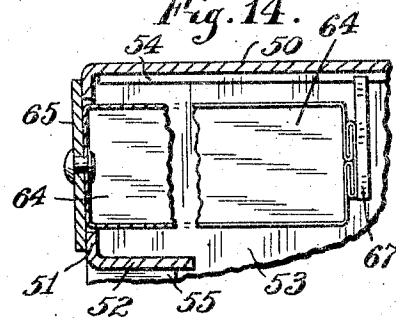


Fig. 14.



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UNITED STATES PATENT OFFICE.

CHESTER A. FRICK, OF MUNCIE, INDIANA.

BOTTLE REFRIGERATOR.

Application filed January 10, 1925. Serial No. 1,595.

To all whom it may concern:

Be it known that I, CHESTER A. FRICK, a citizen of the United States, residing at Muncie, in the county of Delaware and State of Indiana, have invented a new and useful Bottle Refrigerator, of which the following is a specification.

My invention relates to improvements in refrigerators for bottles and the like and is particularly designed for the cooling of soda and pop bottles and the like. It relates particularly to that type of refrigerator wherein the insertion of one bottle in the refrigerator will cause a discharge of a cooled bottle.

One of the objects of my invention is to provide a refrigerator which may be readily assembled and thereby reduce the cost of manufacture. Another object of my invention is to provide a refrigerator which will permit of the ready cleaning of the bottle container.

Other objects and advantages of my invention will appear more fully in the accompanying specification and claims.

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

Fig. 1 is a side elevation of a refrigerator embodying my invention;

Fig. 2 is a front elevation thereof;

Fig. 3 is a plan view thereof;

Fig. 4 is a longitudinal section of the refrigerator;

Fig. 5 is a transverse section;

Fig. 6 is a partial plan view with certain of the cover plates removed;

Fig. 7 is a side elevation of the outer and inner tubs showing the inner tub partially removed;

Fig. 8 is a detail section showing the manner of securing the tubs in position;

Fig. 9 is a detail section on the line 9—9 of Fig. 7;

Fig. 10 is a detail section showing the assembly of the drain pipe for the inner tub;

Fig. 11 is a sectional view on the line 11—11 of Fig. 1;

Fig. 12 is a detail section on the line 12—12 of Fig. 11;

Fig. 13 is a partial section on the line 13—13 of Fig. 2;

Fig. 14 is a section on the line 14—14 of Fig. 13.

In the embodiment illustrated I provide a frame upon which all the parts are built and which supports not only the outer and inner tub but also carries the covering panels and various parts of the refrigerator. This frame comprises the four vertical corner posts 1 which also constitute the supporting legs for the refrigerator and these corner posts are connected together at their top front and rear by means of front and back rails 3 and 4, similar rails 5 and 6 connecting the posts at their bottoms. Top side rails 7 and 8 extend between the posts at the upper portion thereof and similar bottom side rails 9—9 connect the posts together at their lower ends. Also extending between the bottom front and back rails 5 and 6 is a brace 11. This structure provides a rigid frame on which all of the parts may be suitably hung.

The bottle containers, or channels, are formed by a pair of tubs 12 and 13, each of which is preferably formed of corrugated sheet metal bent to form a round bottom tub as illustrated in Fig. 4, the two ends being substantially flat. The inner tub 12 is smaller than the outer tub and when the tubs are held in position in spaced relation the corrugations form a series of curved channels 14 into which the bottles may be inserted. The arcs of the opposite walls of each of the channels are formed on a common center whereby the channel forms a substantially cylindrical tube for the reception of the bottle and this tube is of such a dimension with reference to the size of the bottle that the bottle will fit therein without lateral displacement during the feeding of the bottles through the tubular channels. While the outer and inner tubs are slightly spaced apart to form circulating spaces between the various tubs, this spacing of the tubs is considerably less than

the diameter of a bottle so that the bottle always will be maintained, during its passage through the tubes, against lateral displacement. The curvature of the tubs is such that the bottles will readily slide through the same and by inserting a bottle into the top of a channel at one side, the channels being filled with bottles, a slight pressure will force the entire line of bottles forward to cause a bottle on the opposite side to project beyond the top of the channel. These channels, while separating the bottles, are connected together, due to the fact that the corrugations do not actually meet, by a circulation space so that there is free circulation of any water contained in the space between the outer and inner tubs. The ends 15 and 16 of the outer and inner tubs are preferably formed of flat sheet metal, the edges of which, with the edges of the sides, are folded together as at 18 to form a water-tight joint at this point. The outer tub thus constitutes a unitary structure and is supported from the top side rails 7 and 8 by screws 19 which pass through the sides of the tub and into the rails. Also if desired, the bottom of the outer tub may rest on the cross brace 11. The screws 19 are passed through the corrugated sides of the outer tub 13 and into the side rails 7 and 8. Preferably a screw passes through the upper ends of the sides at each corrugation. By this arrangement the tub is not only hung from the side rails 7 and 8 of the frame but the corrugated walls are held in a definite and predetermined position which prevents any tendency of the outer tub to bulge under the weight of the water and under the weight of the bottles as they are passed through the tubular channels.

The inner tub 13 is supported in position and in spaced relation with respect to the outer tub from a supplemental frame comprising a pair of cross bars 20 which extend from front to back and rest upon and are secured to the top front and back rails 3 and 4. Each of these cross bars preferably comprises a metal cross piece 21 to the inner face of which is secured a wooden cross piece 22, the whole constituting a cross bar adapted to rest upon the front and back rails 3 and 4, a joint being made between the parts of such nature as to permit the top of the cross bars to lie flush with the top of the front and back rails. The inner tub is secured to these cross bars 20 by means of screws 23 passing through the top of the tub and into the cross bars. In securing the inner tub 14 in position to the cross pieces 21 I preferably insert a screw in each of the corrugations. By securing the edges of the corrugated tub to the cross pieces 23 the tub is not only hung from these cross pieces independently of

the outer tub but the walls of the tub are maintained in definite spaced relation with respect to the walls of the outer tub and are held against any tendency to bulge or become distorted by the passage of the bottles through the tubular channels. Furthermore, this mounting of the tubs definitely positions one tub with respect to the other and maintains the corrugations in such relation that the tubular channels formed by the tubs will properly guide the bottles without permitting the bottles to jam. The structure thus produced comprises a unitary inner tub and supporting means which is hung from the main frame and which may be readily inserted in and removed from position in assembly and for the purpose of cleaning the bottle containing chambers. The cross bars 20 are transversely braced by braces 24 extending between the same at the front and back and forming with the cross bars a substantially rectangular frame which gives ample rigidity to the top of the tub and insures a proper spacing between the inner tub and the outer tub. An additional brace 25 spaced apart from the rear brace 24 is provided. Suitable overflow openings 26 are provided in the inner tub near its top to maintain the water level in the bottle chamber at a predetermined point.

The inner tub not only co-operates with the outer tub to provide a bottle chamber, but in itself comprises an ice receptacle which may be filled, or partially filled, with ice thereby maintaining the water in the bottle chamber properly chilled for cooling the bottles. The cooling chamber, or ice chamber, preferably contains a brine and to maintain the brine level at a proper point I provide an overflow pipe 27 having an opening 28 near the top thereof. This pipe, at its lower end screw threads into a joint 29 secured upon the upper end of the drain pipe 30. This drain pipe, it will be noted, passes through the bottom of both the inner and outer tubs and has arranged thereon a nut 31 between which and the outer side of the inner tub is arranged a gasket 32. A similar gasket 33 is clamped between a nut 34 on the drain pipe on the inner side of the inner tub. Gaskets 35 and 36 are clamped between nuts 31 and 37 on the outer tub in a manner similar to gaskets 32 and 33 and by this construction I form a water-tight joint at the points in the two tubs where the drain pipe 30 passes through the bottoms of the tubs.

The top edges of the tubs on each side are covered by cover plates 38 and 39 each of the same construction. These plates have openings therein coinciding with the bottle channels and the edges of these openings are formed with annular lips 40 which overlap the edges of the channels. The cover

plates on their inner edges are turned down over the edges of the cross bars 20 and are secured to the cross bars. These plates are provided with pairs of hinged covers 41 which normally maintain the bottle channels closed. A front cover plate 42 covers the front top rail 3 and the front brace 24 being turned down on its inner edge over the front brace for the inner tub frame and secured thereto. A back cover plate 43 covers the rear brace 24 and rear top back rail 4 totally closing the space between the rail and the inner brace 25. This cover plate has its inner edge turned down over the inner brace and is attached thereto. The under side of the two rear braces 24 and 25 are likewise covered by an under plate 44 and the space between the top plate and under plate is filled with suitable insulating material, such for instance as ground cork or the like. It will be noted that the brace 25 and front brace 24 co-operating with the side bars 20 of the inner tub frame form a frame opening for the reception of a cover 45 for the ice receptacle, which cover may be readily removed for the insertion of ice.

The outer tub is adapted to be surrounded by suitable insulating material, preferably in the form of ground cork, and for holding this material in position and adding to the general appearance of the refrigerator, panel members are secured to the four sides of the frame. These panel members comprise preferably sheet metal panels 46 which are secured to the corner posts and top and bottom rails of the frame. The inner faces of these panels 46 are lined with card board or other suitable paper lining to prevent sweating of the metal panels and for covering the edges of the panels decorative angles or corners 47 are secured on the different edges of the frame. It will be noted that the cover plates 38 and 39 and 42 and 43 are all attached to the inner frame and are only secured to the outer frame by the corner or angle strips so that when the top angle strips are removed the inner frame and its supported tub and cover plates may be removed as a unit. After the space between the panels of the tubs has been completely filled with insulating material, bottom panels 48 are secured in position, these panels being secured to the bottom side and front rails of the frame and, like the side panels, preferably lined with paper to prevent sweating or dampness from showing through.

For storing the bottles in a position to be readily accessible for insertion in the bottle chambers as chilled bottles are removed, I provide a bottle rack which is adapted to be mounted on the top of the refrigerator. In constructing this rack the sides and back are formed of a single piece of sheet metal 50 which forms the back 49 and is bent for-

ward at each end to form the sides 50. The front edges of the sides are then bent to lie parallel with the back as at 51 and the raw edge is turned inwardly to form a lip 52 thereby forming at each side of the rack a spacer member. The bottom of the rack is formed from a single sheet of metal and comprises the bottom portion 53, having its four edges upturned to form annular flanges 54 which at their corners are preferably welded or otherwise secured together. This bottom member telescopes within the member forming the back and sides and the edge of the front flange is turned inwardly and downwardly to form an inturned lip 55, which lip, at spaced apart intervals, is slotted as at 56. The rear flange of the bottom at intervals and points opposite the slots 56 has tongues 57 struck up therefrom and bent forwardly to form pairs of parallel guide members. The top 58 of the rack is formed in a manner similar to the bottom, with the exception of the struck up tongues, and the inturned lip 59 thereof is slotted as at 60. This top telescopes on the exterior of the member forming the sides and bottom and the back 49 of the rack has a series of tongues 61 struck up therefrom and arranged in parallel pairs opposite the slots in the lip 59. The tongues 57 and 61 and slots in the lips 55 and 59 form receiving guides for spacer members 62 and maintain these spacer members in position so as to divide the rack into a series of bottle receiving compartments.

In assembly the bottom is telescoped within the member forming the sides and back, being secured in position by suitable bolts passing through the flanges thereof and through the sides and backs. The spacer members are then inserted in position and the top telescoped upon the member forming the sides and back, being likewise held in position by bolts passing through the parts. This arrangement forms a quickly and readily assembled rack for the bottles, which is adapted to be secured on the back portion of the refrigerator by suitable bolts 63 which pass through the bottom of the rack and through the top of the refrigerator. The back 59 is also extended a slight distance below the bottom of the rack to form a lip which is screwed to the back portion of the refrigerator by the same screws which hold the top rear corner strip in position.

For dispensing straws for use in connection with the dispensed bottles, I provide a straw holder which is adapted to be supported on the bottle rack. To this end I provide a box or container 64 preferably formed of sheet metal and open at its top. This box or container is supported from the rear face of a carrier 65 hinged as at 66 to the front portion 51 of one of the side mem-

bers 50. This portion is provided with an opening into which the box 64 projects and the carrier 65 is slightly greater in dimension than this opening so that, while the box may be inserted in the opening, the carrier will fit flush with the front face of the bottle rack. The rear end of the box 64 is provided with a weight and stop 67 which is so positioned on the rear of the box that when the box is in substantially vertical position, as illustrated in full lines in Fig. 3, the weight will urge the box toward closed position whereas when the carrier is tilted forward and with it the box, as illustrated in dotted lines, the weight will urge the box to tilt outwardly, it being held against too great a movement in its opening direction by the weight which acts as a stop and engages against the rear face of the front portion of the rack. To close the straw container it is merely necessary to give the same a slight push, when the weight being moved past the center of gravity, will cause the box to automatically move to closed position.

I claim as my invention:

1. A bottle refrigerator comprising a supporting frame including corner posts, top sills extending between said corner posts, a transversely corrugated tub hung from a pair of said top sills, a pair of supplemental sills supported by the opposite pair of top sills and a second transversely corrugated tub hung from said supplemental sills and nesting with the first tub and so spaced therefrom that the corrugations of said tubs form a plurality of longitudinally disposed passageways for the reception of bottles.

2. A bottle refrigerator comprising a frame including corner posts, a transversely corrugated tub hung from and within said frame, a supplemental frame supported by said main frame, a transversely corrugated tub hung from said supplemental frame and nesting with the first tub and so spaced therefrom that the corrugations of said tubs form a plurality of longitudinally disposed passageways for the reception of bottles and cover plates for the ends of said tubs having openings coinciding with said passageways.

3. A bottle refrigerator comprising a frame including corner posts, a transversely corrugated tub hung from and within the said frame, a supplemental frame supported by said main frame, a transversely corrugated tub hung from said supplemental frame and nesting with the first tub and so spaced that the corrugations of said tubs will form a plurality of longitudinally disposed passageways for the reception of bottles, cover plates for the ends of the tub having openings coinciding with the passageways and top cover plates for the front and back of said frame.

4. A bottle refrigerator comprising a

frame including corner posts, a transversely corrugated tub hung from and within said frame, a supplemental frame, supported by said main frame, a transversely corrugated tub hung from said supplemental frame and nesting with the first tub and so spaced therefrom that the corrugations of said tubs will form a plurality of longitudinally disposed passageways for the reception of bottles, cover plates for the ends of the tubs having openings coinciding with the passageways, top cover plates for the front and back of said frame and side panels secured to said frame and enclosing said tubs.

5. A bottle refrigerator comprising a pair of transversely corrugated tubs one nesting in the other and spaced apart therefrom with the corrugations oppositely disposed to form longitudinal tubular passageways for the reception of bottles, the arc of the opposite corrugations being drawn on a common center to form a substantially cylindrical tubular passageway the walls of which closely embrace the bottles and prevent lateral displacement of the bottles during their passage therethrough.

6. A bottle refrigerator comprising an outer transversely corrugated tub secured to the supporting means on its corrugated sides and a second transversely corrugated tub nesting said first mentioned corrugated tub and independently supported with respect thereto, said supporting means being secured to the tub on its corrugated sides to hold the same in definite spaced relation with respect to the outer tub said tubs being so spaced from one another that the corrugations form a plurality of longitudinally disposed passageways for the reception of bottles.

7. A bottle refrigerator comprising a supporting frame, a transversely corrugated tub hung from said frame and secured thereto at its corrugated ends and a second transversely corrugated tub hung on said frame and secured thereto at its corrugated ends to so space the tubs that the corrugations thereof form a plurality of longitudinally disposed passageways for the reception of bottles.

8. A bottle refrigerator comprising a supporting frame including corner posts, top sills extending between said corner posts, a transversely corrugated tub hung from said top sills being secured thereto on the corrugated sides thereof, a pair of supplemental sills supported by the opposite pair of top sills and a second transversely corrugated tub secured to said supplemental sills on its corrugated sides and nesting with the first tub and so spaced therefrom that the corrugations of said tubs form a plurality of longitudinally disposed passageways for the reception of bottles.

9. A bottle refrigerator comprising a

frame including corner posts, a semi-cylind-
roidal tub hung from and within said frame
a supplemental frame supported by said
main frame, a second semi-cylindroidal tub
5 having closed ends hung from said supple-
mental frame and nesting within the first
tub, the space between said two tubs being
formed into a series of circumferential lat-
erally liquid-communicating channels each
having two open upper ends. 10

In witness whereof, I CHESTER A. FRICK
have hereunto set my hand at Muncie, Indi-
ana, this 6th day of January, A. D. one
thousand nine hundred and twenty five.

CHESTER A. FRICK.