

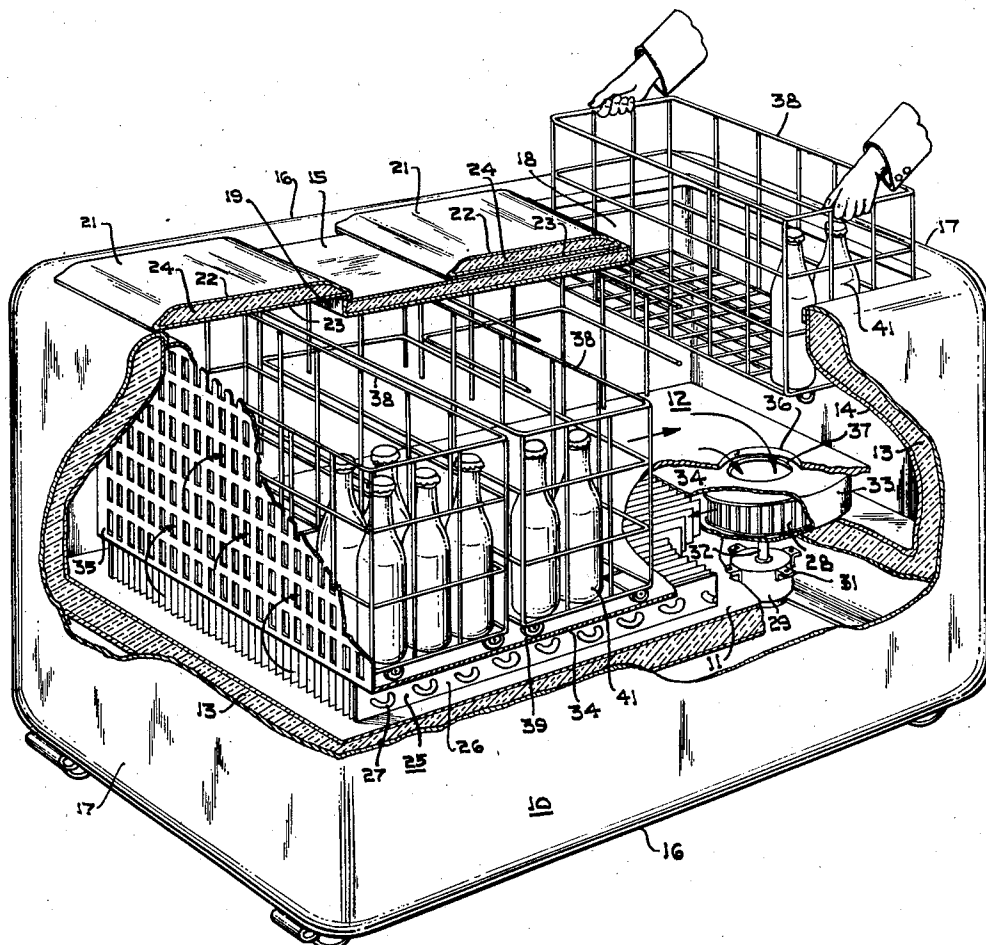
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BOTTLE COOLER

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WITNESSES:

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BOTTLE COOLER

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This invention relates to dry bottle coolers of the type used by retailers of chilled bottled beverages and to a method of operating the same.

Bottle coolers of this type are either of the liquid bath type in which the bottles are immersed in a bath of chilled water, or of the "dry type" in which the bottles are cooled by circulated chilled air. Bottle coolers of the dry type have the inherent disadvantage of cooling the bottles more slowly and, therefore, such bottle coolers must be of a larger size in order to equal the cooling capacity of bottle coolers employing a liquid bath. This larger size entails a greater initial expense and occasions a greater heat loss because of the larger wall surfaces of such coolers.

One object of this invention is to provide a dry refrigerator for cooling bottles and the like in which the cooling of the bottles is accelerated to permit a reduction in the size of the refrigerator.

Another object is to provide a refrigerator of the type described through which the articles to be refrigerated are moved in an orderly fashion to insure that the coldest articles are removed first.

Another object is to provide a refrigerator of the type described which permits of inspection of the indicia on the caps of the bottles in the refrigerator to determine the contents of the bottles.

These and other objects are effected by my invention as will be apparent from the following description and claims taken in connection with the accompanying drawing, forming a part of this application, in which:

The single figure of the drawing is a perspective view of the bottle cooler of this invention with parts broken away to show the interior arrangement of the cooler.

In the drawing the reference numeral 10 designates a rectangular shell of sheet material, the upper and lower edges of which are rolled inwardly. A horizontal sheet 11 of material is secured in the shell somewhat above the lower edge and forms the bottom of the chamber 12. The chamber 12 is lined with insulating material 13 and is provided with an inner liner 14 of sheet material which is secured at its upper edges to the upper inturned edge of the shell.

The opening in the top of the chamber 12 is partially closed by an insulated panel 15 secured to the upper edges of the side walls 16 and spaced from the end walls 17 to provide an opening 18 and 19 adjacent each of the end walls 17. The

openings 18 and 19 are provided with covers 21 adapted to slide over the panel 15. The covers 21 and the panel 15 each comprise upper and lower sheets of material 22 and 23 spaced from one another and joined together at their edges. Insulating material 24 is packed in the space between the sheets.

An evaporator or cooling unit 25 is located in the bottom of the chamber 12 and extends from one side wall 16 to the other but is spaced from the end walls 17. The evaporator 25 comprises a number of spaced metal plates 26 running parallel to the side walls 16 of the chamber 12 through which plates 26 a refrigerant carrying tube 27 is passed back and forth. The tube 27 may be supplied with refrigerant from a compressor-condenser unit not shown in the drawing.

A centrifugal blower or fan 28 is located in the chamber 12 between the evaporator 25 and one of the end walls 17 and is driven by an electric motor 29 secured to the lower surface of the sheet 11 by means of brackets 31. The motor 29 drives the blower 28 through a shaft 32 which passes through the sheet 11, the insulation 13, and the inner liner 14. A shroud 33 around the blower 28 directs the air circulated by it to the edge portion of the evaporator 25 and between the spaced-apart plates 26.

A metal sheet 34 covers the evaporator 25 and is turned upwardly at right angles at the edge of the evaporator 25 farthest removed from the blower 28 and is secured to the upper portion of the adjacent end wall 17. The upturned portion 35 of the sheet 34 is foraminated so that the air circulated by the blower 28 passes between the spaced plates 26 of the evaporator 25 through the space between the end wall 17 of the chamber and the upturned portion 35 of the sheet 34, through the foraminations in this portion 35, and through the interior of the chamber 12. The air returns to the blower 28 through a hole 36 in the sheet 34 and a second hole 37 in the shroud 33.

The chamber 12 is provided with a number of wire cages 38 mounted on casters 39. The cages 38 are open at their tops and are of a size to pass through the opening 18, through the chamber 12, and through the other opening 19. The casters 39 facilitate the passing of the cages 38 over the sheet 34. The cages 38 are adapted to contain the bottles 41 or other articles to be refrigerated. While in the drawing only a few bottles are shown for the sake of clearness, it is the intention that the bottles substantially fill the cages 38 leaving only sufficient space between

the rows of bottles to facilitate the proper circulation of air.

The operation of the bottle cooler is as follows: The warm bottles to be cooled are placed in the cages and the cages inserted in the cabinet. The bottles in the cage nearest the opening 19 adjacent the foraminated portion 35 of the sheet 34 will receive the coldest air and will cool most rapidly. When these bottles are sufficiently cooled they are removed through the opening 19 as sales of the bottled beverages are made. When this cage is emptied it is removed from the chamber and refilled with warm bottles. The remaining cages 38 in the chamber 12 are moved to the left as viewed in the drawing and the cage with the warm bottles is inserted in the chamber through the opening 18 adjacent the blower. This process is repeated whenever a cage is emptied so that the coldest bottles will always be adjacent the opening 19.

It will be observed that the bottles 41 move counter to the flow of the refrigerated air in the chamber 12 thus providing for a faster rate of cooling of the bottles. The caps of the bottles 41 in the cage 38 adjacent the opening 19 are in full view of the storekeeper so that the proper bottle may be withdrawn without occasioning an undue loss of refrigerated air while hunting for the proper bottle.

From the above it will be apparent that this invention provides a bottle cooler of the dry type in which the cooling of the bottles is accelerated, in which the bottles are moved in an orderly fashion through the refrigerator to insure that the coldest bottles are dispensed first, and in which the caps of the bottles to be dispensed are visible to avoid confusion in the selection of the desired beverage.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various other changes and modifications without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are imposed by the prior art or as are specifically set forth in the appended claims.

What I claim is:

1. In a bottle cooler, the combination of an insulated chamber having two spaced apart openings in its top, closure members for said openings, a horizontal partition in said chamber, a cooling unit below said partition, a fan for circulating air over said cooling unit and around said partition, the direction of air flow above the partition being from one of said openings to the other, a plurality of foraminated baskets supported on said partition and readily movable thereon, said baskets being shaped for removal and insertion through said openings, said baskets further having a sectional area closely fitting the interior of said chamber above said partition at right angles to the flow of air above said partition, whereby the air circulated by said fan is forced through the foraminations of said baskets to rapidly cool the contents thereof.

2. In a bottle cooler, the combination of an

insulated chamber having two spaced apart openings, closure members for said openings, a horizontal partition in said chamber, a cooling unit below said partition, a fan for circulating air over said cooling unit and around said partition, the direction of air flow above the partition being from one of said openings to the other, a plurality of baskets on said partition, said baskets being shaped to support bottles in an upright position, said baskets being further shaped for removal or insertion through said openings, the top wall of said chamber being in close proximity above said bottles when upright in said basket, whereby the air circulated by said fan is forced in close contact with said bottles.

3. In a bottle cooler, the combination of an insulated chamber having two spaced apart openings in its top, closure members for said openings, a horizontal partition in said chamber, said partition being spaced at one edge from the side wall of said chamber, said partition having an opening adjacent the opposite edge thereof, a centrifugal fan revolving on a vertical axis below said partition and in alignment with said opening for drawing air therethrough, said fan forcing air across the cooling unit, through the space at one edge of the partition and through the space above the partition, a plurality of baskets supported on said partition and readily movable thereon, said baskets being shaped for removal and insertion through said openings.

4. In a refrigerated dispensing device, the combination of an insulated chamber having two spaced-apart openings in its top, a cooling unit in one portion of the bottom of said chamber, said cooling unit having horizontal air passages therein, a centrifugal blower in another portion of the bottom of said chamber, a plate covering the cooling unit and the blower, said plate having an opening therein, a basket on said plate, said basket being shaped for insertion or removal through said openings, said blower, plate, and evaporator being adapted to circulate air through the horizontal air passages of the cooling unit, through the portion of the chamber above the plate, through the opening in the plate and through said basket.

5. In a bottle cooler, the combination of an insulated chamber having two spaced apart openings in its top, closure members for said openings, a horizontal partition in said chamber, a cooling unit below said partition, a fan for circulating air over said cooling unit and around said partition, the direction of air flow above the partition being from one of said openings to the other, a plurality of foraminated baskets movably supported above said partition, said baskets being shaped for removal and insertion through said openings, said baskets further having a sectional area closely fitting the interior of said chamber above said partition at right angles to the flow of air above said partition, whereby the air circulated by said fan is forced through the foraminations of said baskets to rapidly cool the contents thereof.

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