

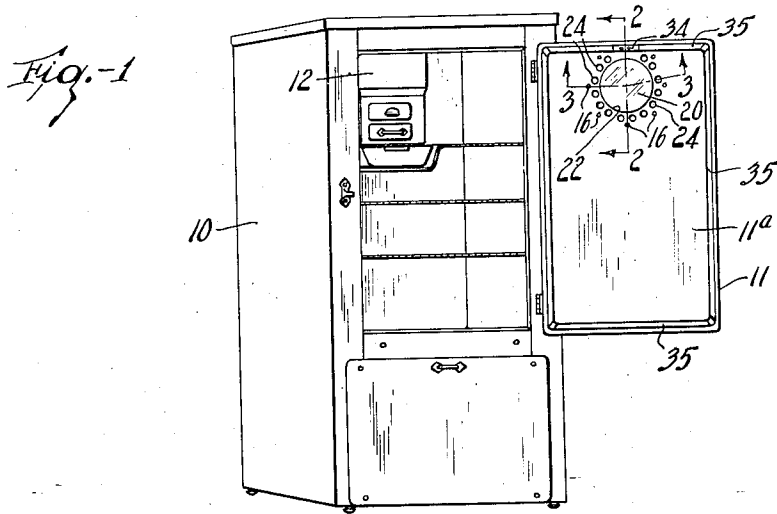
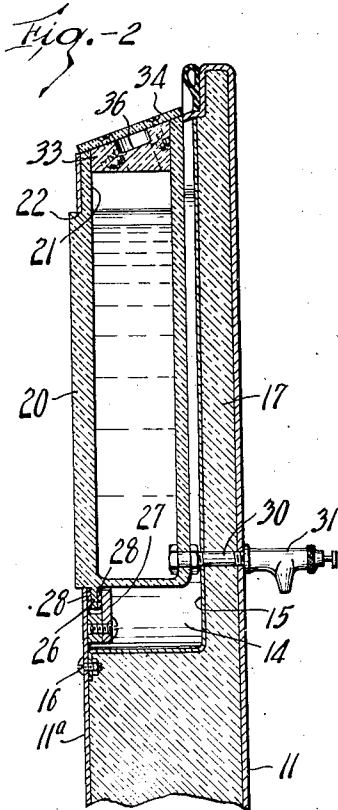
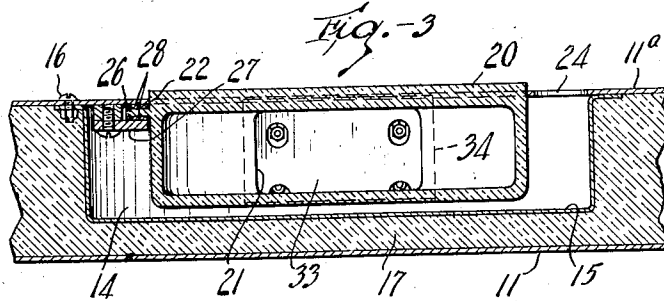
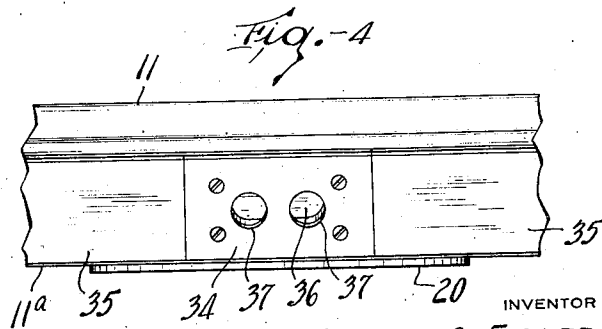
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REFRIGERATOR CONSTRUCTION

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REFRIGERATOR CONSTRUCTION

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3 Claims. (Cl. 62—38)

This invention relates to refrigerator constructions, and more especially it relates to refrigerators having water coolers incorporated therein.

The chief objects of the invention are to conserve space within the refrigerator; to provide for efficient and rapid cooling of the water; to provide for ease and facility of cleaning the container or reservoir in which the water is stored; to provide full visibility of the reservoir so that the amount of water therein instantly may be determined; and to insure against breakage of the reservoir due to jolts and jars. Further objects include simplicity and economy of construction. Other objects will be manifest as the specification proceeds.

Of the accompanying drawing,

Figure 1 is a perspective view of a refrigerator embodying the invention, in its preferred form, the door thereof being open;

Figure 2 is a section, on a larger scale, on the line 2—2 of Figure 1;

Figure 3 is a section, on a larger scale, on the line 3—3 of Figure 1; and

Figure 4 is a fragmentary plan view of the upper marginal face of the door of the refrigerator.

Referring to the drawing, 10 is an electrically operated refrigerator of conventional design, 11 is a door that opens into the food chamber thereof, and 12 is the usual cooling unit. Formed within the door structure 11 and extending to the top thereof is a compartment 14 that is defined by a metal partition 15 that is secured to the inner metal facing 11^a of the door by means of bolts 16, 16, or by any other suitable means such as welding. The compartment 14 is of general cylindrical shape and has a neck portion at its top extending to the top of the door. The depth of the compartment 14 is less than the thickness of the door so that there is some heat-insulating material 17 with which the door and refrigerator walls are lined, between the rear of partition 15 and the outer metal or porcelain facing of the door.

Mounted within the compartment 14 in spaced relation to the peripheral and rear walls of partition 15 is a reservoir 20 for water or other liquid to be cooled. The reservoir 20 is a shallow cylinder in shape and has a relatively large neck portion 21 that extends upwardly to the upper marginal surface of door 11, within the neck portion of partition 15. Preferably the reservoir 20 is made of transparent glass of low thermal expansibility, such as the glass marketed under the trade name "Pyrex". The inner metal facing 11^a of the door has a circular opening or cutaway

portion 22 in front of the reservoir 20, and the latter may extend into and seat within said opening as shown, if desired. The arrangement is such as to provide complete visibility to the interior of the reservoir.

Formed about the opening 22 in the door facing 11^a is a circular series of smaller apertures 24, 24 that open into the compartment 14 between the outer periphery of reservoir 20 and the peripheral wall of partition 15. The apertures 24 permit convection currents of air to circulate within compartment 14, around and behind reservoir 20, whereby liquid in the latter is efficiently cooled by the cooling unit 12. Experience has shown that the temperature of the liquid in the reservoir can be lowered to within two degrees of the temperature of the food chamber of the refrigerator.

For securing the reservoir 20 in position a plurality of integral radial lugs 26 are formed on its peripheral face, near the front thereof, and said lugs are clamped against the door facing 11^a by means of suitable clips 27 screwed to the rear of said facing. Preferably resilient gaskets 28, 28 are mounted on opposite sides of the respective lugs 26 to protect the reservoir against jars and jolts incidental to the closing of the refrigerator door 11. The reservoir has an outlet at the lowest point thereof, said outlet including a short pipe 30 that extends through the rear wall of partition 15 and through the door structure to the front of the latter, and a small spigot or cock 31 preferably of the push type mounted on the front or outer face of the door.

The open neck 21 of the reservoir is provided with a closure or stopper 33, which may be of glass. Secured to the top of closure 33 and projecting beyond the sides thereof is a plate of heat-insulating material 34 which may be a pressed fibrous product such as that marketed under the trade name "Micarta". The projecting marginal portions of the plate 34 constitute a flange that supports the closure 33 in the neck of the reservoir. The arrangement is such that the outer face of plate 34 is flush with strips 35 of similar heat-insulating material mounted upon the marginal surface of the door 11. The top of closure member 33 is formed with a recess 36, and plate 34 is formed with two apertures 37, 37 opening into said recess, the arrangement permitting the insertion of the fingers through apertures 37 for the removal of closure 33 when filling or cleaning the reservoir.

The improved refrigerator construction is neat and attractive in appearance and should not in-

crease the cost of refrigerator operation since the cost of keeping the water cold will be largely compensated for by decreased use of ice cubes. The invention does not reduce the normal storage capacity of the refrigerator, and it achieves the several objects set out in the foregoing statement of objects.

Although the water cooler shown is mounted in the door of the refrigerator, it is not necessarily limited to that particular location, but may be mounted in other walls of the refrigerator without material sacrifice of its inherent advantages. For example, the reservoir may be located in one of the lateral walls, in which case the reservoir closure will be located at the top of the refrigerator or in the side thereof.

Other modifications may be resorted to without departing from the spirit of the invention or scope of the appended claims which are not limited wholly to the specific construction shown and described.

What is claimed is:

1. In a refrigerator comprising a cold chamber, a compartment formed in a wall thereof, a reservoir of smaller size than the compartment

mounted therein and having a surface thereof disposed in an opening in the compartment wall so as to be exposed to the cold chamber, said compartment wall being formed with a series of apertures disposed about the reservoir to permit convection currents to circulate thereabout, and means for withdrawing liquid from the reservoir to the exterior of the refrigerator.

2. The combination of a refrigerator comprising a cold chamber and a door opening therein, a door, a compartment formed in the door structure behind the inner facing material of the door, a reservoir for liquids within said compartment supported by said inner facing material so as to provide unobstructed space in the compartment about the sides and rear of the reservoir, and means admitting air from the cold chamber to the said compartment.

3. A combination as defined in claim 2 in which the inner facing material of the door is formed with an opening, and the reservoir is formed with a complementally shaped portion seating in said opening.

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