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ICE CAN WITH INTEGRAL AIR TUBE

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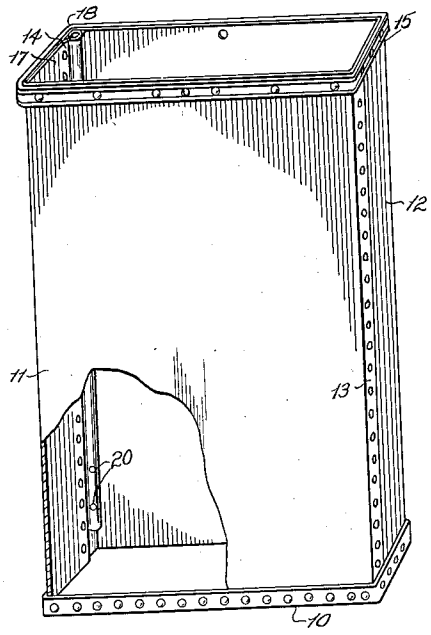


FIG. 1

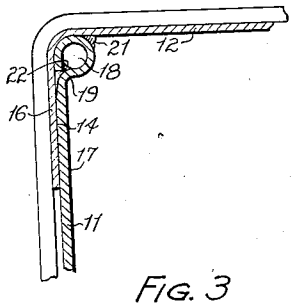


FIG. 3

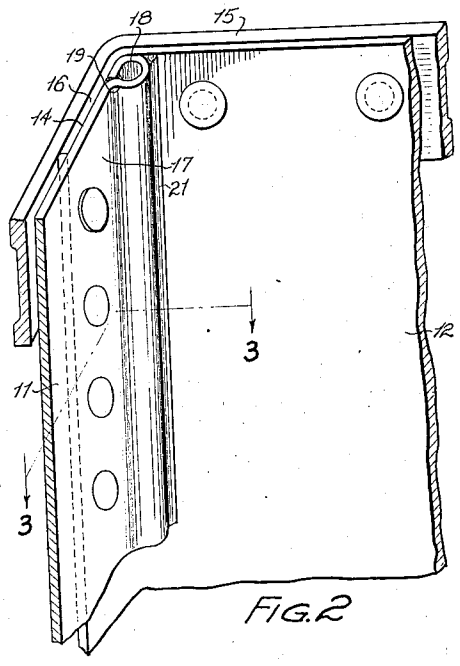


FIG. 2

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ICE CAN WITH INTEGRAL AIR TUBE

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2 Claims. (Cl. 62—159)

This invention relates to improvements in freezing cans used in the manufacture of ice and for the freezing or separating of any liquids, and particularly to an improved construction of can wherein means are provided to force air into the can at or near the bottom thereof to agitate the water which is to be frozen, this being the commonly accepted practice in what is known as the raw water system of ice making.

In the manufacture of ice by the raw water system, each freezing can is usually provided with some means for admitting air to the interior of the can at or near the bottom thereof so that, when the can is filled with water and immersed in a suitable freezing solution, such as brine in the brine tank of the usual ice making plant, air will bubble up through the water and thoroughly agitate the same. The action of this stream of air is such that a clear cake of ice is formed in the can, and any impurities present in the water are not frozen into the ice but are collected in the small amount of water which remains unfrozen at the termination of the freezing period.

Several constructions have been suggested and used for introducing the stream of air into the interior of the can. It is usually convenient to have some sort of a fixture at the top of the can which is connected with an outlet near the bottom thereof. It is then possible to easily connect an air supply line to the fixture at the top of the can. Probably the most generaly used construction includes some form of tube, usualy of brass, which is soldered to the side wall of the can, sometimes interiorly in a corner of the can or in a groove formed in one of the walls, and sometimes exteriorly in a groove, or in some other manner.

The rough handling of these freezing cans which contain usually at least three hundred pounds of water, requires that any such air tube be protected from external injury, while the action of the water as it freezes, as well as the removal of the ice cake, requires that the tube be protected from internal injury.

It is an object of the present invention to so construct the freezing can that a conduit for the introduction of air, in accordance with the raw water system, may be provided economically as an integral part of the can, and in a manner to successfully guard against damage to the conduit.

Other objects and features of novelty will appear as I proceed with the description of that embodiment of the invention which, for the purposes of the present application, I have illustrated in the accompanying drawing, in which

Fig. 1 is a perspective view of an ice can embodying the invention, a portion of the can being broken away to more fully illustrate the invention.

Fig. 2 is a fragmental perspective view on a larger scale showing that corner of the can in which the air conduit is located, and

Fig. 3 is a fragmental horizontal sectional view taken substantially on the line 3—3 of Fig. 2.

In the drawing I have illustrated an ice can comprising as its principal parts a bottom 10 and two side wall elements 11 and 12, each of which is L-shaped in horizontal section, and substantially coextensive with two sides of the can. These elements are connected together by suitable vertical joints or seams 13 and 14, in which the fastenings may be rivets, as shown, although spot welds or continuous welds may be employed if desired. Around the upper end of the can there is a reenforcing rim 15 of heavy gauge metal which is riveted or otherwise secured to the side wall elements, as illustrated. These side wall elements are attached by rivets or other fastenings to the base 10, as shown in Fig. 1, and the joints are preferably sealed with solder or the like. In a general way the foregoing construction is well known in the art.

At the joint illustrated in Fig. 2 the wall element 12 has a flange 16 which is connected with the main part of the element 12 by a right angle bend around a short radius. The side wall element 11 has a portion 17 which engages the inner surface of flange 16. This portion 17, which thus overlaps the flange 16, is riveted or otherwise secured to the flange 16, forming the seam 14 which extends throughout the height of the can.

The element 11 beyond joint 14 is so bent as to form an integral tubular member which fits snugly within the radius of the can corner, and constitutes an air conduit 18. This conduit is formed by putting a sharp inward bend 19 into the metal of element 11, and then reversely bending or curling the remainder of the portion 17, it being understood, of course, that this is done before the elements 11 and 12 are assembled and riveted together. The free edge of the portion 17 is caused to abut against the sharp bend 19, and the curvature of tube 18 is such that it fits snugly within the radius of the corner of the can. The free edge is thus concealed, making for good appearance, and is also protected from damage such as frequently occurs during the removal of ice from the conventional cans, or in the handling of the cans otherwise.

A small section of the tube 18 may be removed from its lower end, as illustrated in Fig. 1, so as

to provide an exit for air. The tube may also be drilled, as at 20, to provide air exits if desired. Any suitable means for connecting the upper extremity of the tube to an air preessure system may be utilized.

After the seams 13 and 14 are formed and before the base 10 is attached to the side wall elements, the seam corners of the latter are dipped one at a time into molten solder or the like, and the excess solder is drained off by tilting the assembled side elements toward one end. This not only seals the seams, but also results in a line of sealing material 21 being formed in the angle between the tube 18 and the wall element 12. A similar line 22 of sealing material is formed within the tube 18 at the joint between the sharp bend 19 and the edge of the sheet from which the tube is formed. The seal 21 would probably be sufficient to render the tube fluid-tight, and the seal 22 provides a second barrier against the leakage of air out of the tube during its travel down to the lower extremity of the latter.

Variations from the described structure may be employed. Accordingly, I desire it to be understood that the scope of the invention is to be regarded as defined exclusively by the appended claims, rather than by the foregoing description or the accompanying illustration.

Having thus described my invention I claim:

1. A freezing can for use in the manufacture of ice, having a vertical seam formed of two overlapping elements only joined together adjacent a corner of the can, the inner overlapping element being bent sharply inward between the seam and the corner of the can and then curved backwardly and outwardly into a tubular member filling the corner bend of the can and constituting an air conduit extending from the top to the bottom of the can, the free edge of the inner element being concealed and protected and lying adjacent the said sharp bend a seal between the outer wall of the tubular member and the adjacent wall of the can, and a reinforcing band secured to the can at the upper edge thereof extending over said vertical seam.

2. In a freezing can for use in the manufacture of ice, two wall elements meeting at one of the corners of the can, the outer element having a right angle flange extending beyond the corner, the inner element engaging said flange, a seam between said inner element and flange spaced from the corner of the can, a tubular member formed in said inner element on the side of the seam toward the can corner, the metal of which the tubular member is formed being curved first inwardly and then outwardly behind itself, terminating behind the first curve whereby the edge of the metal is held in place without fastenings, and whereby there are two thicknesses of metal only in the vertical seam, and a reinforcing band secured to the can at the upper edge thereof extending over said vertical seam.

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