April 3, 1934. H. D. GEYER 1,953,167

FREEZING TRAY

Filed Nov. 25, 1931 2 Sheets-Sheet 1

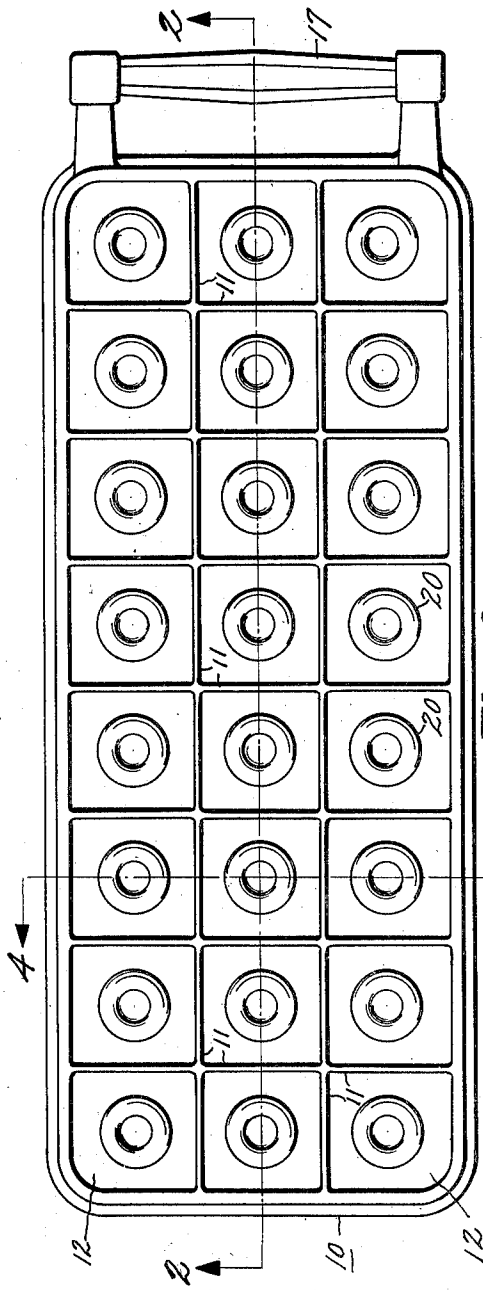


Fig. 1

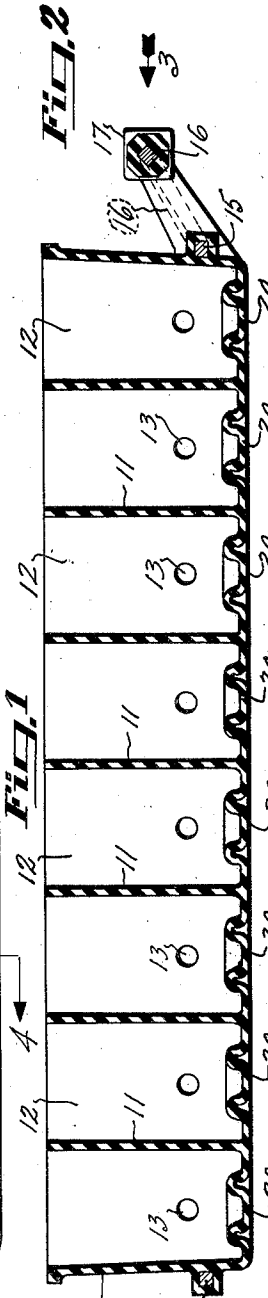


Fig. 2

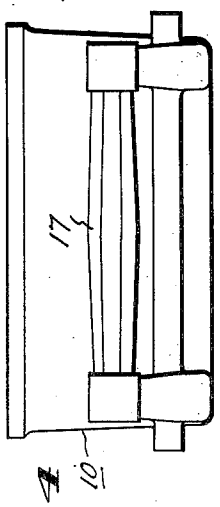


Fig. 3

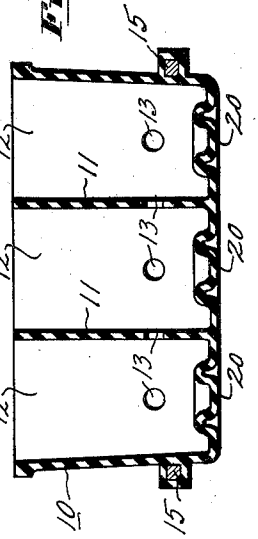


Fig. 4

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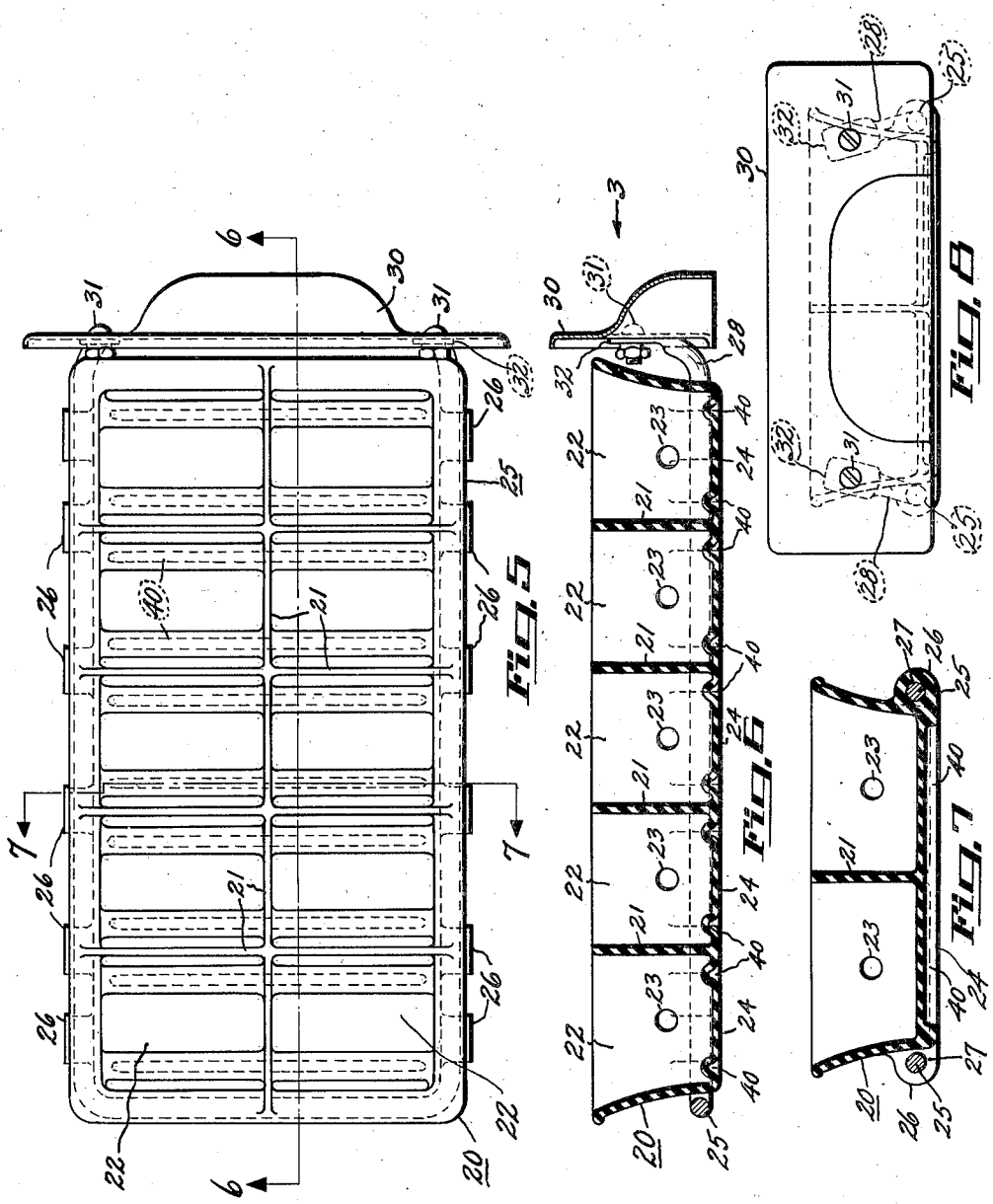
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FREEZING TRAY

Filed Nov. 25, 1931 2 Sheets-Sheet 2



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Patented Apr. 3, 1934 1,953,167

UNITED STATES PATENT OFFICE

1,953,167

FREEZING TRAY

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Application November 25, 1931, Serial No. 577,249

5 Claims. (Cl. 62—108.5)

This invention relates to ice trays or freezing containers, especially such as are adapted for use in domestic refrigerators.

An object of this invention is to provide an improved form of flexible non-metallic tray having a reinforcing metal frame supporting the periphery of the flexible tray near the bottom thereof, whereby not to interfere with the outward lateral flexing or distortion of the side walls of the flexible tray to facilitate removal of the frozen contents.

Another object is to provide a tray having a plurality of ice pockets each having a resilient flexible bottom which can be easily pushed upwardly with the fingers to individually remove the contents from any one pocket without materially disturbing the contents of adjacent pockets.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred embodiment of one form of the present invention is clearly shown.

In the drawings:

Fig. 1 is a plan view of an ice tray made according to this invention.

Fig. 2 is a vertical section on line 2—2 of Fig. 1.

Fig. 3 is an end view of the handle end thereof.

Fig. 4 is a transverse section on line 4—4 of Fig. 1.

Figs. 5, 6, 7 and 8 similarly show a modified form of this invention wherein the reinforcing metal frame is not molded in situ in the flexible tray.

Fig. 5 is a plan view; Fig. 6 is a section on line 6—6 of Fig. 5; Fig. 7 is a section on line 7—7 of Fig. 5; and Fig. 8 is an end view of the handle end thereof.

Similar reference characters refer to similar parts throughout the several views.

In Figs. 1 to 4, 10 designates as a whole the molded flexible container which preferably is molded in one piece from soft flexible rubber of high grade. In the form shown in Figs. 1 to 4, the container 10 is molded in the form of a tray having partitions 11 therein dividing the tray into three longitudinal rows of separate ice pockets 12. These partitions 12 have small holes 13 interconnecting the separate pockets to permit the equalization of the water level in all pockets when the tray is filled with water. A substantially rigid metal frame 15 is set in the molding die when the rubber tray 10 is molded and is thus molded in situ in the rubber, as shown in Figs. 1 to 4. This rigid supporting frame has a handle projection 16 thereon, or formed integral therewith, which handle projection 16 is shown as also covered with molded rubber to form a convenient hand grip 17 and for appearance sake. By means of handle 17 which is rigid with the metal frame 15 the flexible tray may be easily handled when filled with water without material distortion due to the weight of the water.

As clearly illustrated, each ice pocket 12 has a molded corrugated bottom wall 20 which is sufficiently stiff to retain its shape as illustrated in Figs. 1 to 4 when the pockets 12 are filled with water, but which is sufficiently flexible to be pressed upwardly by pressure of the fingers from below to facilitate the removal of the ice cube from the pocket. After the removal of the ice cube the inherent resiliency of the material of which the corrugated bottoms 20 are made causes said bottoms to return to their normal shape as illustrated. In the form shown these corrugated bottoms 20 are molded integrally with the rest of container 10 of flexible rubber. Instead of making container 10 of flexible rubber it may be made of quite thin and flexible sheet metal in order to obtain more rapid freezing. In such a modified form the corrugated metal bottoms 20 could be flexed upwardly by pressing thereupon from below similar to the well known manner of flexing the bottom of an oil can to force out the oil. The supporting metal frame 15 is preferably located slightly above the bottom walls of the ice pockets, so as not to interfere with the upward flexing of said bottoms as described above, and at the same time to permit the outward lateral flexing of the flexible side walls of container 10 to further facilitate removal of the ice cubes from pockets 12. In operation, when the tray is first withdrawn from the freezing compartment, if it is desired to remove only one or several ice cubes these may be easily first loosened by an outward flexing of the adjacent portion of the side walls of container 10 after which the ice cubes may be easily individually removed by an upward flexing of the bottoms 20. Thus the remaining ice cubes will not be disturbed or even broken loose from their contacting pocket walls.

Figs. 5 to 8 inclusive illustrate a modified form of the invention wherein the container 20 is molded of flexible rubber but the suporting metal frame 25 is not molded in situ therein. Container 20 is molded with spaced integral projections 26 along its longitudinal sides, each projection 26 having an aperture 27 therethrough through

which the metal frame 25 may be inserted after container 20 is taken from the mold. The attachment of the metal frame 25 to container 10 may be easily accomplished by wetting the flexible rubber container to greatly reduce the friction of the metal bars 25 passing through apertures 27 and then simply threading the substantially U-shaped metal frame 25 through the aligned apertures 27 on the two sides of the rubber container. The short length of apertures 27 permits them to be easily passed over the two upwardly curved free ends 28 of frame 25. Of course the flexibility of container 20 as a whole greatly facilitates this method of attaching frame 25 thereto.

A pressed metal handle and closure front 30 is rigidly attached to the upwardly turned ends 28 of metal frame 25 by the two small screws 31 which pass through apertures in the flattened ends 32 on the up-turned ends 28 of frame 25.

The frozen ice blocks in pockets 22 which are defined by the flexible partitions 21 may be easily individually removed by an upward flexing of the corrugated bottoms 24, substantially as above described in reference to the form shown in Figs. 1 to 4. In Figs. 5 to 8 the corrugations 40 extend only along two opposite edges of the bottom of each pocket 22. This provides sufficient flexibility or easy independent movement of the bottom to eject the ice block from any one pocket 22. Corrugations 40 are shown as being continuous transversely across the width of container 20 (see Fig. 7) and thus act as stiffening ribs to prevent excesive distortion of the central portion of container 20 as a whole when it is being handled while filled with water.

While the form of embodiment of the present invention as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. A freezing tray comprising: a molded flexible non-metallic container having partitions therein to define a plurality of ice pockets in said container, said pockets each having a corrugated area in its bottom wall capable of being distorted upwardly to facilitate the removal of the frozen contents from said pocket.

2. A freezing tray comprising: a molded flexible rubber container having integral partitions therein to define a plurality of ice pockets therein, the bottom wall of said container having individual resilient corrugated areas under each pocket to facilitate the removal of the frozen contents therefrom.

3. A freezing tray comprising: a molded flexible rubber container having integral partitions therein to define a plurality of ice prockets therein, the bottom wall of said container having individual resilient corrugated areas under each pocket to facilitate the removal of the frozen contents therefrom, and a reinforcing metal frame supporting the periphery of said flexible container near the bottom thereof whereby not to interfere with the lateral flexing of the side walls of said container to remove the frozen contents.

4. A freezing tray comprising: a molded flexible rubber container having integral partitions therein to define a plurality of ice pockets therein, the bottom wall of said container having individual resilient corrugated areas under each pocket to facilitate the removal of the frozen contents therefrom, and a substantially rigid metal frame supporting the periphery of said flexible container a relatively short distance above the bottom wall thereof whereby not to interfere with the upward flexing of said bottom wall to remove the frozen contents.

5. A freezing tray comprising: a flexible non-metallic container having a plurality of pockets therein, said pockets having distortable bottoms to facilitate the removal of the frozen contents therefrom, and a relatively rigid metal frame attached to the periphery of said flexible container at a relatively short distance from the bottom thereof whereby to facilitate the upward flexing of said bottom and also to permit the outward lateral flexing of the upper portions of the side walls of said container to remove the frozen contents.

HARVEY D. GEYER.