

Aug. 25, 1931.

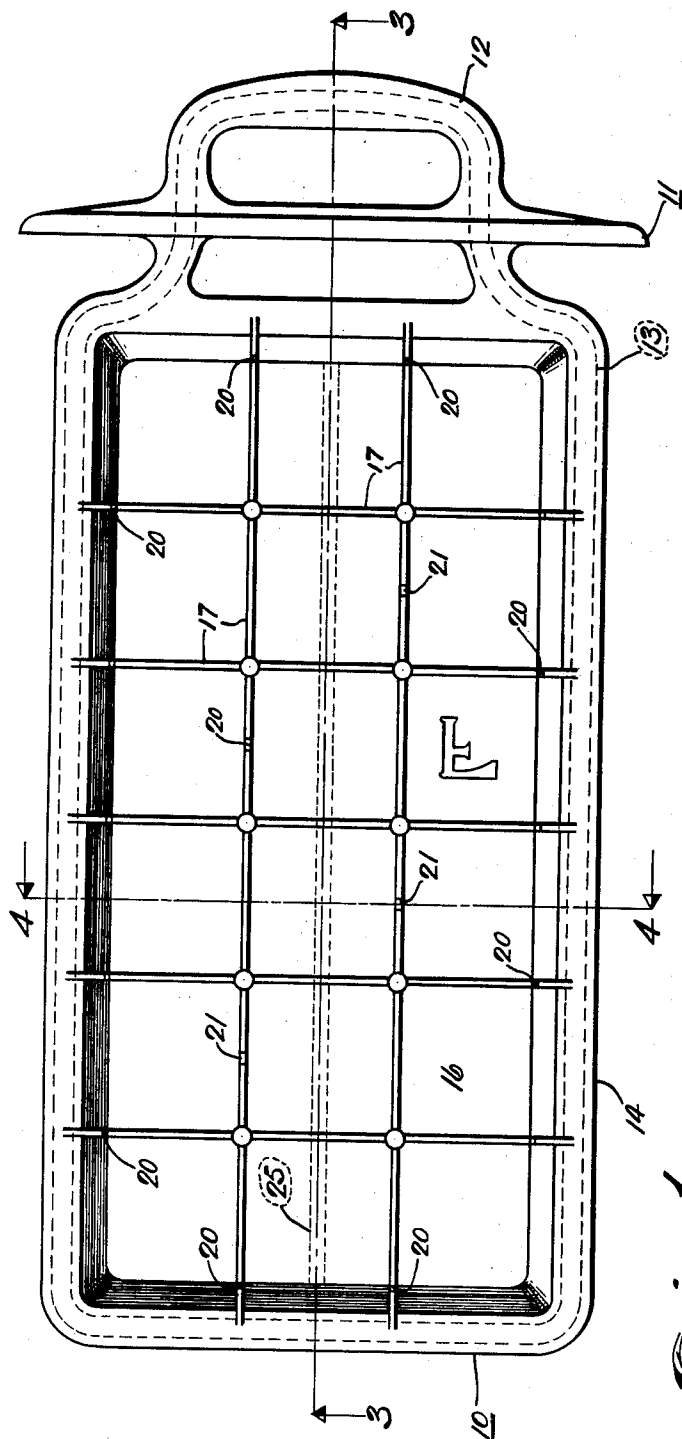
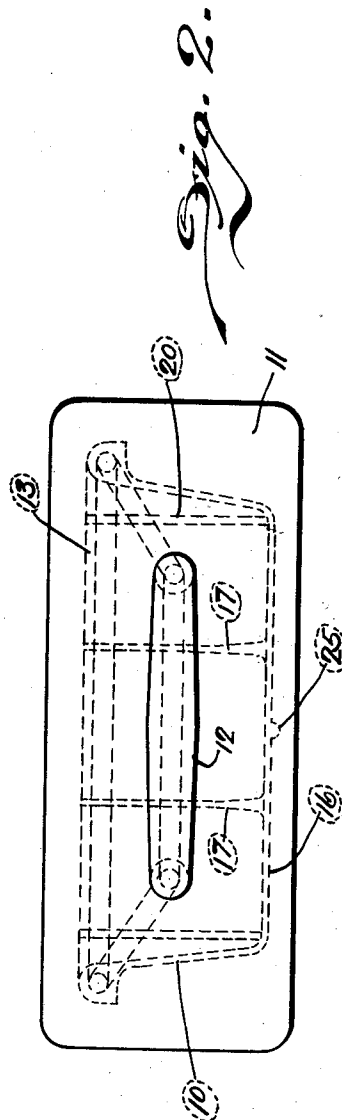
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FREEZING CONTAINER

Filed May 12, 1930

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

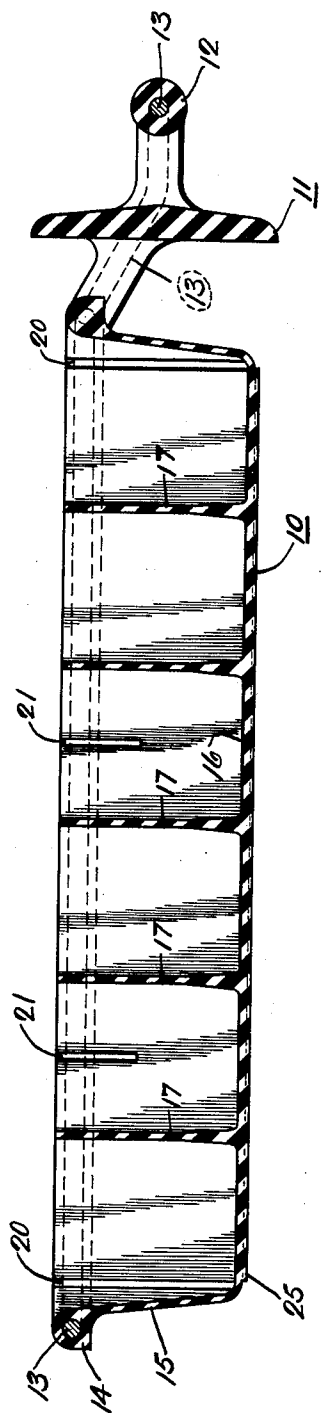


Fig. 3.

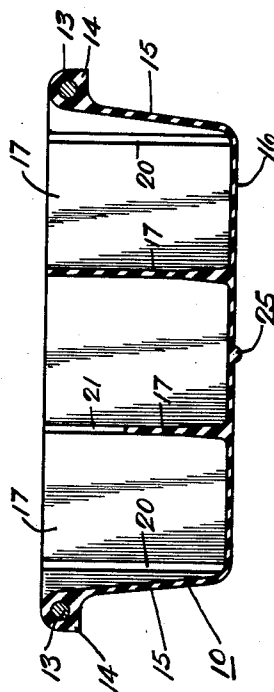


Fig. 4.

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FREEZING CONTAINER

Application filed May 12, 1930. Serial No. 451,708.

This invention relates to ice freezing trays, especially such as are adapted to be inserted by hand within the freezing compartment of a home mechanical refrigerator.

5 An object of this invention is to provide a strong, efficient and economically made freezing container of flexible non-metallic material, such as soft rubber, which may be easily flexed to facilitate the removal of the
10 frozen contents.

Another object is to provide a freezing container which is adapted to be inserted as a drawer into a freezing compartment and having a flexible non-metal closure front for
15 said compartment, whereby said closure front may be more easily freed from the compartment opening if bonded thereto by frozen condensation water.

Another object is to provide an integrally
20 molded soft rubber freezing container and closure front therefor having a stiffening metal frame for said container which projects therefrom and supports said closure front in proper relative position.

25 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
30 present invention is clearly shown.

In the drawings:

Fig. 1 is a plan view of a flexible rubber ice cube freezing tray which is adapted to be inserted as a sliding drawer into the freezing
35 compartment of an electric refrigerator.

Fig. 2 is an end view of Fig. 1.

Fig. 3 is a vertical section taken on line 3—3 of Fig. 1.

Fig. 4 is a transverse section taken on line
40 4—4 of Fig. 1.

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

The ice cube container is designated as a whole by numeral 10, the closure front by
45 11, and the handle by 12. In the form of tray illustrated, a substantially rigid metal reinforcing frame 13 is provided, preferably from a steel wire about $\frac{1}{8}$ inch in diameter having its ends butt welded together to form
50 an endless frame as shown. This metal re-

inforcing frame 13 is properly located in the molding die in such position that it is embedded in the upper peripheral flange 14 of the side walls 15 of container 10. The front end of frame 13 is shaped, as clearly shown
55 in Figs. 1 and 3, to form a reinforcing core for the handle 12 and also to form a substantially rigid support for the flexible closure front 11 which is shown spaced outwardly from the end of container 10.
60

Container 10 has its side walls 15, bottom wall 16, and partitions 17 molded to the shape and approximate thicknesses shown, preferably from a high grade flexible rubber so as to provide sufficient strength with a minimum thickness and to facilitate the upward
65 flexing of the bottom 16 to remove the frozen ice cubes from the container. The rigid metal frame 13 provides substantial rigidity and strength to the upper portion of the container and hence the flexible rubber walls 15 and 16 may be considerably thinner than
70 would be permissible if the frame 13 were omitted. Of course the thinner the rubber walls the more rapid will be the freezing of
75 the container contents due to more rapid heat transfer through the thinner walls.

In order to facilitate the upward flexing of the bottom of the container, or what may be termed the partial turning inside out of container 10 to remove the frozen cubes, the
80 partitions 17 may be fully or partially detached from the side walls 15 adjacent where they abut same by slits 20 in said partitions. Figs. 3 and 4 show the transverse partitions
85 17 detached from the side walls 15 by the slits 20 which extend all the way to the bottom 16. These slits 20 may be cut in the partitions after the container is molded, however preferably slits 20 are formed during
90 molding by the shape of the die core, as will be readily understood by those skilled in the art. It will now be clear that when the container contents are frozen solid the container
95 10 may be easily turned substantially inside out by an upward flexing of the bottom 16 carrying upward also the partitions 17 and of course the frozen cubes. This flexing will free all the ice cubes from their bond with
100 the side walls and partitions, after which

they may be easily picked from their individual compartments by hand or they may be all dumped out by inverting the container. If it is desired to remove only one or two ice cubes this can be easily done simply by pressing upward with the fingers on the bottom 16 to free the one or two cubes desired, which may be then picked out by hand. This can be done after pulling the freezing drawer 10 only a short distance from its freezing compartment so as to give access to the first row of cubes only.

In order to further facilitate the partial turning inside out of container 10 to remove the frozen cubes, the frame 13 may be coated with some well known substance, such as soap or graphite compound which will prevent a bond being formed with the rubber during vulcanization and thus provide an easy turning of the rubber walls 15 about the wire frame 13.

The partitions 17 are also preferably provided with slots 21 leading into the interior cube compartments and extending about half the depth of said partitions in order that when the ice tray is filled with water the water will run into all compartments and fill all to the same level. It will be noted that these slots 21 also serve to facilitate the above described upward flexing of bottom 16 since they reduce the stiffening effect of said partitions which form a stiffening grid.

A longitudinal central bead or depending rib 25 is preferably provided on the bottom surface of bottom 16, as clearly shown in Figs. 3 and 4. It has been discovered that this small bead 25 resting upon the floor of the freezing compartment which supports the ice tray somehow prevents the distortion of the partitions 17 when the ice cubes expand upon freezing. Without bead 25 it is found that when the ice cubes freeze the partitions 17 distort or become disaligned at the slits 20 and hence the cubes will be somewhat irregular in shape. With bead 25 present the partitions remain substantially aligned at slits 20 upon freezing of the ice. The narrow necks of ice formed in slits 20 and slots 21 usually break apart themselves when the cubes become solid, but in case they do not, they are easily broken when the bottom 16 is flexed upwardly for removal of the cubes.

The flexible closure front 11 is preferably molded of soft rubber and has a thickness approximately as illustrated so that it needs no other reinforcement than the two wires 13 passing therethrough as shown in Fig. 1. This closure front 11 preferably overlaps and abuts against the margin of the opening in the freezing compartment which receives the freezing tray, thus providing a good air seal for said opening. Heretofore freezing trays have been provided with a similar closure front made of metal. Such metal fronts easily freeze tight to the opening

against which they abut due to the frozen condensation which forms thereon and so the removal of the ice tray is rendered difficult. With the flexible rubber sealing front 11 of this invention the ice tray may always be easily removed because the frost ice will not bond strongly to the flexible rubber and is easily broken therefrom by a slight movement of the handle 12. This feature of the flexible rubber front 11 may be applied to metal freezing containers as well as to the rubber container 10 herein disclosed and claimed. That is to say, the flexible non-metallic closure front 11 is applicable to any kind of container where there is a tendency of the closure front freezing tight in closed position. The handle 12 may be completely encased in rubber or not, as desired, however when the entire metal frame 13 is encased as shown it may be of iron or steel or other cheap metal since it will not be subject to rust and corrosion.

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 adapted to be inserted within a freezing chamber, comprising: a molded flexible rubber container having the upper edges of its side walls stiffened by molded in situ metal inserts, said inserts being rotatable relative to the confining rubber, whereby said side walls may be more easily partially turned inside out.

2. A freezing tray adapted to be inserted within a freezing chamber, comprising: a molded flexible rubber container having a stiffening frame extending around the upper edge thereof whereby the frozen contents of said container may be more easily removed therefrom, and a handle projecting from said container and secured to said frame.

3. A freezing tray adapted to be inserted within a freezing chamber, comprising: a molded flexible rubber container having a stiffening frame extending around the upper edge thereof whereby the frozen contents of said container may be more easily removed therefrom, and a handle projecting therefrom and integrally molded with said container and having a stiffening reinforcement therein.

4. A freezing tray adapted to be inserted within a freezing chamber, comprising: a molded flexible rubber container having a stiffening frame extending around the upper edge thereof whereby the frozen contents of said container may be more easily removed therefrom, and a molded rubber handle projecting from said container and secured to said frame.

5. A freezing tray adapted to be inserted within a freezing chamber, comprising: a

molded flexible rubber container having a stiffening frame extending around the upper edge thereof whereby the frozen contents of said container may be more easily removed

therefrom, and a handle offset from said container with an intervening open space but substantially attached to said container.

6. A freezing tray adapted to be inserted by hand within a freezing compartment, comprising: a molded flexible rubber container and a flexible non-metallic closure front for said compartment secured to said container in spaced relation therewith.

7. A freezing tray adapted to be inserted by hand within a freezing compartment, comprising: a molded flexible rubber container and a flexible non-metallic closure front for said compartment secured to said container in spaced relation therewith, and a handle for said container projecting outwardly beyond said closure front.

8. A freezing tray adapted to be inserted by hand within a freezing compartment, comprising: a molded flexible rubber container and a flexible non-metallic closure front for said compartment, integrally molded with said container, said container having a stiffening reinforcement therefor projecting outwardly and supporting said closure front in spaced relation therewith.

9. A freezing tray adapted to be inserted by hand within a freezing compartment, comprising: a molded flexible rubber container and a flexible non-metallic closure front for said compartment secured to said container in spaced relation therewith, and a handle for said container projecting outwardly beyond said closure front, said container having a stiffening reinforcement therefor extending outwardly through said closure front and supporting said handle.

10. A freezing tray adapted to be inserted by hand within a freezing compartment comprising: a container having a flexible rubber closure front for said compartment secured thereto and a handle for said container located outwardly beyond said closure front and having a substantially rigid support extending through said closure front.

11. A freezing container for freezing a plurality of relatively small ice blocks having a series of flexible non-metallic partitions separating the individual blocks, some of said partitions having slits extending from the upper edge downwardly therein whereby to facilitate removal of the frozen blocks.

12. A flexible rubber freezing container having a series of flexible rubber partitions forming individual compartments therein, some of said partitions having slits extending from the upper edge downwardly therein whereby to facilitate ejection of the frozen contents.

13. A flexible rubber freezing container having a series of flexible rubber partitions

forming individual compartments therein, said partitions having slits therein adjacent the flexible rubber side walls of said container.

14. A flexible rubber freezing container having a series of flexible rubber partitions forming individual compartments therein, said partitions having their upper portions extending substantially to but detached from said flexible side walls whereby to facilitate the upward flexing of the bottom of said container.

In testimony whereof I hereto affix my signature.

HARVEY D. GEYER.

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