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ICE TRAY

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13 Claims. (Cl. 62—108.5)

This invention relates to freezing receptacles and more particularly to an ice tray having a plurality of independent ice cube molds.

It has been customary heretofore to fabricate ice tray grids and pans from sheet metal in such a manner that a removable grid is provided to divide the space within the pan into a plurality of ice block compartments of suitable size for domestic use. In an effort to minimize the quantity of metal or other materials employed, efforts have been made to increase the ratio of the ice block forming area per unit of metal employed in the grid structure.

I have found that very satisfactory results can be obtained by employing a skeleton framework adapted to receive a plurality of separate ice block molds of suitable size to provide a plurality of independent ice blocks of convenient size for domestic use.

An object of this invention is therefore to provide an ice forming receptacle having a framework dividing the space within the receptacle into a plurality of mold spaces to receive independent cube forming receptacles.

A further object of the invention resides in the provision of an ice tray grid having large ice forming area per unit of metal employed in the grid structure.

Another object resides in the provision of a skeleton framework forming bottom and side walls of an ice tray grid and a removable partitioning element adapted to divide the space within the framework into a plurality of mold compartments of convenient size for domestic use.

Still a further object of the invention resides in the provision of removable receptacles having high calendered surfaces adapted to receive a liquid to be frozen to form ice blocks of relatively small size which may be readily removed from the receptacles due to the high calendered surfaces of the receptacles.

Another object of the invention resides in the provision of a novel method of forming ice blocks wherein individual ice block receptacles are removably positioned in a framework having receptacle receiving compartments to form individual receptacles and wherein the receptacles are provided with a high calendered surface to facilitate the removal of individual ice blocks therefrom.

A further object is to provide a frame member having a removable cover portion which may be employed to divide the space within the frame member into a plurality of relatively small mold receiving compartments or which may be re-

moved to adapt the frame member for the reception of a single relatively large receptacle.

Other objects and advantages of this invention will be apparent from the following detailed description considered in connection with the accompanying drawing, submitted for purposes of illustration only, and not intended to define the scope of the invention, reference being had for that purpose to the subjoined claims.

In the drawing wherein similar reference characters refer to similar parts throughout the several views:

Fig. 1 is a perspective view of a device embodying the invention.

Fig. 2 is a perspective view illustrating the framework of Fig. 1 having a single receptacle positioned therein.

Fig. 3 is a view similar to Fig. 1 illustrating a modified form of the invention.

Fig. 4 is a perspective view of one of the individual ice block receptacles.

Before explaining in detail the present invention it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawing, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation, and it is not intended to limit the invention claimed herein beyond the requirements of the prior art.

Referring now to Figs. 1 and 2, it will be observed that the invention is illustrated as embodied in a grid structure having a framework 10 formed of wire or other strip material of suitable proportions. The framework 10 is formed with end members 12 and side members 14. A pair of spaced longitudinally extending strip members 16 and 18 having generally vertically extending portions 20 and 22 suitably secured to the end members 12 as by a spot welding process are provided to support ice blocks.

The space within the framework 10 and above the strip members 16 and 18 may be divided into a plurality of ice block compartments of convenient size for domestic use by a removable framework 24 formed of strip material such for example as wire. The framework 24 preferably has a centrally disposed longitudinally extending member 26 having a hooked portion 28 adapted to engage one of the end members 12 at an inwardly bent portion 30 substantially midway between the side members 14 of the framework

10. The other end of the longitudinally extending member 26 is provided with a downwardly extending portion 32 having a backwardly projecting portion 34 adapted to snap over the end member 12 at a bent portion 36 positioned approximately midway between the side members 14 of the framework 10.

The longitudinally extending member 26 is provided with a plurality of transversely extending separator members 38 suitably secured thereto as by a spot welding operation to divide the space within the framework 10 into a plurality of longitudinally spaced mold compartments 40 adapted to receive independent mold receptacles 42 to form ice blocks of convenient size for domestic use.

It will be understood that if desired more than one longitudinally extending member 26 may be provided to divide the space within the framework 10 into a desired plurality of laterally spaced rows of mold compartments 40. It will also be apparent that the mold receptacles 42 may be positioned in any container such as a dish, pan or other suitable vessel formed of any desired material either metal or non-metallic such as a plastic. If desired the framework 10 may be partially or wholly formed of plastic material.

The independent mold receptacles 42 may be formed of any suitable material such for example as plastic material or a highly calendered paper having a water repellent surface thereon. The plastic material utilized to form the independent mold receptacles 42 or the container or pan to receive the independent mold receptacles 42 may be either of the thermoplastic or thermosetting type and preferably has a relatively high calendered surface whereby absorption of water into the pores of the material is minimized.

Where a paper material is used to form the independent ice mold compartments 42, it has been found that good results are obtained where a relatively high calendered paper is provided to give a relatively smooth finish. If desired, the surface of the paper can be treated by a water repellent substance such for example as petrolatum or other substance having the properties of repelling water at temperatures encountered during the freezing operation and being relatively hard at normal room temperatures to avoid being wiped off upon handling.

The receptacles 42 may be provided with an outwardly extending lip or projection forming a handle 44 whereby the individual mold receptacles can be grasped to remove them from the grid structure. A bead 46 may be formed adjacent the top of each of the receptacles 44 to overlie the side members 14, the longitudinally extending member 26 and the transversely extending members 38 of the grid structure to assist in maintaining the grid members in assembled relation.

The framework may be provided with a longitudinally extending handle portion 48 suitably attached to one of the end members 12 as by a spot welding operation. If desired the handle member 48 may be attached to the vertically extending portions 20 and 22 of the strip members 16 and 18, or may be attached to both the portions 20 and 22 and the end member 12.

In the operation of this device, when it is desired to form ice blocks of suitable size for domestic use, the framework 24 is assembled on the framework 10 in the manner illustrated in Fig. 1. A plurality of independent ice mold compartments

42 may then be positioned within the compartments 40 to rest upon the longitudinally extending strips 16 and 18. The mold compartments 42 are maintained in separated relation by the framework 24 and are supported in part by the framework 10. When a desired number of independent receptacles 42 have been inserted into the grid structure, the compartments 42 are filled with water or other liquid which it is desired to freeze and the grid structure is then placed in the freezing compartment of a refrigerator.

After the liquid is frozen and it is desired to remove the ice blocks from the grid structure, the handle 48 may be grasped and elevated to release the grid structure from the supporting surface of the freezing compartment of the refrigerator. It will be noted that the longitudinally extending strips 16 and 18 engaging the supporting surface of the refrigerator compartment have relatively small surface area whereby the grid structure may be readily released from the evaporator.

If desired, the strips 16 and 18 may be treated with a water repellent substance to minimize the adhesion of the grid structure to the refrigerator shelf. It will also be apparent that if desired the other portions of the frameworks 10 and 24 may be suitably treated with water repellent substances to facilitate the release of the receptacles 42 from the grid structure.

After the grid structure has been released from the supporting surface it may be removed from the freezing compartment. If it is desired to release all of the cubes, the downwardly extending portion 32 of the longitudinally extending member 26 may be elevated to disengage the bent portion 36 of the end member 12. The framework 24 may then be removed from the framework 10 of the grid structure. All of the ice block molds 42 will then be released and will remain supported on the longitudinally extending strip members 16 and 18. Any desired number of molds 42 may then be removed from the grid structure and the ice blocks removed from the mold structures 42 for use. I have found that the ice blocks may be readily released from the mold elements 42 if the mold elements are inverted and flexed slightly by exerting a slight pressure on their bottom.

If less than all of the ice blocks are desired for use at one time the grid may be only partially removed from the evaporator or freezing compartment of the refrigerator. The desired number of ice blocks may be procured by elevating the individual ice block molds 42 by grasping the individual handles 44 or by exerting an upwardly directed pressure on the bottom of the mold elements 42 adjacent the longitudinally extending strips 16 or 18.

The individual ice block molds 42 may be used over and over again since the operation of freezing ice therein does not materially deteriorate the material of which they are formed.

Referring now to Fig. 2, it will be noted that the framework 10 of the grid structure may be employed to receive a single container 50 whereby large volumes of material can be frozen in a single mass, such for example as when it is desired to make frozen desserts, ice cream, etc. The container 50 may be formed with fluted side walls 52 whereby it may be readily deformed to fit the space within the grid structure. A supply of individual ice block molds 42 and containers 50

may be kept on hand to replace mold elements or receptacles which become damaged during use.

The embodiment of the invention illustrated in Fig. 3 is similar in many respects to that illustrated in Fig. 1. Corresponding parts have therefore been given corresponding numerals with the addition of 100.

It will be noted that a plurality of longitudinally extending relatively narrow strip members 160 and 162 are provided to receive and support the individual ice block compartments 142. The strip members 160 are operably connected to the end members 112 by means of bent portions 164 suitably connected to the end portion 112 in any desired manner as by a spot welding operation. The members 162 may be similarly attached to the end member 112 by bent upwardly extending portions 166.

I claim:

1. An ice tray comprising a plurality of generally longitudinally extending spaced supporting members, generally vertically extending segments carried by the supporting members, a generally rectangular shaped framework operably connected to the vertically extending segments and positioned to lie in the horizontal plane spaced vertically above the supporting members, a partitioning member having intersecting longitudinal and transversely extending segments adapted to be detachably connected to the generally rectangular shaped framework to divide the space within the framework and above the supporting members into a plurality of separate compartments, and a plurality of independent ice block molds removably positioned within said compartments to form ice blocks of convenient size for domestic use.

2. An ice cube forming device comprising generally longitudinally extending bottom supporting members and a generally rectangular shaped frame positioned vertically above the supporting members, a framework to divide the space within the rectangular shaped frame into rectangular mold receiving spaces, and a plurality of removable individual rectangularly shaped ice block molds in said mold receiving spaces adapted to rest on said members.

3. An ice tray comprising a plurality of longitudinally extending spaced supporting members, generally vertically extending segments carried by the supporting members, a framework operably connected to the vertically extending segments and positioned to lie in the horizontal plane positioned vertically above the supporting members, a partitioning member having intersecting longitudinal and transversely extending segments adapted to be detachably connected to the framework to divide the space within the framework and above the supporting members into a plurality of separate compartments, and a plurality of independently removable ice block molds formed of plastic material removably positioned within the separate compartments to form ice blocks of convenient size for domestic use.

4. An ice tray grid comprising a framework having side and end members, generally longitudinally extending bottom supporting members operably connected to the end members, a frame structure dividing the space within the framework into a plurality of rectangularly shaped mold compartments, and a plurality of rectangularly shaped molds removably resting on said supporting members and in said mold compartments and independently removable therefrom.

5. An ice block forming device comprising a framework having side and end members, bottom supporting members operably connected to certain of said members, a frame connected to the framework for dividing the space within the framework into a plurality of independent mold compartments, and a plurality of independent removable molds resting on said bottom supporting members and in the spaces between the frame and framework.

6. An ice tray grid comprising a framework having side and end members, generally longitudinally extending bottom supporting members operably connected to the end members, a frame structure dividing the space within the framework into a plurality of rectangularly shaped mold compartments, and a plurality of rectangularly shaped molds removably resting on said supporting members and in said mold compartments and independently removable therefrom.

7. An ice cube forming device comprising a framework having side and end members, longitudinally extending supporting members operably connected to the end members, a removable frame detachably connected to the framework for dividing the space within the framework into a plurality of independent mold compartments, and a plurality of independent molds adapted to form ice cubes of convenient size for domestic use and in the spaces between the frame and framework, the framework upon removal of the frame being suitable to receive a single relatively large mold to freeze a relatively large volume of a substance in a single block.

8. An ice block forming device comprising a generally rectangular framework having the four sides thereof formed of wire members, a plurality of flat sheet metal bottom members extending across and connected to opposite sides of the framework, grid means dividing the space within the framework into separate mold receiving spaces, and a plurality of separate individually removable molds resting on said bottom members and within said spaces.

9. An ice block forming device comprising a generally rectangular framework having the four sides thereof formed of members, a plurality of metal bottom members extending across and connected to two opposite sides of the framework, grid means dividing the space within the framework into separate mold receiving spaces, and a plurality of separate individually removable molds resting on said bottom members and within said spaces.

10. An ice tray grid comprising a framework having side and end members, generally longitudinally extending bottom supporting members operably connected to the end members, a frame structure dividing the space within the framework, said supporting members and said frame structure forming with said framework a plurality of rectangularly shaped mold receiving and supporting recesses for removably receiving a plurality of independent rectangularly shaped molds.

11. An ice tray grid combination comprising a framework having side frame members forming the four sides thereof, bottom supporting members operably connected to two opposite side frame members, a frame structure dividing the space within the framework, said supporting members and said frame structure forming with said framework a plurality of rectangularly shaped mold receiving and supporting recesses

for removably receiving a plurality of independent rectangularly shaped molds with their bottoms resting on said supporting members, and a plurality of rectangularly shaped molds of dimensions to be removably received in said recesses with the bottoms of the molds resting on said supporting members, said molds being independently removable from said recesses.

12. An ice tray grid comprising a framework having side frame members forming the four sides thereof, bottom supporting members operably connected to two opposite side frame members, a frame structure dividing the space within the framework, said supporting members and said frame structure forming with said framework a plurality of rectangularly shaped mold receiving

and supporting recesses for removably receiving a plurality of independent rectangularly shaped molds.

13. An ice block forming device comprising a generally rectangular framework having the four sides thereof formed of members, a plurality of metal bottom members extending across and connected to two opposite sides of the framework, and grid means dividing the space within the framework into separate mold receiving spaces for removably receiving a plurality of separate individually removable molds adapted to rest on said bottom members when positioned within said spaces.

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