May 28, 1940. J. W. JACOBS 2,202,105

REFRIGERATING APPARATUS

Filed July 7, 1938 4 Sheets-Sheet 1

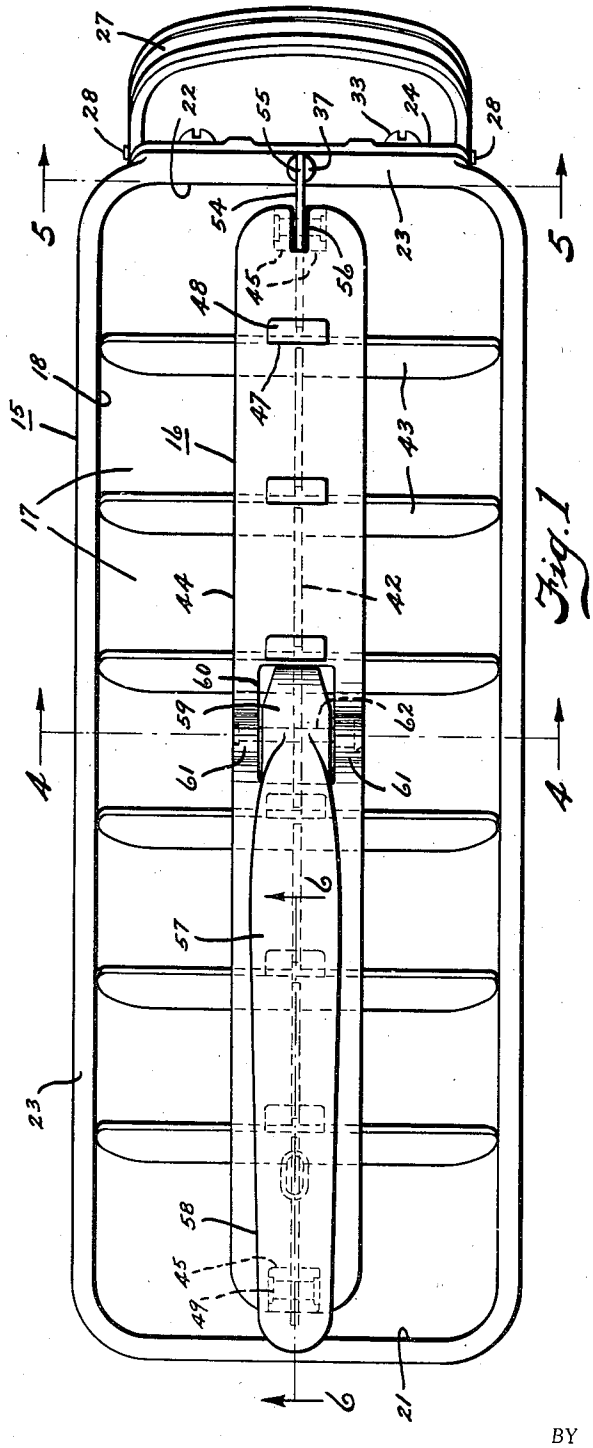


Fig. 1

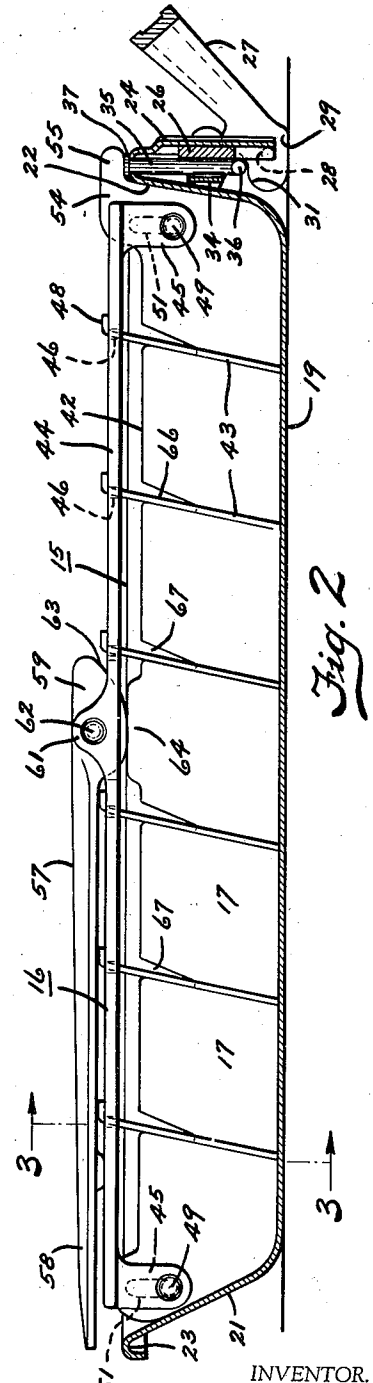


Fig. 2

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REFRIGERATING APPARATUS

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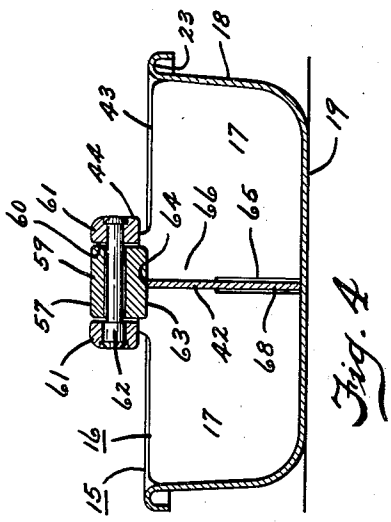


Fig. 4

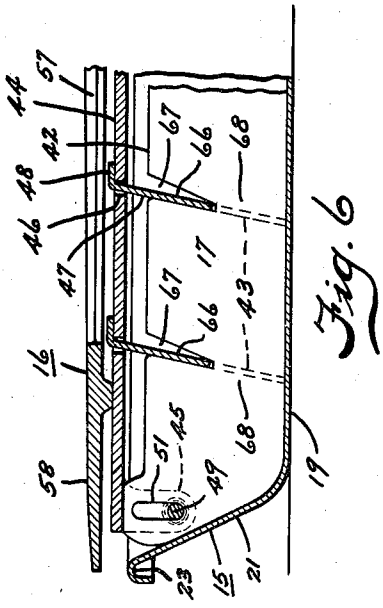


Fig. 6

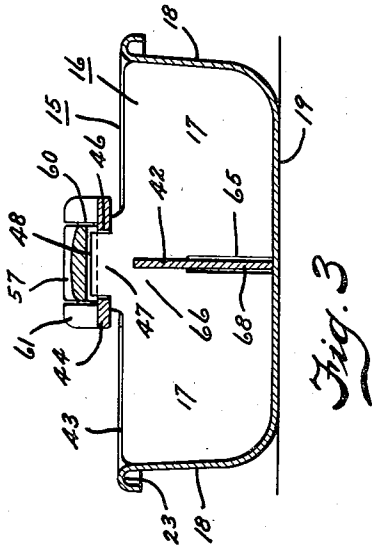


Fig. 3

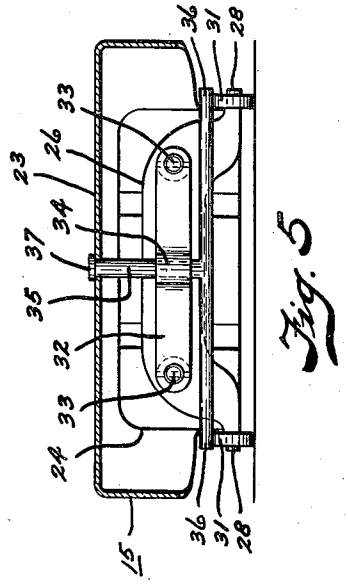


Fig. 5

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REFRIGERATING APPARATUS

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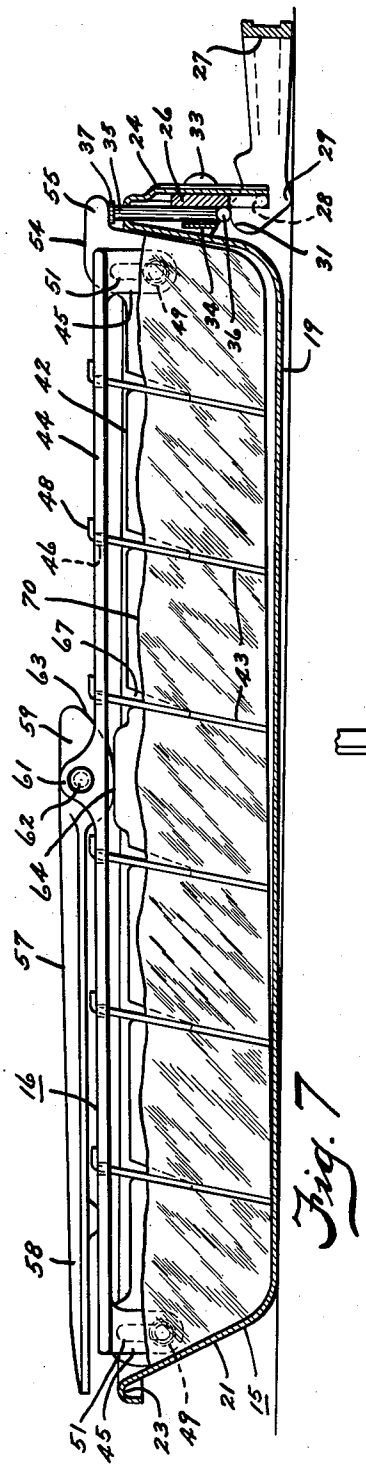


Fig. 7

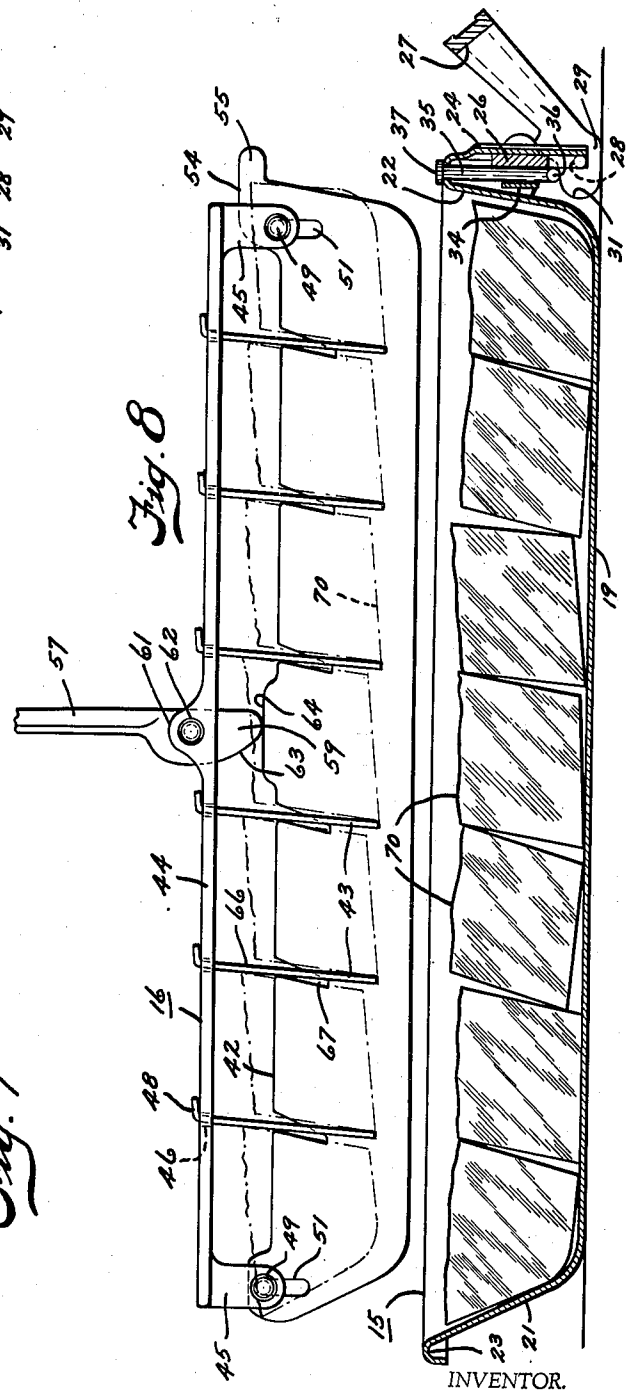


Fig. 8

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REFRIGERATING APPARATUS

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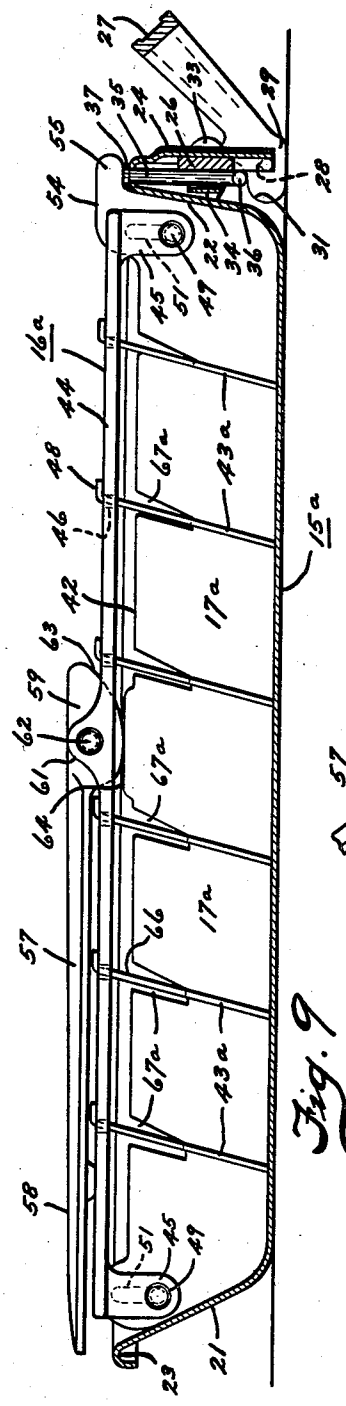


Fig. 9

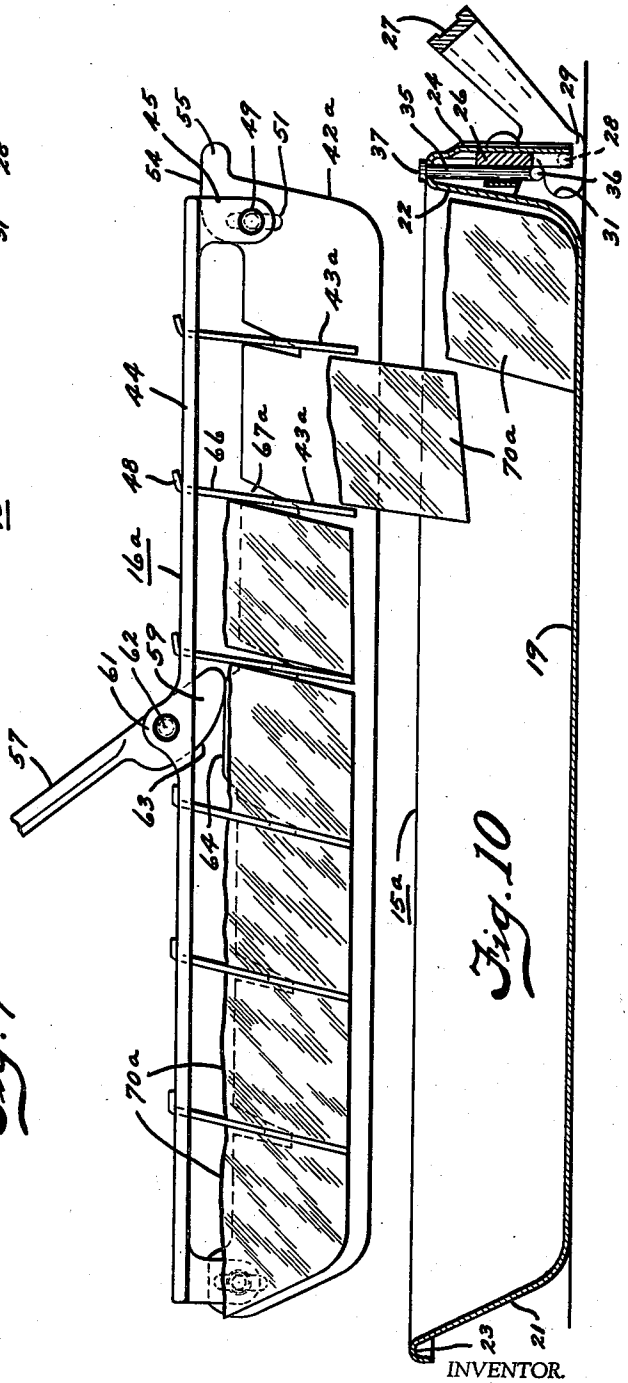


Fig. 10

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Patented May 28, 1940 2,202,105

UNITED STATES PATENT OFFICE

2,202,105

REFRIGERATING APPARATUS

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Application July 7, 1938, Serial No. 217,934

14 Claims. (Cl. 62—108.5)

This invention relates to freezing devices for liquids and particularly to ice trays and grids therefor employed in household refrigerating apparatuses.

A general object of my invention is to provide an improved grid construction adapted to be removably disposed in an ice tray for dividing the interior of the tray into a plurality of ice block compartments and a novel method of removing ice blocks from the tray and grid without application of heat thereto.

Another object of my invention is to provide a unitary metallic grid structure for an ice tray which is removable from the tray as a unit together with ice blocks adhering thereto and which unitary structure has certain walls movable relative to one another and relative to other walls thereof for breaking the bond between the ice blocks and the grid walls to thereby facilitate the harvesting of ice blocks.

A further object of my invention is to provide a unitary rigid metallic walled grid structure including a longitudinal wall and a plurality of transverse walls and in which the transverse walls are elevated relative to the longitudinal wall and moved relative to one another in another direction of motion relative to the longitudinal wall other than the elevating movement thereof to insure complete loosening of ice blocks from the grid walls and to facilitate the release of ice blocks from the grid structure.

In carrying out the foregoing objects, it is a still further object of my invention to provide, in a grid structure of the type described, for the progressive movement of the transverse walls thereof relative to one another and to the longitudinal wall during elevation of the transverse walls relative to the longitudinal wall to thereby sequentially break ice blocks from the grid walls from one portion to another portion along the length of the structure after it has been removed from the tray.

Still further and more specific objects and advantages of my invention reside in the simplicity of construction and ease of operation of my improved grid structure and in novel combinations and arrangements of parts thereof to provide a durable device of low manufacturing cost as will more fully appear in the course of the following description.

In the drawings:

Fig. 1 is a top plan view of a freezing device comprising a tray and a grid constructed in accordance with my invention removably disposed in the tray;

Fig. 2 is a side view of the freezing device disclosed in Fig. 1 and showing the tray in section;

Fig. 3 is a vertical transverse sectional view of the freezing device taken on the line 3—3 of Fig. 2;

Fig. 4 is a vertical transverse sectional view of the freezing device taken on the line 4—4 of Fig. 1;

Fig. 5 is a vertical transverse sectional view taken on the line 5—5 of Fig. 1 showing the tray release and grid elevating mechanism of the freezing device;

Fig. 6 is a longitudinal fragmentary sectional view of the freezing device taken on the line 6—6 of Fig. 1;

Fig. 7 is a view similar to Fig. 2 showing ice blocks in the freezing device and disclosing the grid structure and ice blocks therein elevated relative to the tray;

Fig. 8 is a view disclosing the grid removed from the tray and showing walls of the grid moved relative to one another for releasing ice blocks therefrom;

Fig. 9 is a view similar to Fig. 2 and shows a modified arrangement of walls of the grid structure to provide for progressive or sequential release of ice blocks from the grid; and

Fig. 10 shows the modified form of grid removed from the tray and illustrates the progressive movement of the transverse grid walls to sequentially remove ice blocks therefrom.

Since my invention relates to a freezing device of the type generally employed in household refrigerating apparatuses for producing small blocks of ice, reference to the accompanying drawings will be made for illustrating the invention. The freezing device (see Fig. 1) includes a metal ice tray 15 having a unitary metal walled grid 16 removably disposed therein for dividing the interior of the tray into longitudinal rows of ice block compartments 17. The tray 15 has side walls 18 (see Figs. 3 and 4), a bottom wall 19 and opposed end walls 21 and 22. The tray side walls 18 and the end walls 21 and 22 thereof diverge outwardly toward the top of the tray to facilitate removal of the grid and ice blocks adhering thereto from the tray. The walls 18, 21 and 22 of tray 15 have their upper edge rolled or bent over to form a rim 23 which extends continuously around the top of the tray to increase its structural strength. A portion of the metal tray 15 is extended downwardly from rim 23, as at 24, at the front end 22 thereof and provides a mounting for a heavy metal piece 26 which has a handle 27 pivotally secured thereto as at 28.

The legs of handle 27 are provided with a cam surface 29 adapted to engage the tray support to break an ice bond between the tray and its support. The legs of handle 27 are also provided with a second cam surface 31 located on the side thereof opposite the cam surface 29 so as to position the cams 29 and 31 on opposite sides of the pivotal mounting 28 of the handle. A bracket 32 secured to metal piece 26 by the screws 33, which clamp piece 26 to the downwardly directed portion 24 of the metal tray 15, is provided with a bent portion 34 for receiving and securing an inverted T-shaped member 35 in place upon the tray (see Fig. 5). This inverted T-shaped member 35 has the ends 36 of the horizontal portion thereof resting upon the cam surfaces 31 formed on handle 27 and has the end 37 of the vertical portion thereof extending through a suitable opening provided in the rim 23 of tray 15. End 37 of the inverted T-shaped member 35 is enlarged to thereby secure, with the aid of bracket 32, member 35 in movable relation upon the tray for a purpose to be hereinafter more fully described.

The unitary metallic grid structure, generally represented by the reference character 16, is removably disposed within tray 15 and includes walls which divide the interior of the tray into the plurality of rows of molds, cells or compartments 17. The grid structure 16 comprises a vertically disposed rigid metal wall or partition 42 extending longitudinally of the tray 15. Grid structure 16 also comprises a plurality of spaced apart rigid metal walls or partitions 43 extending continuously through the plane of longitudinal wall 42 and being movably connected or interlocked therewith. It is to be noted that grid walls 43 are normally inclined or disposed at an acute angle with respect to the bottom 19 of tray 15 to provide the ice block compartments 17 with a parallelogram shape in one direction of cross section therethrough. Also, included as a part of the unitary removable grid structure 16 is a horizontally disposed relatively flat member 44 which is disposed above and extends lengthwise with the longitudinal grid wall 42. This member 44 has a pair of legs 45 depending from each end thereof and is also provided with a plurality of elongated openings 46 in its face. The openings 46 in member 44 receive an upwardly extended portion 47 (see Fig. 3), which is bent over as at 48, of each transverse grid wall 43. Openings 46, it is to be noted, are slightly wider than the thickness of the metal extension 47 of walls 43 so as to permit tilting of these walls as will hereinafter be described. A pin 49 is secured to the pair of legs 45 at each end of member 44 and this pin 49 extends through a vertically elongated opening 51 provided in the longitudinal grid wall or partition 42 (see Fig. 2). The connection of member 44 with the grid wall 42 and the connection of transverse grid walls 43 with member 44 interlocks the various parts of the grid together to form the unitary removable structure 16 and also permits elevation of member 44 and walls 43 relative to grid wall 42 in a manner to hereinafter be more fully described.

Referring again to Fig. 2 of the drawings, it will be noted that the longitudinal grid wall 42 is provided, particularly at one end thereof, with an upstanding portion 54 which has a finger part 55 extending therefrom and overlapping the rim 23 at the front end of tray 15. When grid structure 16 is positioned within tray 15 the finger part 55 of upstanding portion 54 on wall 42 is located in vertical alignment with and rests upon the enlarged top end 37 of inverted T-shaped member 35. The member 44 is cut out as at 56 (see Fig. 1) to accommodate the upstanding portion 54 of grid wall 42. The grid structure 16 carries a lever 57 provided with a handle end 58 and a short heavy end 59. The heavy end 59 of lever 57 fits in an opening 60 formed in member 44 and is mounted to a pair of bosses 61 formed integral with member 44, and located at the sides of the opening 60 (see Figs. 1 and 4), by a shaft 62 which extends through the lever and through suitable holes provided in the bosses 61 (see Fig. 4). End 59 of lever 57 has its bottom portion formed into a cam surface 63 which rests against a raised top edge part 64 of longitudinal grid wall 42 for a purpose that will be hereinafter described.

In order to provide for the extension of grid walls 43 transversely through the plane of longitudinal grid wall 42 I have cut a slot 65 in each wall 43 (see Figs. 3 and 4). It will be noted that the slot 65 extends upwardly from the bottom edge of walls 43 to provide a web portion 66 in these walls immediately below the upwardly extending portion 47 thereof. To accommodate the web portion 66 of transverse walls 43 within the plane of longitudinal grid wall 42, I cut a plurality of slots 67 in wall 42 in spaced apart relation along the length thereof (see Fig. 6). Slots 67 extend at an angle downwardly from the top edge of wall 42 and are wider at their upper open end than at their lower closed end to permit the cross walls 43 to swing from their normal inclined position into substantially a vertical position, when elevated along with member 44 relative to grid wall 42, as will become apparent in the description of operation of the device. The slots 67 provide longitudinal grid wall 42 with a plurality of web portions 68 located below the slots 67 (see Figs. 3, 4 and 6) and which are received in the slots 65 of transverse grid walls 43.

Referring now to Figs. 9 and 10 of the drawings wherein a modification of the grid structure 16 is shown at 16*a* disposed in a tray 15*a* it will be noted that, while the normally inclined transverse grid walls 43*a* are equally spaced apart, the slots 67*a* provided in the longitudinal grid wall 42*a* are of progressively increased width from one end to the other end of the grid structure 16*a*. The purpose of the progressively increased width of slots 67*a* along the length of the grid structure is to cause movement of the transverse grid walls 43*a* lengthwise of longitudinal wall 42*a* to be progressive from one end to the other end of the grid structure 16*a* to thereby sequentially release ice blocks from the compartments so as to provide for the release of all or less than all of the ice blocks from the grid structure 16*a* as desired.

Assume that water has been frozen in the freezing device in the form of ice blocks 70 as illustrated in Fig. 7 of the drawings in the ice block compartments 17, by the cooling effect produced by a cooling element or evaporator of a refrigerating system, and removal or harvesting of these ice blocks is desired. The tray handle 27 is grasped by the hand and pulled outwardly, thus causing same to pivot about its pivotal mounting 28 and move downwardly. This initial downward movement of handle 27 causes the cam surface or surfaces 29 thereon to bear against the freezing device support to break the ice bond between the device and its support. The freezing device can thereafter be readily removed from its

support in or on the cooling element or evaporator. After removal of the freezing device from the cooling element or evaporator of the refrigerating system, handle 27 is moved downwardly about its pivotal mounting 28 to thereby cause the cam surface or surfaces 31 to impart a lifting force to ends 36 of the inverted T-shaped member 35 for elevating the member 35 relative to tray 15. Elevation of member 35 causes its upper end 37 to impart a lifting force to the finger part 55 of the upstanding portion 54 of longitudinal grid wall 42 to thereby elevate the unitary grid structure 16 together with the ice blocks 70 adhering thereto relative to tray 15 of the freezing device. This position of the device and movement of parts thereof as described is illustrated in Fig. 7 of the drawings wherein the grid structure 16 and ice blocks 70 bonded thereto are shown raised away from the bottom wall 19 of tray 15. The bond between the ice and tray 15 having now been broken permits the unitary grid structure 16 to be removed from the tray for the purpose of releasing ice blocks 70 from walls of the grid. After grid structure 16 has been removed from tray 15; manipulation of lever 57 carried on the grid will cause movement of the substantially non-flexible or rigid metal walls of the grid relative to one another. Therefore, handle end 58 of lever 67 is grasped by the hand and elevated to cause the lever to rotate about its pivotal mounting shaft 62. This rotation of lever 57 brings the cam surface 63, formed on the short end 59 thereof, into play, due to its engagement with the raised top edge portion 64 of longitudinal grid wall 42, and causes this cam surface 63 to apply a downward force to the longitudinal grid wall 42 to thereby create an elevating movement of member 44 and transverse grid walls 43 connected therewith, by the bent-over portion 48, relative to the longitudinal grid wall 42. This raising of member 44 and walls 43 relative to wall 42 of the unitary grid structure 16 is illustrated in Fig. 8 of the drawings. It is to be noted by referring to this illustration that since walls 43 of the grid are normally inclined the straight line vertical movement of member 44 relative to longitudinal grid wall 42, afforded by the pins 49 moving upwardly in the vertically elongated openings 51 in wall 42, causes transverse grid walls 43 to engage and bear against the left-hand uppermost wall portion of the inclined slots 67 during upward movement thereof. Engagement of transverse grid walls 43 with the left-hand wall of slots 67 during their upward movement with member 44 relative to grid wall 42 causes these cross walls 43 to move relative to one another and to longitudinal grid wall 42 in another direction in addition to their elevating movement. It will be noted by referring to Fig. 8 that the normally inclined transverse grid walls 43 have been moved out of their normal inclination into a substantially vertical position by the force imparted by lever 57 and cam 63 between grid wall 42 and member 44. The abutment of grid walls 43 with the upper portion of the left-hand wall of slots 67 during elevation of walls 43 relative to longitudinal grid wall 42 simultaneously moves the lower portion of cross walls 43 lengthwise or longitudinally of grid wall 42 or to the right as shown in Fig. 8. Movement of cross walls 43 relative to one another and to longitudinal grid wall 42 in another direction other than the elevation thereof, as described, breaks the bond between the ice blocks 70 and the grid walls 42 and 43 and also enlarges the ice block compartments 17 to cause the loosened ice blocks 70 to be liberated from the unitary grid structure 16. In Fig. 8 of the drawings I have shown the ice blocks 70 in dot-dash lines within the compartments 17 after the walls of grid 16 have been moved merely to illustrate the change in form or enlargement of the normally parallelogram-shaped ice compartments; and it is to be understood that, when the walls of the grid have been moved as described, the ice blocks 70 will be instantly liberated from the grid and will freely fall into the tray 15 or other suitable receptacle as shown in full lines in this figure.

The modified structure shown in Figs. 9 and 10 of the drawings and which is preferred by some users and manufacturers of devices of the type disclosed is constructed and arranged to liberate ice blocks 70*a* therefrom sequentially or progressively along the length of the grid structure 16*a* so that less than the entire number of ice blocks can be harvested from the device. The operation of elevating the member 44*a* and grid walls 43*a* relative to grid wall 42*a* in the modified or preferred structure shown in Figs. 9 and 10 is the same as in the structure disclosed in other figures of the drawings. However, the progressively wider slots 67*a* provided in the longitudinal grid wall 42*a* from end to end of the unitary structure 16*a* causes the transverse grid walls 43*a* to engage the uppermost portion of the left-hand wall of slots 67*a* one after the other during elevation of walls 43*a* relative to wall 42*a*. Obviously, therefore, two or more ice blocks 70*a* can be liberated from the grid structure 16*a* without releasing other ice blocks from the structure and which other blocks may, if desired, be replaced in the tray until such time as they are required.

From the foregoing it will be apparent that I have provided an improved freezing device or grid structure for disposition in a freezing tray which is of low cost, strong and durable, capable of being operated to cause elevation of certain grid walls relative to other walls of the grid and movement of these walls in another direction relative to the other grid walls with a minimum of force to release ice blocks from the grid structure. The movement of the grid walls relative to one another in different directions, as disclosed, facilitates the breaking of ice bonds between the ice blocks and grid walls and enlarges the ice block compartments to cause ice blocks to be freely liberated therefrom. The improved grid structure is such that ice blocks can be released therefrom without unduly shattering the blocks, while at the same time the entire metallic structure retains the fast freezing characteristics of metal tray and grid combinations. The novel structure is of such design that the force imparted to the grid wall operating lever is greatly multiplied to thus facilitate manual operation of this lever.

While the form of embodiment of the 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. In combination, a tray having a grid disposed therein, said grid comprising a substantially non-flexible longitudinal wall and a plurality of substantially non-flexible walls disposed in spaced apart relation along the length of said longitudinal wall and extending transversely through the plane thereof to divide the interior of said tray into rows of ice block compartments, said

transversely extending grid walls being normally inclined with respect to the bottom of said tray to provide said ice block compartments with a parallelogram form in one direction of cross-section therethrough, said grid also including a member disposed above said longitudinal wall and extending lengthwise therewith, said member, said longitudinal wall and said transversely extending walls being connected together in movable relation to one another to form a unitary removable grid structure, means for elevating said unitary grid structure together with ice blocks adhering thereto relative to said tray, means for elevating said member relative to said longitudinal grid wall after said unitary grid structure has been elevated relative to the tray, the connections between said plurality of transversely extending grid walls and said member being such that said transversely extending grid walls are elevated along with said member by said second named means upwardly of said longitudinal grid wall, and said transversely extending grid walls engaging said longitudinal grid wall in such manner as to be moved relative thereto and to one another by said second named means out of their normal disposition of inclination to enlarge said compartments and break ice block therefrom for liberating the ice blocks from said unitary grid structure.

2. The combination in accordance with claim 1 wherein the movement of the transversely extending grid walls relative to said longitudinal grid wall out of their normal disposition of inclination is progressive from one portion to another portion along the length of said grid structure.

3. A grid for disposition in an ice tray comprising, a substantially non-flexible longitudinal metal wall and a plurality of substantially non-flexible metal walls disposed in spaced apart relation along the length of said longitudinal wall and extending transversely through the plane thereof to provide rows of ice block compartments, said transversely extending grid walls being normally inclined with respect to the bottom of said grid to provide said ice block compartments with a parallelogram form in one direction of cross-section therethrough, said grid also including a member disposed above said longitudinal wall and extending lengthwise therewith, said member, said longitudinal wall and said transversely extending walls being connected together in movable relation to one another to form a unitary grid structure, means for elevating said member relative to said longitudinal grid wall, the connections between said plurality of transversely extending grid walls and said member being such that said transversely extending grid walls are elevated along with said member by said means upwardly of said longitudinal grid wall, and all of said transversely extending grid walls being interlocked with said longitudinal grid wall in such manner as to be moved relative thereto and to one another by said means out of their normal inclined position to enlarge said compartments and break ice blocks therefrom for liberating the ice blocks from said unitary grid structure.

4. The combination in accordance with claim 3 wherein the movement of the transversely extending grid walls relative to said longitudinal grid wall out of their normal inclined position is progressive from one portion to another portion along the length of said grid structure.

5. A grid for disposition in an ice tray comprising, a substantially non-flexible longitudinal metal wall and a plurality of substantially non-flexible metal walls disposed in spaced apart relation along the length of said longitudinal wall and extending transversely through the plane thereof to provide rows of ice block compartments, said transversely extending grid walls being normally inclined with respect to the bottom of said grid to provide said ice block compartments with a parallelogram form in one direction of cross-section therethrough, said longitudinal grid wall being provided with a plurality of slots extending downward from its top edge for receiving said spaced apart transversely extending grid walls, each of said transversely extending grid walls having a slot extending upward from its bottom edge for receiving said longitudinal grid wall, said slots in said longitudinal grid wall being of sufficient width to permit tilting of said transversely extending grid walls, said grid also including a member disposed above said longitudinal wall and extending lengthwise therewith, said member, said longitudinal wall and said transversely extending walls being connected together in movable relation to one another to form a unitary grid structure, means for elevating said member relative to said longitudinal grid wall, the connections between said plurality of transversely extending grid walls and said member being such that said transversely extending grid walls are elevated along with said member by said means upwardly of said longitudinal grid wall, and one wall of each of said plurality of slots in said longitudinal grid wall being arranged in the path of upward movement of the associated wall to cause the engagement of such walls therewith for tilting same out of their normal inclined position to enlarge said compartments and release ice blocks therefrom.

6. The combination in accordance with claim 5 wherein the plurality of slots in the longitudinal grid wall are arranged to cause progressive engagement of said transversely extending grid walls with the corresponding walls of the slots from one portion to another portion along the length of said longitudinal grid wall for sequentially tilting the transversely extending grid walls out of their normal inclined position.

7. A grid for disposition in an ice tray comprising, a single non-flexible longitudinal metal wall and a plurality of non-flexible metal walls disposed in spaced apart relation along the length of said longitudinal wall and extending transversely through the plane thereof to provide rows of ice block compartments, said grid also including a member disposed above and extending lengthwise of said single longitudinal wall and arranged for movement vertically relative thereto said member, said single longitudinal wall and said transversely extending walls being connected together in movable relation to one another to form a unitary grid structure, means for preventing lengthwise movement of said member and permitting vertical movement thereof, means for moving said member vertically with respect to said single longitudinal grid wall, the connections between said plurality of transversely extending grid walls and said member being such that the vertical movement of said member causes movement of said transversely extending grid walls, and all of said transversely extending grid walls being interlocked with said single longitudinal grid wall in such manner as to cause their movement by said member to be in a direction longitudinally of said longitudinal wall to break ice blocks therefrom and liberate the ice blocks

from the compartments of said unitary grid structure.

8. A grid structure according to claim 7 wherein the movement of the transversely extending grid walls longitudinally of said single longitudinal grid wall is progressive from one portion to another portion of said unitary grid.

9. A grid for disposition in an ice tray comprising, a single non-flexible longitudinal metal wall and a plurality of non-flexible metal walls disposed in spaced apart relation along the length of said longitudinal wall and extending transversely through the plane thereof to provide rows of ice block compartments, said transversely extending grid walls being normally inclined with respect to the bottom of said grid to provide said ice block compartments with a parallelogram form in one direction of cross section therethrough, said grid also including a member disposed above and extending lengthwise of said single longitudinal wall and arranged for movement vertically relative thereto, said member, said single longitudinal wall and said transversely extending walls being connected together in movable relation to one another to form a unitary grid structure, means for moving said member vertically with respect to said single longitudinal grid wall, the connections between said plurality of transversely extending grid walls and said member being such that the vertical movement of said member causes movement of said transversely extending grid walls, and all of said transversely extending grid walls being interlocked with said single longitudinal grid wall in such manner as to cause their movement by said member to be in a direction longitudinally of said longitudinal wall out of their normal inclined position to enlarge said compartments and break ice blocks therefrom for liberating the ice blocks from said unitary grid structure.

10. A grid structure according to claim 9 wherein the movement of the transversely extending grid walls longitudinally of said single longitudinal grid wall out of their normal inclined position is progressive from one portion to another portion of said unitary grid.

11. A grid for disposition in an ice tray comprising, a single non-flexible longitudinal metal wall and a plurality of non-flexible metal walls disposed in spaced apart relation along the length of said longitudinal wall and extending transversely through the plane thereof to provide rows of ice block compartments, said grid also including a member disposed above and extending lengthwise of said single longitudinal wall and arranged for movement upwardly relative thereto, said member, said single longitudinal wall and said transversely extending walls being connected together in movable relation to one another to form a unitary grid structure, means for preventing lengthwise movement of said member and permitting vertical movement thereof, means for moving said member upwardly with respect to said single longitudinal grid wall, the connections between said plurality of transversely extending grid walls and said member being such that said transversely extending grid walls are elevated along with said member by said second named means upwardly of said single longitudinal grid wall, and all of said transversely extending grid walls being interlocked with said longitudinal grid wall in such manner as to engage same during elevation of said walls to also move said transversely extending walls in a direction longitudinally of said longitudinal wall to break ice blocks therefrom and liberate the ice blocks from the compartments of said unitary grid structure.

12. A grid structure according to claim 11 wherein the movement of the transversely extending grid walls longitudinally of said single longitudinal grid wall is progressive from one portion to another portion of said unitary grid.

13. A grid for disposition in an ice tray comprising, a single non-flexible longitudinal metal wall and a plurality of non-flexible metal walls disposed in spaced apart relation along the length of said longitudinal wall and extending transversely through the plane thereof to provide rows of ice block compartments, said transversely extending grid walls being normally inclined with respect to the bottom of said grid to provide said ice block compartments with a parallelogram form in one direction of cross section therethrough, said grid also including a member disposed above and extending lengthwise of said single longitudinal wall and arranged for movement upwardly relative thereto, said member, said single longitudinal wall and said transversely extending walls being connected together in movable relation to one another to form a unitary grid structure, means for moving said member upwardly with respect to said single longitudinal grid wall, the connections between said plurality of transversely extending grid walls and said member being such that said transversely extending grid walls are elevated along with said member by said means upwardly of said single longitudinal grid wall, and all of said transversely extending grid walls being interlocked with said longitudinal grid wall in such manner as to engage same during elevation of said walls by said means to also move said transversely extending walls out of their normal inclined position to enlarge said compartments and break ice blocks therefrom for liberating the ice blocks from said unitary grid structure.

14. A grid structure according to claim 13 wherein the movement of the transversely extending grid walls out of their normal inclined position is progressive from one portion to another portion of said unitary grid.

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