This invention relates to an ice tray and grid for use in refrigerators of the domestic type.

Ice trays today are usually filled at a kitchen water tap and carried to the freezing shelf. When the trays are filled to the normal level, that is to one-quarter to three-eighths of an inch below the top, they must be handled with care during the period of transportation from the kitchen sink to the freezer. If filled properly spilling is apt to result. More often to avoid such spilling the user will fill the tray to a point only half full. This causes waste of freezing space and an inadequate supply of ice cubes in the peak demand periods.

It is an object of the present invention to provide an article of manufacture which permits trays to be properly filled and easily carried without spilling.

To accomplish this, the invention contemplates a wide band to fit around the edge of the tray to serve as a spill-guard but having sufficient flexibility that it will not interfere with cube removal.

Another object of the invention is the provision of a finger contact band to facilitate ice cube removal and a device which permits the full tray and consequent easier ice cube removal.

Other objects and advantages of the invention will be evident in the following description and claims.

Various embodiments of the invention are illustrated in the drawings which are briefly described as:

Figure 1, a perspective view of a tray and grid assembly with spill-guard.

Figure 2, a sectional view on line 2-2 of Figure 1.

Figure 3, a perspective view of an embodiment in which the spill-guard is integral with a rubber or plastic grid.

Figure 4, a section on line 4-4 of Figure 3.

Figure 5, a sectional view of an embodiment in which the spill-guard has an extra seal rim.

Referring to the drawings, in Figure 1 a standard metal tray 26 is shown with a metal, movable plate grid consisting of a backbone 21 and movable plates 22. This type of grid is sometimes referred to as a mechanical grid in which ice is freed by the application of a lever to effect bodily movement of partition walls. Around the edge of the tray 26 is a detachable molded band 25 having a configuration and cross-section as shown in Figure 2. The rubber band is molded to conform somewhat to the beaded edge of the tray at 26. Below the portion 26 is a retaining portion 27 and above the portion 26 is a spill-guard portion 28. The portion 28 extends above and slightly over the opening of the tray. The entire band is preferably composed of a soft elastic rubber or of a soft flexible and slightly resilient plastic having characteristics similar to that of rubber. The guard portion 28 is preferably tapered down to a rather thin cross-section so that it will have sufficient body to retain its shape but will not interfere in any way with the removal or insertion of the grid and plates 21—22 or individual ice cubes that are removed separately.

It will be seen that if the tray 22 is filled to the water line indicated at A—A on Figure 2, it may be readily handled in transporting from the water tap to the refrigerator shelf by reason of the spill-guard which will retain any water which is accidentally spilled over the tray side by reason of tilting of the tray.

When the tray of frozen substance is removed from the refrigerator and it is desired to free the ice cubes, the detachable band 25 may be used to hold the tray, that is, holding pressure may be applied through the band while the lever of the mechanical tray is being used. During this mechanical action, ice cubes are often lifted partially out of the tray. The angled band will serve to catch these cubes and hold them in position wherein they may be readily lifted out as desired. A cube is shown in such a position in dotted lines in Fig. 2. In addition to the economy of operation in permitting full cubes to be frozen, the combination has another feature. Many metallic grid and tray combinations operate most successfully when full cubes are frozen. The use of the spill-guard band with mechanical ice trays permits them to be filled to a level most conductive to cube release.

In Figure 3, a modified form of the invention is shown. A tray 40 is of standard construction and within this tray is a rubber grid of the type described, for example, in my copending application, Serial No. 532,959, filed April 27, 1944, now abandoned. This rubber grid consists of a central web member 42 and transverse side members 44, these dividing members being shaped to flare in cross-section near the top in a gradual curve as shown in Fig. 4. Grid release is obtained by upward expansion of the ice. Around the upper corner of the transverse members 44 is a band 46 shown in cross-section in Figure 4 and composed of a sealing portion 47 and a spill-guard portion 48. The portion 47 lies along the upper edge of the walls of the tray in a snug relation-
ship which will be water retaining. The spill-guard portion 48 lies above and over the tray opening as described in connection with Figure 1 and has the same function. In operation it will be evident that to be effective the ice tray and grid combination of Figures 3 and 4 must be filled to a level quite near the top. The spill-guard permits this filling without danger of spilling. The spill-guard also prevents flopping and twisting of the grid when it is formed of soft rubber, thus eliminating the necessity for straightening in the tray.

A modified construction is shown in Figure 5 where a portion of the tray 50 is shown in cross-section retaining a rubber or plastic grid member having a central web member 51 and transverse members 52. A spill-guard rim is molded with this rubber grid member and has a three-part cross-section all of the parts having a common root. A sealing member 47 lies along the upper edge of the inside surface of the tray walls and outwardly extending flange 48 rests upon the beaded edge 49 of the tray, and the spill-guard member 50 extends up and over the tray opening. The flange 48 will tend to supplement the sealing strip 47 in a sealing capacity. The spill-guard portion 50 will function the same as previously described.

It will thus be seen that my simple guard unit forms a multiple function when applied to a metal tray, it provides a non-metallic rest for the fingers of one hand when the other hand is used in removing the cubes and thus prevents sticking of the fingers to the cold metal surface of the tray; it permits the positive filling of the tray to a level which will assist in the removal of the ice cubes when the contents are frozen; it permits easy transporting of the tray from the water tap to the refrigerator without spilling; the position and thickness of the wall forming the guard permits easy removal of the grid unit and assists in holding the ice cubes in place during removal, and when the guard forms an integral part of the grid it assists in reinforcing the grid, it provides a handle for assisting in stripping the grid from the ice and in turn the grid assists in positioning the guard around the edge of the tray.

It will be understood that when the guard or band is formed as an integral part of the grid, that the surface of the grid is preferably slippery so as to make the grid readily removable from the ice, such as the grid disclosed in the patent to Jennings #2,303,938, dated December 1, 1942. It will further be understood that the grid part of the combined unit such as as shown in Figures 3 and 4, may be formed of either rubber or plastic and may vary considerably in its flexibility and resiliency.

What I claim is:

1. An improved ice tray grid, a plurality of dividing members formed of flexible, resilient material such as rubber or plastic, and a spill-band formed integrally with said dividing members, a portion extending continuously around said members positioned to lie in sealing relation with the sides of said tray, and a portion connected to said sealing portion lying above and over the tray opening.

2. In combination, an ice tray for domestic use, a removable grid to fit said tray having a plurality of dividing members formed of flexible resilient material such as rubber or plastic, and a spill-band formed integrally with said dividing members, a portion extending continuously around said members positioned to lie in sealing relation with the sides of said tray, and a portion connected to said sealing portion lying above and over the tray opening.

3. A combination as described in claim 2 in which the spill-band is, in cross-section, a three-part member each having a common root, one part lying along the inside of the tray, another part lying over the edge of the tray in an outward direction, and a third part extending above and over the tray opening.

4. As a new article of manufacture an ice tray grid having a plurality of dividing members formed of flexible resilient material and adapted to lie within a tray, said members in cross-section being relatively thin at the bottom and widening in a broad curve above the center thereof and a band around the outside upper corners of said dividers formed integrally therewith adapted to seal an ice tray at the edges thereof above the normal height.

5. In combination an ice tray, and a separable grid member therefor comprising a plurality of vertically disposed dividing members formed of flexible resilient material, said members in cross-section being relatively thin at the bottom and widening at the top in a broad curve above the center thereof, and a band molded integrally around the outside corners of said dividers to lie in sealing relation against the sides of said tray and extending above the normal height of said tray to prevent spilling when said tray is filled to the wide curved portion of said dividers.

6. In combination an ice tray, and a separable grid member therefor comprising a plurality of vertically disposed dividing members, said members in cross-section being relatively thin at the bottom and widening at the top in a broad curve above the center thereof, and a band molded integrally around the outside corners of said dividers to lie in sealing relation against the sides of said tray and extending above the normal height of said tray to prevent spilling when said tray is filled to the wide curved portion of said dividers.

7. In combination an ice cube tray formed of metal and having shallow sides and an outturned flange at the top edges of the tray, and a band of flexible resilient material of sufficient length to pass tightly around said tray and having a cross-section wherein one portion adapted to lie along the flange of the tray is disposed at an angle to the remainder of the band wherein the remainder extends over and above the tray opening within the sides.

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