United States Patent

Doman et al.

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[54] ICE CUBE BIN

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[52] **U.S. Cl.**.....**220/1 R,** D67/3.2, 62/344, 150/0.5, 220/74

[51] **Int. Cl.**.....**B65d 1/22**

[58] **Field of Search**.....220/1, 72, 74, 1 R; 249/69, 249/70, 71, 72, 75; 150/0.5; 62/320, 344; D67/3.2

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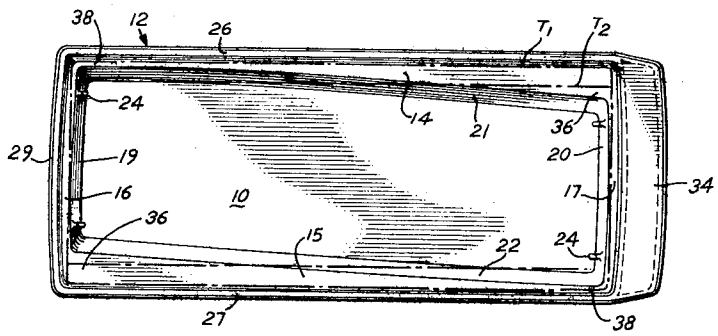
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[57] **ABSTRACT**

An ice cube bin for storing loose ice cubes including a collar portion encompassing the top of a cube storage container and oppositely inclined shoulders for the twist discharge of ice cubes from an ice cube tray. The inclined shoulders are of varying width over their length whereby ice cube trays of varied sizes may be accommodated by the bin.

4 Claims, 5 Drawing Figures



PATENTED FEB 15 1972 3,642,162

Fig. 1

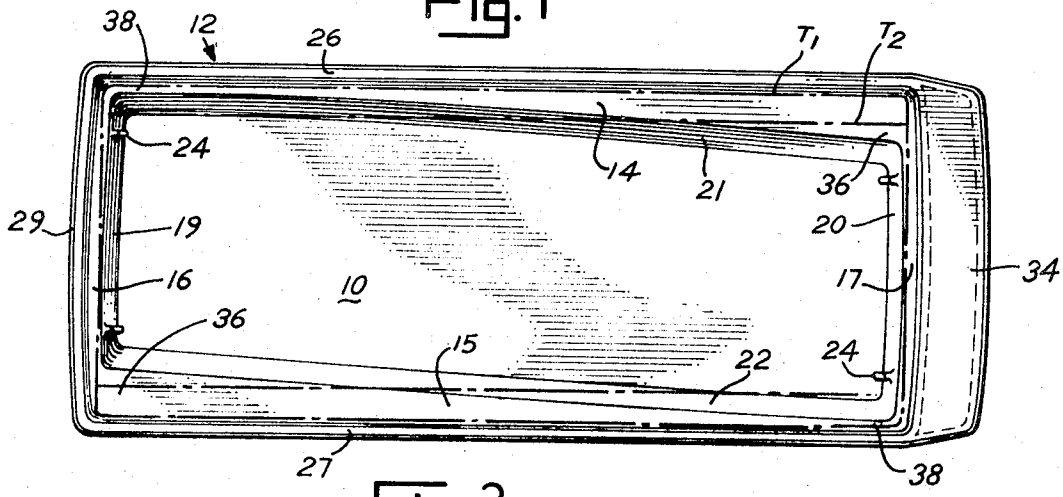
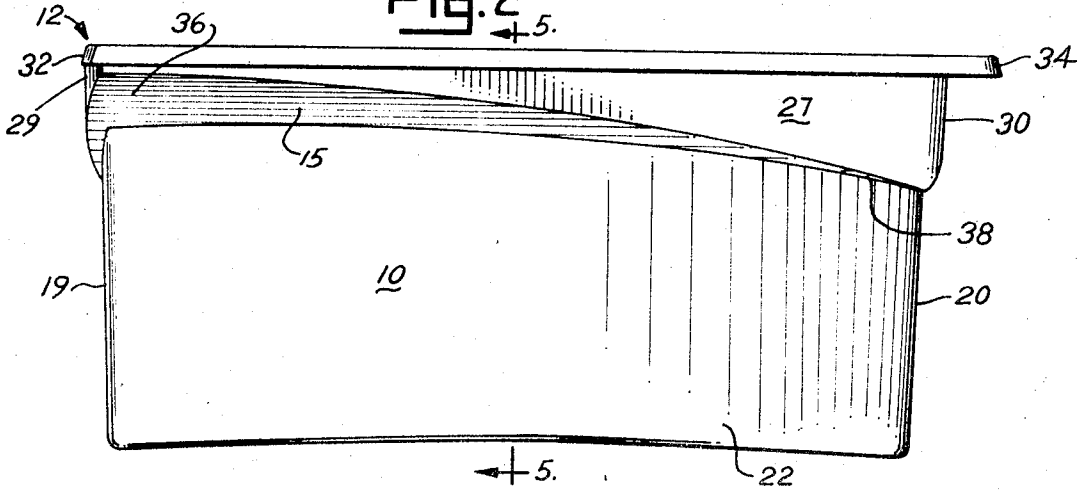


Fig. 2



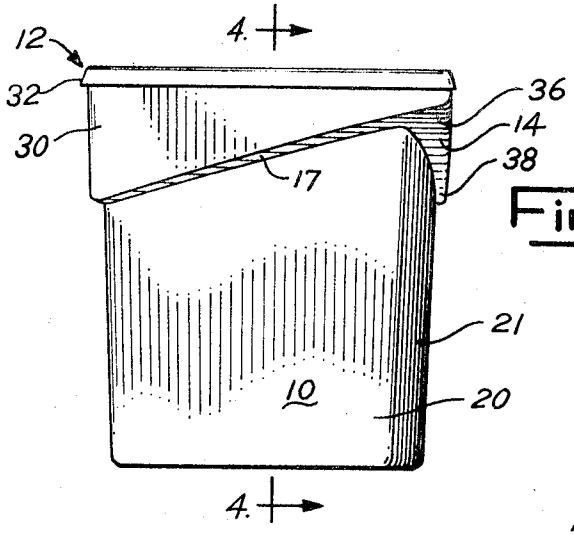


Fig. 3

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Fig. 4

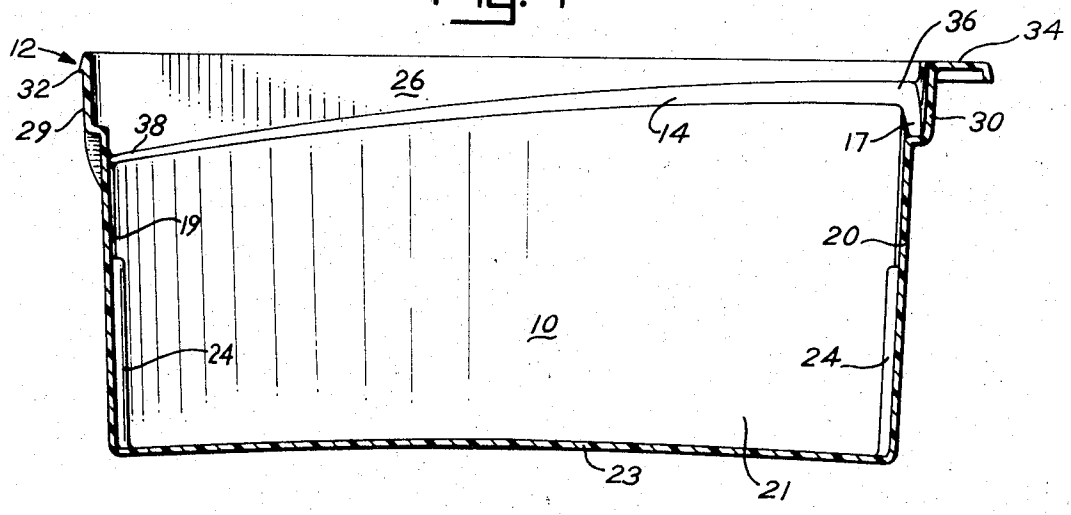
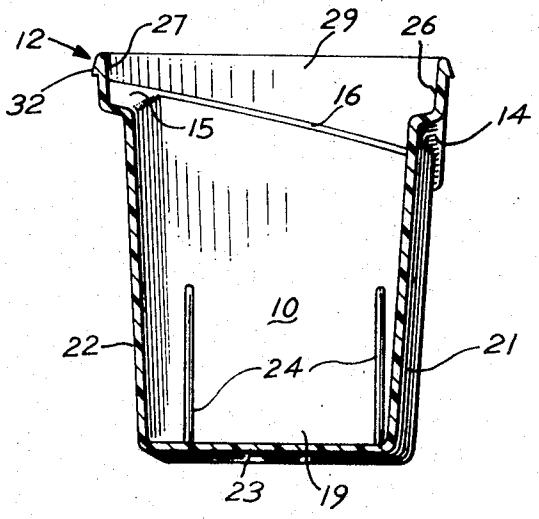


Fig. 5



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ICE CUBE BIN

BACKGROUND OF THE INVENTION

This invention relates to ice cube bins and more particularly, to ice cube bins adapted for the twist discharge of ice cubes from ice cube trays.

Ice cube storage containers or bins have been provided in the past for the storage of loose ice cubes in readiness for use. Some such bins have been provided with an oppositely inclined shoulder construction on the interior thereof for receiving and discharging ice cubes from an ice cube tray in which the ice cubes are firmly frozen when the tray is inserted upside down in the bin and pressed to effect twisting of the tray.

The ice cube bin constructed in accordance with the principles of our invention may readily accommodate flexible ice cube trays of varying sizes and effects a twist discharge of the ice cubes from such varied trays.

SUMMARY OF THE INVENTION

The ice cube bin constructed in accordance with the principles of our invention includes a storage container and a collar portion positioned at and encompassing the top of the container having oppositely inclined shoulders for effecting twisting of a flexible ice cube tray to discharge frozen ice cubes from the tray. Opposed ones of the shoulders each are of a width which substantially varies over the length of the shoulders.

Other objects, features and advantages of the present invention will be more clearly understood through a consideration of the following detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

In the course of this description reference will frequently be made to the attached drawings in which:

FIG. **1** is a top plan view of a preferred embodiment of ice cube bin constructed in accordance with the principles of our invention;

FIG. **2** is a side elevation view of the ice cube bin of our invention;

FIG. **3** is an end elevation view of the ice cube bin of our invention;

FIG. **4** is a cross-sectioned side elevation view of the ice cube bin of our invention taken substantially along line **4—4** of FIG. **3**; and

FIG. **5** is a cross-sectioned end elevation view of the ice cube bin taken substantially along line **5—5** of FIG. **2**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A preferred embodiment of ice cube bin employing the principles of our invention is shown in the drawings and comprises generally a lower storage container **10** for containing loose ice cubes and an upper collar portion **12** which is integrally joined to the top edge of the storage container **10** by way of inclined shoulders **14, 15, 16** and **17**. The entire bin is preferably of moulded integral one-piece design and may be formed of a suitable polymeric or plastic material, such as high-impact styrene.

The storage container **10** comprises a pair of opposed end walls **19** and **20**, a pair of opposed slightly curved sidewalls **21** and **22** and a bottom wall **23** so as to form an open topped, generally rectangular storage volume. Vertically extending ribs **24** are preferably moulded in one or more of the walls. The ribs **24** facilitate stacking of the bins in nested fashion and parting of the bins from the stack as well as strengthen the container against failure which might particularly occur when an ice cube tray is being forcibly pressed into the collar portion **12** for ejecting cubes therein as will be described later.

The collar portion **12** is generally rectangular in plan outline and includes a pair of vertical opposite sidewalls **26** and **27** and a pair of vertical opposite end walls **29** and **30**. The walls of the collar portion are integrally joined with the walls of the container **10** by way of the inclined side shoulders **14** and **15** and the inclined end shoulders **16** and **17**. The outer edge perimeter of each of side shoulders **14** and **15** and end shoulders **16** and **17** is smoothly and integrally moulded to the lower edges of the collar sidewalls **26** and **27** and collar end walls **29** and **30**, respectively. Likewise, the inner edges of each of the shoulders are smoothly moulded to the top edge of the upstanding side and end walls **19, 20, 21** and **22** of the storage container **10**. A beaded rim **32** may be moulded about the upper edges of the collar portion walls to strengthen the walls and the end rim may be slightly enlarged so as to provide a handle **34**.

Each of the longer side shoulders **14** and **15** is of varied width. The width variation is produced by angularly offsetting the longitudinal axis of the lower storage container **10** slightly from the longitudinal axis of the rectangular collar portion **12**, the cross-sectional area of the rectangular collar portion being somewhat larger than the cross-sectional area of the storage container. Thereby the width of shoulder **14** is substantially wider at one end **36** than it is at the opposite end **38** and the wider end of shoulder **14** is positioned directly opposite the narrower end **38** of the opposite shoulder **15**. In addition, the inner inclined edges of each of the shoulders **14** and **15** are curvilinear due to curvature of the container sidewalls **21** and **22**. Such curvature maximizes the storage volume of the container **10** while still providing a sufficient length of substantial width shoulder to properly engage narrower ice cube trays.

The end shoulders **16** and **17** are also inclined over their length as best shown in FIG. **5**, such that the wider ends **36** of shoulders **14** and **15** and the intersecting ends of the end shoulders **16** and **17** substantially lie in a plane which is spaced parallel above the plane in which the narrower ends **38** of the side shoulders and the intersecting ends of the end shoulders lie. Side shoulders **14** and **15** are also somewhat inclined across their width, the outer edge perimeter of the shoulders being slightly higher than the inner edge of the shoulders, as shown in FIG. **4**.

In use, a conventional compartmented flexible ice cube tray may be inverted and placed face down within the collar portion **12** of the ice cube bin and then pressed down against the inclined shoulders **14, 15, 16** and **17** of the bin. Since the shoulders are oppositely inclined such that their respective points of intersection which lie on a first given diagonal are positioned in a plane which is spaced from the plane of the points of intersection which lie on a second diagonal, such downward pressure on the tray will cause the tray to twist resulting in a discharge of the ice cubes frozen therein into the storage container **10**. Since side shoulders **14** and **15** are of varied width, the ice cube bin will readily accommodate a wide variety of ice cube tray sizes. As shown in FIG. **1**, ice cube trays of both substantially wide widths, as shown by the dot and dash lines T_1, or narrower widths, as shown by the dot and dash lines T_2, each may be equally accommodated by the ice cube bin of our invention, the narrower width tray T_2 simply engaging the wider ends **36** of the shoulders **14** and **15** at a point spaced nearer the inner peripheral edge of the shoulders.

It should be understood that the embodiment of the present invention which has been described is merely illustrative of one application of the principles of the invention. Numerous modifications may be made by those skilled in the art without departing from the true spirit and scope of the invention.

What is claimed is:

1. In an ice cube bin having a storage container for holding loose ice cubes and a collar portion of substantially rectangular cross section positioned at and encompassing the top of the container and having oppositely inclined shoulders for twisting a flexible ice cube tray to discharge the ice cubes frozen in the tray into the storage container when the tray is pressed into engagement with the shoulders; the improvement comprising:

opposed ones of said shoulders each having a width which substantially varies over their length such that one end of

each of said opposed ones of said shoulders is substantially wider than the other end of said shoulders, the wider end of each of said opposed ones of said shoulders being positioned directly opposite the narrower end of the opposite shoulder and the wider and narrower ends of each of said opposed ones of said shoulders lying respectfully in different spaced parallel planes, whereby trays of differing sizes may be accommodated by said bin.

2. The bin of claim 1 wherein the cross-sectional area of said collar portion is greater than the cross-sectional area of

said storage container and the walls of the storage container intersect the inner edge of said shoulders and wherein the longitudinal axis of said storage container is angularly disposed to the longitudinal axis of said collar portion.

3. The bin of claim 1 wherein opposed walls of the storage container intersect said opposed shoulders in a curvilinear line of intersection.

4. The bin of claim 1 including raised ribs located on opposed walls of said storage container.

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