Oct. 11, 1949. L. G. COPEMAN 2,484,017

APPARATUS FOR DISPENSING ICE CUBES

Filed April 11, 1944

Fig. 1

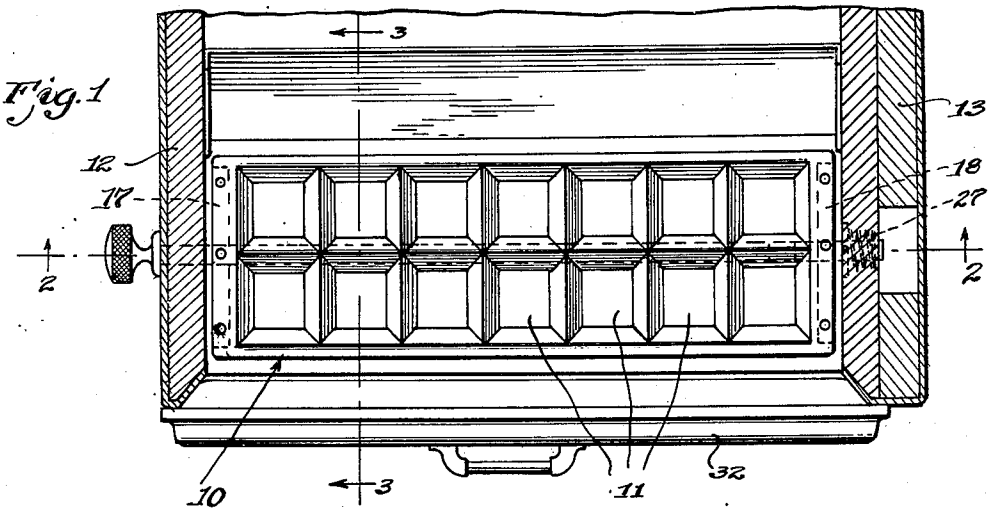
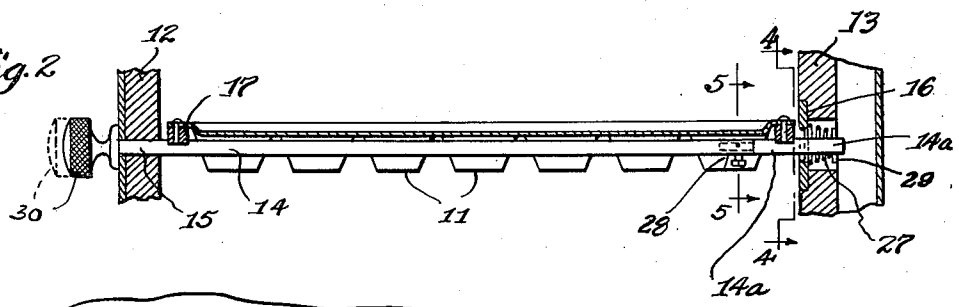


Fig. 2



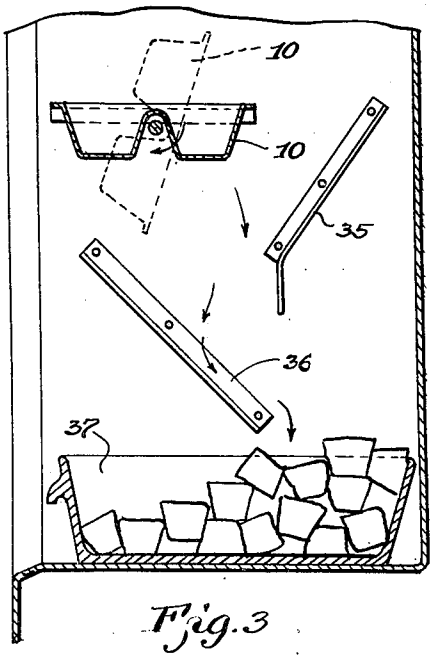


Fig. 3

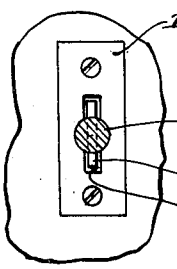
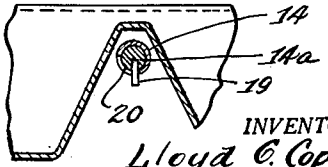


Fig. 4

Fig. 5



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APPARATUS FOR DISPENSING ICE CUBES

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5 Claims. (Cl. 62—105)

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This application relates to an apparatus for dispensing ice cubes for domestic use.

It is an object of the present invention to provide a means which may be associated with the freezing chamber of an ordinary household refrigerator for the purpose of freezing ice cubes and removing them from the molds and storing them in a suitable space within the refrigerator. Many efforts have been made to provide devices for readily removing ice cubes from their molds. Most of them involve removal of the tray from the evaporator and some operation upon the tray after removal. The present invention contemplates a means which cooperates with the tray while in the evaporator to release the ice cubes.

Other objects and features of the invention relating to the details of construction and the method of operation will be brought out in the following description and claims:

In the drawings:

Fig. 1 is a plan view of the tray in its operating position.

Fig. 2 is a vertical section taken on line 2—2 of Fig. 1.

Fig. 3 is a vertical section transversely of the tray on line 3—3 of Fig. 1.

Fig. 4 is a partial section taken on line 4—4 of Fig. 2.

Fig. 5 is a partial section taken on line 5—5 of Fig. 2.

In the drawings an ice tray 10 is shown with individual pockets 11 mounted between two walls 12 and 13 of a freezing chamber. The tray 10 may be formed of a plastic material or other distortable material. The tray is mounted on a shaft 14 which is pivoted at 15 in wall 12 and mounted at the other end in a plate 16 in wall 13. Two rigid reinforcing means 17 and 18 extend the width of and are secured to the tray at each end and join to the shaft 14. Shaft 14 is split at 28 so that one part 14a may rotate relative to the main part 14. A pin 19 acting in a slot 20 limits this movement between the two parts of the shaft 14 and 14a. On the shaft 14a a transverse pin 25 normally fits in a slot 26 in plate 16. A spring 27 held under compression between plate 16 and a collar 29 secured at the free end of shaft 14a holds shaft 14 in the position shown in Fig. 2 so that the pin 25 is locked in the slot 26 to prevent rotation of the end 14a with the shaft. A knob 30 is provided at the outer end of the shaft and permits turning of the shaft and also an axial shifting of the shaft against spring 27 by pulling out the knob so that pin 25 leaves its

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recess 26 thus permitting both parts of the shaft 14 and 14a to rotate with the knob 30.

In operation the tray may be filled with water by opening a door 32 when the tray is positioned as shown in Figs. 1 and 2. After ice cubes are frozen in the individual pockets, they may be released from the sides of the pockets by turning the handle or knob 30. This shifts one portion of the shaft 14 relative to the end of 14a and also shifts bars 17 to a plane which is at an angle to the plane of the bar 18 at the other end of the tray. The entire tray is thus torqued or distorted so that the ice cubes are freed from the sides of the pockets 11. Knob 30 may then be pulled out to the dotted line position shown in Fig. 2. This removes pin 25 from slot 26 and permits the entire shaft 14—14a and the tray to turn as shown in Fig. 3. The tray may then be inverted and the ice cubes, released by the torquing of the tray, will fall down the chute provided by plates 35 and 36 to a storage receptacle 37. The tray can then be returned to its upright, level position and refilled with water for another freezing.

I claim:

1. A device for forming and dispensing ice cubes which comprises a distortable ice cube tray, a freezing compartment, means for movably mounting each end of said tray in said compartment, a storage compartment below said tray, means for releasably locking one end of said tray against movement to permit distortion of the tray by movement of the other end to effect release of ice cubes frozen on said tray, and for releasing said locked end to permit inversion of said tray, and means for directing released cubes from said inverted tray to said storage chamber.

2. A device for forming and dispensing ice cubes which comprises a distortable ice cube tray, reinforcing means arranged transversely at each end of said tray, means extending axially of said tray connected to each of said reinforcing means and serving to movably support the tray between its ends, means for movably mounting each end of said tray in a freezing compartment, means for selectively locking one end of said tray against movement to permit distortion of the tray by movement of the other end to effect release of ice cubes frozen therein, and for releasing said locked end to permit inversion of said tray for dumping said released cubes into a storage chamber.

3. A device for forming and dispensing ice cubes which comprises a tray with individual ice cube compartments formed therein, said tray

being formed of self-sustaining but distortable material, means to mount said tray in a horizontal plane in water containing position within a freezing zone comprising a member horizontally disposed in said zone, attaching means connecting said tray to said first named means, a releasable locking means at one end of said member to restrain said tray against rotative movement at that end, and means at the other end of said tray manually operable to shift said other end out of the plane of said locked end to cause ice releasing distortion of said tray, said manual means serving also to move the entire tray 180° about a horizontal axis to dump the frozen contents thereof when said locking means is released.

4. A device for forming and effecting the release of ice cubes comprising a flexible ice cube tray, a mounting means at one end of the tray adapted to permit rotative movement of that end relative to the other end of the tray, and mounting means at the other end arranged in one position to prevent rotative movement of the tray at that end shiftable to another position to permit such movement around the axis of the tray, the combination of said means operating to permit manual shifting of the tray at one end while the other end is locked to cause wall distortion to release ice cubes, and to release said other end to permit manual inverting of the tray for dumping of the ice cubes to a storage chamber.

5. A device for forming and dispensing ice cubes which comprises a tray formed of easily distortable material with individual ice cube compartments formed therein, an ice compartment

having opposed walls one of which is available to the hand of an operator, a mounting shaft passing through said walls and longitudinally of said tray, attaching means at each end of said tray to fasten the tray at said shaft, said shaft being rotatable and slidable between said walls, resilient means for releasably maintaining said shaft in axial position, manually operable means for one end of said shaft to permit rotating and axial shifting thereof, a locking means against rotation for the other end of the shaft releasable by axial shifting of the shaft, and a connection between the ends of the shaft and between the ends of the tray permitting relative rotation of the portions of the shaft on either side thereof whereby manual manipulation may twist one end of the tray relative to the other to release cubes from their confining walls and also effect a complete inversion of said tray to dump the frozen contents thereof.

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