June 1, 1943. W. S. WRIGHT 2,320,542

MEANS FOR REMOVING ICE CUBES FROM FREEZING TRAYS

Filed Nov. 29, 1937

FIG. 1.

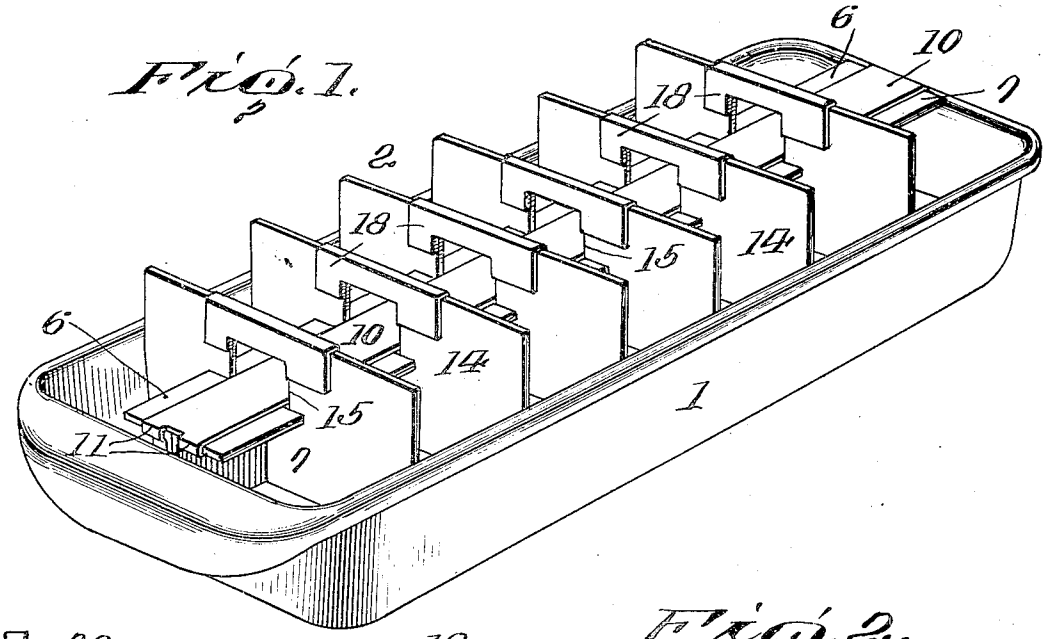


FIG. 2.

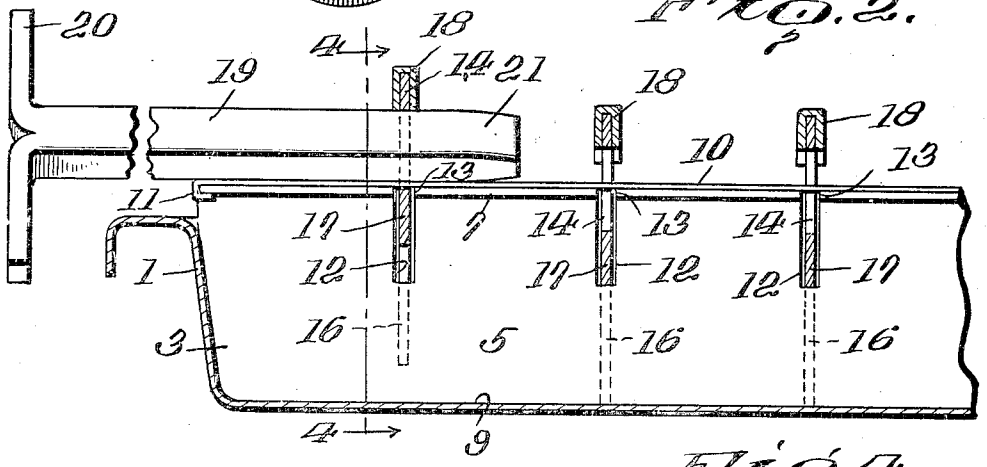


FIG. 3.

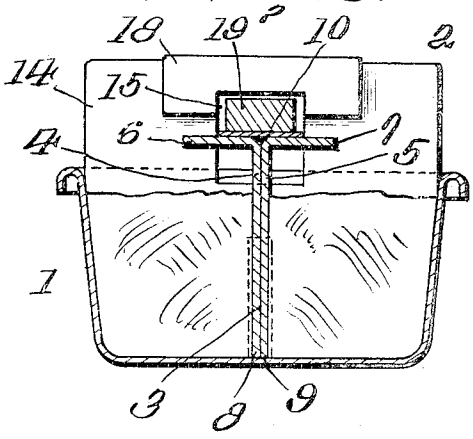
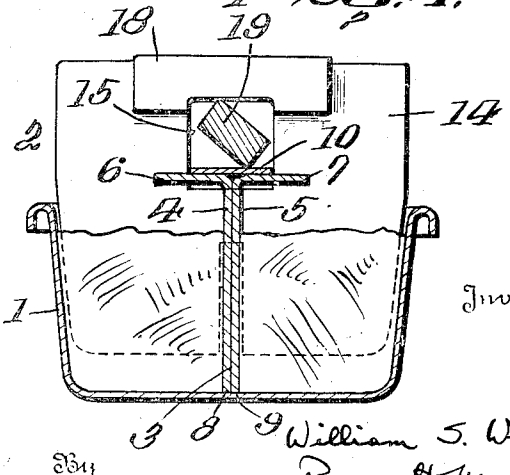


FIG. 4.



Inventor

William S. Wright

By Percy H. Moore

Attorney

Patented June 1, 1943 2,320,542

UNITED STATES PATENT OFFICE

2,320,542

MEANS FOR REMOVING ICE CUBES FROM FREEZING TRAYS

William S. Wright, Newark, Ohio, assignor to The Hoover Company, Canton, Ohio, a corporation of Ohio

Application November 29, 1937, Serial No. 177,161

5 Claims. (Cl. 62—108.5)

My invention relates to improvements in means for removing ice cubes from freezing trays.

The object of my invention is to provide a device of this character in which the partitions are removable from the tray and having means for breaking loose the transverse partitions from the cubes whereby the cubes can be readily removed by hand after the partition is removed from the tray.

Another object of my invention is to provide means whereby one or any number of the transverse partitions may be broken loose from the cubes so that any number or all of the ice cubes can be removed from the partition by hand.

A further object of my invention is to provide a device of this character which can be readily used in any form of tray as the tray in no way co-operates with the partition moving means.

A still further object of my invention is to provide a simple cheap and very effective means of separating the cubes from the partitions and having certain details of structure and combination of parts hereinafter more fully described.

In the accompanying drawing:

Figure 1 is a perspective view of an ice tray showing my improved partitions therein;

Figure 2 is a longitudinal vertical sectional view partly broken away and showing the operating bar in the position assumed after having vertically raised one of the transverse partitions;

Figure 3 is a transverse sectional view of Figure 1 showing the transverse partitions in their lowered position during the freezing operation; and

Figure 4 is a transverse sectional view taken on the line 4—4 of Figure 2.

Referring now to the drawing 1 represents the ordinary ice tray used in refrigerators and the same can be of any desired size to fit any of the well known refrigerators. Within the tray is my improved partition 2, which as shown is of a form to freeze fourteen cubes but this can be varied to suit the desire of the user. My improved partition consists of the longitudinal partition 3 which is preferably made of two strips 4 and 5 of metal spot welded or otherwise secured together and having their upper edges turned laterally, the two laterally turned edges 6 and 7 forming a flat horizontal surface extending the entire length of the partition. The lower edges 8 and 9 of said strips 4 and 5 forming the longitudinal partition 3, resting upon the bottom of the tray 1 as clearly shown in Figures 2 and 3 of the drawing.

Secured to the upper faces of the laterally turned edges 6 and 7 of the longitudinal partition is a strip 10 which has its ends 11 turned under or can be spot welded to the same and which forms a smooth flat horizontal surface upon which the operating bar can be readily oscillated, as hereinafter fully described.

The longitudinal partion, at properly spaced distances, is provided with vertically arranged slots 12 which start some distance above the lower end thereof and also extend through the laterally turned edges 6 and 7 as indicated at 13 and thus forming a continuation of the slots 12.

The transverse partitions 14 are of aluminum and rectangular in form to extend across the entire tray 1 and are of a height considerably greater than the depth of the tray and are provided midway their ends with rectangular openings 15. Directly below said openings are slots 16 which extend upwardly from the lower ends or edges of the partitions, a wall 17 being left between the same and the rectangular opening 15.

When assembling the transverse partitions 14, the plate 10 is not in position on the longitudinal partition and thus the transverse partitions can be interlocked with the longitudinal partition through the medium of slots 12 and 16, so that their lower edges are in the same plane and may rest upon the bottom of the tray. The plate 10 is then passed through the rectangular openings 15 in the transverse partitions and secured to the longitudinal partition, whereby the transverse partitions are locked on the longitudinal partition with freedom of limited vertical movement.

The transverse partitions as heretofore stated are made of thin aluminum and above the rectangular openings 15 a reinforcing strip 18 is placed or folded over the upper edge and spot welded so that the operating bar will not bend or distort the transverse partitions and prevent the proper operation thereof.

The operating bar 19 which is of rectangular form and of a length greater than the tray, is provided at one end with a suitable handle 20 and the other end is beveled as indicated at 21. The cross sectional area of the operating bar is less than the size of the openings 15 in the transverse partitions 14 and therefore the same can be readily inserted into said openings.

In operation the tray is removed from the ice compartment and the operating bar 19 is inserted through the opening 15 in the first transverse partition while resting flat upon the plate 10. The bar is then turned and due to its rectangular form one corner will engage the upper wall of the

opening 15, and the reinforcing strip 18, thus forcing the partition upward in a vertical direction. The bar is then allowed to resume its flat position and again forced inwardly until it passes through the opening 15 in the second transverse partition and is again oscillated to break loose the second partition, this operation being repeated until all of the transverse partitions have been raised. By this time the atmospheric temperature has so heated the tray that the cubes are freed or nearly freed from the walls thereof and the longitudinal partition is removed carrying with it all of the ice cubes. The operating bar 19 being of heavy metal will also transfer its atmospheric temperature to the longitudinal partitions so that the ice cubes will not adhere tightly thereto, it being understood that at this time, three walls of each cube have been broken away, from the partitions and the tray. By rapidly oscillating the operating bar the cubes will be jarred loose from the longitudinal partition, but should they not drop from the same, they can be individually pushed out by hand or the tray can be left standing, whereupon atmospheric temperature together with the action of the operating bar will loosen the cubes from the longitudinal partition and they will fall out of the compartments.

Having thus described my invention,

What I claim is:

1. In combination with a freezing tray, a grid having a longitudinal partition removably supported therein, transverse partitions vertically movably carried by the longitudinal partition and extending above the longitudinal partition, and an operating bar carried by the grid and separable therefrom, said bar being adapted to be passed through the extensions of the transverse partitions and adapted to vertically move the same on the longitudinal partition.

2. In combination with a freezing tray, a grid having a longitudinal partition removably supported therein, a series of transverse partitions vertically movably carried by the longitudinal partition and extending some distance above the same and having aligned openings above the longitudinal partition, and an operating bar separable from the grid and adapted to rest on said longitudinal partition and to progressively pass through said openings and to be rocked to successively raise said transverse partitions on the longitudinal partition.

3. In combination with a freezing tray, a grid having a longitudinal partition removably supported therein, a series of transverse partitions vertically movably interlocked with the longitudinal partition and extending a considerable distance above the same, said extensions having substantially rectangular openings therein above the longitudinal partition, and a substantially rectangular operating bar separable from the grid and adapted to progressively pass through said openings and to be rocked to successively raise said transverse partitions on the longitudinal partition.

4. In combination with a freezing tray, a grid having a longitudinal partition removably supported therein, horizontally extending flanges on the upper end of said partition forming a relatively broad flat surface, a series of transverse partitions vertically movably carried by the longitudinal partition and extending some distance above the same and having aligned openings, and an operating bar separable from the grid adapted to pass through said openings and rest upon said flanges and adapted to successively raise said transverse partitions.

5. In combination with a freezing tray, a grid assembly comprising a series of vertically movable substantially parallel partitions in said tray for forming ice blocks, said partitions extending above the top of said tray and having openings therein, and an operating bar separable from said grid assembly and being adapted to be passed successively through said openings for vertically moving the parallel partitions.

WILLIAM S. WRIGHT.