Nov. 4, 1941. J. H. MINER 2,261,522

ICE TRAY ORGANIZATION FOR REFRIGERATORS

Filed March 31, 1938

Fig. 1.

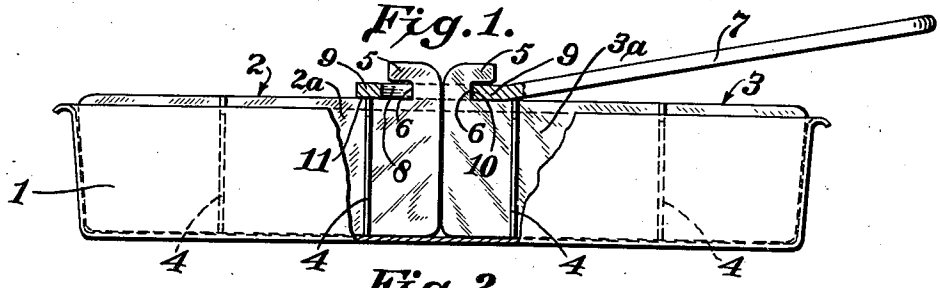


Fig. 2.

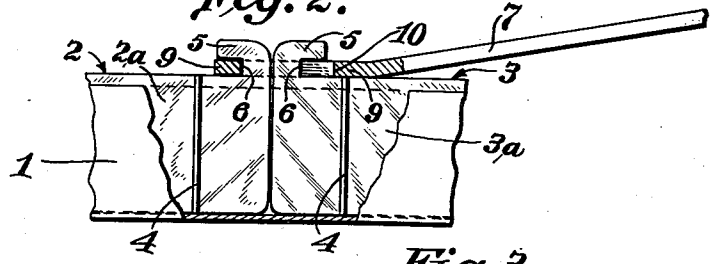


Fig. 3.

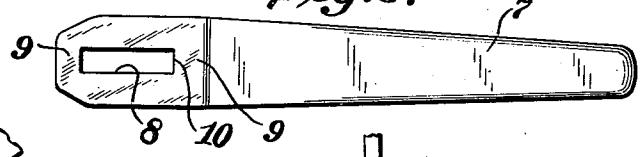


Fig. 4.

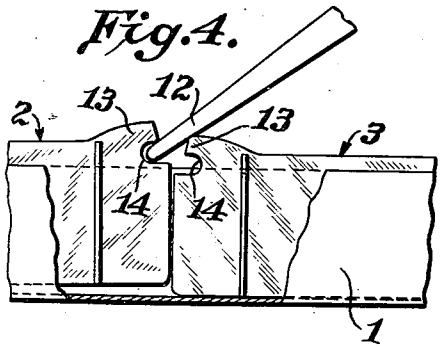


Fig. 5.

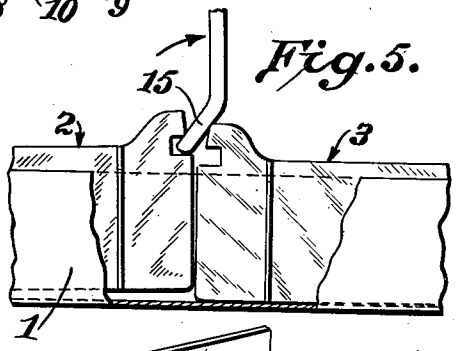


Fig. 6.

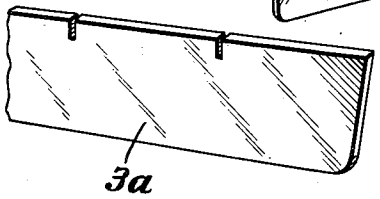
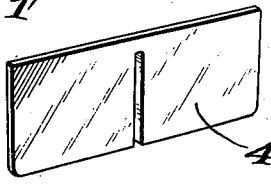


Fig. 7.



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ICE TRAY ORGANIZATION FOR REFRIGERATORS

James H. Miner, Meridian, Miss.

Application March 31, 1938, Serial No. 199,293

8 Claims. (Cl. 62—108.5)

The invention relates to an ice tray organization for refrigerators.

In the accompanying drawing

Figure 1 is a side view of an ice tray organization embodying my invention with a portion of the tray member broken away.

Fig. 2 is a detail view showing the operating lever shifted from the position of Fig. 1 to its other position.

Fig. 3 is a plan view of the operating lever.

Fig. 4 is a view of a different form of operating lever and grid arrangement, the lever having been moved to lift one grid section.

Fig. 5 is a modification of an operating lever.

Figs. 6 and 7 are views of grid members.

In the drawing, 1 indicates a tray of substantially ordinary form and of any material suitable for the purpose.

The grid is composed of two sections 2, 3 meeting at substantially the central zone of the length of the tray, and each section is composed of a longitudinally extending center bar 2a and 3a respectively, said center bar carrying laterally extending fins or partitions shown at 4 in dotted lines, it being understood that the partition or longitudinally extending plates or bars 2a and 3a have these fins or laterally extending partitions on each side thereof.

Each grid section has at the inner end of its longitudinally extending main partition an upwardly extending lug 5 which is recessed at 6, the recess on each lug facing the end of the tray at which the opposite end of the said grid is located. The tray may have its sides inclined upwardly and outwardly, and may be made of resilient metal, if desired. The end walls also may incline upwardly and outwardly.

For operating the grid sections, I provide a lever 7 to be manipulated by hand, said lever being slotted at 8, said slot extending in a direction lengthwise of the lever near one end, leaving an intact portion at 9, and providing an edge at 10.

In the use of this hand lever, it will be noticed from Fig. 1 that it is placed over the upwardly extending projections 5, 5, which are received in the slot 8, and the lever having thus been placed in position, it is moved lengthwise so that the portion or shoulder 10 enters the recess 6 in the lug 5, and then by lifting the free end of the lever with the fulcrum 11 bearing upon a portion of the grid which, in this particular instance, is the upper edge of the longitudinally extending partition 2a of the lefthand grid section, the righthand grid section will be elevated slightly in relation to the tray. This will be sufficient to break the ice cubes away from the wall of the tray, so that this section may be lifted out from the tray in order that access may be had to the cubes for their dislodgement from the grid. Before, however, lifting the righthand section out from the tray, this section, after being loosened, may be utilized as a bearing at the upper edge of its longitudinally extending partition 3a for the shoulder 9 which now acts as the fulcrum.

It will be understood that in order to crack the ice away from the tray, only a slight movement of the grid is necessary.

Broadly speaking, I fulcrum the lever upon one grid section. Specifically, however, I prefer to fulcrum the lever upon the upper edge of the central longitudinally extending partition of the grid, because this may be made thicker than the fins or lateral partitions, the scope of the invention in these features being defined by the appended claims.

Nor do I limit myself to the precise location and arrangement of the lugs 5 relative to the grid, nor to the arrangement of the fulcrum points of lever and grid sections relative to each other.

Broadly speaking, the fulcrum is shiftable from one grid section to another. Specifically speaking, the fulcrum point is at one time on the left side of the pair of projections 5, 5, and at another time said fulcrum point is at the right-hand side of the pair of projections. The invention is not limited to this arrangement.

It will be understood that while the lever is in place relative to the lugs of the grid section, it may be employed to loosen first one grid section and then the other by simply shifting the said lever in a direction lengthwise of the tray from one position to the other. In one of these positions, the end portion 11 of the lever will act as the fulcrum and the shoulder 9 will act as the lifting means, by lifting up on the free end of the lever. On the other hand, when the lever is shifted in the other direction so as to make the end portion 11 engage the lug adjacent thereto, the portion or shoulder 9 will act as the fulcrum and then the force applied would be downward on the free end of the lever instead of upward, as in the previous instance.

Instead of shifting the lever from one position to the other while still maintaining its position with the lugs protruding through its slot, the lever after lifting or loosening one grid section may be removed and turned end for end in relation to the lugs and replaced over these lugs in this reversed position, and then slid into en-

gagement in the recess of the proper lug for lifting the grid section to which said lug is attached.

In other words, the lever may be shifted from one position to the other for operating first one grid section and then the other without removing the lever entirely from the lugs, or it may be removed after the first grid section is loosened and then turned end for end, replaced on the lugs, and slid into engagement with the proper lug for lifting the second section. Various forms of levers may be employed; for instance, instead of having fulcrum means comprising the two portions 9 and 11, the fulcrum means may consist of a single bearing which by the sliding of the lever from one position to the other may engage either grid section while the lever is lifting the other grid section. In both forms, however, the principle of a shifting fulcrum is present. The fulcrum in either case bears on the grid structure.

A modification of the tray is shown in Fig. 4 in which a lever having a plain end 12 can be thrust between the lugs 13 at the meeting ends of the tray of the grid sections, so that by moving this lever in a direction longitudinally of the tray, it will fulcrum with its plain end on one of the lugs 13, and by engaging under the projection of the other section of the grid, this will be lifted. Furthermore, the operation of the lever will tend to move the grid sections lengthwise towards the opposite ends of the tray, respectively. The projections 13 overhang recesses 14 in the meeting edges of the tray sections, so that the lever may work freely throughout the desired stroke thereof. By operating the lever lengthwise of the tray back and forth, first one grid section may be lifted, and then the other, the fulcrum being shifted from one of the projections 13 to the other projection on the other grid during this back and forth movement of the hand lever.

A further modification is shown in Fig. 5 in which the hand lever has a plain end 15 at an inclination to the main part of the lever so that the lifting effect can be accentuated by the manipulation of the lever.

In all the forms the grid may be made up of a bar extending longitudinally of the tray having a slot at each of the points where a fin is to be located, said slot extending vertically of the bar, say for about ¼'', and in these slots the fins are located, each fin being slotted from its lower edge upwardly, leaving an intact portion of about ¼'' in depth from the upper edge of the fin, so that by placing this fin tightly in the notch or slot of the longitudinally extending bar with the intact upper edge portion of the fin resting in the said notch of the longitudinally extending bar, a sufficiently firm connection between these two members will be afforded. Furthermore, the lower portions of the fin at each side of the longitudinally extending bar will be capable of flexing in a direction longitudinally of the tray. This action will be useful in making the fins accommodate themselves to the angular position of the grid when it is tilted up at its inner end by the operation of the hand lever applying stress thereto. The fin may be of comparatively thin metal so as to yield or bend as the grid is raised at its inner end, the whole grid section performing a movement which is substantially the arc of a circle described from the end of the grid adjacent the end wall of the tray.

It will be noticed that no special connecting means need be provided between the fin and the main longitudinally extending bar of the grid. The connection may be made with a driving fit between the upper intact portions of the fins and the walls of the slots or notches in the upper edge of the longitudinally extending bar. The slots in the fins are of sufficient width to allow the lower portions of the fins to yield or flex. In other words these lower portions are not confined, but are free to yield in a direction longitudinally of the tray.

I claim:

1. An ice tray organization for refrigerators comprising a tray proper, a grid divided into a pair of sections, which sections are arranged each to extend from one end of the tray towards and substantially in meeting relation with the other grid section extending from the other end of the tray, and a lever for operating the grid sections, the meeting ends of the grid sections being arranged each to provide means for engagement by said lever to be lifted thereby and also to provide a fulcrum for the lever when the latter is used to raise the other section.

2. An ice tray organization according to claim 1 in which each grid section has a longitudinally extending center bar and the lever fulcrums upon the said center bars of the grid sections.

3. An ice tray organization according to claim 1 in which the lever engaging means constitute upwardly extending portions carried by the respective grid sections.

4. An ice tray according to claim 1 in which the lever engaging means constitute upwardly extending portions carried by the respective grid sections and the lever is slotted adjacent one end, the end walls of the slot being adapted to engage the upwardly extending portions respectively.

5. An ice tray according to claim 1 in which the lever engaging means constitute upwardly extending portions carried by the respective grid sections and the lever is slotted adjacent one end, the end walls of the slot being adapted to engage the upwardly extending portions respectively, said upwardly extending portions having recesses in which the said end walls are received.

6. An ice tray organization according to claim 1 in which said lever is shiftable lengthwise of the tray without reversal of its general position relative to the grid for changing its fulcrum from one section to the other, substantially as described.

7. In combination, a tray, a grid divided into a pair of sections meeting at a point intermediate the length of the tray, and having portions to be engaged by a lever, said lever being shiftable lengthwise of the tray into position to fulcrum upon either grid section for lifting the other section, substantially as described.

8. In combination, a tray, a grid divided transversely into individually operable sections, which meet end to end at a point intermediate the length of the tray and a lever for lifting the sections by engaging the inner end of one grid section while fulcruming on the adjacent end of the other grid section, said lever being reversible for fulcruming upon first one section and then the other, each section being made up of a partition bar extending longitudinally of the tray and carrying fixed thereto fins extending transversely in respect to said bar and tray substantially as described.

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