March 29, 1932. L. K. TOWNSEND 1,851,740

APPARATUS FOR PREVENTING ADHESION BY FROSTING

Filed Aug. 8, 1930

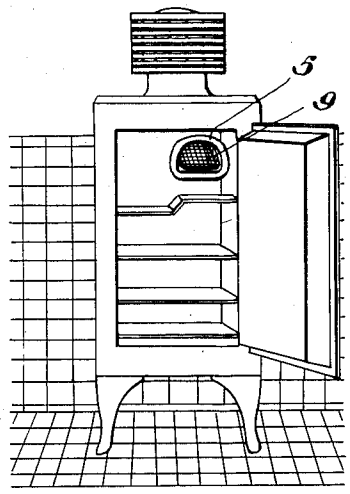

Fig. 1.

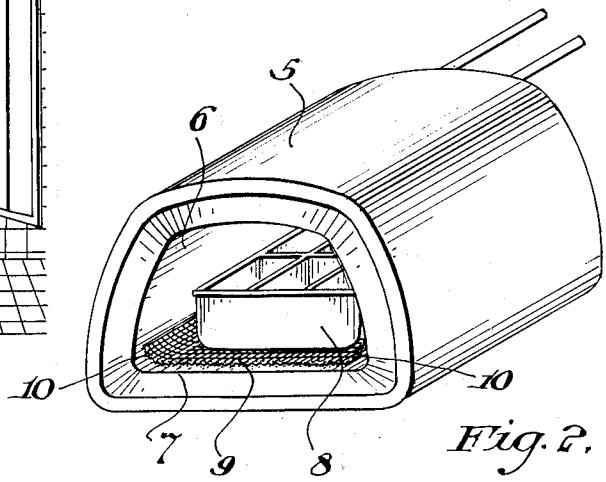

Fig. 2.

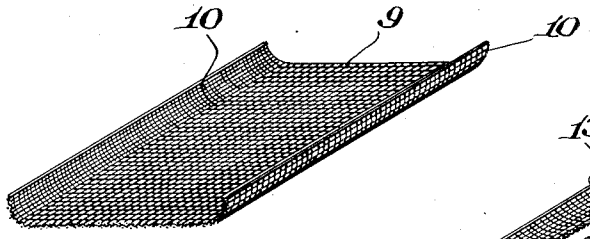

Fig. 3.

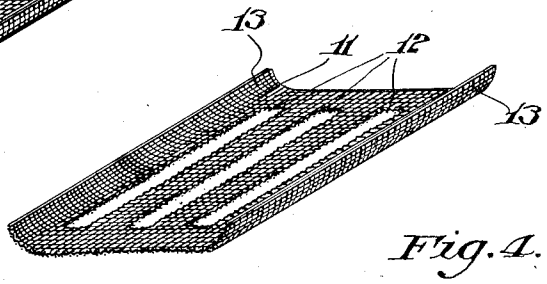

Fig. 4.

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UNITED STATES PATENT OFFICE

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APPARATUS FOR PREVENTING ADHESION BY FROSTING

Application filed August 8, 1930. Serial No. 473,970.

My invention is an improved apparatus for preventing the frosting together of a refrigerating element and a refrigerated element having extended surfaces in close proximity to one another; such frosting together occurring particularly when a metal receptacle containing a liquid to be frozen is placed in close proximity to a metal surface cooled by a low temperature refrigerant. Under such circumstances a film or layer of frost or ice commonly forms between and firmly binds together the juxtaposed metal surfaces.

I have found, however, that if the surface of such film or layer of frost adjacent to the receptacle is divided into minute sections, its adhesion to the receptacle is destroyed or minimized so that its holding power is negligible and the receptacle may be readily removed from the refrigerating surface. I have found that the interposition of a mesh fabric, such for instance as ordinary copper fly screening having say 14 meshes to the inch, effectively prevents the frosting together of the liquid receptacle and refrigerating surface, such mesh fabric seemingly floating on the surface of and subdividing the frost layer and permitting the passage of some air between the surfaces without materially decreasing the freezing effect. The mesh fabric does not become embedded in the frost layer to any material extent and seems to have somewhat the action of a snow-shoe and both the mesh fabric and liquid receptacle may be readily withdrawn.

My invention, while of general application, is particularly applicable to domestic refrigerators of the electric or gas operated type, for preventing the frosting together of the ice-cube pan and the chilling unit.

There is in general use, at present, a type of refrigerator, in which the bottom of the ice making receptacle rests directly upon the bottom of the ice making compartment, with the result that during the period necessary to make ice, the receptacle is frozen fast to the bottom surface of the compartment by the film or layer of frost resulting from condensation and freezing of moisture between the juxtaposed surfaces of the receptacle and compartment. To dislodge the receptacle it has been necessary either to partially defrost the compartment or to use considerable force to free the receptacle, neither of which is desirable or convenient. It is, therefore, an object of this invention to provide means designed to be placed between the ice making receptacle and the ice making compartment in this type of refrigerator to minimize the adhesion between the receptacle and the compartment, and to this end a reticulated mat is placed upon the floor of the ice making compartment and the ice making receptacle rests upon and is floated upon the frost layer by this mat and a slight air space is provided between the receptacle and the compartment surfaces.

Additional objects and advantages of the invention will be apparent from the following description and the accompanying drawings of an illustrative embodiment of my invention, in which

Fig. 1 is a perspective view of a domestic refrigerator having an ice making compartment showing one embodiment of the invention in use;

Fig. 2 is an enlarged perspective view of the ice making compartment shown in Fig. 1 with an ice-cube pan therein.

Fig. 3 is a perspective view of a reticulated mat suitable for use in practicing my invention, and

Fig. 4 is a perspective view of a modified form of reticulated mat.

In the drawings, a well known type of ice making compartment is shown as 5, and being of the usual construction need not be described in detail. This compartment contains a chamber 6 having the floor 7 upon which a usual ice making receptacle 8 has heretofore been placed in direct contact with said floor 7. During the ice making period considerable frost accumulates upon the surfaces of the ice making compartment, and heretofore the receptacle 8 when placed in direct contact with the frost accumulating surface has frozen fast thereto.

In accordance with my invention, a reticulated mat 9 is interposed between the bottom of the receptacle 8 and the floor 7. The re-

ceptacle 8 will then not freeze to the compartment and will not freeze to the mat 9.

The mat 9 as shown in Fig. 2 is preferably formed with upstanding side members 10 and of a shape designed to fit over the floor of the chamber 6 and is preferably made of wire mesh of copper, copper bronze or galvanized iron. As above noted, a mat having 14 mesh to the inch is suitable but the mat may be of coarser or finer mesh. The mat 9 is made as a unit and may be used in the ice making compartments of refrigerators already in general use, being removable at will to allow for cleaning or for any other purpose. The upstanding edge members 10 extend between the walls of the receptacle 8 and the walls of the chamber 6 to prevent freezing to the side walls and also to facilitate removal of the mat. The mat 9 does not interfere with the ice making in the receptacle, nor does it freeze to the floor 7, but it rests upon the frost formed in the compartment. After ice has been formed in the receptacle 8, with the mat 9 in position of Fig. 1, the receptacle may easily and readily be removed from the compartment 5 by simply lifting it from, or sliding it along, the mat 9.

In Fig. 3, there is shown a modified form of mat 11 of the same mesh material as the mat 9. There is provided, however, spaced apertures 12 extending lengthwise which increase the air space between the floor 7 of the compartment and the receptacle 8. Upstanding edges are shown at 13, 13 similar to edges 10, 10 of Fig. 2.

Having described my invention, I claim:

1. The combination with an ice making compartment having an extended frost accumulating surface and an ice making receptacle having an extended surface in close juxtaposition to the first named surface of a metallic wire mesh fabric interposed between and in close juxtaposition to both said surfaces.

2. The combination with an ice making compartment having an extended frost accumulating surface and an ice making receptacle having an extended surface in close juxtaposition to the first named surface of a reticulated metallic mat interposed between and in close juxtaposition to both said surfaces.

3. The combination with an ice making compartment having an extended frost accumulating surface and an ice making receptacle having an extended surface in close juxtaposition to the first named surface of a wire mesh mat interposed between and in close juxtaposition to both said surfaces.

4. The combination with an ice making compartment having an extended frost accumulating surface and an ice making receptacle having an extended surface in close juxtaposition to the first named surface of a wire screening interposed and providing an air space between said surfaces.

5. The combination with an ice making compartment having an extended frost accumulating surface and an ice making receptacle having an extended surface in close juxtaposition to the first named surface of a removable wire screening mat interposed between and in close juxtaposition to both said surfaces.

6. The combination with an ice making compartment having an extended frost accumulating surface and an ice making receptacle having an extended surface in close juxtaposition to the first named surface of a removable reticulated wire mat interposed between and in close juxtaposition to both said surfaces.

7. The combination with an ice making compartment having an extended frost accumulating surface and an ice making receptacle having an extended surface in close juxtaposition to the first named surface of a mat interposed between said surfaces, said mat being made of mesh fabric having strip-like apertures therein.

In testimony whereof I have hereunto set my hand this 6th day of August, 1930.

LAURA K. TOWNSEND.