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A. C. SHUART
SHELF FOR REFRIGERATORS
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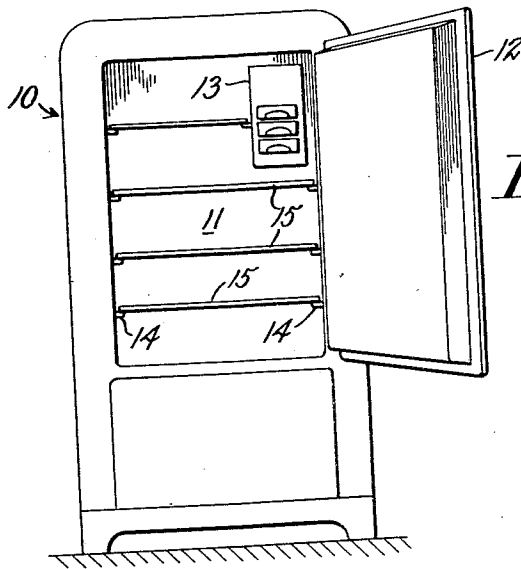


Fig. 1.

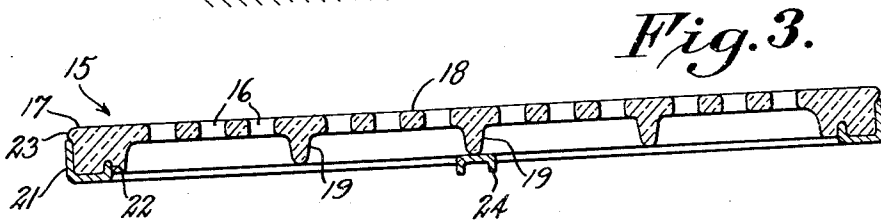


Fig. 3.

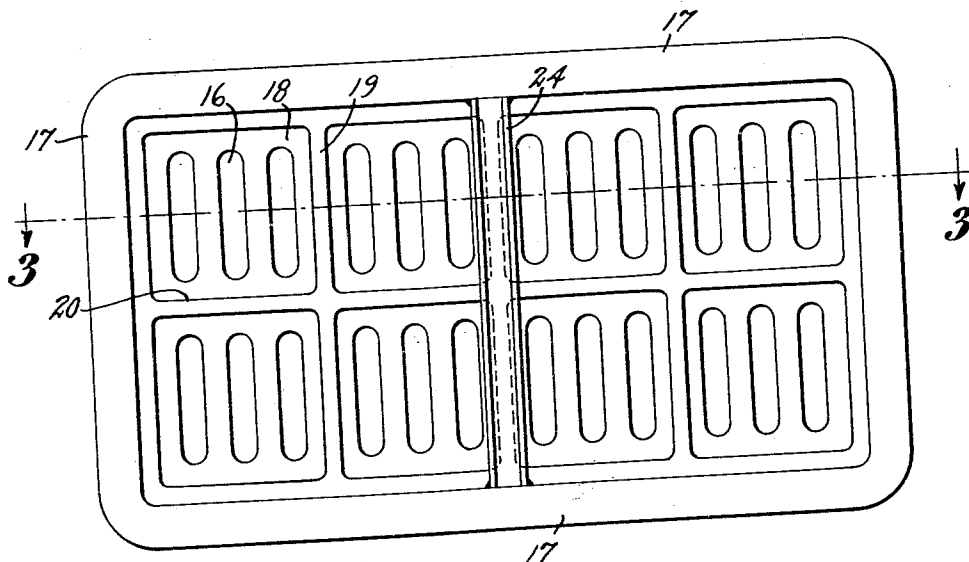


Fig. 2.

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SHELF FOR REFRIGERATORS

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7 Claims. (Cl. 211-153)

My invention relates to shelves for refrigerators, and has for its object the provision of an improved shelf which possesses strength and rigidity for use in refrigerators, is neat in appearance, and can be efficiently used. I accomplish this by providing a shelf which is molded and may be formed of glass or synthetic resins, and the shelf may have a plurality of openings to permit circulation of air in a storage space in which it is adapted to be supported. A molded shelf of this character may be provided with a smooth and flat top surface so that it can be efficiently used with items freely movable thereon in any direction, and, since the material forming the shelf is chemically inert, food and other perishables will not become contaminated.

The invention, together with the objects and advantages thereof, will become apparent from the following description taken in connection with the accompanying drawing forming a part of this specification, and of which Fig. 1 is a front elevation of a refrigerator provided with shelves embodying my invention; Fig. 2 is an enlarged bottom plan view of one of the shelves diagrammatically illustrated in Fig. 1; and Fig. 3 is a sectional view taken on line 3-3 of Fig. 2 to illustrate more clearly parts of the shelf.

Referring to Fig. 1, I have shown a refrigerator comprising a cabinet 10 having a thermally insulated storage space 11 into which access may be had by a door 12 hinged to the front of the cabinet. Within the storage space 11 is arranged a cooling element 13 of refrigeration apparatus for producing cold and maintaining the space 11 at a desired low temperature. To the side walls of the space 11 are fixed brackets 14 for supporting a plurality of shelves 15.

In accordance with my invention, the shelves 15 are molded and may be provided with openings or apertures 16 to permit circulation of air in the storage space 11. The shelf shown in Figs. 2 and 3 is rectangular in shape with the peripheral edge 17 of greater depth or thickness than the main body portion 18. The body portion 18 is provided with ribs 19 which extend transversely of the shelf between the longitudinal sides thereof, and a rib 20 which extends longitudinally of the shelf between the lateral sides thereof and intersects the ribs 19. The ribs 19 and 20 are of substantially the same thickness or depth as the peripheral edge 17 and serve as stiffeners to give the shelf greater rigidity and strength. Between the ribs 19 and 20 and the peripheral edge 17 of the shelf are formed a plurality of elongated openings 16 to

permit circulation of air in the storage space 12.

The shelf 15 is provided with a metal frame 21 which is L-shaped in section, as shown in Fig. 3. The frame 21 is adapted to fit tightly against the bottom and outer sides of the peripheral edge 17, and the bottom of the edge 17 is provided with a groove which extends about the circumference of the shelf to receive an up-turned lip 22 formed at the outer edge of the horizontal arm of the frame. The outer side of the edge 17 is provided with a projection or protuberance 23 which is slightly rounded and against which the upper end of the vertical arm of the frame 21 is adapted to bear.

Between the lateral sides of the frame and substantially at the middle of the shelf the frame is provided with a cross-member 24 which is U-shaped in section and secured at its ends, as by welding, for example, to the longitudinal sides of the frame. The cross-member 24 is preferably secured to the frame so that the top side thereof will bear against one of the transverse ribs 19 formed on the shelf.

The shelf 15 preferably consists of glass or synthetic resin which is molded to the desired shape. Among the synthetic resins which may be used in forming the shelf, for example, are those known under the commercial names Bakelite, Glyptol, and Vinylite. By using glass or a synthetic resin and molding such material to form a shelf, a shelf can be obtained which is of the desired shape in which the ribs 19 and 20, relatively thick edge 17, and elongated openings 16 are all formed simultaneously in a single molding operation. The peripheral edges of the openings have smooth heat finished surfaces as a result of molding the material under heat and pressure to form the shelf. The slight amount of excess material adhering to the shelf when thus molded can readily be removed and such parts easily smoothed to provide a shelf having no rough edges.

In using synthetic resins as a material for a refrigerator shelf, the shelf may be made transparent or colored white to provide a finish similar to that of porcelain. When the molded refrigerator shelf is formed of glass, the glass may be heat strengthened or tempered, such as glass known under the commercial name Tufflex, to provide an unbreakable glass shelf.

After the shelf has been molded and smoothed, as explained above, the frame 21 is fixed to the shelf so that it will snugly fit against the bottom and outer sides of the peripheral edge 17. I prefer to make the frame 21 of a suitable

stainless steel alloy having a bright surface which does not readily tarnish or become discolored.

5 It will now be understood that I have provided a molded shelf for refrigerators which is neat in appearance and easily formed to the desired shape, so that it will possess the necessary rigidity and strength for use in refrigerators. By using glass or synthetic resins to form the shelf, a shelf is obtained which will not rust and is chemically inert, so that food and other perishables will not become contaminated in the storage space. Further, such a molded shelf can easily be cleaned because all of the surfaces may be rounded to avoid sharp corners. A molded shelf possesses many inherent advantages over an open framework type of shelf in that the top surface may be made smooth and flat, as shown in Fig. 3, so that it can be efficiently used and items can be moved about freely in any direction on the shelf. Hence, very little trouble is encountered when such a shelf is loaded and it is desired to effect a rearrangement of the items to utilize the space in a different manner. The fact that the shelf may be formed from heat resisting or tempered glass or a synthetic resin is particularly advantageous in that the shelf will not develop cracks or break with sudden changes of temperature.

15 While I have shown and described a particular embodiment of my invention, such variations and modifications are contemplated as fall within the true spirit and scope of my invention as pointed out in the following claims.

What is claimed is:

35 1. A shelf adapted to be supported in a food storage compartment of a refrigerator and having a peripheral edge portion and spaced ribbed portions of greater depth or thickness than other portions of said shelf, said shelf being constructed of material of a class including glass, synthetic resins and the like and having a plurality of openings disposed between said edge and ribbed portions to permit circulation of air in the storage compartment, and the peripheral edges of said openings having smooth heat finished surfaces.

2. A shelf adapted to be supported in a food storage compartment of a refrigerator and having a peripheral edge portion and spaced ribbed portions of greater depth or thickness than other portions of said shelf, said shelf being constructed of material of a class including glass, synthetic resins and the like and having a plurality of openings disposed between said edge and said ribbed portions to permit circulation of air in the storage compartment, and a metal frame tightly fitted about and bearing against the peripheral edge of said shelf.

3. A shelf adapted to be supported in a food storage compartment of a refrigerator, said shelf being constructed of material of a class including glass, synthetic resins and the like and having a plurality of openings to permit circulation of air in the storage compartment, said shelf having a groove at the bottom about the peripheral edge thereof, and a metal frame tightly fitted about the peripheral edge of said shelf and bearing against the bottom and outer edge thereof, said frame having an upturned lip extending into said groove.

4. A shelf adapted to be supported in a food storage compartment of a refrigerator and having a groove at the bottom about the peripheral edge thereof, and a frame tightly fitted about the peripheral edge of said shelf against the bottom and outer edge thereof, said frame having an upturned lip extending into said groove.

5. A shelf as defined in claim 4 in which the peripheral edge thereof is of greater depth or thickness than other portions of the shelf.

6. A shelf as defined in claim 4 and including a peripheral edge and spaced ribbed portions of greater depth or thickness than other portions of said shelf, the shelf having a plurality of openings between said edge and ribbed portions to permit circulation of air in the storage compartment.

7. A shelf as defined in claim 4 in which the upper part at the peripheral edge overlaps the upper edge of the portion of the frame bearing against the outer edge of the shelf.

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