

May 22, 1956

L. J. AMORE
CABINET CONSTRUCTION

2,746,828

Filed July 28, 1952

2 Sheets-Sheet 1

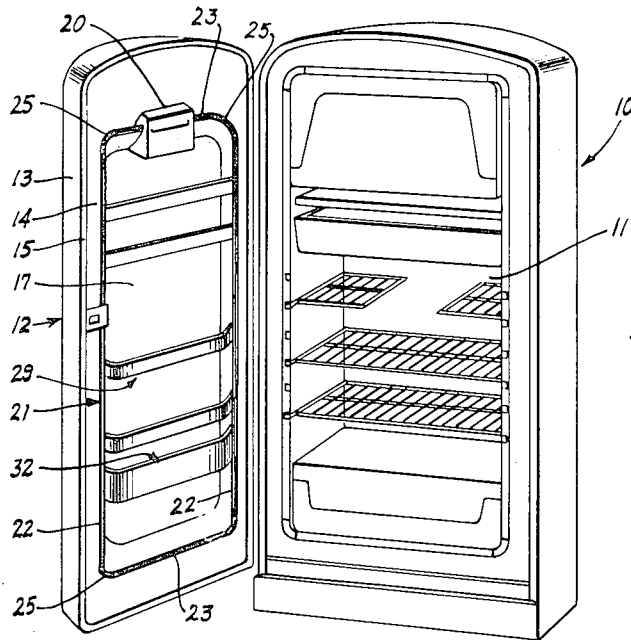


FIG. 1.

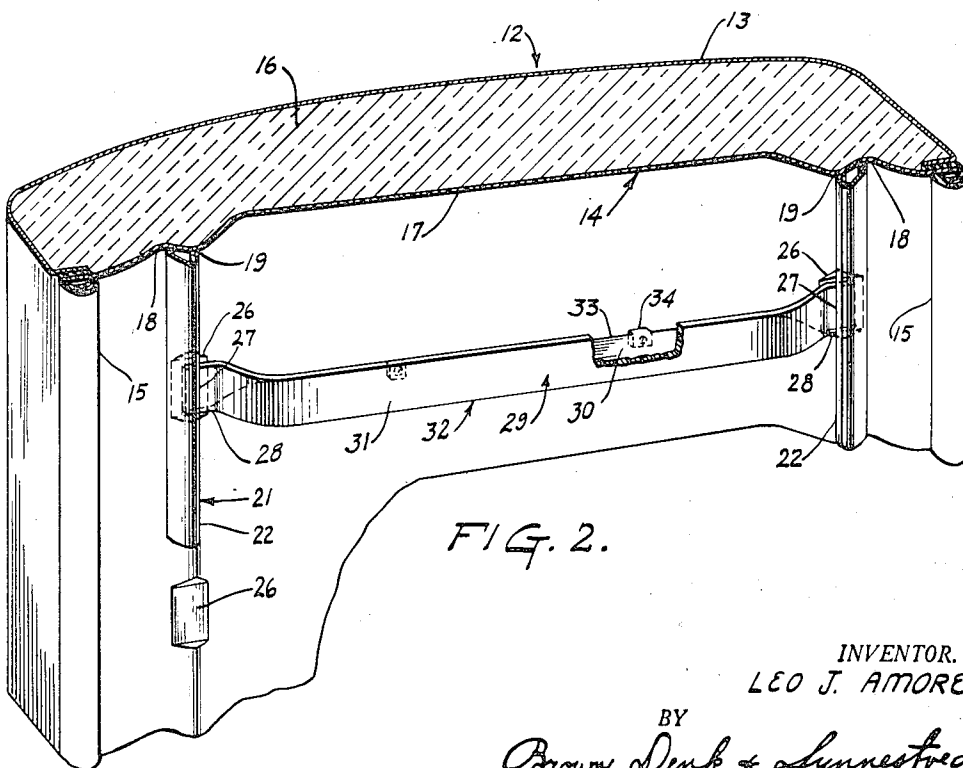


FIG. 2.

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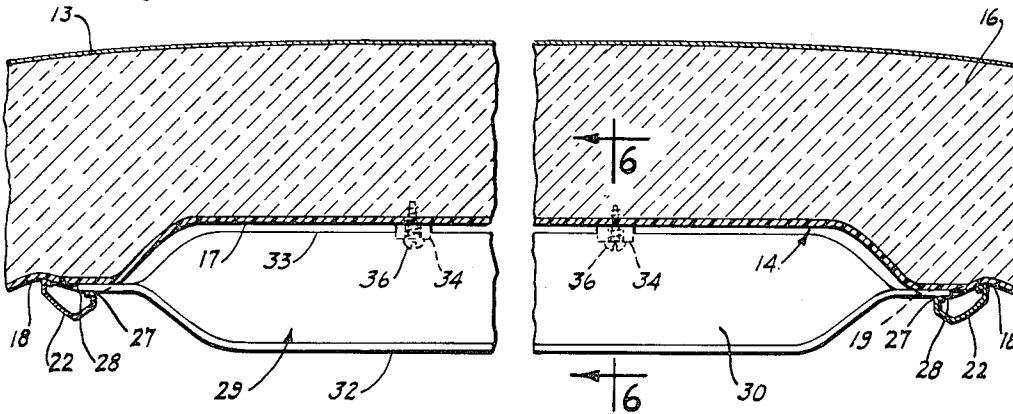


FIG. 3.

FIG. 4.

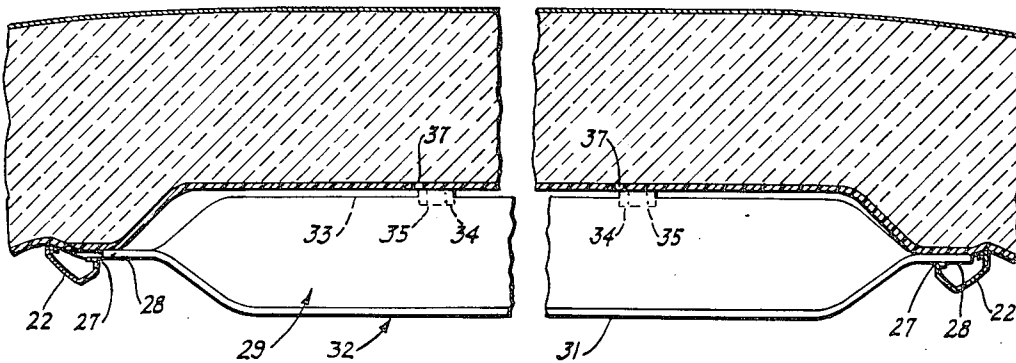


FIG. 5.

FIG. 6.

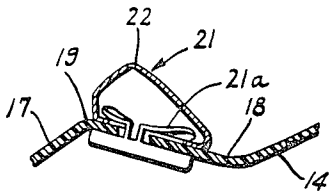


FIG. 7.

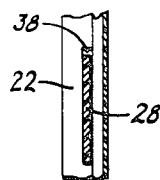
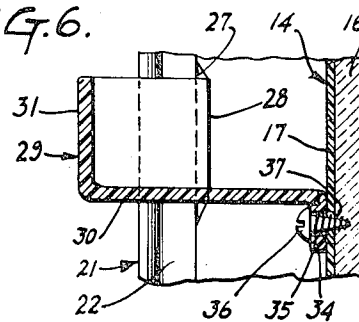


FIG. 8.



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CABINET CONSTRUCTION

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Application July 28, 1952, Serial No. 301,338

6 Claims. (Cl. 312—214)

The invention hereinafter described and claimed has to do with cabinet construction and more particularly with door mounted shelf arrangements. While of broader applicability, the invention is specially adapted for use with refrigerator doors and accordingly the following description has reference to such an embodiment.

In recent years it has become quite common to provide cabinet doors with auxiliary shelves on which articles may be stored in a readily accessible position, and it is the primary object of this invention to provide a new shelf structure of this type characterized by a novel mode of mounting the structure upon the inner panel of the door.

Another object of the invention is the provision of a door shelf construction characterized by flexibility enabling it, even when fully loaded, to withstand and absorb the shock of repeated door slamming without damage thereto.

Still another object of the invention is to provide a shelf structure which may be easily mounted upon or removed from the door without the use of special tools, and without requiring disassembly of the door.

A further object is to provide a door shelf structure of economical construction and pleasing appearance.

In keeping with these general objects, the invention contemplates a door construction including inner and outer panels and having a plurality of article supporting shelves mounted upon the inner panel thereof. Marginal trim members cooperating with portions of the inner panel form pockets adapted to receive the ends of shelves and thus support them upon the door. The ends of the shelves are received within the pockets in a manner permitting limited relative movement therebetween so that the shelves are free to flex when subjected to shock, by reason of the door being slammed or because of heavy objects being dropped upon the shelf thus absorbing the shock and preventing damage to the shelf. Fastening means is provided to prevent accidental displacement of the shelf ends from the pockets.

In the drawings, illustrating a preferred embodiment of the invention:

Figure 1 is a perspective view of a refrigerator cabinet including a door embodying features of the present invention;

Figure 2 is a perspective view of a fragmentary portion of the door showing a shelf mounted thereon;

Figure 3 is a horizontal sectional view through the door, with portions broken away, and showing a shelf mounted on the inner door panel;

Figure 4 is a view similar to Figure 3, but showing the first step in the procedure of mounting a shelf upon the door;

Figure 5 is a sectional view of a fragmentary portion of the inner door panel showing one means of fastening the trim strip thereto;

Figure 6 is a sectional view, taken generally along the line 6—6 of Figure 3; and

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Figure 7 is a fragmentary view of a modified construction.

With detailed reference to the drawings and more particularly to Figure 1 thereof, the numeral 10 designates a refrigerator cabinet having an open front food storage space 11, normally closed by a door 12. The details of cabinet construction form no part of this invention and, therefore, the following description is confined to the door construction.

With reference to both Figures 1 and 2 it is seen that the door comprises an outer shell 13, and an inner panel 14, secured together about their peripheries, preferably by means of a plurality of screws (not shown) disposed circumferentially about the door and beneath the usual door gasket 15. The space between the outer shell and inner panel is filled with insulation 16, which may be of any desired type.

Inner door panel 14 preferably is formed of heat insulating material which, by way of example, may be a plastic composition of the synthetic resin type. As seen more clearly in Figures 2, 3, and 4, panel 14 preferably, but not necessarily, is formed with a pair of recesses 17 and 18, the first of which is in the central portion of the panel and the second around the marginal area thereof. Between these recesses is a marginal ridge 19 projecting outwardly from the door structure, and extending substantially around the panel, being broken only in the area of the butter conditioner 20 shown in Figure 1. It should be understood that, for the purposes of this invention, ridge 19 need only be provided along each vertical side of the recess 17. The reason for this is more clearly disclosed as this description progresses.

Ridge 19 carries a trim frame 21 (Figure 1) secured thereto by any suitable means, such as speed fasteners 21a which may be of any acceptable type, such for example as that shown in Figure 5. Trim frame 21 may be formed in one piece, although in the embodiment illustrated it comprises straight side members 22, straight top and bottom members 23, and arcuate corner sections 25 connecting the ends of the straight sections. It should also be understood that, for the purposes of this invention, the straight side members 22 alone are sufficient.

Beneath the trim members 22, as seen in Figure 2, ridge 19, on each side of the door, is provided with a plurality of vertically spaced depressions 26. These depressions, in cooperation with the side trim members, form inwardly opening pockets 27 (see Figures 3 and 4) adapted to receive opposite ends 28 of shelves 29.

The shelves are preferably of one piece moulded synthetic plastic construction and include a base or floor 30, and a vertical front rail 31 terminating in the outwardly projecting ends 28 which are received and supported in pockets 27. The vertical rail 31, as shown more clearly by shelves 29 at the top of the door in Figure 1, may be substantially coplanar with end portions 28, or the central portion 32 of said rail may project outwardly from the door structure, as is the case with shelves shown on the lower half of the door in Figure 1 and, more clearly, in Figures 2, 3, and 4. It is desirable that the shape of the rear edge 33 of floor 30 of the shelf conform generally with the contour of the central recess 17 of the door panel, as appears in Figures 3 and 4.

Depending from rear edge 33 of the shelf floor is a pair of tabs 34 spaced from each other and provided with apertures 35 through which fastening means 36, as seen in Figure 6, may be passed to engage the rear panel and thus secure the shelf thereto.

In assembling the door, trim frame 21 is first secured to inner panel 14, after which the inner and outer panels are secured together, all as described above. The manner in which the shelves are assembled to the inner panel is clearly shown in Figure 4, wherein it may be seen

that the right hand end 28 of the shelf is inserted in pocket 27 to its full extent, which permits the left hand end of the shelf to be brought into registry with the pocket on that side. The shelf then is moved bodily to the left to engage the left end of the shelf in its pocket, after which movement the shelf is again shifted a distance just sufficient to ensure proper engagement of both shelf end portions 28 with the associated pockets. Apertures 35 in tabs 34 (Figure 6) are then in registry with apertures 37 provided in panel 14, so that the fastening means 36 may secure the shelf to the liner. The fastening means preferably is of the type—a screw, for example—which may be inserted and withdrawn with the door completely assembled. By removing the fastening means and reversing the assembly procedure described above the shelves may easily be removed from the door. It will of course be appreciated that the shelves may be assembled to the door with equal ease by first inserting the left hand end of each shelf in its associated pocket and then shifting the shelf bodily to the right.

It should be understood, of course, that the inner panel may be constructed with the trim strip as an integral part thereof, and with the pockets formed directly in the panel structure.

In Figure 7 there is shown a modified pocket construction wherein the side trim members 22 are provided with spaced notches 38 along their inner edge portions, and within which notches ends 28 of the shelves may be received, in a manner similar to that described above in connection with pockets 27. With this construction it is possible to obtain certain of the advantages of the invention by the use of a flat inner panel, that is, one without the recesses and ridges.

Because of the excellent appearance and low cost of molded plastic materials, such for example as polystyrene, it is preferred to construct shelves from such material. However, the brittleness of materials of this kind is well known and, because of this characteristic, shelves molded therefrom, if they be rigidly mounted, cannot withstand the shocks which arise from repeated slamming of the door or from other abuse to which they are subjected when in use.

Perhaps the most important advantage achieved by the above-described construction flows from the flexibility which characterizes the novel shelf mounting of the present invention. Extensive field practice has demonstrated that a shelf of the above-described type will withstand repeated slamming of the cabinet door, even if loaded with heavy merchandise. When conditions of high impact are encountered the shelf is distorted, or flexed, and the ends thereof are partially withdrawn from the pockets within which they are mounted, with the result that the heavy impacts and shocks referred to are absorbed without damage.

I claim:

1. A door construction comprising a panel, a pair of spaced outwardly projecting and vertically extending ridges on one face of said panel, a trim member secured to each of said ridges, said ridges and trim members being constructed so as to form at least a pair of pockets having apertures providing access thereto, the aperture of the pocket of one of said pair being disposed in confronting relation to the aperture of the other pocket of said pair, a shelf positioned on said door, and means on said shelf extending through said apertures within the pockets and supported by the latter in a manner permitting limited movement of said means within each pocket of said pair.

2. A door construction in accordance with claim 1, and characterized in that said ridges are provided with depressions which cooperate with said trim members to form said pockets.

3. A door construction in accordance with claim 1,

and characterized in that said trim members are provided with notches which cooperate with said ridges to form said pockets.

4. A door structure comprising a panel, said panel having a centrally positioned recess bounded by outwardly projecting vertically extending surfaces along opposite vertical sides of the recess, each of said surfaces having a plurality of spaced depressions along its vertical extension, a trim strip secured to each of said surfaces and cooperating with said depressions to form confronting pockets, a plurality of shelves, each of said shelves including a base portion and a vertical wall, and means defining end extensions on each shelf engaging a pair of confronting pockets and supporting said shelves on said panel within said central recess, the end-to-end dimension of each shelf being substantially equal to the dimension between the outer edges of said trim members minus the width of one of the latter, whereby said shelves may be assembled on the door by first inserting one end extension into one pocket, bringing the opposite end into registry with the opposite pocket, and bodily shifting said shelf to engage the latter end within said opposite pocket.

5. A door structure comprising a panel, said panel having a centrally positioned recess bounded by outwardly projecting longitudinally extending surfaces disposed along opposite sides of the recess, each of said surfaces having a plurality of spaced depressions along its extension, means cooperating with said depressions to form confronting pockets having access openings, a plurality of shelves, each of said shelves including a base portion and a vertical wall, and means defining a pair of end extensions of the vertical wall of each shelf, said end extensions engaging a pair of confronting pockets and supporting said shelves on said panel within said central recess, the distance between said access openings being at least equal to the width of the shelf plus the width of an end extension whereby said shelves may be assembled on the door by first inserting one end extension through the access opening of one of said pockets, bringing the opposite end extension into registry with the access opening of the opposite pocket, and bodily shifting said shelf to engage the latter end within said opposite pocket.

6. A door construction comprising an inner panel, a pair of outwardly projecting and longitudinally extending ridges formed integrally with said panel on one face thereof, a trim member secured to each of said ridges, said ridges and said trim members being so constructed as to form pockets having access openings formed therein, an opening formed in one of said pockets being in confronting relation with an opening formed in an opposite pocket, a plurality of shelves, each of said shelves including a base portion and a vertical wall, and means defining end extensions on the vertical wall of each shelf, said extensions being integral with said vertical wall and being of a size to be received snugly within the access openings formed in said pockets, said end extensions on each shelf extending through the confronting access openings to support said shelves on said panel.

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