June 24, 1958 R. E. FIELDS 2,839,793

DOOR STRUCTURE

Filed Dec. 22, 1954

FIG. 1.

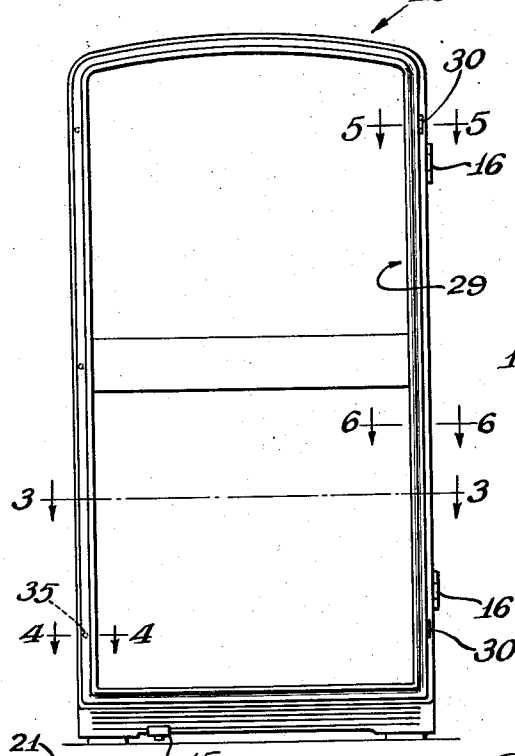


FIG. 2.

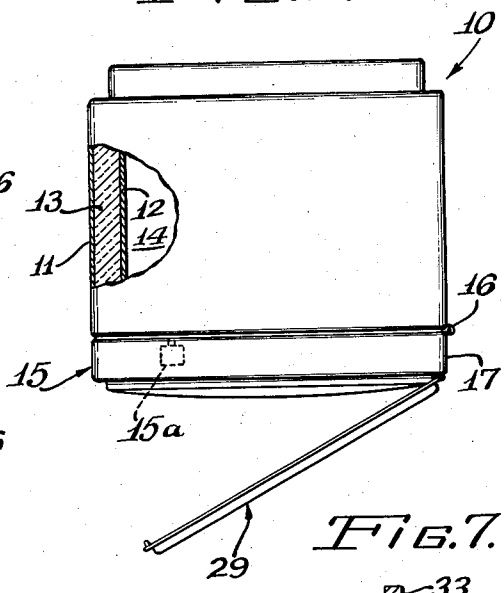


FIG. 7.

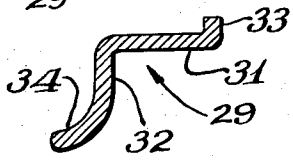


FIG. 3.

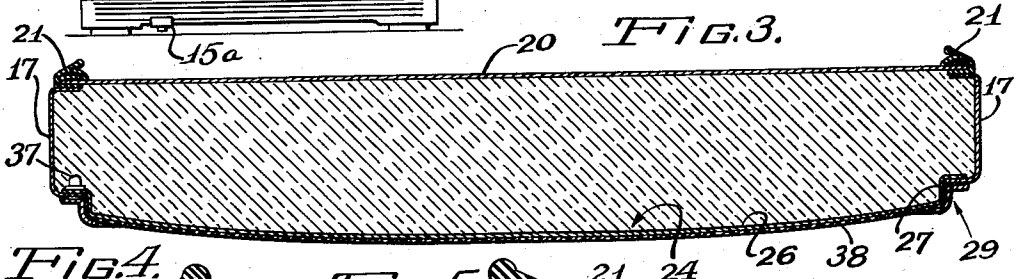


FIG. 4.

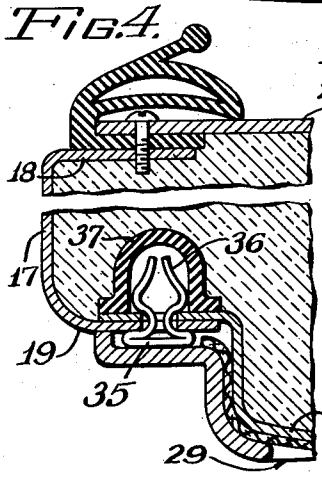


FIG. 5.

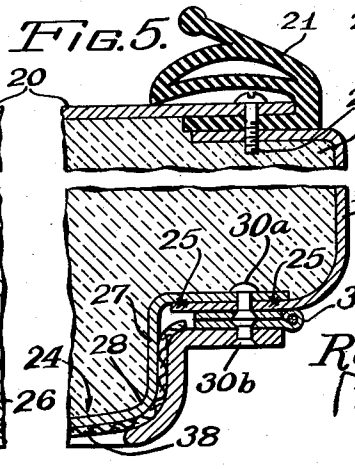
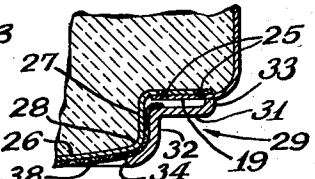


FIG. 6.



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DOOR STRUCTURE

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1 Claim. (Cl. 20—35)

This invention relates to refrigerated cabinet structures, but is more specifically directed to an improved door structure which incorporates simple means therein to facilitate redecorating the door at will.

It is a primary object of the present invention, therefore, to provide an improved door structure having means associated therewith to facilitate altering or modifying the decorative appearance of the door.

Another object is to provide a cabinet door having an auxiliary frame pivotally mounted externally thereof which may be used to clampingly support a decorative sheathing or the like against the outer face of the door.

A further object is to provide an insulated refrigerated cabinet door fashioned with a raised center panel and having readily releasable means mounted hingedly on the door for closely engaging the raised portion thereof so that a decorative covering for the door may be supportably positioned between said means and said raised panel portion.

A still further object is to provide a simple, inexpensive, and effective arrangement for removably mounting a decorative covering or the like on a portion of the outer surface of a refrigerated cabinet door.

The above and other objects of the invention, such as to provide a means for hiding the spot-welded joints around the center panel of the door, to provide a suitable cover for the edges of a decorative facing material, and to provide facilities for rapidly changing decorative coverings on the door, will appear more fully from the following detailed description of a representative type of door embodying the invention and illustrated in the accompanying drawings wherein:

Figure 1 is a front elevational view of a refrigerated cabinet incorporating the present invention in the door thereon;

Figure 2 is a top plan view of the refrigerated cabinet of Figure 1 but shown with the proposed frame structure in a partially opened position;

Figure 3 is a horizontal sectional view taken along the line 3—3 of Figure 1 but shown in a slightly larger dimension;

Figure 4 is a horizontal sectional view, in enlarged dimension, taken along line 4—4 of Figure 1 and shows in detail the snap fastener type of hold down clip used for securing the proposed frame;

Figure 5 is a horizontal sectional view, in enlarged dimension, taken along line 5—5 of Figure 1 and shows the detail of the hinge mounting for the proposed frame;

Figure 6 is an enlarged partial sectional view taken along the line 6—6 of Figure 1 showing the frame section in greater detail; and

Figure 7 is a cross sectional view, in enlarged dimensions, of one side portion of the proposed frame.

For purposes of illustrating a preferred application of the present invention there is depicted in the attached drawings a generally conventional refrigerated cabinet, indicated by the reference numeral **10**, having an outer shell **11** and an inner shell **12** spaced therefrom with suitable heat insulating material **13** therebetween. The cabinet is fashioned with one side thereof open to provide access to a food storage compartment **14** therewithin while a door **15** mounted on hinges **16** is provided as a closure or cover member for said opening as is well understood in the art. Since the refrigerating apparatus forms no particular part of the present invention it has not been shown in the drawings and no further reference will be made thereto in the following description.

The door **15** which includes some generally conventional features of construction is formed with a peripherally extending generally U-shaped frame-like side wall member **17** having flange-like legs **18** and **19** extending inwardly therefrom. A rear wall or inner panel member **20** may be expansibly secured together with a peripherally extending resilient sealing gasket **21** to the rear flange **18** by suitable means such as the threaded fasteners **22**. Suitable heat insulating material **23** is positioned between the walls of said door and the rear panel **20** may be formed from any one of a number of suitable and well known low-heat conducting plastic compositions. Suitable latching mechanism (not shown) controlled by the foot pedal **15***a* may be provided for opening and closing the door.

A front wall or outer panel member, represented generally by the numeral **24**, is centered within said frame-like wall member **17** and is fixedly secured along the marginal edges thereof, by suitable conventional means such as the spot welds indicated at **25**, to the front flange **19** of said frame. The panel **24** is formed, according to the particular concepts of the present invention, with a raised or drawn central portion **26** that is offset from the marginal edges thereof by a peripherally extending normally disposed flange-like portion **27** which, when so formed, provides a shoulder **28** that also extends completely around the edges of said panel. As shown, in a seemingly exaggerated proportion in some of the drawings, the raised or offset central portion **26** of said front panel is formed with a crowned face that slopes toward all the respective edges thereof while the shoulder **28** along said edges is substantially flat in its longitudinal dimension and lies within a single plane.

An auxiliary or adapter frame, represented generally by the reference numeral **29**, resembles a picture frame and is mounted, by suitable means such as the hinges **30**, on the outer face of the door **15**. Attaching means, such as the rivets indicated at **30***a*, may be used to fixedly secure said hinges to the door in the area where the front flange **19** thereof is welded to the adjoining marginal edge of the panel **24** thereby eliminating the need for any back-up or reinforcing member on the inner side of said panel. Rivet means, such as indicated at **30***b*, may also be used to fixedly secure the hinges **30** to the adapter or swing-out frame **29**.

The swing-out frame **29** is fashioned from a member that resembles in appearance a trim strip that is bent to form a frame generally rectangular in shape with an open center and which is adapted to overlie the shoulder **28** and be positioned against said door in a closely fitting relationship. A cross section of one side portion of said frame resembles an angle member having a leg or arm **31** that extends substantially normal to a leg or arm **32**, while the end edges of these legs are overturned or flanged as indicated, respectively, at **33** and **34** and best seen in Figure 7. The overturned edge **34** is fashioned to conform with the general contour of the outer surface of the shoulder **28** against which it will be while the overall frame **29** is shaped to fit the general contour of the peripherally extending offset portion **27** of the raised panel **26** on said door. It is preferred that the leg or arm **31** of said frame be sufficiently long to cover the spot-weld points **25** along

the marginal edges of the outer panel **24** thus eliminating the need for and the cost of metal finishing of the area adjoining these welds. This flange **33** may be of such length as required to space the frame from the flange **19** a distance substantially corresponding to the thickness of the leaves of the hinges **30** while said hinges, preferably, are secured to the frame **24** at points where cut-outs have been made in the flange **33**. While said swing-out frame may be fashioned from any suitable material, it is preferred that it be fabricated of a light weight metallic composition, such as aluminum or magnesium, and that it be fabricated of a material that will be sufficiently rigid to resist reasonable distortion and yet present an appearance that will enhance the overall appearance of the door to which it is attached, while the color, of course, may be blended into or made to harmonize with that of the door or cabinet surface.

On the portion of the frame **29** that overlies the side of the door opposite from that of the hinges there are provided a plurality of releasable fastening means for securely holding down said frame against the door. Each of said fastening means includes a snap fastener **35** which has outwardly spreading resilient projections or prongs **36** thereon that are adapted to be squeezed together to permit their insertion into an opening and then spread apart to prevent the easy withdrawal thereof from said opening. Fasteners or hold down clips of this type are well known products and are manufactured, among others, by the Tinnerman Products Company. The fastener is fixedly secured by any well known means to the swing-out frame **29** and the prongs **36** thereof are aligned with an opening in the marginal edge portion of the panel **24** that registers with an opening in the adjoining flange **19** in the frame-like wall member **17** of the door. In order to seal the opening provided in the door for the snap fasteners against the ingress of moisture, a cup-like cap member **37** is suitably secured to the back of the panel **24** and disposed so as to overlie each of the openings therein. Such capping member may be fashioned from any one of many of the suitable and well known plastic or rubber compositions. Any of the suitable adhesives or asphaltic compounds may, if desired, be used for affixing said caps to the rear of the door panel member.

In covering the proposed door with any particular decorative covering the adapter frame **29** is first released from its hold-down or closed position by snapping the fasteners **35** loose and then swinging the frame open on its hinges **30**. A sheathing of the desired decorative covering material **38** is cut to size and then positioned against the surface of the door panel and, if desired, may be held temporarily in place by a suitable adhesive such as the well-known double-face pressure sensitive adhesive tape manufactured and marketed by the Minnesota Mining Company. After said sheathing has been properly centered and all wrinkles worked out of the adapter or swing-out frame **29** is closed in clamping fashion over the end portions of said covering, and as said frame is snapped into its closed or hold-down position the covering material is pulled tightly and stretched over the surface of said panel while, at the same time, the ends of the material are covered and concealed by said frame. It will readily be appreciated from the above that frequent changes of such decorative coverings may be made at will, and that various arrangements or combinations of such coverings may also be employed as desired. Furthermore, a thin sheet or panel of a decorative material such as an unsupported vinyl plastic film may also be used in lieu of a fabric or fabric-like material, if preferred.

From the foregoing it should now be apparent that a novel door structure has been shown and described, and it is to be understood that changes may be made in the proposed construction without departing from the spirit of the invention or the scope thereof as defined in the appended claim.

What is claimed is:

In a decorative panel construction for refrigerator doors having an outer shell provided with a side wall formed of a channelled frame member extending about the top, bottom, and sides of the door, with the front and rear flanges of the channel turned inwardly, the improvement which comprises a front wall member having a central front wall portion provided with a peripheral rearwardly extending flange joined to the central portion by a curved portion forming a rearwardly extending shoulder extending completely about the front wall member, said rearward flange being received inside the front flange of said channelled frame member and attached thereto by welding, an adapter frame of a shape similar to the front wall member, said adapter frame being angular in cross section, and having an inwardly curved clamping flange extending over said curved portion of the front wall member, and also having a forwardly extending frame flange extending entirely about the said peripheral rearward extending flange of the front wall member with sufficient clearance to receive with a clamping action a covering of flexible decorative material covering the front wall member out to the channeled frame, said adapted frame having hinges mounted on said channeled frame at one side thereof, and said adapter frame fitting over the flexible decorative covering and drawing it tightly over the front wall member until the adapter frame encompasses and secures the flexible covering about the front wall member at the peripheral rearwardly extending flange thereof, and a plurality of expanding U-shaped fasteners concealed under said adapted frame and carried by the rear side of the attaching flange of said adapter frame and extending into apertures in the front flange of the channeled frame member to secure the adapter frame thereto on the side opposite to said hinges.

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