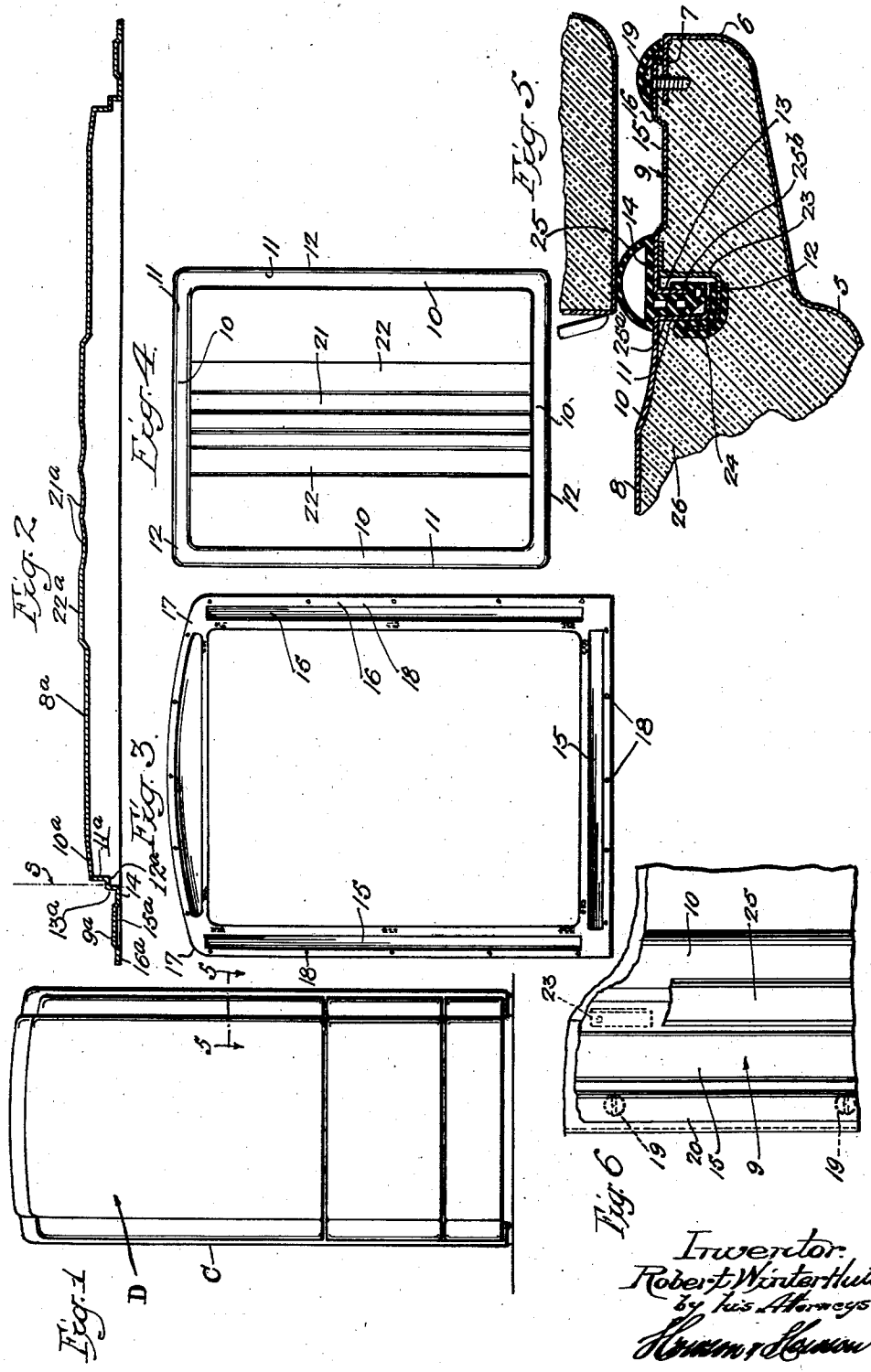
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REFRIGERATOR CABINET CONSTRUCTION

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REFRIGERATOR CABINET CONSTRUCTION

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Original application May 18, 1938, Serial No. 208,683, now Patent No. 2,276,778, dated March 17, 1942. Divided and this application June 25, 1941, Serial No. 399,696

2 Claims. (Cl. 113—116)

This invention relates to refrigerator cabinet construction, and the primary object of the same is to provide a method of constructing an improved door for cabinets of this type whereby economy in manufacture results while at the same time obtaining durability, thermal insulating efficiency, strength with lightness in weight and other standards which must be upheld in a highly competitive market.

The improved door has spaced outer and inner walls of sheet metal or other material susceptible to the required shaping operations, with the conventional insulation material therebetween. The outer wall is preferably, although not necessarily, of one-piece construction, while the inner wall consists essentially of two parts, namely, a door liner proper forming the inner face of the door and a surrounding frame which is also a one-piece unit and is connected to the liner with a thermal break or sealing gasket anchored therebetween and overlying the joint between the frame and liner. In constructing an inner wall of this type, the liner and frame may be first blanked and drawn in one piece, at which time the marginal edge of the blank is given a shape such that, when reversed, it will constitute the desired door frame member. The blank is then severed on a line extending between the liner and frame portion of the blank; and then in the assembling operation, the frame member is reversed with respect to the liner. The resultant construction is a door which will live up to the required specifications having an inner wall made up essentially of two parts co-related to facilitate the assembling operation including the mounting and anchoring of the thermal break or gasket, while at the same time there is no waste of metal in the drawing and blanking process.

The present application is a division of application Serial No. 208,683, filed May 18, 1938, from which Patent No. 2,276,778, granted March 17, 1942, for Refrigerator cabinet construction resulted.

The objects and advantages of the improved door structure and method of making the same will become more apparent in view of the following description taken in conjunction with the drawing, wherein:

Figure 1 is a view in front elevation of a refrigerator cabinet having a door thereon constructed in accordance with the features of the present invention;

Figure 2 is a section taken substantially through the central portion of a blanked and drawn sheet metal piece shaped to constitute the door liner and frame member;

Figure 3 is a view in outer side elevation of the frame member after it has been severed from the door liner;

Figure 4 is a view similar to Figure 3 of the liner after severance from the frame;

Figure 5 is a horizontal sectional view taken through the door on the line 5—5, Figure 1; and

Figure 6 is an enlarged inner side elevation of a portion of the door frame and adjacent door liner.

Referring to the drawing in detail, a refrigerator cabinet is generally indicated at C having a door D. The outer wall 5 of the door (note Figure 5) comprises a sheet metal member having a door jamb portion 6 terminating in an inturned frame-attaching flange 7. The particular design of the outer wall of the door may be varied at will in accordance with the exterior design of the cabinet.

The inner wall of the door consists essentially of a liner, generally indicated at 8, and a frame member, generally indicated at 9, note particularly Figure 5 where these parts are joined or connected in the finished door. Figure 2 shows the sheet metal piece or blank from which the liner and frame are made, the respective parts in Figure 2 being designated with the same reference characters as in the remaining figures except that in Figure 2 the exponent *a* is added. The liner 8, in the particular design shown is formed with a slight depression 10, as it approaches its outer edge and is then turned inwardly providing a frame locking or connecting edge wall or shoulder 11 terminating in an out-turned edge flange 12.

The line of severance is indicated at S in Figure 2, and at this point the inner edge of the frame member 9 is formed with an in-turned flange 13 which coacts with the shoulder 11 and flange 12 to provide a recess for the web of a sealing gasket. The inner exposed face of the frame member is shown formed with a gasket-supporting rib or shoulder 14, a central wall 15 and an outer raised portion or rib 16 which overlies and is secured to the flange 7.

If the connected liner and frame members of Figure 5 are compared with the sheet metal blank of Figure 2, it will be noted that the shapes are identical except that the frame member 9 in Figure 5 is reversed with respect to the liner.

The frame member and liner are shown as they appear after severance and prior to assembly in Figures 3 and 4 respectively. It will be noted

from Figure 3 that the frame has integral corner portions 17 formed substantially plain or flat while the outer edge portion 16 is formed with a plurality of screw holes 18, for accommodating screws 19 for attaching the outer edge of the frame to the adjacent flange 7 of the outer wall 5 and also for mounting a garnish or edge gasket 20, note Figure 5. The door liner in the design illustrated has a plurality of central flutes 21 and a surrounding flat or plain area 22.

In the assembling operation a plurality of clips 23 may be used for supporting the liner with respect to the door frame, a suitable thermal break or gasket 24 being provided between the parts at this point, the clips being formed or bent over after positioning the liner. A suitable compression gasket 25 is provided and has an inwardly projecting web 25a fitting in the recess defined by the wall 11 of the liner and in-turned flange 13 of the frame, said web including an overlap or strip 25b for receiving the flange 13. The outer edge 16 of the frame is joined to the in-turned flange of the door panel through the medium of screws 19, which also serve to hold the garnish gasket 20 in place. The door is provided with the usual insulation material 26.

From the foregoing it will be seen that the parts constituting the door consist essentially of the outer panel 5, the inner liner 8 and the frame 9, fabricated for assembly with the gasket and insulating strips in a simple and expeditious manner, the resultant door being relatively light, yet strong and rugged and capable of efficient service throughout the life of the cabinet. A frame member formed in this manner constitutes an integral one-piece unit, simplifying the assembling operation and rendering the door more sturdy.

While the blank of Figure 2 is preferably given a shape such that reversal of the frame with respect to the liner is required after severance it is conceivable that a shape could be given the blank such that reversal in relative positions would not be necessary; and that other changes in construction and design may be adapted as well as materials other than sheet metal used without departing from the spirit and scope of the invention, as defined by the appended claims.

I claim:

1. In refrigerator cabinet construction the method of constructing a door which consists in shaping a sheet metal blank in a manner such that the outer marginal edge of the blank defines a frame member for the door and the remaining portion of the blank defines a door liner offset from the plane of said frame and the inner and outer marginal edges of the frame and liner respectively terminate in parallel laterally spaced right angle flanges extending toward each other and are joined intermediate the planes of said frame and said panel member by a connecting flange, severing the frame portion from the liner at the junction of said connecting flange and one of said right angle flanges and assembling the parts with the frame member encircling said liner in reversed position with respect to said liner and anchoring a compression gasket between the frame member and the liner in the channel formed by said right angle flanges and said connecting flange.

2. The method of forming a refrigerator door comprising an inner liner and a surrounding frame separated by an insulating gasket, said method consisting in forming a unitary sheet to produce a blank including the liner and frame therefor in which the liner and frame are disposed in offset planes and adjacent edges of the liner and frame are each defined by a perpendicularly related flange extending toward the other thereof and in which said flanges are web connected in a plane intermediate the general planes of the liner and frame, severing the web to separate the liner and frame, reversing the frame in relation to the liner and assembling the liner and frame with the frame member encircling the liner and with said flanges in opposed relation and anchoring a compression gasket between the frame member and liner in the channel formed by said flanges.

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