Feb. 18, 1947. E. E. NOFZINGER 2,416,017

REFRIGERATOR CABINET

Filed Aug. 21, 1943 3 Sheets-Sheet 1

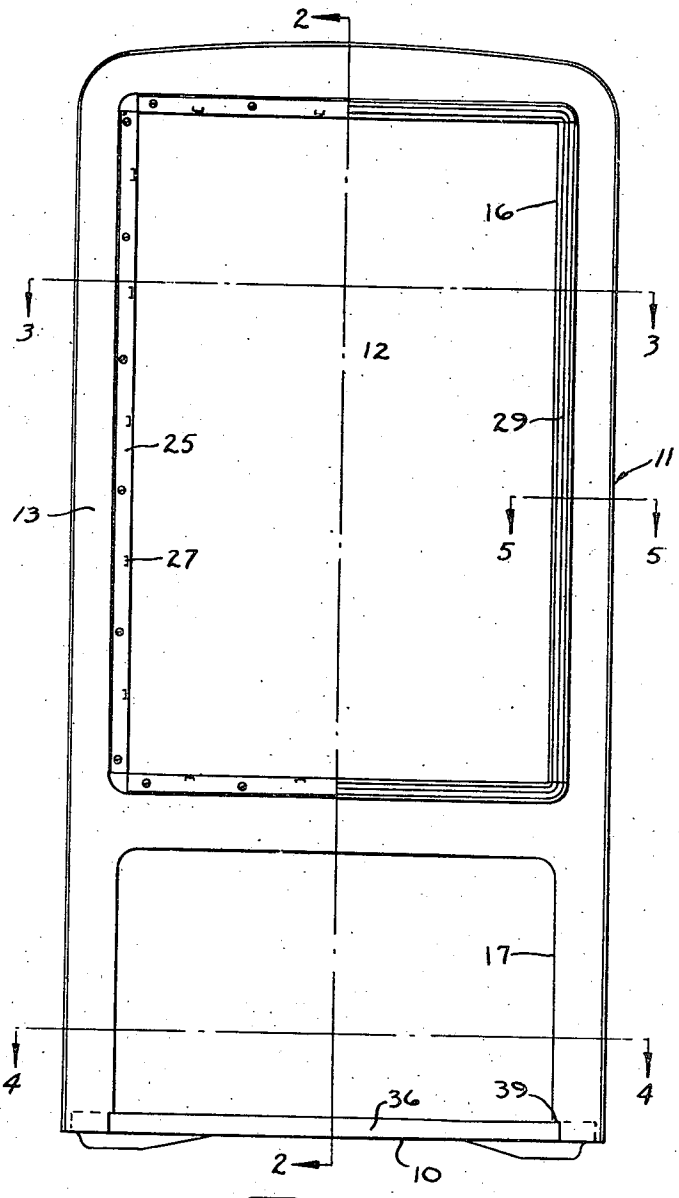


Fig. 1

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Filed Aug. 21, 1943 3 Sheets-Sheet 2

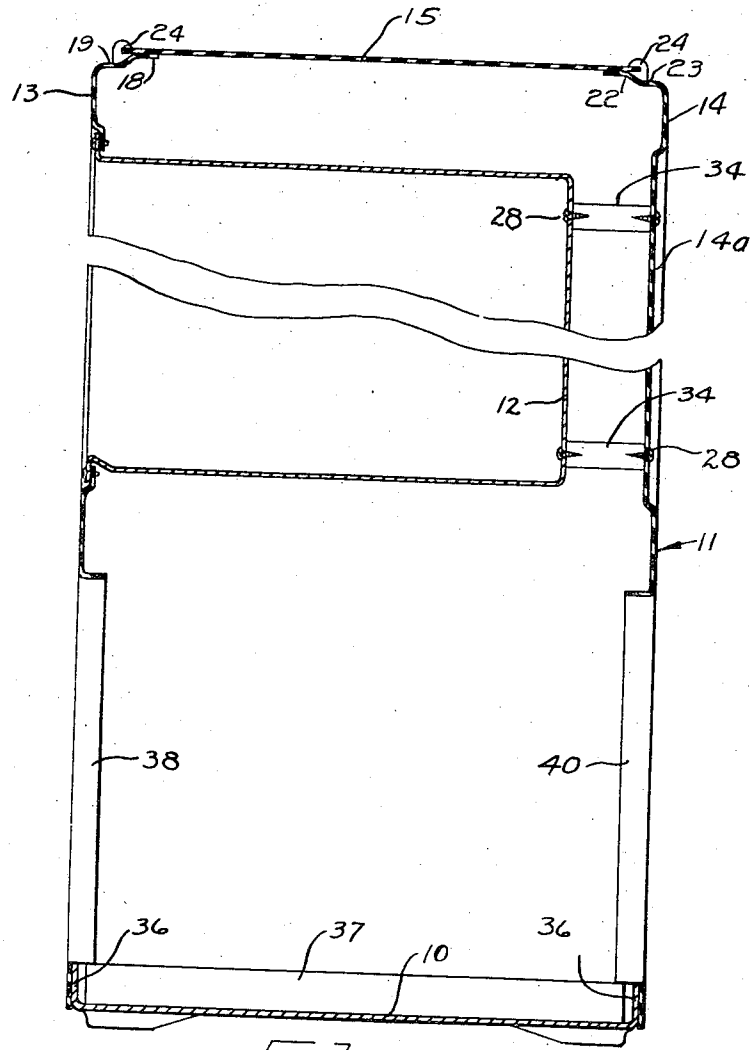


Fig 2

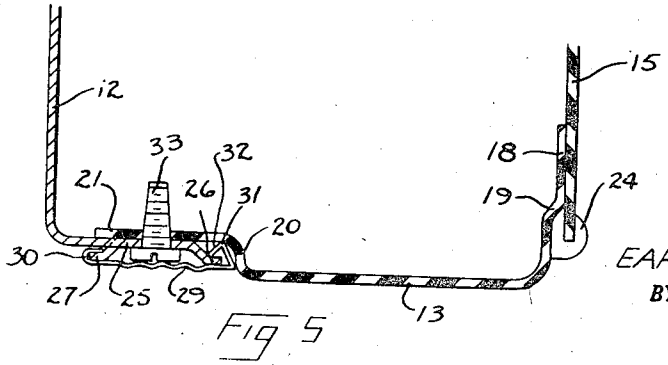


Fig 5

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Filed Aug. 21, 1943 3 Sheets-Sheet 3

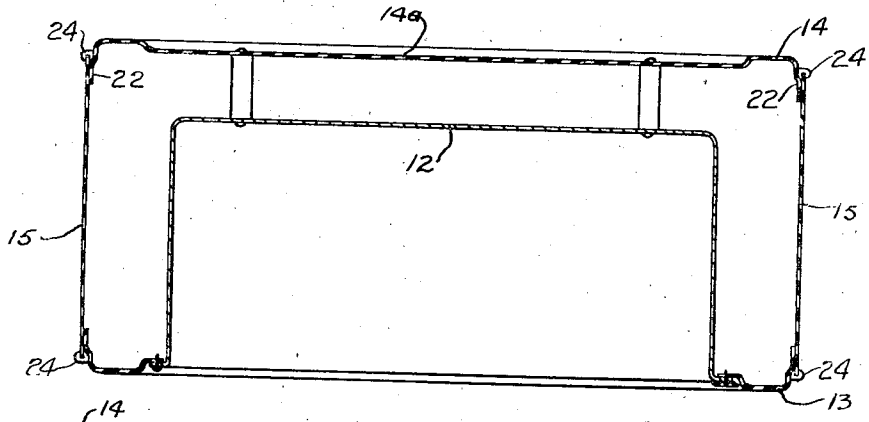


Fig. 3

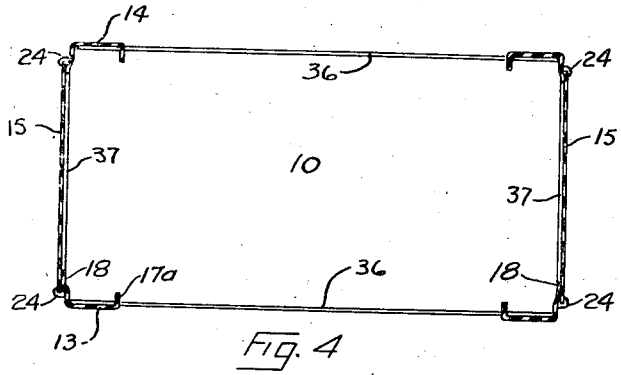


Fig. 4

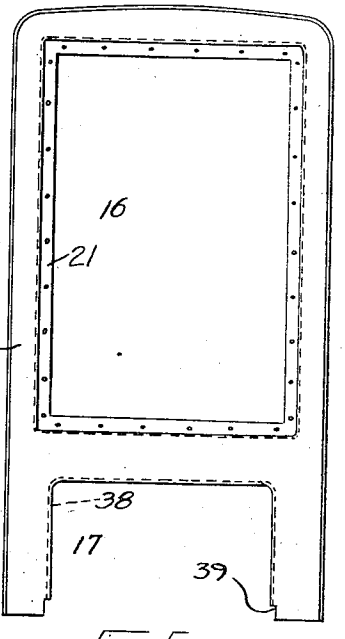


Fig. 6

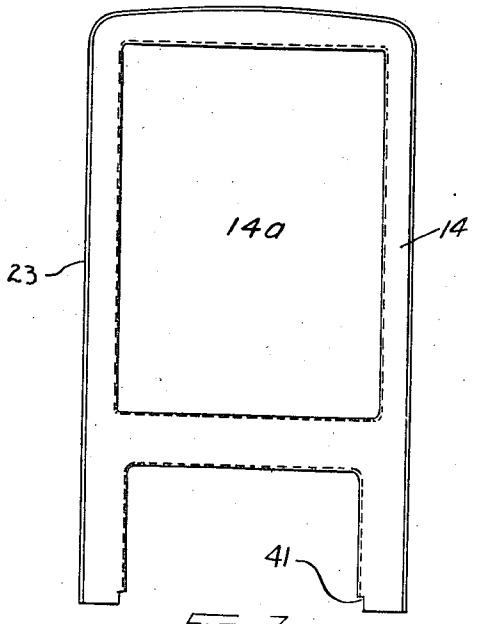


Fig. 7

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Patented Feb. 18, 1947

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UNITED STATES PATENT OFFICE

2,416,017

REFRIGERATOR CABINET

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Application August 21, 1943, Serial No. 499,474

1 Claim. (Cl. 220—9)

1

This invention relates to refrigerator cabinets and more particularly to the outer casings thereof.

Heretofore refrigerator cabinets have been constructed principally of steel. Plastic materials have many advantages over steel, some of which are light weight and low heat conductivity. Their use in cabinet structures, however, introduces many new problems.

The present invention has for its principal object the provision of a novel outer casing for a refrigerator cabinet so formed that it can be composed entirely of plastic materials.

Another object is to provide such an outer casing of a minimum number of parts.

A still further object is to provide novel means for ornamenting the cabinet and concealing the joints between various members thereof.

A further object is to provide a cabinet so formed as to minimize the number of dies employed in its fabrication.

These objects will more fully appear in the following specification when read in connection with the accompanying drawings, wherein:

Figure 1 is a front elevational view of a refrigerator cabinet, a portion of the trim moulding having been removed;

Figure 2 is a fragmentary cross-sectional view taken on substantially the line 2—2 of Figure 1;

Figure 3 is a cross-sectional view taken on substantially the line 3—3 of Figure 1;

Figure 4 is a cross-sectional view taken on substantially the line 4—4 of Figure 1;

Figure 5 is a cross-sectional view taken on substantially the line 5—5 of Figure 1;

Figure 6 is a front elevational view of the front wall of the cabinet; and

Figure 7 is a rear elevational view of the rear wall of the cabinet.

The cabinet shown in the drawings is formed to provide an insulated food storage compartment in the upper portion and a machinery compartment in the lower portion. Both compartments are open at the front and are provided with conventional doors not shown.

The cabinet comprises a base 10 of sheet metal, an outer casing 11 and a liner 12. The base is provided with upstanding front and rear flanges 26 and end flanges 37 about its perimeter to which the outer casing is attached. The flanges 36 are separated from the flanges 37 at the corners of the base to receive portions of the casing 11, as will more fully appear later. The base forms the support for the machinery in the machinery compartment.

The outer casing is composed of three parts, a

2

one piece front wall 13, a one piece rear wall 14, and a one piece intermediate wall 15. All three parts are fabricated from a suitable plastic materila formed to the desired shape and secured together by cement, as will be more fully pointed out hereinafter.

In this connection, it will be noted that the intermediate wall is shaped so as to eliminate all forming operations other than bending and that the front and rear walls are drawn or formed to provide all corners. Thus, no deep drawing or forming operations are involved in the fabrication of any part of the casing.

The front wall 13, in elevation, is of the shape indicated in Figures 1 and 6. It is provided with a large opening 16 into which the liner is fitted, and which affords access to the food storage compartment. Another opening 17 is formed at the lower end to permit access to the machinery compartment. As will be noted from Figures 2 and 3, the front wall is provided with a relatively wide rearwardly extending continuous flange 18 about its top and side edges. Another flange 38 extends rearwardly from the top and side edges of the opening 17. The flange 38 terminates above the lower end of the front wall, as indicated at 39, to receive the front flange 36 of the base 10. In the zone of junction of the front portion of the front wall and the flange 18 is a rabbet 19 for a purpose which will appear presently.

The laterally inner edge of the front wall 13 surrounding the access opening 16 is offset inwardly to form a rabbet 20 having a bottom 21 to which the liner 12 is attached as will be more specifically pointed out later.

The back wall 14 is a large sheet of plastic having a flange 22 about its top and side edges. In the corners a rabbet 23 is formed, the same as rabbet 19 in the front wall. An opening is formed in the lower end of the back wall opposite the machinery compartment. The top and side edges of the latter opening are bounded by a flange 40, the same as flange 38. It is cut away near its lower end in the same manner as flange 38. A large depression 14a is formed in the back wall. The size of the depression is the same as that of the opening 16 in the front wall plus the width of the portions 21 of the rabbets 20 therein.

It will be evident from the preceding description and the drawings that both the front and rear walls are identical except for the provision of the access opening 16 in the front wall. Thus, the two walls may be molded in the same die and the opening formed afterward by severing a portion from the original blank. As dies for mould-

ing plastics are very costly, the economy of making the walls alike is evident.

The intermediate wall 15 is generally U-shaped and is wrapped around the upright side edges and the top edges of the front and back walls. The front and rear edge portions of the intermediate wall overlap the flanges 18 and 22 on the front and back walls respectively, as shown in Figures 2 and 3, and are cemented thereto. The extreme edges of the intermediate wall overlie the rabbets 19 and 23 and are spaced from the bottoms thereof. Those edges are concealed, and the appearance of the entire cabinet is enhanced by channel shaped trim strips 24 which slip over the aforesaid edges of the intermediate portion and partially fill up the rabbets.

The lower extremities of the casing 11 are tied together and supported by the base 10. The flanges 38 and 40 fit over the upper edges of flanges 36 by reason of the cutaway parts 39 and 41. The flanges 18 and 22 at the sides of the front and rear walls extend into the gaps between flanges 36 and 37 and lie flush with the respective flanges 37. See Figure 4. The intermediate wall overlaps the flanges 37 at the outer side thereof, while the front and rear walls 13 and 14 overlie the front and rear flanges 36 on the base.

The liner 12 may be of metal or plastic material. It is of rectangular box shape, open at the front. A continuous flange 25 projects laterally outwardly and surrounds the open front of the liner. The extreme free edge of the flange 25 is offset forwardly at 26. A plurality of spaced apart tongues 27 are struck forwardly from the flange 25 adjacent its junction with the main body of the liner. The flange 25 overlies the bottom portions 21 of the rabbets 20 in the front wall when the liner is mounted in the cabinet. The flange 25 is secured to the bottom portions 21 by screws 33, whereby to partially support the liner. The remainder of the support for the liner 12 is provided by struts 34 between the rear wall of the liner and the back wall 14 of the cabinet and screws 28 which extend through those walls and are threaded into the struts. No other support is necessary.

The flange 25 and screws 33 are concealed, and the cabinet otherwise ornamented, by four trim mouldings 29, one for each side of the opening 16. The trim mouldings may be of polished flexible steel or a flexible plastic material. Their cross-section is shown in Figure 5. As will be evident, the edges of the mouldings are reversely bent at 30 and 31. Edge 30 forms a relatively deep channel that hooks over tongues 27. Edge 31 is reversely bent twice so that the free edge 32 points out toward the front of the moulding. The reversely bent free edges of the moulding are spaced apart a distance slightly less than the distance between the outer edge of the offset portion 26 of the flange 25 and the free edges of tongues 27. Thus, when the moulding is applied to the cabinet the edge 30 is first hooked over the tongues 27 and the edge 31 is then forced inwardly over the offset 26. The extreme edge 32 will yield sufficiently to snap by the portion 26 and will then return

to the position shown in Figure 5 wherein it is hooked behind portion 26 to hold the moulding in place.

It will be apparent from the foregoing that this invention provides a novel form of casing for a refrigerator cabinet composed of but three parts, all of which are formed of moulded plastic material. All joints between the three parts are concealed by trim members applied so that no fastening means is evident. The casing is light in weight, is easily assembled, and requires no decorative coating of paint or enamel.

Each of the wall portions 13, 14 and 15 serves the triple functions of (*a*) support, (*b*) insulation, and (*c*) ornamentation.

The scope of the invention is indicated in the appended claim.

I claim:

A refrigerator cabinet wall structure comprising a front wall member formed of insulating material, an outer casing member, and a liner member spaced from and parallel to said outer casing member, said front wall member having a rearwardly extending flange at its laterally outer edge and a forwardly opening rabbet at its laterally inner edge, the front portion of said outer casing member overlying said flange and secured thereto with the extreme forward extremity of said casing member spaced from said flange, said liner member having a laterally outwardly extending flange seated in said rabbet, means connecting said liner flange to said front wall member and separate mouldings overlying the liner flange and the forward extremity of said casing member.

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