

Sept. 21, 1943.

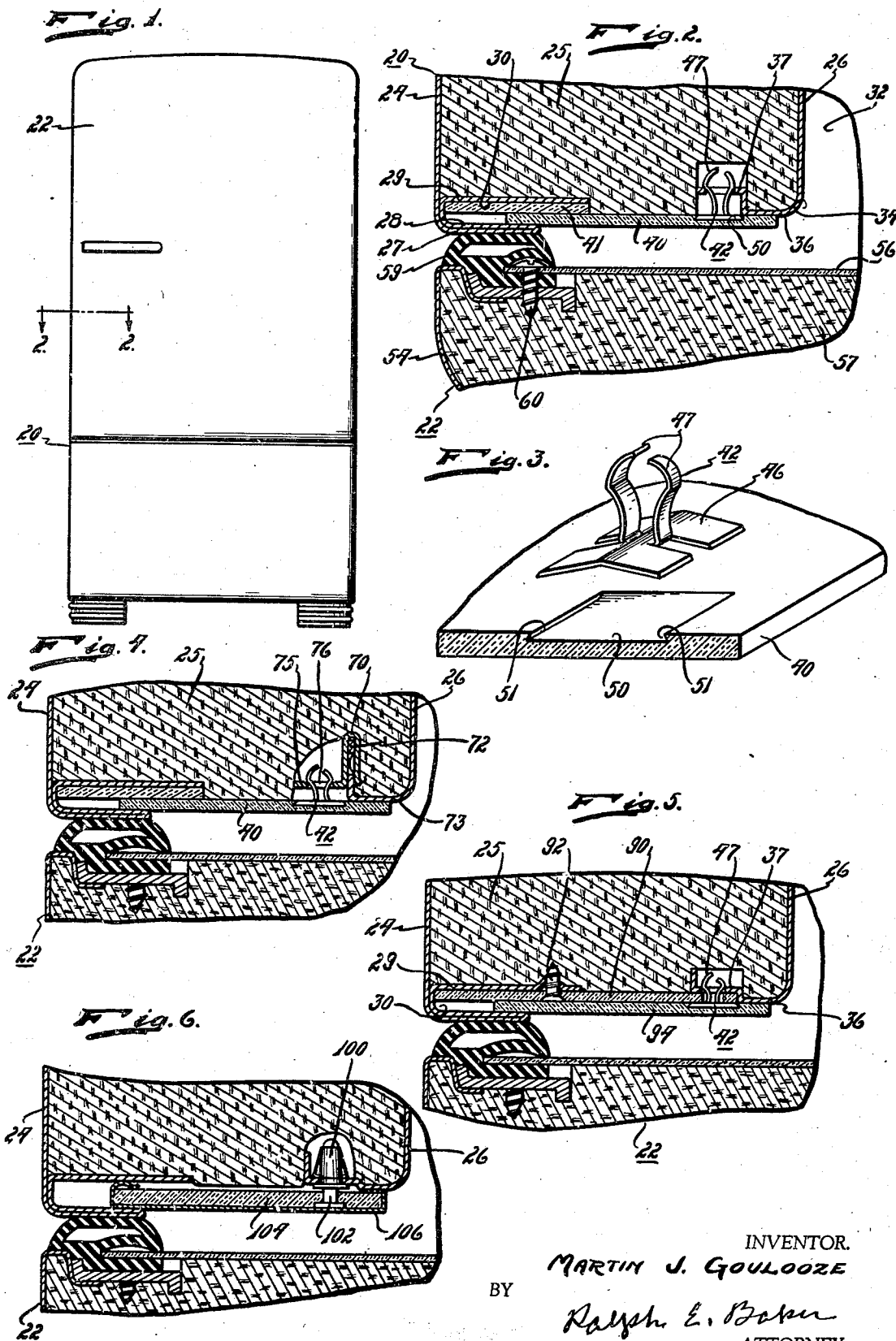
M. J. GOULOOZE

2,329,754

REFRIGERATING APPARATUS

Filed May 9, 1941

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 7.

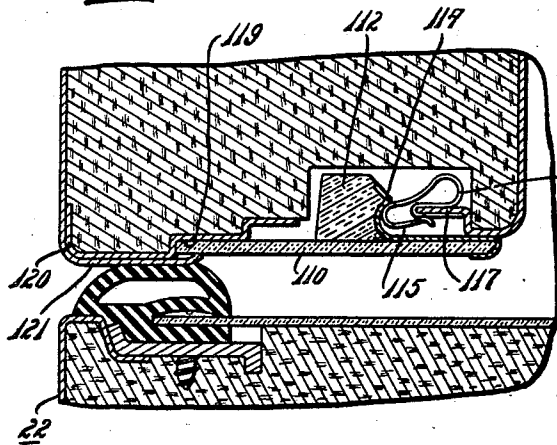


Fig. 8.

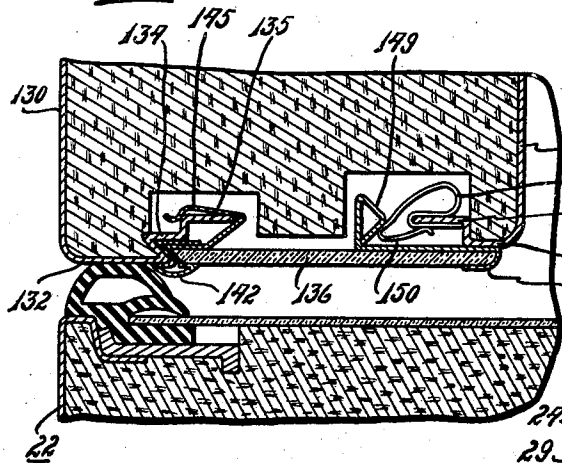


Fig. 11.

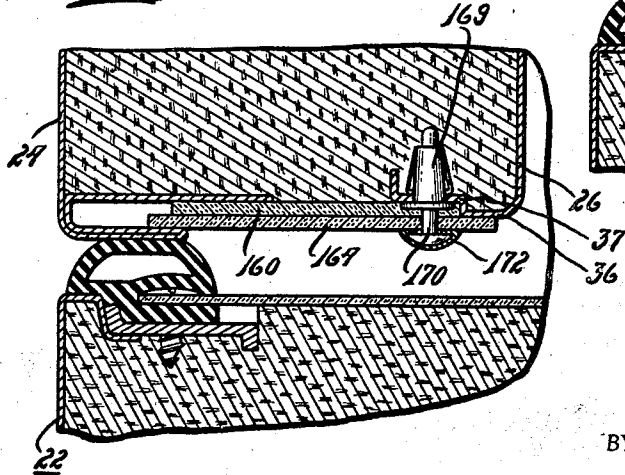


Fig. 9.

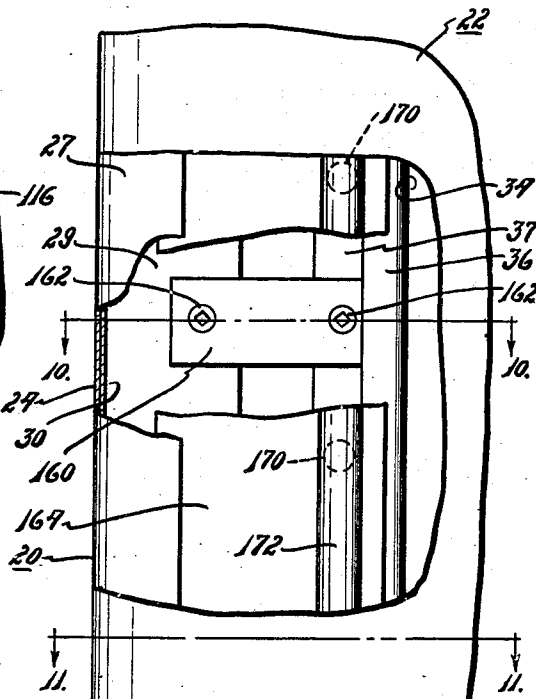
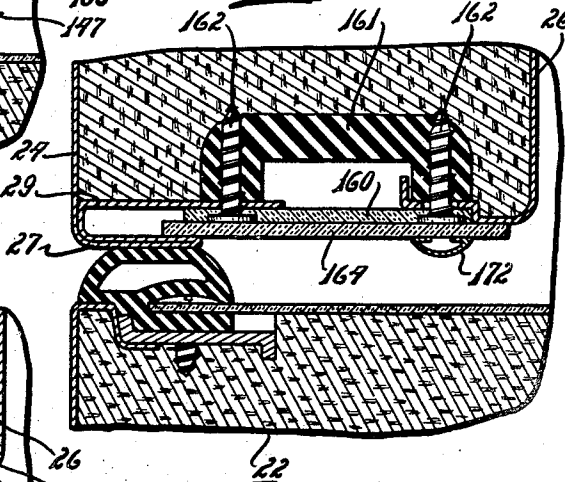


Fig. 10.



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2,329,754

REFRIGERATING APPARATUS

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Application May 9, 1941, Serial No. 392,613

1 Claim. (Cl. 220—9)

The present invention pertains to a refrigeration apparatus and more particularly to an improved refrigerator cabinet construction.

It is an object of the present invention to provide a breaker strip for interconnectively joining the edges of the inner and outer wall of a refrigerator cabinet which is readily attached by use of resilient members.

It is another object of the present invention to provide an improved breaker strip construction which is readily attachable without the aid of tools.

It is a further object of the present invention to provide a cabinet construction whereby the breaker strip forms a portion of the front wall of the cabinet to extend peripherally adjacent to a door opening.

The invention itself, however, both as to its organization, and its operation together with additional objects and advantages thereof, will best be understood from the following description of specific embodiments when read in conjunction with the accompanying drawings, in which:

Fig. 1 is a front elevational of a refrigerator cabinet;

Fig. 2 is a fragmentary cross sectional view taken along line 2—2 of Fig. 1;

Fig. 3 is a perspective view of the fastening means used in the invention shown before assembly to the breaker strip shown in fragmentary cross section therefrom;

Figs. 4 through 8 are fragmentary cross sectional views of various modified arrangements embodying features of my invention;

Fig. 9 is a fragmentary elevational view of a refrigerator cabinet with parts broken away and parts shown in section;

Fig. 10 is a fragmentary cross sectional view taken along line 10—10 of Fig. 9; and

Fig. 11 is a fragmentary cross sectional view taken along line 11—11 of Fig. 9.

Shown in the drawings is a refrigerator cabinet 20 having a door 22. The cabinet is formed of an outer sheet metal casing or shell 24 and an inner sheet metal shell, casing or liner 26. Suitable insulation 27 is interposed between the shells 24 and 26.

The outer casing 24 forms the sides, top and, if desired, the rear wall of the refrigerator. It is bent at a marginal distance from its front edge at right angles to the side portion to provide a portion 27 forming the front wall of the refrigerator cabinet. The face portion 27 is formed with extended metal which is doubled upon the portion 27 to extend reversely, as at 28, thence

rearwardly adjacent to the side wall of the casing a determinable distance upon which it is bent at right angles forming a rear portion 29 substantially parallel to the face portion 27. The rear portion 29 forms with the double face portion a recess or pocket 30. By this form of construction the front edge or front wall is reinforceably strengthened by being formed of double thickness.

The inner liner 26 which forms the walls of a food storage compartment 32 is marginally bent adjacent the door opening 34 to provide a laterally extended flange 36. The outer edge portion of the flange 36 is offset, as at 37. The flange 36 is substantially in parallel planular alignment with the face portion 27 of the outer shell with their edges terminating a substantial distance apart.

Extending from the face portion 27 to the lateral flange 36 is a breaker strip 40 confined on one edge thereof to the pocket 30 and clamped on the other edge to the flange 36. The breaker strip may be made of plastic, fibrous material, "Bakelite" or any suitable non-hygroscopic, non-metallic material. Similar breaker strips are positioned along the other side of the cabinet on the front wall adjacent the opening 34 thereof, and immediately above the food storage compartment at the top of the cabinet, and also immediately below the food storage compartment. Since the principle of attaching the breaker strip 40 to the cabinet and the principle of attaching the other breaker strips are the same, I have only shown in detail the breaker strip 40 and the way it is attached to the cabinet.

Preferably the breaker strip 40 is made of relatively thin material. To snugly fit an edge of the breaker strip 40 in the pocket 30 a filler pad 41 is secured by adhesive to the rear portion 29 so as to hold the breaker strip in snug contact to the portion 29. The opposite edge of the breaker strip is held in snug contact to the lateral flange 36 by means of snaps 42 carried by the breaker strip which are adapted to be received in openings 44 formed in the offset portion 37 of the flange 36. The snap 42 is formed with a base 46 from which is formed upwardly extending opposed resilient arms 47. The arms 47 are curved outwardly in opposed relation a greater portion of their length with the ends turned to extend towards each other. The ends serve to guide the resilient arms 47 into the opening 44 and extend beyond the offset portion 37 with the curved section frictionally locking within the

opening. The resilient arms 47 are tensioned to move outwardly in opposite relation.

The snap 42 is affixed to the breaker strip by first bending the base portion 46 into a modified V-form so as to draw inwardly the ends of the base. The snap is then placed so that the base is received in recess 50 which is formed in the rear side of the breaker strip. By pressing downwardly along the crease or bend, so as to flatten the base, the ends will move outwardly into the bevel edge portion 51 of the recess thereby locking the snap against withdrawal. By this arrangement any desired number of snaps may be secured at certain intervals to the breaker strip. Thus the breaker strip can be easily and quickly affixed into position by first insertion of one edge into binding engagement in the pocket 30 and the opposite edge moved towards the flange 36. The snaps locking this edge to the flange 36.

Any door of suitable construction may be used with the cabinet. As shown in the drawings, there is provided a door 22 having an outer metallic shell 54 and an inner panel 56. The inner panel 56 is formed of plastic, fibrous material, or other low heat conducting material. Insulation 57 is interposed between the shell and panel.

Secured to the door is a gasket 59 that extends around its perimeter and adapted for engagement with the front part 27 of the cabinet. The gasket is secured by a tongue which lies beneath the inner panel by means of screw 60 which also secures the panel to the shell 54. The screw head 60 is covered by overlapping the gasket thereon. The door gasket 59 is arranged to contact the front part of the cabinet to form a seal so as to prevent air entering the food storage compartment.

The food storage compartment 32 is cooled by means of a refrigerating system (not shown).

In Fig. 4 there is shown a U-shaped member 70 adapted to embrace opposite sides of the rearwardly directed portion 72 of the flange 73. The member 70 is provided with an outwardly bent portion 75 having openings 76 for the reception of the snaps 42. The member 70 is fixedly attached to the flange 73 to provide means for readily attaching the breaker strip without the arms 47 coming into contact with the enamelled portion of the liner.

In Fig. 5 a tie bar 90 formed of insulation material is secured from the flange 36 into the pocket 30 and secured by screw 92 to the rear portion 29 of the outer shell or casing of the cabinet. The tie bar 90 further serves to prevent lateral movement of the liner relative to the outer shell. A breaker strip 94 extends across the front wall over the tie bar and is similarly secured as described in the preferred form.

In Fig. 6 a snap comprising a female portion 100 is secured in the flange of the liner and is adapted to receive the male portion 102 carried by the breaker strip 104. The face portion of the breaker strip is covered by a relatively thin gauge metallic member 106 having low heat conductivity, such as stainless steel or the like.

In Fig. 7 the breaker strip 110 is provided with a rearwardly extending block 112 provided with a lip 114 adapted to be engaged by the looped

section 115 of a spring member 116 securely affixed to flange 117 of the liner. It will be noted that one edge of the breaker strip 110 is received in a pocket 119 formed by a second member 120 which is secured by weld to the rear side of the face portion 121 of the outer shell of the cabinet.

In Fig. 8 the outer shell 130 is turned inwardly to provide a face portion 132 whose marginal edge is offset in steps 134 and 135. A breaker strip 136 extends flush from the face portion 132 over into flush contact against the flange 139 of the liner 140. One edge of the breaker strip 136 is secured to the outer shell by a bead 142 adapted to overlie the edge between the breaker strip and face portion 132. The bead 142 is provided with rearwardly extending portions of which portion 145 is formed into a hook to engageably lock over the step 135. The opposite edge of the breaker strip is frictionally secured by means of a finishing strip 147 that extends around the edge of the breaker strip and rearwardly along its rear side to be formed into a triangularly shaped lip projection 149 adapted to be engaged by looped end 150 of a spring member 151 securely affixed to the offset portion of flange 139.

In Figs. 9 to 11 the outer shell and liner are similarly formed as shown and described for the preferred form. The outer shell and liner are secured in spatial relation by their flanges by the tie bars 160 and 161 spaced on opposite sides of the flanges and secured by screws 162. A breaker strip 164 extends from the pocket formed in the outer shell to the face of flange formed from the liner. The breaker strip is secured by snaps having a female portion 160 affixed in the flange of the liner and a male portion 170 carried by the breaker strip. The head of the male portion 170 is concealed within a bead 172 that extends longitudinally along the breaker strip.

Each of the embodiments shown in Figs. 4 to 11 inclusive may be used in cabinet construction of the type shown in Figs. 1 and 2.

While I have shown and described the preferred forms of my invention, I do not wish to limit myself to the precise details as shown but wish to avail myself of such variations and modifications as may come within the scope of the appended claim.

I claim:

A refrigerator cabinet construction comprising inner and outer metallic walls, the edges of said walls terminating in spaced apart opposed relation, the edge of said outer wall having a pocket formed rearwardly of its face portion, a breaker strip having one edge extending into said pocket and the other edge thereof extending over the edge of the inner wall, a second breaker strip extending across the front face of the first breaker strip with one edge located in said pocket and the opposite edge extending across the edge of the inner wall and means carried by said second named breaker strip extending through an opening in the first named breaker strip and an opening in said inner wall for locking said breaker strips to said inner wall.

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