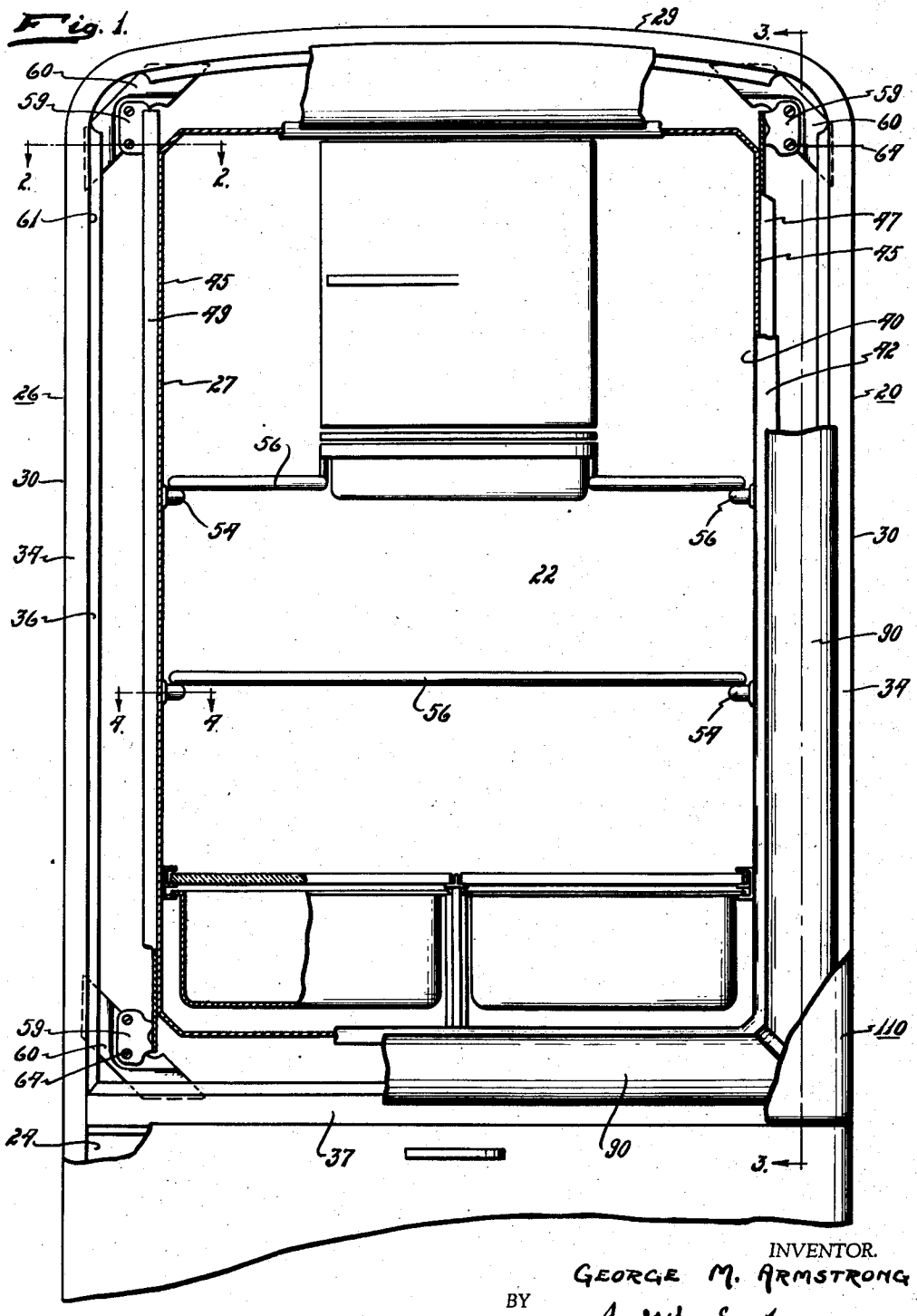
Oct. 2, 1945. G. M. ARMSTRONG 2,385,908

REFRIGERATING APPARATUS

Filed July 18, 1941 2 Sheets-Sheet 1

Fig. 1.



INVENTOR.
GEORGE M. ARMSTRONG

BY
Ralph E. Baker
ATTORNEY

Oct. 2, 1945. G. M. ARMSTRONG 2,385,908

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Filed July 18, 1941 2 Sheets-Sheet 2

Fig. 2.

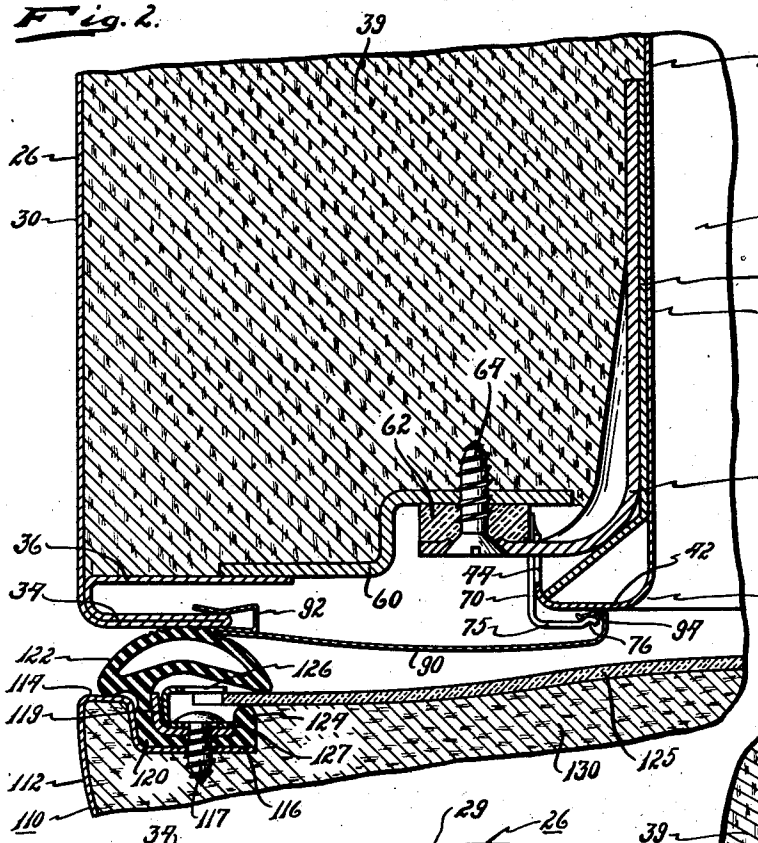


Fig. 3.

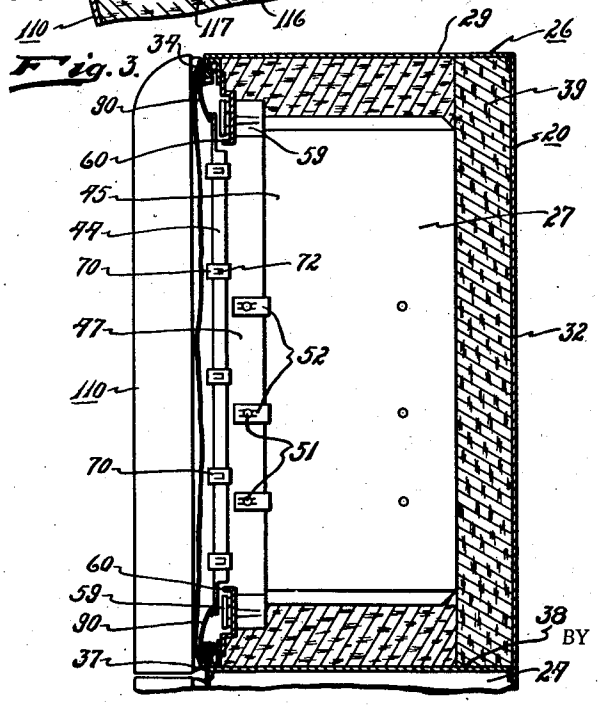
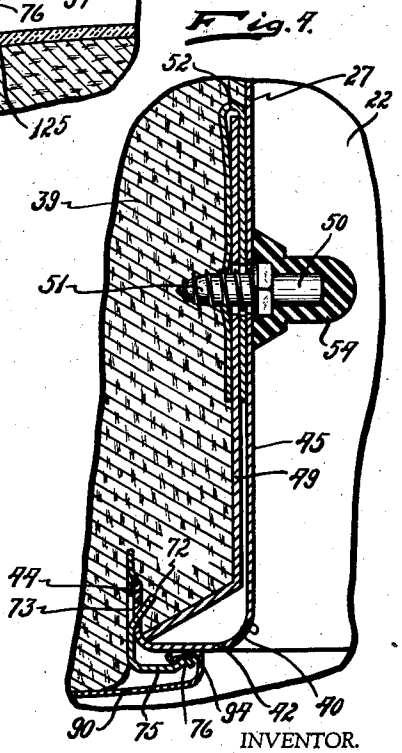


Fig. 4.



INVENTOR.
GEORGE M. ARMSTRONG
BY
Ralph E. Yoder
ATTORNEY

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UNITED STATES PATENT OFFICE

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REFRIGERATING APPARATUS

George M. Armstrong, Grand Rapids, Mich., assignor to Nash-Kelvinator Corporation, Detroit, Mich., a corporation of Maryland

Application July 18, 1941, Serial No. 402,904

1 Claim. (Cl. 220—15)

The present invention relates to refrigerating apparatus, and more particularly to cabinet construction.

It is an object of the present invention to provide in a cabinet having an inner and outer casing an improved means for the securing and supporting of the inner casing to the outer casing.

It is another object of the present invention to secure and support the inner casing comprising the food storage compartment by vertical rails which are attached by their ends to the outer casing to provide a sturdy structure without chipping or otherwise marring the enamel of the inner casing.

The invention itself, however, both as to its organization and its method of 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:

In the drawings:

Fig. 1 is a front elevational view with parts broken away and parts shown in section of a cabinet embodying the present invention;

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

Fig. 3 is a cross sectional view taken along line 3—3 of Fig. 1; and

Fig. 4 is a fragmentary cross sectional view taken along line 4—4 of Fig. 1.

Shown in the drawings is a refrigerator cabinet 20 having a food storage compartment 22 and a machine compartment 24 insulated therefrom.

The cabinet 20 comprises an outer shell, casing or liner 26 and an inner shell or liner 27. The outer casing 26 comprises top wall 29 and side walls 30 formed as a unitary structure being rolled from a single sheet of metal and to which is secured by weld a panel 32 forming the rear wall of the cabinet. The front wall is formed by flanging inwardly the marginal edge of the top and side walls, as at 34, thence doubling the metal upon itself to form the wall 34 of double thickness and continuing the metal adjacently along the side and top wall a determinable distance to thence be bent to extend spatially parallel to the front wall portion, as at 36. A cross member 37 is secured in alignment with the front wall 34 between the side walls 30 and is similarly formed having a wall of double thickness spaced by a parallel wall in alignment with the wall 36. Secured to the rear of member 37 and extending to the rear panel 32, and between the side walls 30 is a partition wall 38 which divides the casing 26 into upper and lower compartments. The wall 38 is preferably welded to the side wall, rear wall and portion 37. The lower compartment serves as the machine compartment for a refrigerating unit, and in the upper compartment is positioned the inner liner 27.

The liner 27 comprises of top, rear, bottom and side walls which are in spatial relation to the walls of the outer casing and between which are positioned suitable heat insulation material 39. The liner forms the walls of the food storage compartment 22 and is preferably coated with vitreous enamel, such as porcelain. An access opening 40 to the food storage compartment is formed in the front wall of the liner which is formed by flanging outwardly the top, bottom and side walls, as at 42. The marginal edge of the front wall 42 is bent at right angles to form a rearwardly extending flange 44 parallel to the sides of the liner.

Extending vertically adjacent to a respective side wall 45 of liner 27 are supporting rails 47 and 49. The rails are positioned adjacent the forward edge of the side walls, and its forward longitudinal edge is marginally bent to extend angularly as a wedge into the corner formed by the front wall 42 and the flange 44. The rails are each affixed to the walls 45 by means of studs 50 having threaded shank 51 that is adapted to extend through opening in the side wall 45 and thread into a speed nut 52 formed as a U-shaped clip and frictionally attached to the rail. The stud 50 projects into the food storage compartment and is provided with a covering 54 to serve as a support for a respective shelf 56. By thus attaching the inner liner to the outer casing, it has been found that no strain is placed upon the forward corners or other parts of the liner, and accordingly the possibility of chipping the porcelain from the liner is obviated.

Affixed at opposite ends of the rails are L-shaped brackets 59 having one leg thereof extending flush against the rail and secured thereagainst by weld, and the other extending outwardly at right angles to lie over a respective gusset plate 60. A gusset plate is secured in each of the four corners of the opening 61 formed in the front wall of the outer casing, and is secured by weld to the rear side of the flange 36. Each of the gusset plates are formed with inwardly pressed portion to provide a recess for insertion of insulation spacers 62 between the

gusset and bracket 59 which are secured together by means of screws 64.

The above described arrangement of parts permits an easy and quick assembling of the cabinet. The insulation material is packed against the walls of the casing 26 after which the liner 27 is inserted through the opening 61 into the casing with the brackets 59 aligning with a respective gusset plate for the threading of the screws 64 therethrough.

Clamped at spatial intervals along the flange 44 are L-shaped members 70 having tongues 72 projecting through a respective opening 73 formed in flange 44 to frictionally engage the rear face of the flange. The upper portion of the member 70 is flared to lock over the edge of the flange 44 preventing withdrawal therefrom. A leg 75 of member 70 extends spatially parallel to the front wall 42 and is formed with a radiused end 76 over which is adapted to lock an edge of the breaker strip 90 extending between and joining the front wall portion of the liner with the spaced front wall portion of the casing.

The breaker strip 90 is preferably formed of stainless steel or the like and is preferably of .010 inch thick metal though other thickness material may be used and suitably coated with enamel, or plated. Similar breaker strips are positioned along the other side of the cabinet on the front wall adjacent to the opening 40 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 other breaker strips is the same, there is only shown in detail the breaker strip 90 and the way it is attached.

The breaker strip extends preferably in a convex curve from the edge of the outer shell to the front wall of the liner. It is clampingly attached to the edge of the front wall 34 by forming the adjacent longitudinal edge U-shaped, as at 92, adapted to embrace opposite sides of the double wall 34. The opposite longitudinal edge is flanged inwardly, as at 94, and tensioned between the surface of wall 42 and leg 75 providing an interlocking relation of the flange 94 with the radiused end 76.

The opening 40 to the food storage compartment 22 is closed by a hinged door 110. The door 110 comprises an outer shell 112 having upwardly extending sides which are bent inwardly thereof to form a peripherally extending ledge 114 with the extended metal bent to form an insetted flange 116. Secured by screws 117 and a metal strip 119 to the flange 116 is tongue 120 formed integrally with the door gasket 122. The tongue 120 is provided with an upwardly extended edge portion 124 upon which is adapted to rest inner panel 125 forming the inner side of the door. The panel 125 is formed of non-heat conducting composition which has the tendency to absorb moisture condensed thereon, and results in a linear expansion of the panel. To permit this expansion the edge of the panel engages under leg 126 of a U-shaped member 127 which is secured by screw 117 to flange 116. The panel is tensionally held between the leg 126 and the raised edge 124, the tension being sufficient to prevent shifting or sliding movement of the panel 125 and is not binding to prevent linear expansion. The door gasket 122 extends in overlapping relation over the ledge 114 and across the marginal edge of the panel 125. The gasket is adapted to seal against the front wall 34 of the cabinet so as to prevent air entering the food storage compartment.

Suitable heat insulation material 130 is provided between the spaced inner and outer panels of the door.

While I have shown and described the preferred form 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:

In a refrigerator cabinet having inner and outer casings in spaced relation with heat insulation therebetween, an opening formed in the front wall of said outer casing, an opening formed in the front wall of said inner casing, the front walls of said inner and outer casing being arranged in planar alignment terminating in spaced relation to each other, the front wall of said inner casing having its edges bent rearwardly to form a U with a side wall of said inner casing, vertically extending rails adjacent each of the side walls of said inner casing and at the front thereof with each rail having its forward portion bent to extend diagonally across said U to form a wedge for maintaining said rail against the side of said inner casing, means attaching said rails to said side walls of said inner casing, gusset members secured across each corner in the opening of the front wall of said outer casing, outwardly projecting legs provided at opposite ends of said rails for attaching to a respective gusset, and a relatively thin breaker strip for joining the front walls of said inner and outer casing.

GEORGE M. ARMSTRONG.