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E. D. DRAKE

2,343,447

REFRIGERATING APPARATUS

Filed July 18, 1941

Fig. 1.

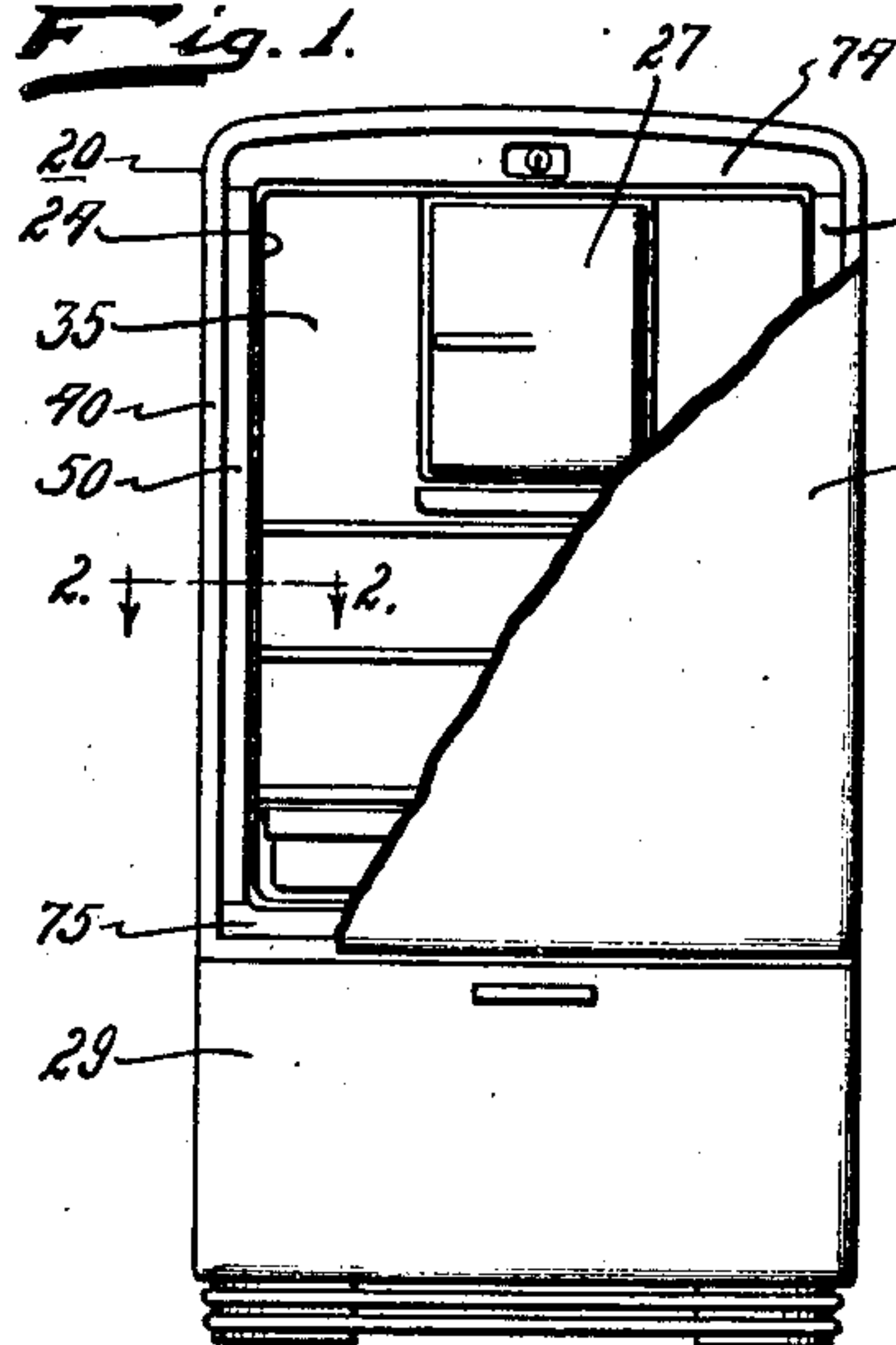


Fig. 3.

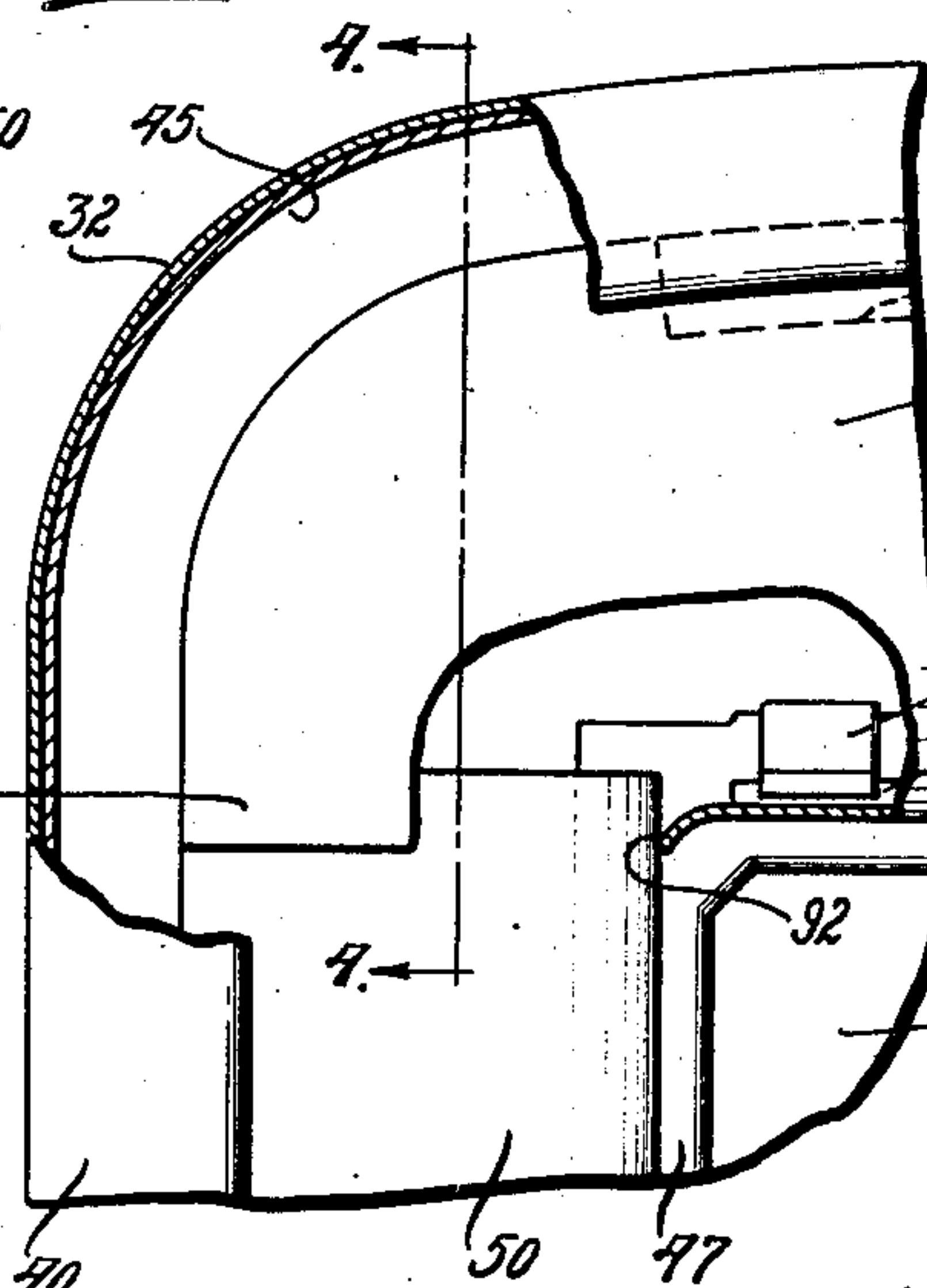


Fig. 4.

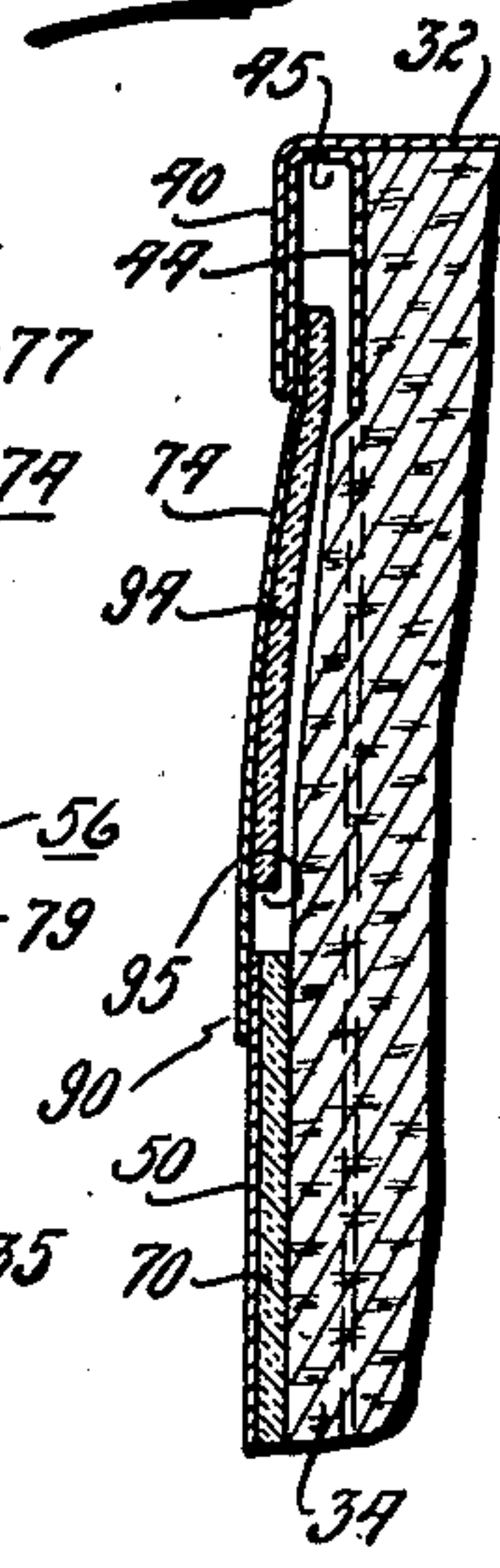


Fig. 2.

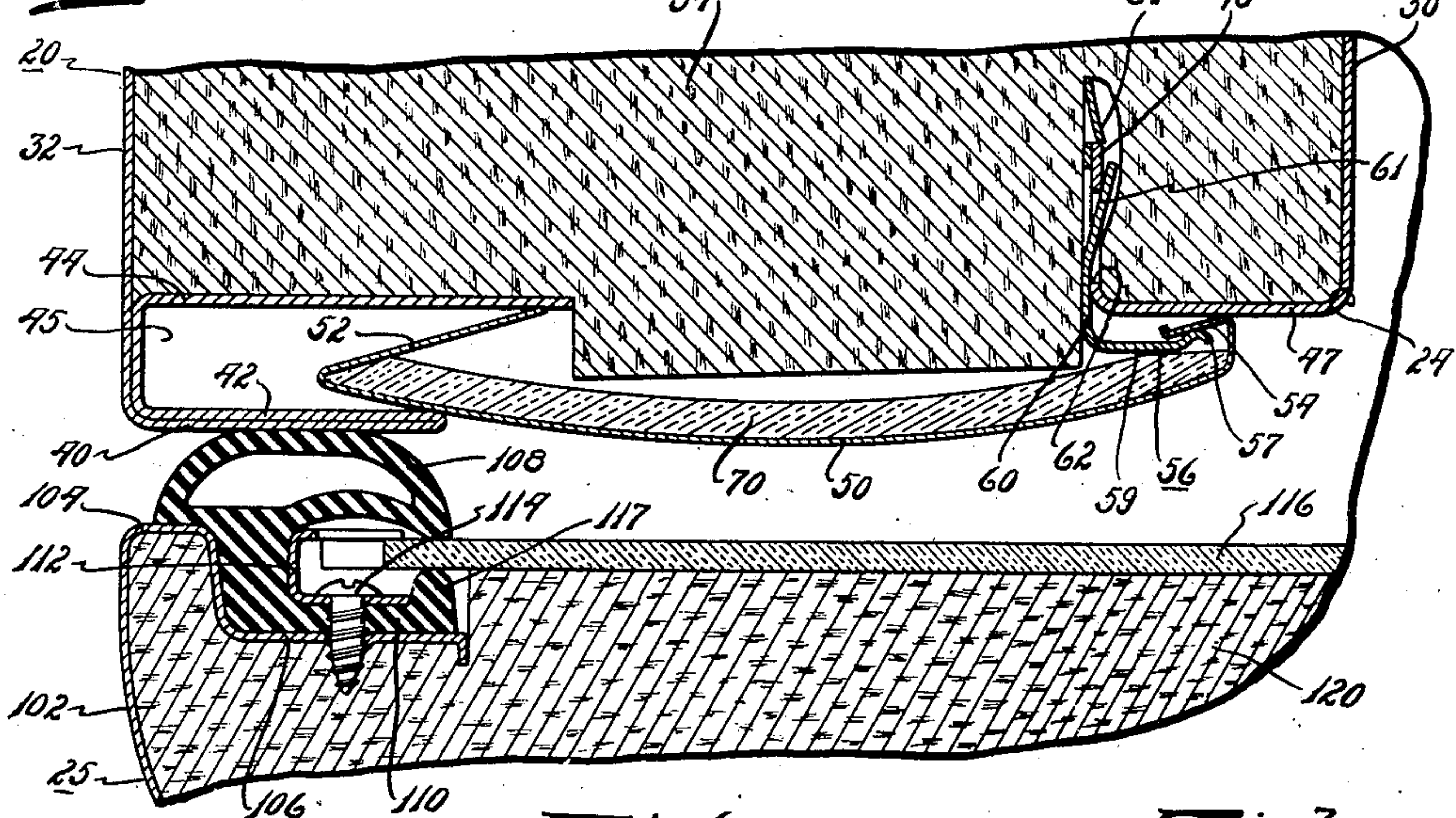


Fig. 5.

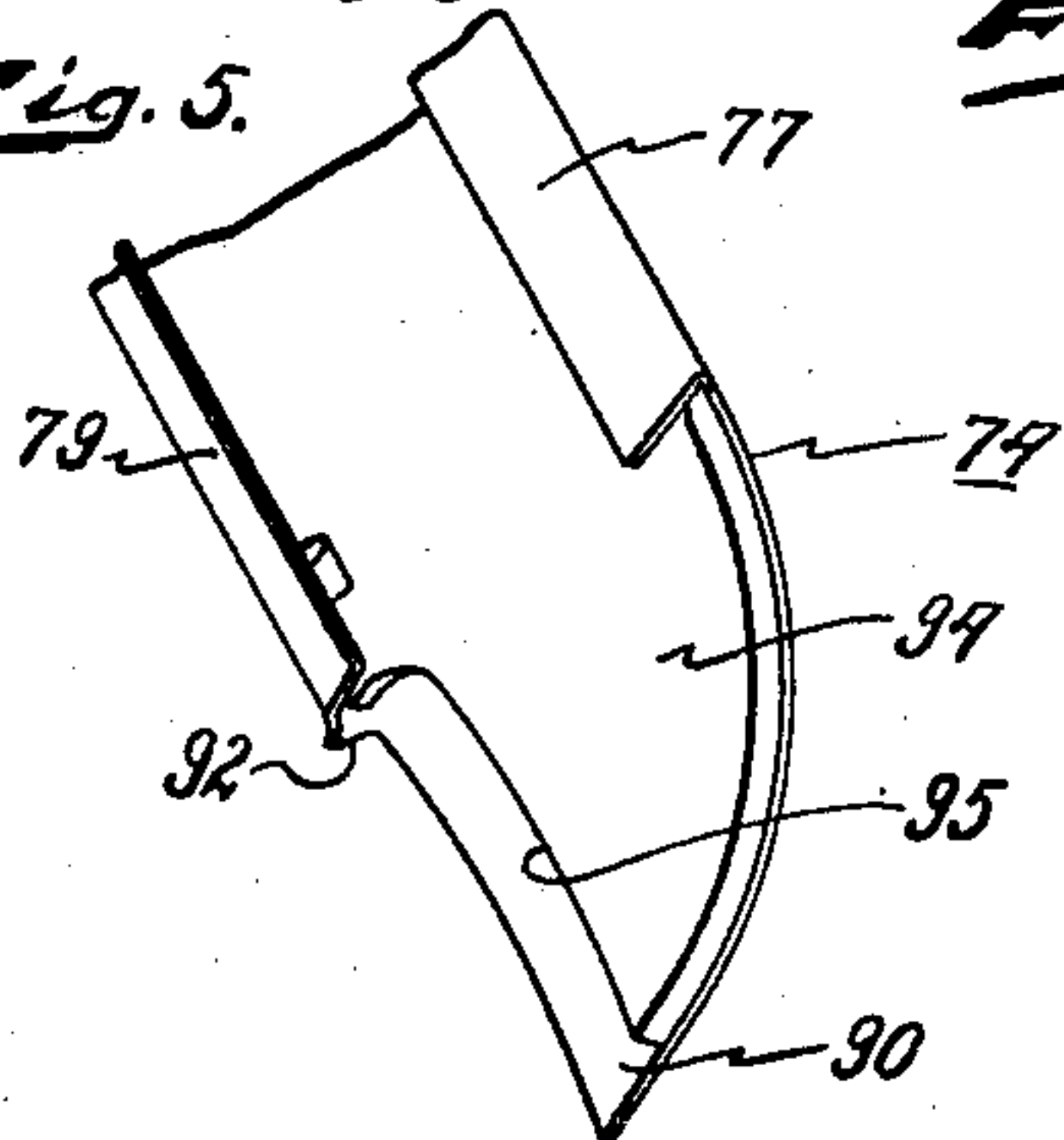


Fig. 6.

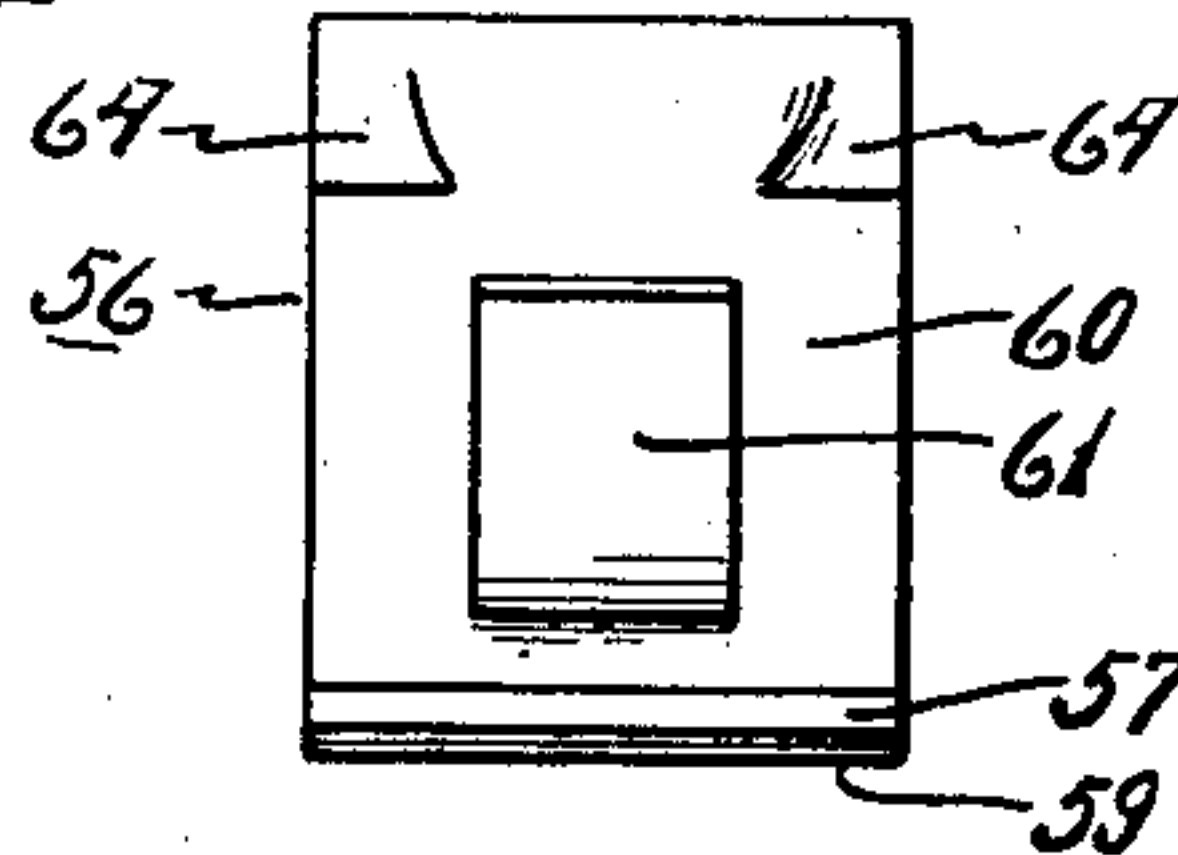
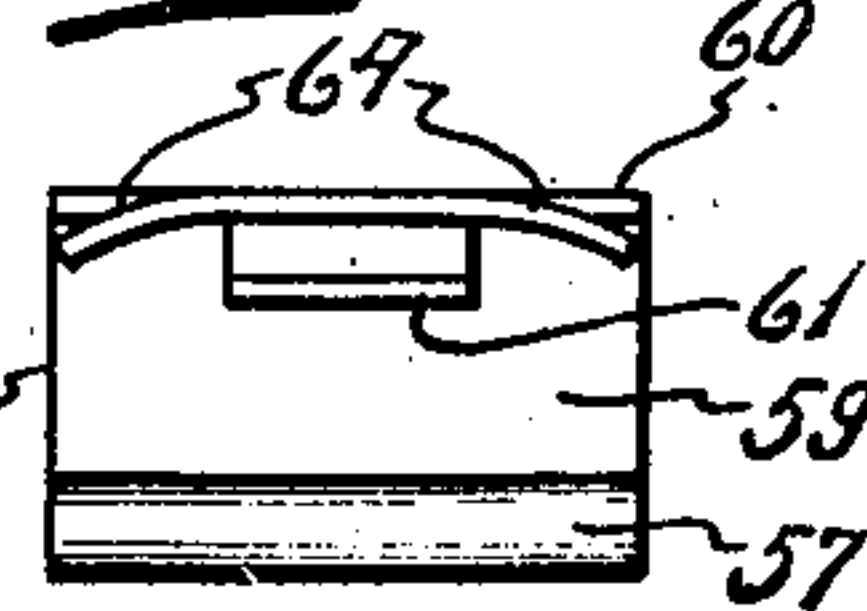


Fig. 7.



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UNITED STATES PATENT OFFICE

2,343,447

REFRIGERATING APPARATUS

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Application July 18, 1941, Serial No. 402,902

1 Claim. (Cl. 220—9)

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

It is an object of the present invention to provide an improved arrangement for the securing of breaker strips to the metal walls of a refrigerator cabinet.

It is another object of the present invention to provide a metallic breaker strip formed of relatively thin material having relatively low heat conduction, and reinforcing the breaker strip by cementing to its rear side non-heat conducting material.

It is a further object of the present invention to provide an arrangement for the self locking of the breaker strip to the metal walls of the cabinet by providing concealed fastening members to hold the breaker strips, the fastening members being also self-lockingly attached so that affixing means such as screws and the like are eliminated in the present construction thereby facilitating assembling and permitting a smooth exterior appearance.

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 drawing, in which:

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

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

Fig. 3 is a fragmentary front view of a corner section of the refrigerator cabinet with parts broken away and parts shown in section;

Fig. 4 is a fragmentary cross-sectional view taken along line 4—4 of Fig. 3;

Fig. 5 is a fragmentary perspective view of a breaker strip;

Fig. 6 is a front view of a fastening member; and

Fig. 7 is a top plan view of the fastening member.

Shown in the drawing is a refrigerator cabinet 20 having a food storage compartment 22 and an opening 24 in the front wall to provide access to the food storage compartment. The opening 24 is closed by a swingably mounted door 25.

The circulating air in the food storage compartment is cooled by its contact with evaporator 27 which is connected to a suitable compressor-condenser unit (not shown) located in a second

compartment beneath the food storage compartment to which access may be had through closure member 29.

The cabinet is constructed with an inner metal liner or casing 30 and an outer metal casing, liner or shell 32. The walls of the inner and outer casing are in spaced relation between which is placed suitable heat insulation material 34. The inner shell or casing 30 forms the walls of the food storage compartment 35. Though not shown, as it forms no part of the present invention, the casing 30 may be supported and affixed to the outer casing in manner described and shown in copending application of Martin J. Gouloze, Serial Number 365,135, filed November 9, 1940, for Refrigerating apparatus, or in any other suitable manner well known in the art.

The outer metal casing 32 is formed with a front wall portion 40, which is doubled upon itself to form a rearwardly extending portion 42 extending a determinable distance along the side wall of the cabinet and thence bent at right angles to extend inwardly, as at 44, in spaced parallel relationship to the doubled front wall 40, forming a pocket 45 therewith.

The inner liner or casing 30 is bent at right angles a marginal distance from its edge to form a front wall section 47 extending peripherally about the opening 24. The marginal edge of the front wall is bent to extend rearwardly to form a flange 49 in spaced parallel alignment to the side walls of the casing 30.

The wall portion 47 and the wall 40 extend peripherally about the opening 24. The wall portion 47 is in planular alignment with the section 44 and their ends are terminated so as to form a spatial gap therebetween. Joining the front walls 47 and 40 is a relatively thin metallic breaker strip 50.

The breaker strip 50 is formed of flexible material and is preferably formed of stainless steel or the like, and is preferably formed of .010 inch thick metal, though other thickness metal may be used as well as other types of material which may be suitably coated with enamel, or plated. The breaker strip 50 is formed to extend along a side on the front wall adjacent the opening 26 thereof, and a similar strip is positioned along the other side on the front wall. Since the principle of attaching the other strip is the same, there is only shown in detail the breaker strip 50 and the way it is attached.

The breaker strip 50 extends preferably in a convex curve from within the pocket 45 of the outer casing, to over and against the face of the

front wall 47 of the inner casing. The strip is frictionally held in the pocket by bending the marginal edge 52 to form a V with the main portion of the breaker strip. The edge 52 tensioning against the back 44 and pressing the breaker strip in contact against the edge of the front wall 40. The opposite end of the breaker strip is provided with an inwardly turned marginal edge 54 adapted to extend angularly between member 56 and front wall 47 and extend over and beyond the radiused end 57 to form a locking engagement therewith.

The radiused end 57 is formed on the leg 59 of the L-shaped member 56 which extends in spaced parallel relation to the front wall 47. The radius 57 extends towards the wall 40 so as to form a restriction therebetween to resist withdrawal of the diagonally extending marginal edge 54 of the breaker strip. A plurality of members 56 are self-lockingly attached at spaced intervals to the flange 49 by means of the leg 60 which lies flush against one face of the flange and is provided with an outwardly punched tongue 61 which projects through opening 62 in flange 49 to engage the opposite face of the flange. The leg 60 extends beyond the edge of the flange 49 having inwardly cut sides with the portion thereabove pressed inwardly, as at 64, so as to engage over the end of the flange 49. By this arrangement the tongue 61 and the inwardly pressed sides 64 cooperatively serve to lock the members 56 securedly to the flange.

The breaker strip is reinforced and stiffened by means of an insulation pad 70 which is cemented to the rear face of the breaker strip.

Breaker strip 74 extends along the top on the front wall adjacent to the opening 26 thereof, and a breaker strip 75 extends along the bottom on the front wall adjacent the opening 26 interconnecting the vertically extending strips 50. The breaker strips 74 and 75 are similarly constructed except for conforming it to the construction and design of the cabinet, but its principle of attachment are the same so that there is only shown in detail the breaker strip 74 and the way it is attached.

The breaker strip 74 is similarly formed throughout its major length to the described breaker strip 50 having a V-shaped or wedge shape longitudinal side 77 receivable in the pocket 45, and its opposite marginal side edge 79 extending diagonally between members 56 and the face of the front wall 47 and lockingly held therebetween. The V-shaped section 77 and the diagonal marginal section 79 terminate a determinable distance from each end 90, preferably the width of the vertical strip 50 which a respective end 90 is adapted to overlap. The ends 90 are formed to fit the contour of the vertical breaker strip 50 extending from the pocket 45 over the breaker strip in snug fitting relation. The inner edge which is cut away, as at 92, is curved to form a rounded inner corner with the adjacent vertical breaker strip. A pad 94 is cemented to the rear face of the breaker strip, and is cut back as at 95 to prevent interference with the overlapping portion of the breaker strip.

The above arrangement provides a breaker strip construction for refrigerator cabinets which can easily and quickly be attached, and which is self-lockingly attached free from an external appearing affixing means such as screw

heads or the like. In the assembling of the breaker strip to the cabinet the fastening members 56 are affixed at spaced intervals to the inner liner by moving the leg 60 planularly to the flange with the tongue 61 entering the opening 62 until the inwardly pressed side sections 64 snap over the end of the flange. The tongue is tensioned to frictionally bind the member against the face of the flange, while the section 64 serves to prevent withdrawal. The vertical breaker strips 50 are then affixed to the cabinet by inserting first the V side into the pocket 45 while the opposite side 54 engages and locks with the member 56. The top and bottom breaker strips 74 and 75 are then similarly set in position with their ends overlapping the vertical strips so as to eliminate the need of separate corner strips.

Door 25, closing the opening 24, comprises an outer metal panel 102 of dish-like conformation having upwardly extending sides. The sides are bent to provide peripherally extending ledge 104 and a second ledge 106 inwardly offset from the ledge 104. A door seal or gasket 108, adapted to seal against the front wall portion 40 and thus prevent air entering the food storage compartment, extends peripherally about the edge of the door and is affixed thereto by tongue 110 secured to ledge 106 by means of a U-shaped member 112 and screws 114. An inner door panel 116, of non-heat conducting expansible material, is floatingly affixed by inserting its ends within the U-shaped member to be frictionally held against a side thereof by the pressure of the enlarged end 117 which is formed on the end of tongue 110 of the door seal. Suitable heat insulation 120 is provided between the inner and outer door panels.

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:

A refrigerator cabinet comprising inner and outer metal shells having a door opening formed therein, said shells having edge portions about the periphery of the door opening, the metal of the edge portion of the outer shell being bent to form a pocket and including a section extending toward the inner shell, the metal of the inner shell being bent to provide a flange extending toward the outer shell but spaced therefrom, a short inturned flange carried by said flange extending rearwardly from said door opening in substantially parallel relation with the side wall of the inner shell, a thin metal breaker strip having the edges thereof provided with diagonally inwardly turned flanges, the flange along one edge of the breaker strip being inserted in said pocket and engaging a wall thereof and causing the body of the breaker strip to engage the opposite wall of the pocket, and a clip removably connected to said short inturned flange and having a portion extending substantially parallel with the flange of the inner shell and spaced therefrom and projecting between the breaker strip and the other diagonal flange thereof for securing the breaker strip against the flange of the inner shell.

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