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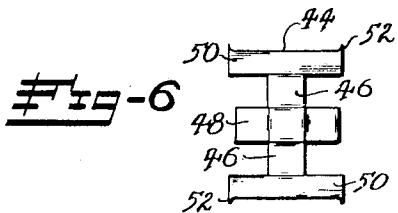
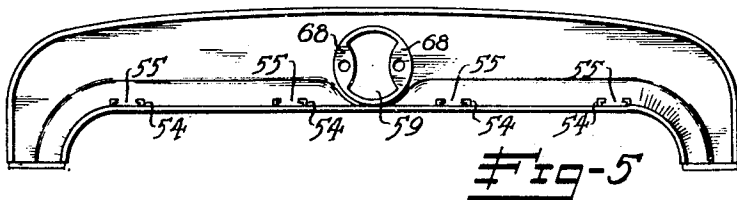
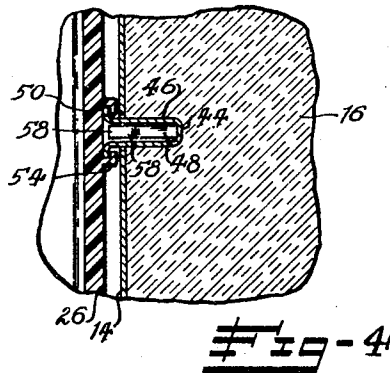
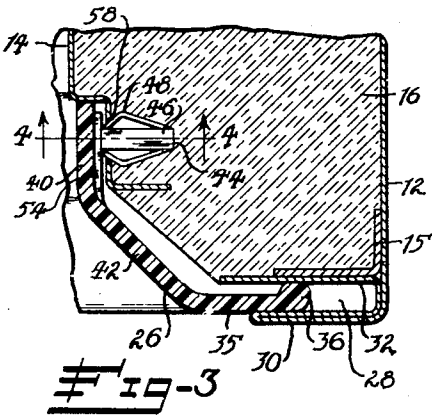
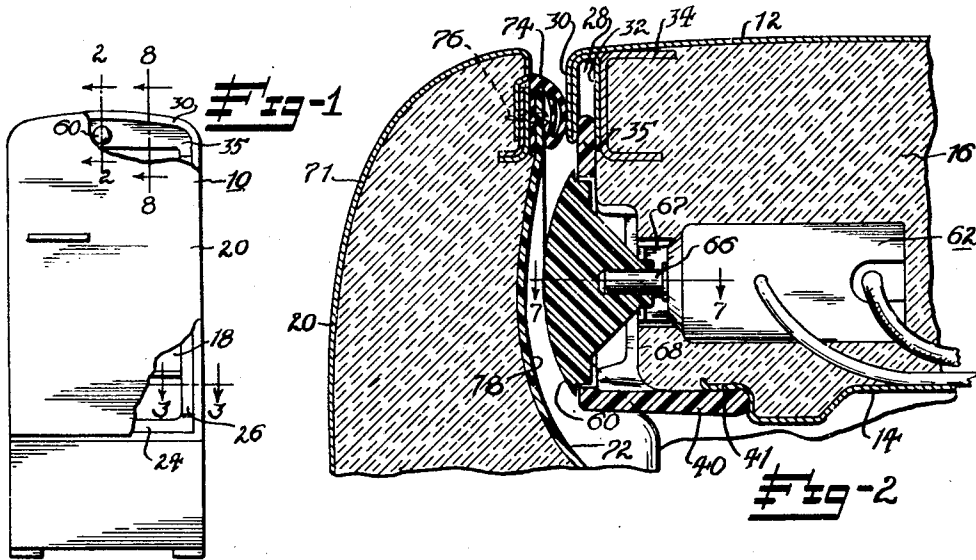
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2,477,055

REFRIGERATING APPARATUS

Filed May 14, 1947

2 Sheets-Sheet 1



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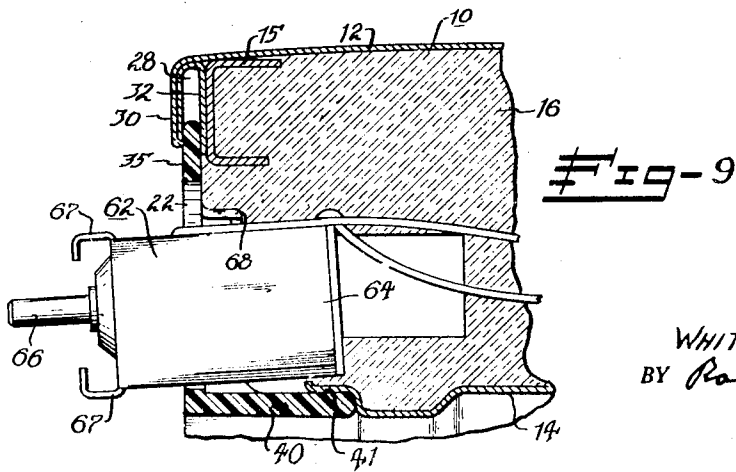
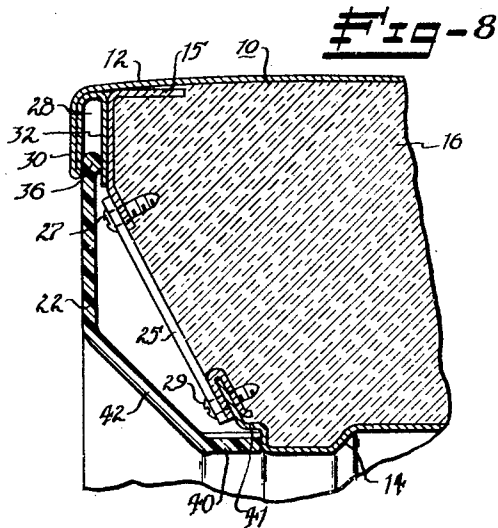
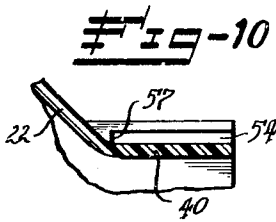
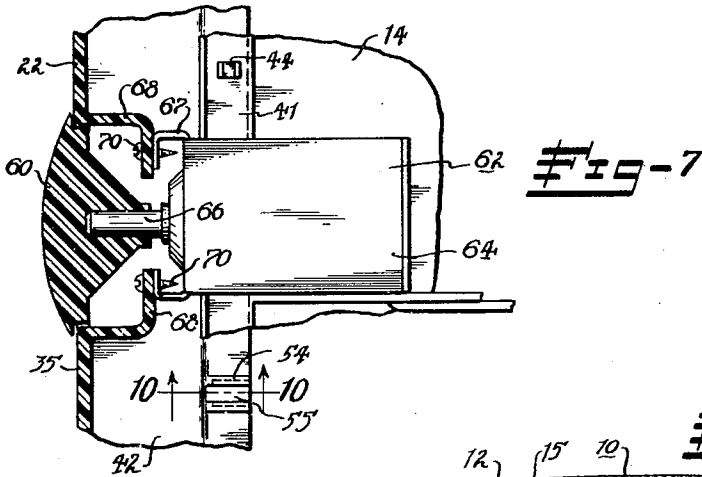
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2,477,055

REFRIGERATING APPARATUS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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REFRIGERATING APPARATUS

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6 Claims. (Cl. 62-89)

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This invention relates generally to refrigerating apparatus and more particularly to a refrigerator cabinet therefor.

It is an object of the present invention to provide an improved refrigerator cabinet construction with respect to facilitating the installation of a breaker strip between the cabinet inner liner and outer casing.

Another object of the invention is to provide an improved arrangement and construction of a cabinet outer casing, inner liner and connecting trim or breaker strip around the doorway of a refrigerator cabinet compartment.

Another object of the invention is to provide an improved arrangement between a cabinet breaker strip and a thermostat.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein a preferred form of the present invention is clearly shown.

In the drawings:

Fig. 1 is a front view partly broken away of a refrigerator embodying features of my invention;

Fig. 2 is a fragmentary, vertical cross sectional view of the refrigerator cabinet, taken along the line 2-2 of Figure 1;

Fig. 3 is a fragmentary, horizontal sectional view of the cabinet, taken along the line 3-3 of Figure 1;

Fig. 4 is a fragmentary, horizontal sectional view of the cabinet, taken along the line 4-4 of Figure 3;

Fig. 5 is a rear view of a trim strip of the cabinet;

Fig. 6 is a top plan view of a breaker strip fastener for the cabinet;

Fig. 7 is a fragmentary sectional view of the cabinet, taken along the line 7-7 of Figure 2;

Fig. 8 is a fragmentary sectional view of the cabinet, taken along the line 8-8 of Figure 1;

Fig. 9 is a fragmentary sectional view of the cabinet similar to Figure 2; and

Fig. 10 is a detailed sectional view, taken along the line 10-10 of Figure 8.

Referring to the drawings by characters of reference, the numeral 10 designates generally a refrigerator cabinet. The cabinet 10 comprises an outer metal casing 12 and a metal liner 14. Between the outer casing 12 and the liner 14, heat insulation 16 is provided which may be of any suitable type. At the front of the cabinet, within the outer casing 12, a frame 15 is preferably provided and welded to the front of the

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casing to reinforce the same. The metal liner 14 forms a food storage compartment 18 having an access door opening in the front of the cabinet, closed by a door 20 which may be hinged to one side wall of the cabinet proper. At the front of the cabinet, around the door opening of compartment 18, I provide breaker strips comprising, an upper strip 22, a lower strip 24 and side strips 26. These strips 22, 24 and 26 are angle members of low heat conductivity preferably plastic which cooperate to cover terminal edges of the outer casing and the inner liner to form a continuous breaker strip arrangement at the door opening so as to give a finished appearance to the cabinet front without the conduction of but very little heat from the outer casing to the inner liner. At spaced intervals around the access door opening, the outer casing 12 and the food storage compartment liner 14 are attached together by tie members 25 (see Fig. 8). These tie members 25 are made of a suitably low heat conductive material, such as a phenolic plastic to avoid heat transfer from the casing to the liner. One end of each of the tie members 25 is attached preferably by a screw 27 to the cabinet frame 15 and the other end of each of the tie members 25 is secured by a screw 29 to the liner 14.

The outer casing 12 is formed with a breaker strip receiving portion, preferably a retaining channel or pocket 28. The retaining channel 28 extends entirely around the door opening along the front of the cabinet, outwardly of the forward edge of the liner 14. This trim or breaker strip retaining channel 28 may be provided by bending the casing at the front of the cabinet back onto itself to form the outer flange, as at 30, of the channel and then bending the casing end portion, as at 32, inwardly in spaced relation to flange 30 to provide the inner flange of the channel. The inner channel flange 32 may be welded or be otherwise suitably secured to the cabinet frame 15. The channel 28 receives and retains outer marginal edge portions or legs 35 of the angle trim strips 22, 24 and 26. Extending along the outer edge of each of the trim strips 22, 24 and 26 is a rounded bead 36 which I provide to reinforce the trim strips and to facilitate entry of the strips, outer marginal portions into the retaining channels 28. These beaded edges 36 of the trim strips 22, 24 and 26 fit snugly into the retaining channels to aid in holding the trim strips in place. Each of the trim strips 22, 24 and 26 has an inner marginal side portion or leg 40 extending at an angle to leg 25 which

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positions in overlapping relation with the inner liner 14. As shown, the liner 14 terminates inwardly of the front of the cabinet and is preferably provided around all sides thereof with outwardly directed offset portions 41 to receive the inner marginal portions 40 of the trim strips so that the trim strips will be flush with the inner surface of the food storage compartment liner 14. An intermediate, leg connecting portion 42 of each trim strip is angularly disposed with respect to its adjoining side marginal portions 35, 40 which gives a flared opening effect to the food storage compartment 18. The strips 22, 24 and 26 are made wholly of low heat conductive material, preferably a phenolic plastic to prevent transfer of heat by conduction from the cabinet casing 12 to the inner liner 14.

The strips 22, 24 and 26 are held in place by spring fasteners 44 carried thereby, engaging in holding relationship with the metal liner 14. Each of the strips 22, 24 and 26 carries a plurality of the spring fasteners 44, spaced longitudinally thereof. The spring fasteners 44 are made of spring metal each comprising, a pair of oppositely disposed spring fingers 46 and a second pair of oppositely disposed spring fingers 48. These pairs of spring fingers are preferably disposed at right angles to each other, the fingers tapering inwardly toward one end of the fasteners where they join together. At the other end or base of the fastener 44, the spring fingers 46 each have an outturned foot 50 having outwardly directed points 52 to dig into the plastic finish strips 22, 24 and 26 to hold the fasteners thereto. At spaced intervals, the breaker strips 22, 24 and 26 are each provided on the rear side thereof with longitudinally spaced clip retainers 54 which are formed integral with the strips. These retainers 54 are arranged in pairs each forming a T-slot 55 to receive the feet 50 of a fastener, the T-slot extending widthwise of the legs 40 of the strips. To assemble a strip and its fasteners 44, the fastener fingers 46 are pressed together to allow entrance of their pointed feet 50 into the T-slot and the fastener is moved along the T-slot until the fastener feet engage the inner ends 57 thereof, as a stop. The spring fingers 46 are then released allowing them to spring apart and in so doing thrust their pointed feet into the slot forming retainers 54, thus holding the fasteners against movement in the T-slot. The other pair of spring fingers 48 of each fastener have free ends terminating adjacent the base of the fastener or adjacent the fasteners feet 50. End portions 58 of the spring fingers 46 are bent so that they taper in the reverse direction from the tapering fingers 48 or so that the bent portions 58 taper inwardly from their bends toward each other and toward the fasteners base. These fasteners 44 are pressed through apertures in the liner 14, the fastener bent portions 58 springing outwardly in the apertures against the inner side of the liner to hold the breaker strips in place by a yieldable wedging action. In removing the finish strips they are pulled away from the cabinet, the fastener bent portions then having a camming function moving the spring fingers 46 together as the fasteners are withdrawn from the liner apertures.

Substantially midway of its ends, the upper trim strip 22 is provided with a circular opening 59 therethrough to receive an operating knob 60 of a thermostat 62. The thermostat 62 is carried solely by the upper, plastic strip 22 and is disposed in the insulation of the cabinet top wall,

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as shown in Figure 2. The thermostat 62 is contained in a casing 64 from one end of which extends an adjustment shaft 66 to which the knob 60 is secured. Secured to the outer end of the thermostat casing 64 is a pair of laterally spaced, oppositely disposed U-brackets 67 which are attached respectively to a pair of lugs or ears 68 of the finish strip 22, preferably by screws 70. These breaker strip ears 68 are diametrically arranged with respect to the circular opening 59 in the strip and are located rearwardly thereof. The thermostat casing 64 is of general rectangular shape in cross section but may be pulled out of the casing through the finish strip circular opening 59 for the purpose of making adjustments thereto or for the purpose of replacement. This eliminates need of removing the breaker strip 22 before access may be had to the thermostat. After removing the screws 70, the thermostat is turned substantially through 90° in which position it will clear the trim strip ears 68 and may then be withdrawn through the trim strip circular opening 59, as illustrated in Figure 10.

The cabinet door 28 may comprise an outer, metal door casing 71 and an inner door panel 72. Preferably the inner door panel 72 is made of a low heat conductive material such as phenolic plastic. Carried by the door 28 is a rubber gasket 74 engageable with the outer channel flange 30 to seal the door opening. This gasket 74, the door panel 72 and the door outer casing 71 may be secured together by screws 76. As shown in Figure 2, the door inner panel 72 is dished, as at 78, to clear the thermostat adjusting knob 60 which projects forwardly of the other casing channel 28.

In some instances it has been found desirable to have the bead wider at spaced intervals than to have it all the same width. This arrangement provides for contact between the bead 36 with member 32 only at the spaced intervals where the bead is wider than therebetween. By this arrangement it has been found that the breaker strips are more snugly held in place throughout their lengths.

From the foregoing description, it will be appreciated that I have provided an improved cabinet construction including breaker strips or trim at the entrance of the cabinet food storage compartment. It will further be appreciated that I have provided angle section breaker strips or trim made wholly of a low heat conductive plastic which may be readily pressed and held in place by spring fasteners carried by an inner leg of the angle strip. In addition, I have provided ears on the upper, cross breaker strip for the attachment thereto of a thermostat carried by the breaker strip, the thermostat and breaker strip ears being so arranged that the thermostat may be withdrawn from the cabinet without first removing the breaker strip.

Although only a preferred form of the invention has been illustrated, and that form described in detail, it will be apparent to those skilled in the art that various modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

I claim:

1. In refrigerating apparatus, an outer cabinet casing, an inner liner forming a food storage compartment, a door opening in a wall of the cabinet giving access to the food storage compartment, a trim strip of low heat conductivity having one side edge portion engaging said liner at the door opening and having an opposite side

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edge portion engaging said casing, said trim strip having an opening therethrough and having a pair of diametrically opposite ears extending into said opening, a thermostat attached to said ears inwardly of said trim strip and being removable through said opening.

2. In refrigerating apparatus, a cabinet casing, a liner within said casing forming a compartment, said casing and said liner having spaced apart edge portions adjacent an access opening into said compartment, a heat breaker strip spanning the edges of said casing and liner, and a control between said casing and said liner carried by said heat breaker strip.

3. In refrigerating apparatus, a cabinet casing, a liner within said casing forming a compartment, said casing and said liner having spaced apart edge portions adjacent an access opening into said compartment, a heat breaker strip spanning the edges of said casing and liner, and a thermostat between said casing and said liner carried solely by said heat breaker strip.

4. In refrigerating apparatus, a cabinet casing having a top wall, a liner within said casing having a top wall spaced from the adjacent said casing top wall, said liner forming a compartment and said casing and liner having spaced apart edge portions around an access opening for said compartment, a heat breaker strip spanning the edge portions of said casing and liner, a thermostat disposed between said top walls of said casing and liner behind said heat breaker strip, and a bracket mounting said thermostat on said heat breaker strip.

5. In refrigerating apparatus, a cabinet casing,

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a liner within said casing forming a compartment, said casing and said liner having spaced apart edges adjacent a door opening into said compartment, a heat breaker strip spanning the spaced apart edges of said casing and liner having a thermostat receiving opening, a support carried by said heat breaker strip extending into said opening, and a thermostat carried by said support between said casing and said liner.

6. In refrigerating apparatus, a cabinet casing, a liner within said casing forming a compartment to be cooled by a cooling element, said casing and liner having spaced apart edge portions around an access opening to said compartment, a heat breaker strip spanning said spaced apart edges of said casing and liner having a thermostat receiving opening therein, ears carried by said heat breaker strip extending into said opening, and a thermostat attached to said ears inwardly of said heat breaker strip and being removable through said opening.

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