April 15, 1941. H. C. FOSTER 2,238,416

REFRIGERATOR CABINET CONSTRUCTION

Filed July 31, 1937

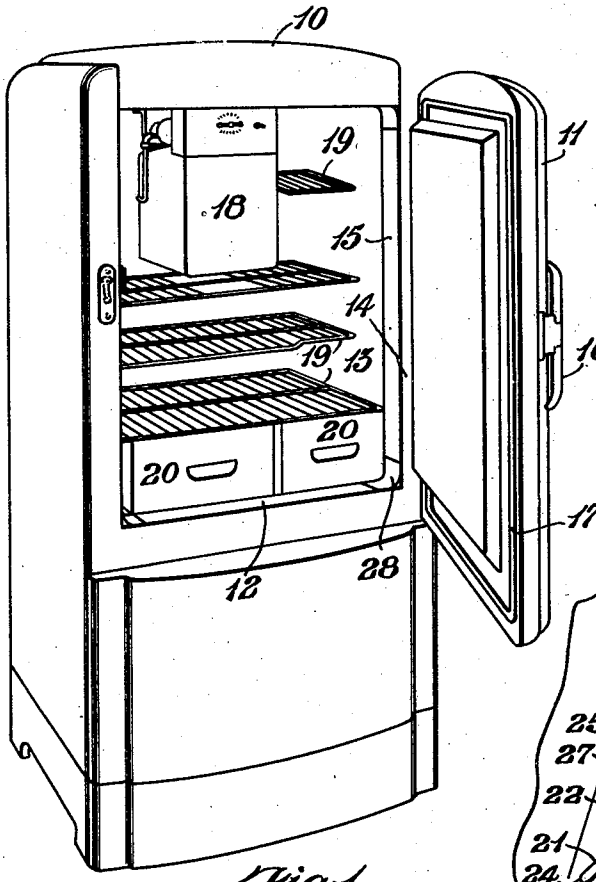


Fig. 1.

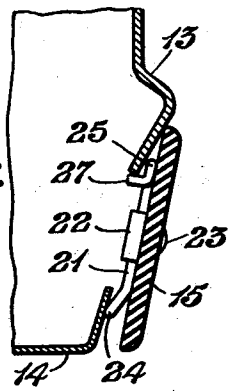


Fig. 2.

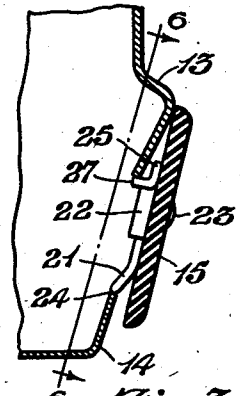


Fig. 3.

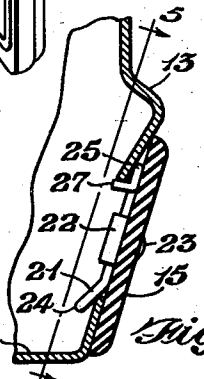


Fig. 4.

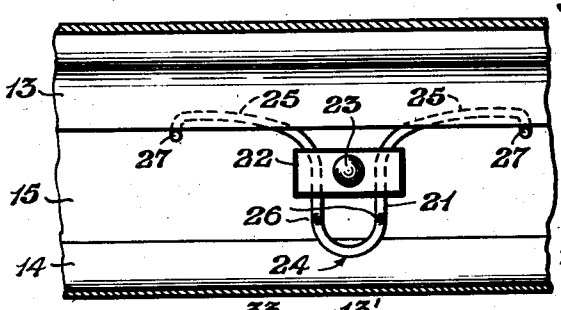


Fig. 5.

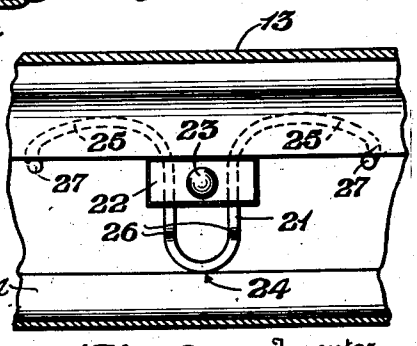


Fig. 6.

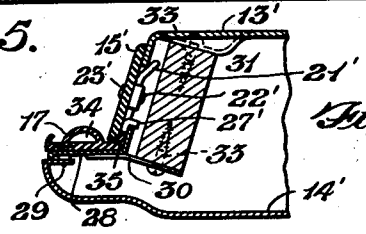


Fig. 7.

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UNITED STATES PATENT OFFICE

2,238,416

REFRIGERATOR CABINET CONSTRUCTION

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Application July 31, 1937, Serial No. 156,818

7 Claims. (Cl. 220—9)

This invention relates to refrigerator cabinets and particularly refrigerator cabinets of the household type intended to include mechanical refrigerating means for providing the cooling effect or natural cooling means such as ice.

The invention particularly relates to refrigerator cabinet construction of the type in which inner and outer metal shells or casings are supported in spaced relation with insulation therebetween.

Among the objects of the invention is to provide cabinet wall structure of the character specified wherein the inner and outer metal plates are secured in spaced relation by poor heat conducting mechanism and with a breaker strip providing a finishing trim between the contiguous edges of the inner and outer metal plates.

The invention contemplates the ultilization of an annular frame between the shells or the elimination of such annular frame and the employment in lieu thereof of spacing elements of poor heat conducting properties.

The invention further contemplates a finishing trim or breaker strip construction susceptible of easy application or removal and particularly susceptible of being snapped in place.

Other objects and the nature and advantages of the invention will be apparent from the following description taken in conjunction with the accompanying drawing, wherein:

Figure 1 is a view in perspective of a refrigerator cabinet, with the door open disclosing an embodiment of my invention;

Figures 2, 3 and 4 are horizontal cross sections of part of the refrigerator cabinet taken at any edge of its open face, showing the breaker strip in partially installed and completely installed positions;

Figure 5 is a cross section of Figure 4 taken along lines 5—5 in the direction of the arrows;

Figure 6 is a cross section of Figure 3 taken along the lines 6—6 in the direction of the arrows shown;

Figure 7 is a cross section of an end portion of the door showing the gasket and finishing trim in installed position.

Referring to Figure 1, a refrigerator 10 is shown having a door 11 coacting with the door jamb shown generally at 12. The walls of the refrigerator 10 may include an interior liner 13 and an exterior metal casing 14. In order that heat may not be transferred from the exterior metal wall 14 to the interior metal liner 13 insulation may be provided therebetween. Connecting the exterior metal wall 14 and the interior metal liner 13 at or overlapping their respective edges is finishing trim or strip 15 commonly known as a breaker strip which may be of non-metallic poor heat conducting material. The interior and the exterior of the refrigerator may be white in color, and the breaker strip may be black in color in order that a pleasing appearance be effected.

Similarly the door 11 has an exterior metal wall 14' and an interior metal liner 13' in spaced relation and may include some insulating material therebetween. Also similarly, a breaker strip 15' is provided as a finishing trim and as an insulating element in coacting relationship with the interior metal wall 14' of the door and its interior metal liner 13'.

The door 11 is hinged to the cabinet 10 in the usual manner by hinges not shown and may be provided with a latch mechanism, not shown, a handle of which is depicted at 16 and which may be operated by pushing inwardly. A gasket 17 is provided on the door 11 to coact with the open face of the refrigerator 10 in order that cold air may not leak from the interior of the refrigerator when the door is closed and the refrigerator is in operation.

The refrigerator 10 is provided with an evaporator 18 having the usual connections with a mechanical unit located in the base of the refrigerator cabinet, details of which form no part of the present invention and hence are not shown here.

The interior of the refrigerator may be provided with removable shelves, shown generally at 19, and drawer like receptacles 20 for the reception of foodstuffs.

Referring to Figures 2, 3, 4, 5 and 6, the breaker strip 15 is shown in various positions, relative to the outer metal wall 14 and the inner metal liner 13, illustrating the method of installation of said breaker strip. The breaker strip 15 is provided with a spring member 21 secured thereto by a clip means 22 and fastener 23 which may be a rivet, screw, bolt or other suitable fastening means. The spring member 21 has a central U-shaped relatively rigid portion 24 and two arm like resilient or spring extensions extending from each leg 25 of the U-shaped portion 24. The U-shaped portion 24 of the spring member 21 is bent out of alignment at 26 and the two arm like extensions 25 of the spring member 21 are hooked at their ends 27. The clip member 22 crosses the two legs of the U-shaped portion 24 of the spring member 21 and is fastened substantially at its center by means

of the fastening means 23 to the breaker strip 15.

At suitable distances from each other, a plurality of the unitary spring fastening units may be secured to breaker strip 15, enough of the fastening units being utilized to effect a strong, neat structure. The breaker strip 15 may be molded in a single piece for direct insertion in place for cooperation with exterior metal wall 14 and interior metal liner 13 or it may be made up of a plurality of straight sections as illustrated in Figure 1 and corner pieces 28 may be provided for sealing the ends or joints of the portions or the sections of the breaker strip in order that a sealed, strong, neat and pleasing trim be presented to the housewife upon the opening of the door.

What has been said of the breaker strip and its fastening means for use with the cabinet 10 is also applicable to that breaker strip utilized in a corresponding position on the door 11, see, for example, Figure 7.

In Figure 2 the breaker strip is shown in a position prior to the actuation of the spring 21 which must take place before the said breaker strip will snap into its final position.

Figure 3 shows the breaker strip in almost the same position with the spring 21 compressed immediately prior to the snapping back of the spring within the metal wall exterior 14 for a complete installation.

Figure 4 shows the breaker strip completely in place with the spring member in expanded position within the exterior metal wall 14.

Figure 5 is another view of the breaker strip completely installed showing the spring member 21 in expanded position with the ends 27 of arms 25 of the spring member 21 in engaging position with the interior metal liner 13 and the bent U-shaped portion 24 of the spring 21 in engaging position with the exterior metal wall 14.

Figure 6 is another view showing the spring member 21 in compressed position and illustrating clearly the flexing of the arm like members 25.

Referring to Figure 7 which is a cross section of a part of the door 11 taken at its edge, the application of the breaker strip 15' in accordance with this invention and further the particular location of the sealing gasket 17 in relation to the said breaker strip is clearly shown.

To the exterior metal wall 14' of the door 11 is fastened an extension 28 by suitable fastening means such as a screw, bolt or other fastening means 29. To this extension 28 is secured in some suitable manner a bracket 30. The interior metal liner 13 of the door may have indentations 31 between which and the bracket 30, may be located spacer blocks 32 secured to the bracket 30 and indentations 31, by lag screws 33 or other suitable means.

The gasket 17 may include a hollow bead like portion 34 and an extension 35 and may be secured to the door 11 by the breaker strip 15' in the following manner: A gasket 17 is placed on the door in the position shown in Figure 7 with its extension 35 resting against the exterior metal wall 14' and extension 28, then the breaker strip 15' is applied in such a manner that its spring means 21 causes it to press against the extension 35 and hold it firmly and securely against the wall extension 28.

The spacer means 32 serves to strengthen and give rigidity to the metal liner 13' and exterior metal wall 14' to form a serviceable, long lasting, light weight, and easily fabricated door member 11. This spacer means 32 may take the form of relatively small blocks or a complete annular frame of a material such as wood or the like. The same arrangement may be utilized in the door jamb construction within the cabinet 10.

Whether the breaker strip be formed of a single piece, or be made up in sections, or whether it be applied to the refrigerator cabinet 10, or to a corresponding position on the door member 11, it may be installed as follows:

The breaker strip 15 is placed in a position similar to that shown in Figure 2 with the hooked ends 27 of the spring member 21 resting against the edge of the interior metal liner 13. The breaker strip 15 is then pressed upwards as shown in Figure 3 and Figure 6 so that the arms 25 of the spring member 21 are in flexed position, better shown in Figure 6; the breaker strip may then be pressed forwardly slightly so that the lower end of the bent U-shaped portion 24 of the spring member 21 may rest upon the edge of exterior wall 14; then the breaker strip may be further pushed forward and the spring member 21 released as shown in Figures 4 and 5, to its normal installed position. If a single, one piece, closed, rectangular shaped, finishing trim member 15 has been utilized, the corner pieces 28 may be omitted. On the other hand if a plurality of straight sections of finishing trim 15 have been applied as shown in Figure 1, then corner pieces 28 may be installed to finish and completely trim the structure. The pieces 28 may be fastened to the exterior trim sections by any suitable fastening means such as by screws, bolts, welding, etc.

It will be obvious to those skilled in the art that various changes may be made in this device without departing from the spirit of the invention and therefore the invention is not limited to what is shown in the drawing and described in the specification but only as indicated in the appended claims.

I claim:

1. In refrigerator cabinet construction, inner and outer walls having an elongated space between opposed marginal edges thereof, a sealing member such as a breaker strip or the like closing said space, and a spring locking clip connected to the inner side of said strip and having an inwardly bent substantially U-shaped portion engaging in back or rear of the marginal edge of one of said walls and opposed integral resilient inturned free end portions engaging and bearing against the edge of the opposed wall, the strip being applied by flexing the free end portions to permit the looped portion to first clear the opposed wall edge and then engage in back or rear of the latter.

2. In refrigerator cabinet construction, spaced inner and outer walls having an elongated space between opposed marginal edges thereof, and a sealing member such as a breaker strip or the like for closing said gap provided with a locking clip in the form of a piece of spring wire having an intermediate bent portion forming one end of the clip, said end engaging the marginal edge of one of said walls, and opposed free extremities having the ends thereof bearing against the edge of the opposed wall and exerting an equalized locking thrust on the clip, said free extremities inwardly of said ends being bent to give a spring action thereto and facilitate application of the clip.

3. In refrigerator cabinet construction, spaced inner and outer walls having an elongated space between opposed marginal edges thereof, a breaker strip or like closure member closing said space, and a locking clip connected to the inner

side of said breaker strip, said clip being in the form of a length of spring wire having a looped portion engaging the marginal edge of one of said walls and opposed free extremities bent at divergent angles to facilitate flexing engaging the opposed edge of the wall, whereby when the strip is applied said free extremities may be pressed against the edge of one wall and flexed to permit the looped portion to clear the edge of the opposed wall and then engage in rear thereof to automatically lock the strip in sealing position.

4. In refrigerator cabinet construction, spaced inner and outer walls with insulation therebetween having an elongated space between opposed marginal edges thereof, and sealing means such as a breaker strip or the like closing said space having secured to the inner side thereof a locking clip in the form of a piece of spring wire with a substantially U-shaped portion projecting laterally and engaging the marginal edge of one of said walls and opposed free extremities bent divergently to facilitate flexing and having ends in bearing engagement with the edge of the opposed wall, whereby when the strip is applied said bearing ends may be pressed against one wall edge and said extremities flexed to permit the U-shaped portion to clear the edge of the opposed wall and engage in rear thereof.

5. In refrigerator cabinet construction, spaced walls having an elongated gap between opposed marginal edges thereof, a strip of material providing a closure for said gap, and a locking clip connected to the inner side of said strip and having a relatively rigid portion projecting laterally of the strip and engaging in rear or back of one of said marginal edges and an oppositely projecting resilient portion engaging the other of said marginal edges and exerting a locking thrust for both edge-engaging portions of the clip, said strip being applied by flexing the resilient portion to permit the relatively rigid portion to first clear its coacting marginal wall edge and then engage in back of the latter and said clip being concealed from exterior view by the strip.

6. In refrigerator cabinet construction, spaced walls having an elongated gap between opposed marginal edges thereof, a strip of material providing a closure for said gap, a locking clip anchored to the inner side of said strip, said clip being formed of spring metal and having one extremity thereof offset inwardly from the strip and projected laterally and engaging in rear or back of one of said marginal edges and an oppositely projected resilient portion having a free end engaging over the other of said marginal edges and exerting a locking thrust for both edge-engaging portions of the clip, said strip being applied by bringing the flexible end of the clip against its coacting marginal wall edge and flexing the resilient portion of the clip to permit the opposite offset portion to first clear its coacting marginal wall edge and then engage in back of the latter, the clip being concealed from exterior view by the strip.

7. As an article of manufacture, a breaker strip for use in refrigerator cabinet construction having secured to one side thereof a locking clip comprised of spring wire and having a substantially rigid U-shaped portion projected laterally toward one side of the strip and oppdsitely projected resilient spring legs terminating in free ends bent at an angle with respect to said spring legs, the clip being secured to the breaker strip at a point intermediate said U-shaped portion and said spring legs.

HARRY C. FOSTER.