June 12, 1956 R. E. WALLENBROCK 2,750,065

REFRIGERATOR CABINET CONSTRUCTION

Filed April 7, 1953

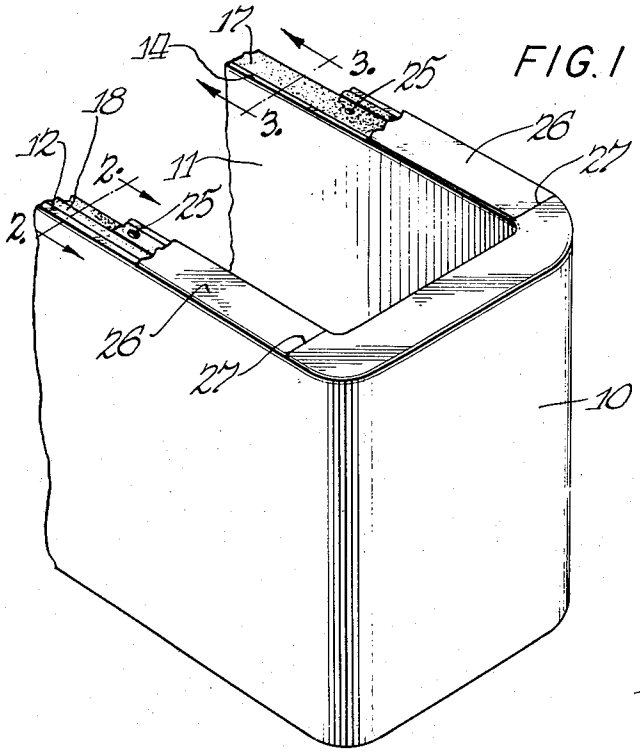


FIG. 1

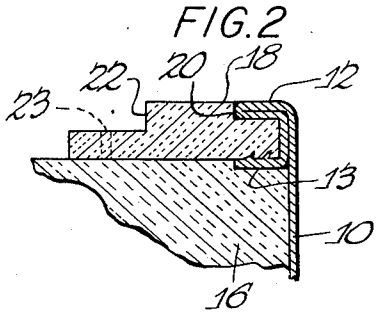


FIG. 2

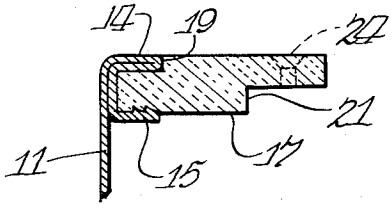


FIG. 3

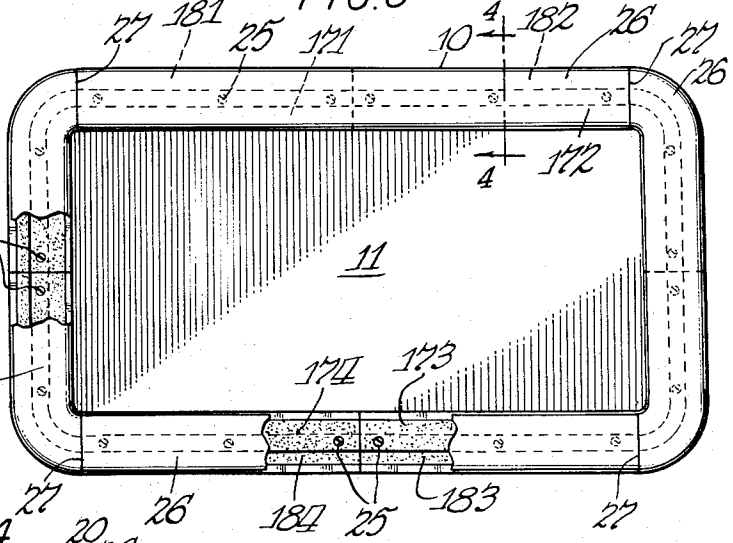


FIG. 5

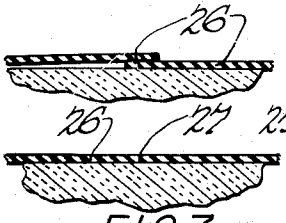


FIG. 6

FIG. 7

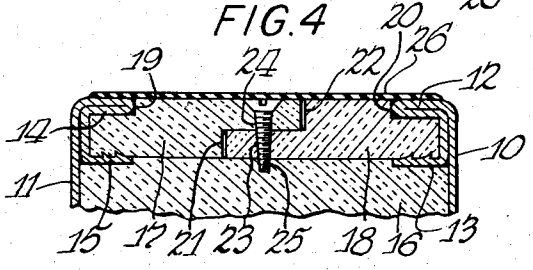


FIG. 4

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United States Patent Office 2,750,065 Patented June 12, 1956

2,750,065

REFRIGERATOR CABINET CONSTRUCTION

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Application April 7, 1953, Serial No. 347,216

5 Claims. (Cl. 220—15)

This invention relates generally to breaker strip constructions in refrigeration systems, and more specifically to an improved breaker strip construction for use in chest or upright types of refrigerator cabinets, and to an improved method of construction of those refrigerator cabinets.

It is an object of this invention to provide a novel breaker strip construction for use in refrigerator cabinets wherein the construction is economical, has excellent heat barrier properties, and has sufficient rigidity, and wherein the specific breaker strip construction will provide means for a simple and positive method of construction of chest or upright types of refrigerator cabinets.

It is a feature of this invention that the breaker strip is formed in a plurality of portions and that they are assembled to the inner and outer liners of the refrigerator cabinet before the inner liner is positioned within the outer liner.

Other objects and features of the present invention will be apparent upon the perusal of the following specification and drawing of which:

Figure 1 is a partial isometric view of a chest type refrigerator cabinet embodying a partial construction of the present invention;

Figure 2 is a partial cross-sectional view of the construction shown in Figure 1 taken along the line 2—2;

Figure 3 is a partial cross-sectional view of the construction shown in Figure 1 taken along the line 3—3;

Figure 4 is a cross-sectional view of the embodiment of the present invention shown in Figure 1 and taken along a line such as 3—3 after the construction has been completed or as shown in Figure 5 taken along the line 4—4;

Figure 5 is top plan view of the embodiment of the invention after the construction is completed; and

Figures 6 and 7 are partial cross-sectional views of a portion of the present invention shown in Figures 4 and 5.

The present embodiment is the preferred embodiment, but it is to be understood that changes can be made in the present embodiment by one skilled in the art without departing from the spirit and scope of this invention.

To describe the invention in detail, reference is made to the drawing. An outer refrigerator shell **10** is provided. The outer shell **10** is generally rectangularly shaped and has four sides and a bottom or back. A liner **11** is also provided. The liner **11** is smaller than the outer shell **10** and also has four sides and a bottom or back. Flanges are formed at the upper edges of the outer shell **10** and the liner **11**. These flanges may be rolled on a yoder roller so that a U-shaped section is formed, such as seen in Figures 2 and 3. In Figure 2, wherein is shown a partial cross-sectional view of the outer shell, the rolled edge comprises an upper flange **12** and a lower flange **13**. In Figure 3, wherein a portion of the liner is shown in cross-section, the rolled edge comprises an upper flange **14** and a lower flange **15**. Further, as seen in Figures 1 through 3, flanges **12** and **13** of the outer shell **10** are formed to extend inwardly therefrom, and flanges **14** and **15** of the liner **11** are formed to extend outwardly therefrom.

In the next step of the construction of this invention, insulation **16** is disposed within the outer shell **10** against the walls thereof. The insulation **16** may be of any rigid or semi-rigid type well known in the art. The insulation **16** is of a thickness equal to one half of the distance between opposite inner sides of the outer shell **10** minus the distance between outer opposite sides of the liner **11**, so that the insulation **16** completely fills the space between the liner **11** and the outer shell **10** when the liner **11** is positioned within the outer shell **10**.

In the next step of the construction of this invention, portions **17** and **18** of the breaker strip are mounted to the liner **11** and the outer shell **10** respectively. Each of the portions **17** and **18** are formed of a rigid type of insulation, such as Masonite, a processed wood type material made by the Masonite Corporation. Further, each one of the portions **17** and **18** may be formed into four sections, such as sections **171**, **172**, **173** and **174**, and sections **181**, **182**, **183**, and **184**, as shown by the dotted lines in Figure 5. Further, the portions **17** and **18** are shaped to conform to the shape of the flanges of the liner and outer shell **11** and **10** and to cooperate with each other. This importantly comprises the forming of the upper outward section of portion **17** with a depressed section **19** which has a depth equal to the depth of the flange **14** and a width equal to the inner width of the flange **14**. The upper outward section of portion **18** is provided with a depression **20** which is of a depth equal to the thickness of the flange **12** and of a width equal to the inner width of the flange **12**, as can be seen in Figure 2. The inner sections of both, the portion **17** and the portion **18**, are so formed that these inner sections may be mounted together as a rabbet or scarf joint. In order that this may be accomplished a depressed section or scarf **21** is formed in the lower inner section of the portion **17**, and a depressed section or scarf **22** is formed in the upper inner section of portion **18**, as can easily be seen in Figures 2, 3, and 4. Additionally, a plurality of lead holes **23** are formed in the scarf **22** of the portion **18**, and a plurality of countersunk clearance holes **24** are formed in the scarf **21** of the portion **17**.

Turning to the next step in the construction of this invention, the portion **18** of the breaker strip is inserted between the flanges **12** and **13** of the outer shell **10**. As previously described, the portion **18** of the breaker strip comprises four sections **181**, **182**, **183** and **184**, and therefore, these four sections abut each other when positioned between the flanges **12** and **13** of the outer shell **10**. When this has been done, any clinching tool well known in the art is applied against the flange **13** of the outer shell **10** to turn up a plurality of burrs on the flange **13**. These burrs will be forced into the lower surface of the portion **18** of the breaker strip and will rigidly maintain the portion **18** within the flanges **12** and **13** of the outer shell **10**. In a similar manner, the portion **17** of the breaker strip is positioned within the flanges **14** and **15** of the liner **11**, and a clinching tool is applied to the flange **15** to turn up burrs on the flange **15** to rigidly secure the portion **17** of the breaker strip between the flanges **14** and **15** of the liner **11**.

After the previously described steps have been taken, the liner **11** is then positioned within the insulation **16** disposed within the outer shell **10**. When this has been completed, the portions **17** and **18** of the breaker strip will be aligned, as shown in Figure 4. A plurality of screws or fasteners **25** are then projected through the holes **24** of the portion **17** of the breaker strip, and are threaded into the holes **23** of the portion **18** of the breaker strip, to secure the sections **21** and **22** together as a rigid rabbet or scarf joint.

In the final step of the construction of this invention, a plastic-like material, such as polyethylene, vinyl, or rubber is provided. This material is formed in the general shape of a strip, as seen in Figure 5. The strip of ma-

terial 26 may be formed in one piece to conform to the surface defined by the breaker strip and the flanges 12 and 14 of the outer and inner walls respectively. The strip of material 26 is cemented to this defined surface by means of any cement well known in the art, such as a thermo-setting adhesive. The strip of material 26 may be formed into four separate sections which are cemented to the surface defined by the breaker strip and the flanges 12 and 14 of the outer shell and the liner respectively. In order that the various sections of the material 26 may abut each other in an accurate alignment, a construction, such as shown in Figures 6 and 7, may be used. As shown in Figures 6 and 7, adjacent sections of the material 26 are allowed to overlap each other when the sections of the strip of material 26 are initially applied to the surface defined by the breaker strip and the flanges 12 and 14. A cut is then made through the overlapping portion of the adjacent sections to form a joint 27, such as shown in Figures 5 and 7.

Having described the invention what is considered new and desired to be protected by Letters Patent is:

1. In a refrigerator cabinet, an outer shell, a liner positioned within said outer shell, insulation disposed between said liner and said outer shell, said outer shell having an inwardly opening U-shaped flange formed at the upper edge thereof, said liner having an outwardly opening U-shaped flange formed at the upper edge thereof, a breaker strip positioned within said flanges, said breaker strip being formed in two portions, the first of said portions having one longitudinal edge thereof positioned within the outer shell flange, the second of said portions having one longitudinal edge thereof positioned within the liner flange, the other longitudinal edge of said first portion being formed as an upwardly facing rabbet cut, the other longitudinal edge of said second portion being formed as a downwardly facing rabbet cut, whereby said other longitudinal edges of said first and second portions cooperate to form a rabbet joint, a plurality of fasteners mounted through said joint to maintain said first and second portions secured together, said lower portions of said flanges further formed to have a series of burrs projecting upward therefrom into said first and second portions, whereby said first and second portions are secured within said flanges.

2. In a refrigerator cabinet, a substantially rectangular outer shell, a substantially rectangular liner positioned within said outer shell, insulation disposed between said liner and said outer shell, said outer shell having an inwardly opening U-shaped flange formed at the upper edge thereof, said liner having an outwardly opening U-shaped flange formed at the upper edge thereof, a breaker strip comprising two substantially rectangularly shaped strips, the first of said strips being mounted with one longitudinal edge thereof positioned within the outer shell flange, the other of said strips being positioned with one longitudinal edge thereof positioned within the liner flange, the other longitudinal edges of said strips being formed as a scarf joint, fastener means mounted through said scarf joint for maintaining said strips in a secured relationship, the lower portions of said flanges further formed to have a plurality of burrs projecting upward therefrom into said strips, whereby said strips are permanently secured within said flanges, and a plastic strip material of low heat conductivity cemented to the upper surface of said breaker strip and said flanges.

3. In a refrigerator cabinet having an outer shell and a liner positioned within said outer shell, a pair of flanges, each flange of said pair of flanges mounted at one of the upper edges of said liner and said outer shell, said pair of flanges positioned in a common horizontal plane, a second pair of flanges, each flange of said second pair of flanges mounted to one of said liner and said outer shell, said second pair of flanges positioned in a common plane parallel to the plane of said first pair of flanges, a breaker strip comprising two strips, one of the longitudinal edges of the first of said strips being positioned between said flanges mounted to said outer shell, one of the longitudinal edges of the second of said strips being positioned between the flanges mounted on said liner, said second pair of flanges being formed to have a series of burrs projecting upward therefrom into said two strips, whereby said two strips are permanently secured within said flanges, the other longitudinal edges of said strips being formed to cooperate as a scarf joint, and a plastic strip material of low heat conductivity being cemented to the upper surface of said breaker strip and said flanges.

4. In a refrigerator cabinet having a liner positioned within an outer shell with insulation disposed therebetween, a pair of inwardly projecting vertically spaced apart flanges formed at the upper edge of said outer shell, a pair of outwardly projecting vertically spaced apart flanges formed at the upper edge of said liner, a breaker strip comprising two strips, one of the longitudinal edges of each of said strips being formed to cooperate as a scarf joint, the other longitudinal edge of one of said strips being positioned between said pair of flanges of said outer shell, the other longitudinal edge of the other of said strips being positioned between said pair of flanges of said liner, means for securing said other edge of said one of said strips between said pair of flanges of said outer shell, means for securing said other edge of said other of said strips between said pair of flanges of said liner, whereby said longitudinal edges of each of said strips cooperate in said scarf joint, and a plurality of fasteners mounted through said scarf joint thereby maintaining said two strips secured together.

5. In a refrigerator cabinet having a liner positioned within an outer shell and having insulation disposed therebetween, a pair of inwardly projecting vertically spaced apart flanges mounted at the upper edge of said outer shell, a pair of outwardly projecting vertically spaced apart flanges mounted at the upper edge of said liner, a breaker strip comprising two strips of a material having a low heat conductivity, one of the longitudinal edges of each of said strips being formed to permit cooperation therebetween as a scarf joint, the other of the longitudinal edges of one of said strips positioned between said pair of flanges of said outer shell, the lower flange of said pair of flanges of said outer shell being formed to have a plurality of burrs therealong, said burrs positioned to project upward from said lower flange of said outer shell flanges into said one of said strips, whereby said one of said strips is secured within said pair of flanges of said outer shell, the other longitudinal edge of the other of said strips being positioned between said pair of flanges of said liner, the lower flange of said pair of flanges of said liner being formed to have a series of burrs projecting upward therefrom into said other strip, whereby said other strip is secured between said pair of flanges of said liner, said two strips being further formed to have a width sufficient to permit said cooperation between said two strips as a scarf joint, and a plurality of fasteners mounted to project through said scarf joint to thereby secure said two strips together.

No references cited.