Feb. 27, 1968 K. K. KESLING 3,370,738

REFRIGERATOR TRIM

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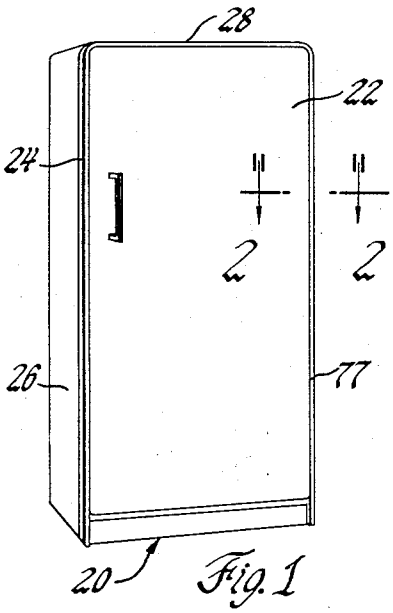


Fig. 1

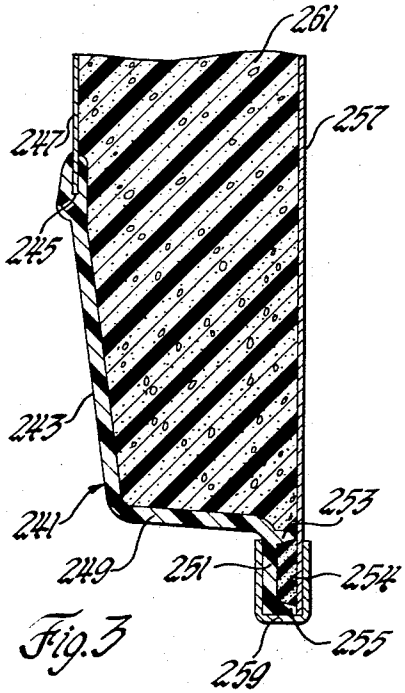


Fig. 3

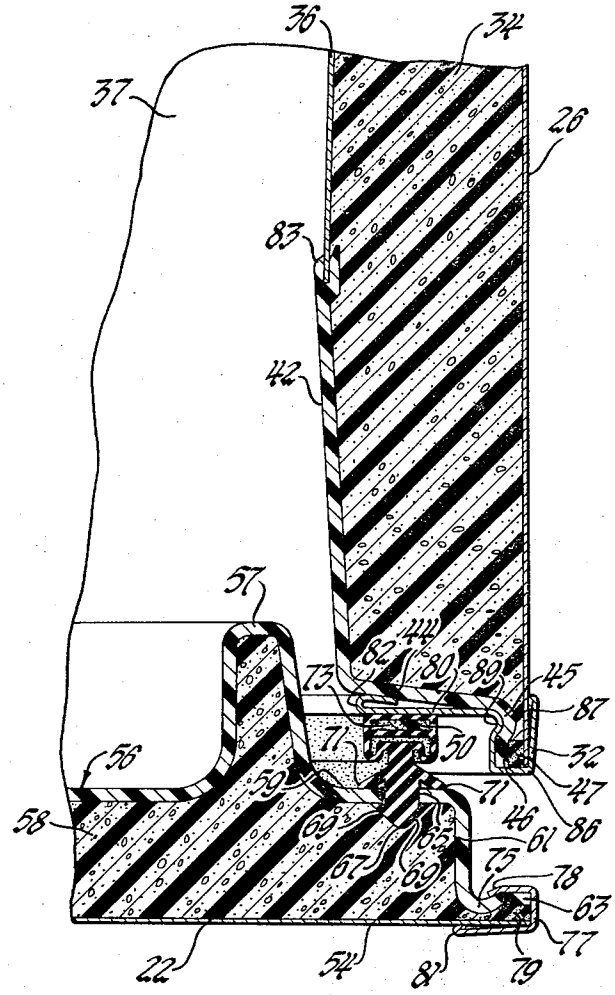


Fig. 2

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REFRIGERATOR TRIM

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5 Claims. (Cl. 220—9)

ABSTRACT OF THE DISCLOSURE

In the preferred form, the refrigerator cabinet has an inner wall provided near an edge with an outwardly extending offset of plastic material including a rib extending adjacent the straight outer wall forming a pocket alongside the rib between the front of the offset and the front of the outer wall. A resilient sealing gasket is compressed in the pocket to seal the insulating space between the walls. A U-shaped trim strip springs inwardly to press the walls against the gasket. In one form, a groove is provided on the opposite side of the rib receiving a projection of the trim strip which projects into it for preventing easy removal of the strip. This construction applies both to side and top walls and doors.

This application is a continuation-in-part of my copending application Serial No. 346,149 filed February 20, 1964, now Patent No. 3,338,451. This application pertains to trim arrangements at the edges of the side and top walls and the doors of refrigerator cabinets.

The trim arrangements at the edges of the side and top walls and the doors of refrigerator cabinets are important to the appearance of the cabinet and also are a considerable proportion of the cost of the cabinet.

It is therefore an object of this invention to provide a trim arrangement for a refrigerator cabinet which is simple, inexpensive, good in appearance and high in style, which can be economically used with either cast-in or removable slab from insulation.

It is another object of this invention to provide a simple, inexpensive, removable trim arrangement for a refrigerator cabinet which will allow the insertion and removal of substantially rigid or semi-rigid foam insulation slabs.

It is another object of this invention to provide a simple, inexpensive removable trim arrangement for a refrigerator cabinet in which all raw edges are covered and protected by a removable ornamental trim strip.

These and other objects are attained in the form shown in the drawings in which a U-shaped trim strip extends around, covers and grips the raw edges of both the inner and outer walls of the refrigerator cabinet and door. Between the edges is a resilient gasket seal compressed by the inward spring of the U-shaped trim strip. One or more ribs hold the gasket seal in place prior to the foam insulation of the space between the walls.

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

In the drawings:

FIGURE 1 is a perspective view of a regrigerator cabinet embodying one form of my invention;

FIGURE 2 is a fragmentary horizontal sectional view taken along the lines 2—2 of FIGURE 1; and

FIGURE 3 is a similar horizontal fragmental sectional view showing a modified arrangement.

Referring now more particularly to FIGURE 1, there is shown a refrigerator cabinet **20** provided with a flat faced front door **22**. The door **22** has a flat front face formed of a flat sheet **54** which is simply formed of decoratively coated sheet metal cut to a suitable size. The inner wall **56** of the door is preferably formed of a suitable plastic by vacuum forming or other means to the shape indicated in FIGURE 2. This inner wall includes a large protruding rib **57** extending around the perimeter of the door on the outer side of which is a double offset provided with the laterally and forwardly extending flange portions **59**, **61** and **63**. The flange portion **59** is provided with a series of slots **65** receiving a corresponding series of spaced projections **67** having the thin flanges **69** which like barbs press against the inner wall of the flange **59** to prevent removal of the gasket seal **50**. On the opposite side of the flange **59** the gasket seal is provided with a set of flanges **71** which press against the outer surface of the flange **59** surrounding the aperture **65**. This portion of the seal **50** is connected by a bellows type arrangement with the envelope for the magnetic material **73**. The flanges **69** are tapered and relatively thin so that with the flexibility provided in the projection **67** they can be pushed through the slots **65** and spread outwardly so that they lock the seal **50** to the flange **59**.

The flange **63** is provided with an outwardly extending rib or bead **75** between the flange **61** and its outer edges. This rib or bead **75** cooperates with the outer wall **56** as well as the U-shaped trim member **77** to hold a resilient gasket seal **79** compressed in the space between these members **54**, **56** and **77**. This seal **79** assists in preventing the escape of foam insulating material **58** from the space between the walls of the door **22**. The flanges **69** likewise prevent the escape of foam insulating materials through the aperture **65**. The foam gasket seal material **79** may be of a natural or synthetic sponge rubber or resilient polyurethane foam or other elastic materials. The U-shaped trim strip **77** has a long leg **81** with an inwardly folded edge on the outside of the sheet **54** of the door **22**. The leg of the U-shaped trim strip **77** on the opposite side is curled, or bent inwardly to form a projection **78** extending into the groove **75** on the opposite side of the flange **63**. This projection **78** is bent into the groove **75** for preventing the easy removal of the trim strip **77**. The strip **77** has a sufficient inward spring to cause the projection **78** to tightly engage the groove **75** so as to prevent easy removal of the trim strip **77**. The space between the walls of the door may be filled with polyurethane plastic foam insulation **56** which may be cast in place between the walls thereof or there may be fitted in slabs of polyurethane insulation foam. The trim strips may not be continuous but may have one or more ends by which the trim strip **77** can be forcibly removed to change the decorative sheet **22** to one of another color or finish which may complement the other colors used in the furnishing of the room wherever the refrigerator **20** is located.

The wall construction of the top and side walls of the cabinet includes a similar front trim arrangement. The flat outer sheet metal side walls **26** as well as the flat outer top wall **28** extend forwardly in a straight line. The inner walls **36** enclose a refrigerated compartment **37** and extend into the notch or kerf **83** which receives the front

edges of the sheet 36. The kerf 83 forms the rear portion of the breaker strip 42 which has an offset flange 44 at the front which is provided with a forwardly extending flange 46 terminatnig in a raw edge. Between the flanges 44 and 46 is an outwardly extending rib 45 extending adjacent the front portion of the outer sheet metal wall 26 which terminates in a raw edge substantially parallel to the raw edge 46. Between the rib 45 and the two raw edges of the flange 46 and the outer wall 26 is compressed a resilient gasket seal 47 which prevents the escape of the foam forming materials during the casting of the foam between the walls. The opposite side of the rib 45 forms a groove.

The raw edges at the front of the flange 46 and the outer wall 26 as well as the sealing gasket 47 are enclosed by the U-shaped trim strip 86 having an outer leg provided with an inwardly folded edge 87. The opposite leg is provided with a projecting portion 89 extending into the groove between the flanges 46 and 44 to provide an interfitting spring engagement to prevent the easy removal of the trim strip 86. The trim strip 86 is provided with a lateral flange 80 extending inwardly from the projection 89 overlying the flange 44 and provided with an inwardly bent or curled edge 82. This flange 80 extends between the portion of the magnetic seal 50 containing the magnetic material 73 and the flange 44. It is preferably made of a type of stainless steel which is magnetic so that the magnetic material 73 is attracted to it to hold the door 22 in the closed position. The trim strip 77 likewise may be made of stainless steel but it may be made of aluminum, if desired. If both trim strips 77 and 86 the U-shaped portions spring inwardly so as to grip and extend around the raw edges and to squeeze the gasket seals 79 and 47 to provide the sealed edge arrangement.

As shown, the flanges 46 and 44 are provided at the front of a plastic breaker strip 42 having its rear edge provided with a kerf receiving the front of the sheet metal inner liner 36 which encloses the refrigerated compartment 37. However, if desired the plastic material forming the breaker strip 42 may continue rearwardly to form out of the same plastic the inner liner. The polyurethane foam plastic insulation 34 is preferably cast in between the inner and outer walls. However, if desired, rigid or semirigid polyurethane foam plastic insulation slabs may be substituted for the cast insulation. Such slabs can be removed and replaced by removal of the trim strips 77 and 86. Either of these forms provide a very simple yet very attractive and durable construction which is quite inexpensive and likewise requires only a minimum of labor.

The form shown in FIGURE 3 is generally similar to the form of wall and breaker strip construction shown in FIGURE 2. The plastic breaker strip 241 is provided with a diverging wall portion 243 having a notch or kerf 245 at the rear receiving the front edge of the sheet metal inner liner 247. This diverging wall portion 243 diverges as it extends forwardly to the laterally outward extending portion 249. The laterally extending portion 249 extends outwardly at an angle of about 85° and terminates in a forwardly extending portion 251. This forwardly extending portion is provided with two parallel ribs, one rib 253 being at the rear and the other rib 255 being at the front. These ribs extend into contact with the inner face of the front edge of the outer wall 257 which is of sheet metal. The space bounded by the ribs 253 and 255 and the flange 251 and the inner face of the front edge of the outer wall 257 has compressed therein a resilient gasket seal 254 of natural or synthetic foam rubber or plastic which in its uncompressed state is substantially larger than the enclosed space so that it is compressed when the ribs 253 and 255 are brought into contact with the inner face at the front of the outer wall 257. By this contact, these ribs limit the compressing of the seal 254.

The front edge or forwardly extending portion 251 of the breaker strip 241 and the front of the outer wall 257 are clamped together and covered by the thin metal U-shaped trim strip 259 which may be chrome plated metal or may be made of a suitable ornamental metal such as stainless steel, aluminum or brass. The space between the inner and outer walls 247 and 257 may be filled with polyurethane foam insulation 261 which may be either cast into place or may be in the form of removable slabs. The breaker strip is readily removable and is securely clamped in place by the removable trim strip 259 which is U-shaped in cross section. The removable trim strip 259 is formed so as to spring inwardly to grip the outer faces of the outer wall and breaker strip. In conjunction with the gasket seal 254, the arrangement makes a well sealed connection at the front of the breaker strip 241 and through the use of the notch 245 at the rear which envelops the front edge of the inner liner 247 a second well sealed connection is made.

The use of polyurethane foam insulation in connection with the walls and breaker strips of this type of construction reduces or eliminates the need for additional strength. Since the front edge of the outer shells or walls 26 and 257 extends straight forward without any substantial inward extension, the breaker strip, the inner wall and the insulation may be readily pulled out through the door opening of the cabinet merely by removing the trim strip with its U-shaped portion. When this is desired, a releasing agent is provided on the inner face of the outer sheet metal walls 26 and 257 to prevent adhesion between the insulation and the walls. Through this arrangement the interior of the cabinet is made more accessible. A releasing agent can also be applied to the inner surfaces of the inner and outer walls 56 and 54 of the door 22 so that the door may be likewise taken apart by removal of the U-shaped trim strip 77.

While the embodiments of the invention as herein disclosed constitute a preferred form, it is to be understood that other forms might be adopted.

What is claimed is as follows:

1. In combination, a substantially flat outer wall means terminating in edges, an inner wall means having an inner portion spaced inwardly from said outer wall means and a portion extending laterally and thence forwardly a short distance from said edges of said outer wall means and terminating in a edge, wherein the improvement comprises providing said portion extending laterally and thence forwardly with a rib paralleling its edge and extending substantially into contact with the inner face of said outer wall adjacent said edges, and a trim means having a portion substantially U-shaped in cross section extending around said edges and clamping the adjacent outer surface of said outer shell means and the inner surface of said inner wall means adjacent said rib.

2. A combination as defined in claim 1 in which a resilient seal is provided between said rib and said U-shaped portion and said outer and inner wall means.

3. A combination as defined in claim 1 in which a second rib is provided spaced from and parallel to said first mentioned rib providing a recess between said ribs and a resilient seal is provided between said ribs and said inner and outer walls means.

4. A combination as defined in claim 1 in which the flat outer wall means is in the form of a rectangular sheet forming the outer face of a door and the inner wall means forms the inner wall of the door.

5. A refrigerator cabinet including an outer wall means provided with a door opening at the front, said outer wall means having side and top walls with edges at the front, an inner wall within said outer wall means having an inner portion spaced inwardly from said outer wall means and provided with means at the front extending laterally substantially to said outer wall means a short distance to the rear of the edges and thence forwardly alongside of and substantially in contact with said outer wall means substantially to said edges of said outer wall means and provided with a recess paralleling said outer wall means

and a rib paralleling said recess extending substantially into contact with said outer wall means and terminating in edges adjacent the edges of the outer wall means, and a trim means having a portion substantially U-shaped in cross section extending around and clamping together and covering said edges and gripping a portion of the adjacent outer surface of said outer wall means and an inner surface of said means at the front adjacent said recess.

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