May 9, 1944. C. R. QUINN 2,348,645

REFRIGERATOR CONSTRUCTION

Filed June 12, 1941

Fig. 1.

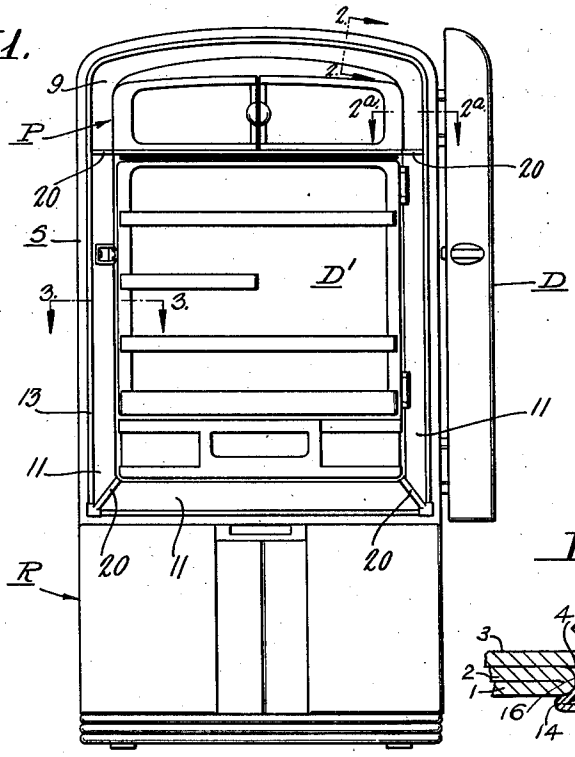


Fig. 4.

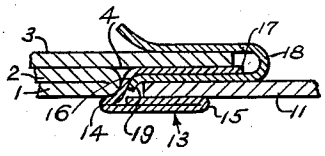


Fig. 2.

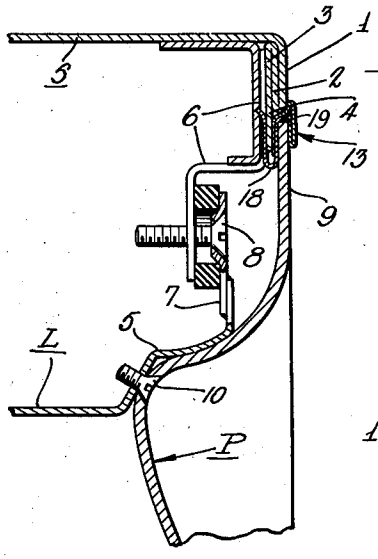
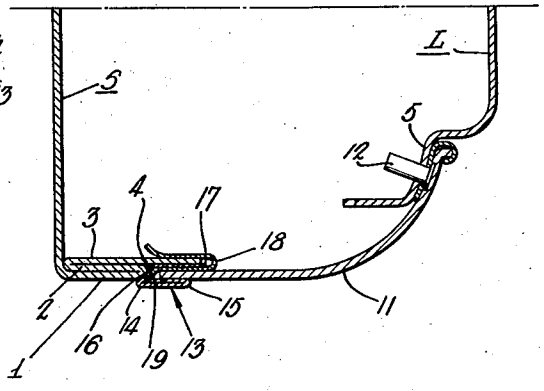


Fig. 3.



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REFRIGERATOR CONSTRUCTION

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Application June 12, 1941, Serial No. 397,803

2 Claims. (Cl. 220—9)

This invention relates to new and useful improvements in refrigerator cabinet construction, and more particularly to the breakerstrip construction employed to close the spaces or openings at the front of the cabinet between the inner and outer shells thereof.

Accordingly, the principal object of the present invention is to provide in a refrigerator cabinet a breakerstrip assembly embodying novel means for fastening the breakerstrips to the cabinet outer shell.

Another object of the invention is to provide a refrigerator breakerstrip assembly as set forth, wherein the novel outer edge fastening means serves also to provide an attractive trim piece about the front of the refrigerator cabinet.

A further object of the present invention is to provide a breakerstrip fastening means of the character described, together with means for securing it to the outer shell constructed and arranged so that the breakerstrip, which is held in place by fastening means, serves in turn to prevent displacement of the means which secures the fastening means.

A still further object of the invention is to provide a breakerstrip assembly and fastening means of the type described which is comparatively easy to install and inexpensive to manufacture.

These and other objects of the invention and the features and details of the construction and arrangement thereof are hereinafter fully set forth and described and shown in the accompanying drawing, in which:

Figure 1 is a view in front elevation of a refrigerator embodying the breakerstrip construction and assembly of the present invention, the refrigerator door being open to better illustrate the same.

Figure 2 is an enlarged view in section taken along line 2—2, and line 2*a*—2*a*, Figure 1.

Figure 3 is an enlarged view in section taken on line 3—3, Figure 1; and

Figure 4 is an enlarged view in section of a strip member made in accordance with the present invention.

Referring now more particularly to the drawing, reference character R designates generally a domestic refrigerator of the mechanical type comprising an outer metal shell S and an inner metal shell or lining L, the interior of which provides the usual food storage compartment open at the front.

In the present instance, the outer metal shell S of the refrigerator cabinet may be formed of a single piece of sheet metal material of generally U-shape, to provide the outer top and side walls of a refrigerator. The front edge portion of the shell S preferably is bent inwardly at right angles to the remainder of the sheet as shown at 1, then is bent back upon itself as at 2 and then again bent as at 3 reversely upon itself inwardly in a direction parallel to the first bent portion 1 to provide, peripherally of the front of the shell, an inturned edge of triple thickness extending continuously about the top and side thereof. The last bent edge portion 3' of the shell S preferably is of greater length than the bent portions 1 and 2 so that it extends inwardly beyond the latter, as shown in the drawing, to form an inwardly projecting flange which provides, in conjunction with the bent portions 1 and 2, a recessed seat 4 extending continuously about the top and sides of the front of the shell S.

The food liner L has its front edge portions formed to provide a flange portion 5 peripherally of the food compartment front opening, and the said liner is positioned slightly rearwardly of the plane of the front of the shell S with its flange 5 extending generally in the direction of, but spaced apart from, the flange edge portion 3 of the said outer shell S. The space between the shell S and lining L is filled with suitable insulating material, and said lining and shell are supported in spaced relation, as aforesaid, by means of bracket members 6 and 7 located, respectively, at suitable points about the front edges of the shell and lining and secured together by screws or the like 8. One suitable construction and arrangement of such parts is disclosed and described, for example, in the copending application of Theodore W. Rundell, Serial No. 397,972, filed June 13, 1914, now Patent No. 2,331,845.

The refrigerator is provided with the usual door D for closing the front access opening to the food storage compartment and this door and its gasket (not shown) are constructed and arranged so that said door overlies the entire front of the refrigerator cabinet, from side to side and to the top of the outer shell thereof, with its gasket positioned to impinge or seat upon the inwardly bent front edge portion 1 of said shell. The refrigerator may also be provided with a shelf-lined inner door D' as shown.

Mounted in the top portion of the food storage compartment of the refrigerator is the usual evaporator (not visible) which, in the illustrated embodiment of the invention, is relatively shallow and extends substantially entirely across the top portion of the front of the cabinet. Overlying

the front of the evaporator there is provided a closure panel P of suitable thermal insulating material, which serves to seal the front of the evaporator against the circulation of air about its exterior top and sides, as well as interiorly thereof. The top and side marginal portions 9 of the panel P may extend outwardly over the lining flange 5 (to which it may be secured by screws 10) and into the recessed seat portion 4 of the outer shell S, thereby providing a thermal breakerstrip between the lining L and the outer shell S in the portions of the refrigerator cabinet immediately adjacent and surrounding the evaporator therein (see Figure 2). The panel member P may be constructed and arranged, for example, as shown and described in the copending application of Donald E. Dailey, Serial No. 397,792, filed June 12, 1941, now Patent No. 2,301,020.

On the other hand, the space between the lining L and outer shell S in the front of the refrigerator cabinet below the level of the bottom of the evaporator and panel P may be closed or bridged by means of breakerstrips 11, and these breakerstrips are constructed and arranged so that their outer edges reside in the recessed seat 4 of said outer shell, while their inner edge portions outwardly overlie the flange 5 of said lining, as shown in Figure 3 of the drawing.

The inner edge of the breakerstrips 11 may be detachably secured to the flange 5 of the lining L by means of suitable snap fasteners or the like 12, for example, in accordance with the invention shown and described in the copending application of Theodore W. Rundell, Serial No. 371,945, filed December 27, 1940, now Patent No. 2,313,671. On the other hand, the outer edge of the breakerstrips may be fastened in the recessed seat 4 of the outer shell by means of a strip 13 which constitutes a novel feature of the present invention and serves both to hold said outer breakerstrip edge in the seat 4 and to provide an attractive trim piece about the front of the refrigerator cabinet at the junction of the breakerstrips 11, panel P and the front edge portion of the outer shell S.

According to the present invention, the trim strip 13 extends continuously about the top and sides of the front of the cabinet outer shell S, and this strip 13 is generally shaped to conform to the contour of the recessed seat portion 4 of said shell in which it is disposed. More particularly, the trim strip 13 includes head portions 14 and 15 which extend in opposite directions, parallel to the plane of the front of the outer shell S, with the portion 14 overlying the front surface of the inner edge of the bent portion 1 of said shell S, and the portion 15 extending inwardly in spaced parallel relation with respect to the inturned flange edge portion 3 thereof so as to overlie the front surface of the outer edge portion of the breakerstrips 11 or panel P, as may be the case. In addition, the strip 13 includes a shank portion 16 which extends rearwardly between the adjacent edges of the doubled portions 1 and 2 of the shell and the breakerstrip 11 or panel, as the case may be, to the forward surface of the flange edge portion 3, and a tail portion 17 which extends across the said flange edge portion 3 in a direction inwardly of the refrigerator and behind the outer edges of the breakerstrips and panel P. The strip 13 may be held in position in the seat portion 4 of the outer shell S by means of a plurality of U-shaped resilient clips 18 which are engaged over the tail portion 17 of said strip 13 and the flange edge portion 3 of said shell, at a plurality of suitably spaced points around the sides and top of the cabinet. In addition, the clips 18 preferably are each provided with a forwardly extending lip 19 which extends forwardly between the bent portions 1 and 2 of the shell and the inner edges of the breakerstrips 11 so that the latter serve to hold said clips against displacement.

Thus it will be seen that the strip 13, and particularly its inwardly extending head portion 15, forms, in conjunction with recessed seat 4 of the outer shell S, an inwardly facing groove or recess which extends continuously about the sides and top of said shell and provides a channel to receive and retain in position the outer edges of the panel member P and the breakerstrips 11.

To mount the panel P and breakerstrips 11 in the refrigerator cabinet, the strip 13, which extends entirely about the sides and top of the shell S, is fastened in the recessed seat 4 of said shell only in top and upper side portions thereof immediately surrounding the evaporator by means of several of the resilient clips 18 as aforesaid, with the lower side portions of the strip 13 below the level of the bottom of the evaporator left free and unattached from the adjacent lower side portions of the shell. With the top and upper side portions of the strip 13 thus fastened to the upper portion of the shell, the opposite side edge portions of the panel P are inserted between the said strip portions 15 and 17 at a point where the strip 13 has been left free from attachment to the opposite sides of the shell (below the evaporator), and the panel P, thus positioned, may be slid upwardly into its proper position across the front of the evaporator, with the entire length of its outer marginal edge inserted and retained in the shell seat 4 behind the said strip 13 as previously described.

With panel member P secured in place, the lower side portions of the strip 13 are secured to the adjacent side portions of the shell by the resilient clips 18 as aforesaid, and the breakerstrips 11 may then be mounted in place. This may be accomplished by first inserting the outer edges of the breakerstrips into the channel formed by the strip portions 15 and 17, after which the inner edges of said breakerstrips 11 may be secured to the flange 5 of the inner shell or lining L, for example, by means of the snap fasteners 12 previously mentioned.

After the panel P and breakerstrips 11 have been installed in the refrigerator cabinet as aforesaid, the joints between the ends of the breakerstrips 11 and between the latter and the lower edge of the said panel P may be connected and concealed from view by means of suitable trim strips 20. These strips 20, for example, may be constructed in accordance with the invention described and claimed in the copending application of Theodore W. Rundell, Serial No. 348,593, filed July 30, 1940, now Patent No. 2,286,109.

From the foregoing, it will be observed that the present invention provides, in a refrigerator, a novel breakerstrip construction and assembly embodying novel means for fastening the breakerstrips to the outer shell of the refrigerator cabinet, and for providing an attractive trim piece about the front of the said cabinet. Too, the fastening and trim means of the present in-

vention is comparatively inexpensive and easy to install, and the construction and arrangement thereof with respect to the breakerstrips is such that said breakerstrip, which is held in place by the trim strip itself, serves to prevent displacement of said trim strip from the outer shell.

The present invention is not confined to use solely in refrigerators embodying a top front panel such as the member P but, obviously, may be employed in the same manner and to equal advantage in refrigerators wherein breakerstrips, such as 11, extend entirely about the front of the cabinet, for example, as illustrated in Figure 1 of the aforesaid Rundell Patent No. 2,313,671. While a particular embodiment of the present invention has been herein illustrated and described, it is not intended that said invention be limited to such disclosure but that changes and modifications can be made and incorporated therein within the scope of the annexed claims.

I claim:

1. A refrigerator cabinet construction comprising inner and outer shells provided with a door opening, said outer shell having an edge portion bent toward the inner shell peripherally of the door opening and the edge portion of the outer shell forming with said outer shell a recessed seat, a breakerstrip closing the space between the shells with the outer edge of said breakerstrip extending into the recessed seat of the outer shell, means detachably securing the inner edge of the breakerstrip to the edge portion of the inner shell, means for fastening the outer edge of the breakerstrip to the outer shell comprising a strip disposed in the recessed seat thereof and including a head portion overlying at least the adjacent edge front surface portions of said breakerstrip and another portion extending rearwardly between the breakerstrip and outer shell and inwardly along the edge portion of the latter, and clips engaging over said other portion of the strip and the edge portion of the outer shell to retain said strip in position.

2. A refrigerator cabinet construction comprising inner and outer shells provided with a door opening, said outer shell having an edge portion bent toward the inner shell peripherally of the door opening and the edge portion of the outer shell forming with said outer shell a recessed seat, a breakerstrip closing the space between the shells with the outer edge of said breakerstrip extending into the recessed seat of the outer shell, means detachably securing the inner edge of the breakerstrip to the edge portion of the inner shell, means for fastening the outer edge of the breakerstrip to the outer shell comprising a strip disposed in the recessed seat thereof and including a head portion overlying at least the adjacent edge front surface portions of said breakerstrip and another portion extending rearwardly between the breakerstrip and outer shell and inwardly along the edge portion of the latter, and clips engaging over said other portion of the strip and the edge portion of the outer shell to retain said strip in position, said clips having a portion thereof arranged for engagement with said outer edge of the breakerstrips thereby to retain the clips against displacement.

CHARLES R. QUINN.