

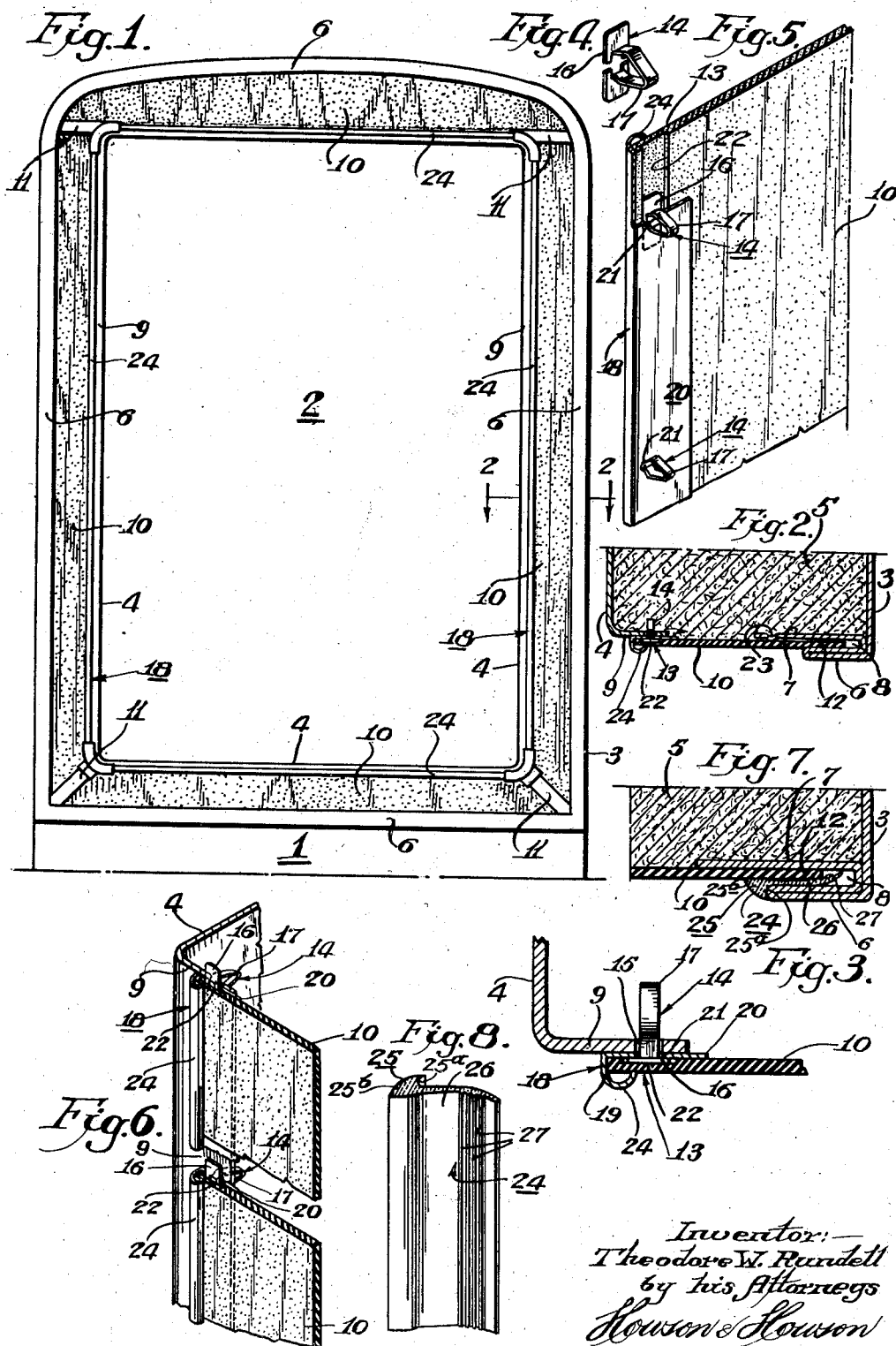
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REFRIGERATOR CONSTRUCTION

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REFRIGERATOR CONSTRUCTION

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This invention relates to new and useful improvements in refrigerator cabinet construction and more particularly to the construction and arrangement of the breaker strips employed to close the space intervening between the outer shell and the lining of such a cabinet.

The principal object of this invention is to provide an improved breaker strip assembly of the "snap-on" type whereby the breaker strip may be easily secured in position without the employment of special apparatus.

Another object of the invention is to provide an improved breaker strip assembly which is of neat attractive appearance and comparatively easy to assemble in a refrigerator cabinet.

A further object of the invention is to provide a breaker strip assembly of the character set forth which is relatively simple and inexpensive and which embodies novel means for removably securing the same in a refrigerator cabinet.

These and other objects of the invention and the various 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 partial front elevation view of a refrigerator cabinet showing the improved breaker strip construction of the present invention.

Figure 2 is an enlarged view in section taken on line 2—2, Figure 1.

Figure 3 is an enlarged fragmentary view in section showing more clearly the manner in which the breaker strip is attached to the lining of the refrigerator cabinet.

Figure 4 is a view in perspective of the novel fastening means employed to secure the breaker strip to the cabinet lining.

Figures 5 and 6 are fragmentary views in perspective showing the manner in which the fastening means are secured to or carried by the breaker strips.

Figure 7 is an enlarged fragmentary view in section similar to Figure 2 but illustrating a modification of the invention; and

Figure 8 is a fragmentary view in perspective of a wedge trim strip of the form embodied in the disclosure of Figure 7.

Referring now more particularly to the drawing, reference numeral 1 designates, generally, a refrigerator cabinet construction defining therein a food storage compartment 2. The cabinet 1 comprises an outer shell 3 and a liner 4 which is suitably supported within the outer

shell 3 and spaced with respect thereto. The space between the adjacent wall portions of the shell 3 and lining 4 is filled with suitable heat insulating material 5.

The forward or front portion of the shell 3, as best shown in Figure 2 of the drawing, is bent substantially at right angles inwardly and peripherally of the opening to the food storage compartment 2 so as to form a flange 6 in the plane of the front of the cabinet 1 and the edge portion 7 is further bent to form a generally U-shaped groove 8 rearwardly of said flange 6 which extends entirely around the said opening of the food storage compartment 2. The liner 4 is likewise bent at right angles peripherally of the opening of the food storage compartment 2 to form or provide a flange 9 in the plane of the front of the cabinet 1 extending toward the flange 6 of the shell 3.

A breaker strip 10 connects the outer shell 3 and the liner 4 and this breaker strip is preferably formed of a non-metallic and non-hygroscopic heat-insulating material or a material having substantially poor heat-conducting properties. A section of the breaker strip 10 is provided for each of the top, bottom and side portions of the cabinet 1 surrounding the opening to the food storage compartment 2, and suitable corner clips 11 connect and conceal the meeting end edges of the several sections of the breaker strip 10 as shown in Figure 1. The clips 11 may be of the type described and claimed in my co-pending application Serial No. 348,593, filed July 30, 1940.

The outer edge portion 12 of the breaker strip sections extend into or are received by the groove 8 formed in the outer shell 3 of the cabinet as shown in Figure 2 of the drawing, and the inner edge 13 of the breaker strip sections are secured to the flange of the liner 4 by means of suitable snap-fasteners 14 which engage the flange portion 9 of said liner 4 through suitably located openings 15.

The fasteners 14 may be of the type shown in Figure 4 of the drawing comprising head and bowed resilient shank portions 16 and 17, respectively, and these snap fasteners 14 may be secured at the inner edge 13 of the breaker strips 10 by means of a clip member 18. As best shown in Figure 3 of the drawing, the clips 18 are of generally J-cross-section shape having their formed end portion 19 arranged to receive the inner edge portion of the breaker strips 10 with the leg portion 20 of said clips underlying

the rear surface of the breaker strips 10 as indicated.

The clips 18 are provided with suitable apertures 21 therein spaced apart a distance corresponding to the spacing between the openings 15 in the flange 9 of the lining 4, and the bowed shank portions 17 of the fasteners 14 project through said openings 21 and have their head portions 16 disposed between the portion 20 of the clips 18 and the breaker strips 10, the latter being grooved or recessed as indicated at 22 to receive said head portions 16 of the fasteners as shown in Figure 5 of the drawing.

In addition to providing a member for securing the fasteners 14 with respect to the breaker strips 10, the clips 18, and particularly the end portion 19 thereof which engages over the inner edge 13 of the strips 10 provide a trim for such inner edge portion of said strips 10 which otherwise would be exposed to view and thus substantially enhances the appearance of the breaker strip assembly. Too, the appearance of the assembly may be furthered by rounding the portion of the clips 18 that is exposed to view as indicated at 24.

In assembling the breaker strips 10 on the cabinet 1 the snap fasteners 14 are first inserted through the openings 21 in the clips 18 after which the latter are engaged over the inner edge 13 of the breaker strips 10 with the head portions 16 of said fasteners 14 disposed in the groove or recess 22 in said strips 10. The outer edge 12 of the breaker strips 10 is then inserted in the groove or pocket 8 of the shell 3, and the bowed shank portions 17 of the fasteners 14 then may be snapped or projected through the openings 15 in the flange 9 of the liner 4. When the four breaker strips 10 have been assembled in this manner, the corner clips 11 are inserted to connect and conceal the adjacent end edges of said breaker strips 10.

The breaker strips 10 preferably are of a width somewhat less than the maximum spacing between the bottom of the groove 8 and the openings 15 in the flange 9 of the liner 4 so that normally the outer edge of the breaker strip 10 does not extend the full depth of said groove 8 as shown in Figure 2, thus providing sufficient tolerance for slight variations in the spacing of the adjacent wall portions of the shell 3 and liner 4. Also, in order that the outer edge portion 12 of the breaker strips 10 may fit relatively snugly within the groove 8 thereby to eliminate rattling thereof against the walls of said groove, the edge portion 7 of the shell 3 is provided with pressed-out portions 23 at suitably spaced intervals therealong for engagement against the rear surface of the breaker strips 10.

On the other hand, and as a modification of the foregoing structure, the aforesaid pressed-out portions 23 may be eliminated and the outer edge portion of the breaker strips 10 held secure against rattling by means of novel wedge strips inserted between the said breaker strips and the flange 6 of the shell 3 of the refrigerator cabinet in the manner shown in Figure 7 of the drawing.

A wedge strip such as that mentioned is shown in Figure 8 of the drawing and is designated generally by the reference numeral 24. This strip 24 is preferably composed of suitable plastic of like material and comprises a head portion 25 and a relatively thinner, slightly arcuate, laterally projecting portion or body 26 which, due to its composition, embodies a certain degree of resilience. The concave surface of the body 26 of the strip 24 is preferably provided with a parallel series of

longitudinally extending corrugations, serrations or the like 27 and, as shown, these face in a direction opposite from the head portion 25.

Preferably the strips 24 are of molded material and extend continuously up one side, across the top and down the other side of the cabinet structure with their corner portions formed or molded to conform to the shape of the corners at the upper end or top of the said cabinet structure, a separate strip 24 being employed across the portion of the cabinet at the bottom of the food storage compartment.

In instances where these strips 24 are employed the breaker strips are constructed and installed as hereinbefore described, and the said strips 24 then are manually inserted or applied so that their body portions 26 are wedged between the forward surface of the strips 10 and the flange portion 6 of the shell 3 into the final rest position and relationship shown in Figure 7, thereby holding the outer edge portion 12 of the strips 10 firmly against the inner edge portion 7 of the said shell 3. Also, with the strips 24 thus inserted between the shell flange 6 and the breaker strips 10, one of the serrations or corrugations 27 on the said strips 24 will engage the outer edge of said breaker strips 10 and hold the latter against movement laterally to the right with respect to Figure 7 of the drawing.

In addition to the foregoing, the head portion 25 of the strips 20 is arranged to fit snugly into the angle or corner formed by the breaker strips 10 and the inner edge of the flange 6, and for this purpose the said head 25 has a concave portion 25a for receiving said flange inner edge and a convex portion 25b which provides a rounded surface exterior. Thus it will be seen that no sharp corner remains in which dust, dirt and the like can collect and at the same time there is provided a trim for the cabinet which is of neat, attractive appearance, the composition of the strips 24 permitting them to be manufactured in different colors and shades as may be desired.

From the foregoing it will be apparent that the present invention provides a breaker strip assembly of novel construction wherein the use of springs, screws and the like is entirely dispensed with. Too, the construction and arrangement of the present breaker strip is easily assembled in a cabinet and readily removable therefrom should occasion require. Furthermore, the assembly is neat in appearance and provides an efficient heat break between the liner and the outer shell of the cabinet.

While a particular embodiment of the invention has been herein illustrated and described, it is not intended that the invention be limited to such disclosure but that changes and modifications may be made and incorporated therein and thereto within the scope of the annexed claims.

I claim:

1. A refrigerator cabinet construction comprising an outer shell and lining having heat insulation therebetween and providing a food storage compartment with a front opening thereto, said shell and lining having edge portions bent inwardly toward each other and spaced apart peripherally of the front opening, the edge portion of the lining having apertures therein and the edge portion of the shell being bent to form an inwardly facing groove substantially peripherally of said front opening, a removable breaker strip closing the space between the shell and lining and having its outer edge extending into said inwardly facing groove of said shell, fasteners hav-

ing head and shank portions for removably securing the inner edge of the breaker strip to the edge portion of the lining by engagement of the shank portion of said fasteners through apertures in said lining edge portion, the rear face of said breaker strip being recessed to receive the heads of said fasteners, and means for securing said fasteners to the breaker strip comprising a U-section spring channel having a portion formed to receive the breaker strip inner edge and a leg portion underlying the rear surface of the breaker strip and provided with apertures therein, the heads of the fasteners being disposed in said recess between said breaker strip and the leg portion of the spring channel with the shanks of said fasteners extending through said apertures so that said spring channel and said fasteners are interlocked with the breaker strip and the latter is supported by the fasteners.

2. A refrigerator cabinet construction comprising an outer shell and lining having heat insulation therebetween and providing a food storage compartment with a front opening thereto, said shell and lining having edge portions bent inwardly toward each other and spaced apart peripherally of the front opening, the edge portion of the lining having apertures therein and the edge portion of the shell being bent to form an inwardly facing groove substantially peripherally of said front opening, a removable breaker strip closing the space between the shell and lining and having its outer edge extending into said inwardly facing groove of said shell, a recess formed in the rear surface of the breaker strip and extending adjacent and parallel to the inner edge thereof, snap fasteners having head and shank portions for removably securing the inner edge of the breaker strip to the edge portion of the lining by engagement of the shank portion of said fasteners through apertures in said lining edge portion, and means for securing said fasteners to the breaker strip comprising a U-section spring channel having a portion formed to receive the breaker strip inner edge and another portion underlying the rear surface of the breaker strip and provided with apertures therein, the heads of the fasteners being disposed between the other portion of the spring channel and the breaker strip in the recess in the latter with the shanks of said fasteners extending through said apertures so that said spring channel and said fasteners are interlocked with the breaker strip and the latter is supported by the fasteners.

3. A refrigerator cabinet construction comprising an outer shell and lining having heat insulation therebetween and providing a food storage compartment with a front opening thereto, said shell and lining having edge portions bent inwardly toward each other and spaced apart peripherally of the front opening, the edge portion of the lining having apertures therein and the edge portion of the shell being bent to form an inwardly facing groove substantially peripherally of said front opening, a breaker strip closing the space between the shell and lining and having its outer edge extending into said inwardly facing groove of said shell, means for securing the breaker strip outer edge in said inwardly facing groove of the shell comprising a wedge strip interposed between a front wall of the groove and said breaker strip, said wedge strip having a body portion of S-section forming a bead portion engaging an edge of the shell groove and provided with serrations for engaging said outer edge of the breaker strip to hold the same against lateral

movement, fasteners having head and shank portions for securing the inner edge of the breaker strip to the edge portion of the lining by engagement of the shank portion of said fasteners through apertures in said lining edge portion, and means for securing said fasteners to the breaker strip comprising a U-section spring channel having a portion formed to receive the breaker strip inner edge and another portion underlying the rear surface of the breaker strip and provided with apertures therein, the heads of the fasteners being disposed between said breaker strip and the other portion of the spring channel with the shanks of said fasteners extending through said apertures, said wedge strip preventing sidewise slippage of said breaker strip relative to said spring channel.

4. A refrigerator cabinet construction comprising an outer shell and lining having heat insulation therebetween and providing a food storage compartment with a front opening thereto, said shell and lining having edge portions bent inwardly toward each other and spaced apart peripherally of the front opening, the edge portion of the lining having apertures therein and the edge portion of the shell being bent to form an inwardly facing groove substantially peripherally of said front opening, a breaker strip closing the space between the shell and lining and having its outer edge extending into said inwardly facing groove of said shell, means for securing the breaker strip outer edge in said inwardly facing groove of the shell comprising a wedge strip interposed between a wall of the groove and said breaker strip, said wedge strip having a body portion provided with serrations for engaging said outer edge of the breaker strip to hold the same against lateral movement, and a head portion constructed and arranged to occupy the corner formed by the breaker strip front surface and the edge portion of the shell thereby to prevent the collection of dust in said corner, fasteners having head and shank portions for securing the inner edge of the breaker strip to the edge portion of the lining by engagement of the shank portion of said fasteners through apertures in said lining edge portion, and means for securing said fasteners to the breaker strip comprising a clip having a portion formed to receive the breaker strip inner edge and another portion underlying the rear surface of the breaker strip and provided with apertures therein, the heads of the fasteners being disposed between said breaker strip and the other portion of the clip with the shanks of said fasteners extending through said apertures.

5. A refrigerator cabinet construction comprising an outer shell and a lining having heat insulation therebetween and providing a food storage compartment with a front opening thereto, said shell having an edge portion bent inwardly toward said liner peripherally of the front opening and the edge portion of the shell being bent to form an inwardly facing groove substantially peripheral of the front opening, a breaker strip closing the space between the shell and the lining and having its outer edge extending into said inwardly facing groove, means for securing said breaker strip outer edge in said inwardly facing groove comprising a wedge strip interposed between the front wall of the groove and said breaker strip, said wedge strip having a body portion provided with means within said channel for engaging the outer edge of the breaker strip to hold the same against lateral movement and a head portion constructed and arranged to occupy

the corner formed by the breaker strip front surface and the edge portion of the shell, fastening means for securing the inner edge of the breaker strip to the edge portion of the lining including a clip having a channel portion formed to receive the breaker strip inner edge, said wedge strip preventing sidewise slippage of said breaker strip out of said spring channel.

6. A unitary breaker strip assembly for refrigerator cabinets comprising a relatively rigid sheet of material of low heat conductivity, the rear surface of said sheet having a recess therein; fastening means having head and shank portions for removably securing said sheet of material in place in a refrigerator cabinet; and means securing said fastening means to the sheet comprising a substantially U-section spring member having a single channel edge portion receiving an edge of said sheet and a substantially flat portion underlying the adjacent portion of the rear surface of the sheet and having apertures therein registering with the recess in said sheet, the heads of said fastening means being disposed in the recess of the sheet between the sheet and said substantially flat portion of said spring member with the shanks of the fastening means extending through said apertures thereby interlocking the spring member and said fastening means with the sheet to prevent relative slippage of the spring member, fastening means and sheet with respect to each other and to provide a unitary structure.

7. A unitary breaker strip assembly for refrigerator cabinets comprising a relatively rigid sheet of material of low heat conductivity, said sheet having a recess formed in one surface thereof and extending adjacent and parallel to at least one side edge thereof; snap fastening means comprising head and shank portions for removably securing said sheet of material in place in a refrigerator cabinet; and means securing said snap fastening means to the sheet comprising a substantially U-section spring member having a single channel edge portion engaging said side edge of the sheet and a substantially flat portion underlying the adjacent portion of the rear surface of said sheet and having apertures therein registering with the recess in the sheet, the heads of said fastening means being disposed between said substantially flat portion of the spring member and the wall defining the base of the recess in the sheet with the shanks of the fastening means extending through said apertures so that said spring member and said fastening means are interlocked with the sheet to prevent relative slippage of the spring member, fastening means and sheet with respect to each other and to provide a unitary structure.

8. In a refrigerator cabinet construction, an outer shell; a lining spaced inwardly from said shell and providing a food storage compartment with a front opening thereto, said lining having an edge portion bent outwardly peripherally of the front opening and provided with apertures

therein; and a unitary breaker strip assembly removably secured in closing relation to the space between said shell and lining, said breaker strip assembly comprising a relatively rigid sheet of material of low heat conductivity recessed in its rear face, snap fasteners having head and shank portions, and means for securing said fasteners to said sheet comprising a substantially U-section spring member having a single channel portion receiving a side edge of the sheet and a substantially flat portion underlying the rear surface of said sheet and provided with apertures therein registering with the recess in the sheet and with the apertures in the outwardly bent portion of the lining, the heads of the fasteners being disposed in the recess of the sheet between the wall defining the base of said recess and said substantially flat portion of the spring member with the shanks of said fasteners extending through the apertures in said substantially flat portion, the sheet material, spring member and snap fasteners providing an interlocked unitary breaker strip assembly, and said assembly being removably secured in closing relation to the space between the shell and lining by engagement of the shanks of the snap fasteners through the apertures in the edge portion of the lining.

9. In a refrigerator cabinet construction, an outer shell; a lining spaced inwardly from said shell and providing a food storage compartment with a front opening thereto, said lining having an edge portion bent outwardly peripherally of the front opening and provided with apertures therein; and a breaker strip assembly removably secured in closing relation to the space between said shell and lining, said unitary breaker strip assembly comprising a relatively rigid sheet of material of low heat conductivity having a recess formed in the rear surface thereof, said recess extending adjacent and parallel to a side edge of said sheet, snap fasteners having head and shank portions, and a substantially U-section spring member for securing the said fasteners to said sheet and comprising a single channel portion receiving a side edge of the sheet and a substantially flat portion underlying the rear surface of said sheet and provided with apertures therein registering with the recess in the sheet and with the apertures in the outwardly bent portion of the lining, the heads of the fasteners being disposed between the substantially flat portion of the spring member and the wall defining the base of the recess in said sheet with the shanks of said fasteners extending through the apertures in said substantially flat portion of said spring member so that said spring member and said fasteners are interlocked with the sheet and provide a unitary assembly, and said unitary assembly being removably secured in closing relation to the space between the shell and lining by engagement of the fasteners through the apertures of the edge portion of said lining.

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