Jan. 23, 1945. C. H. NAUERT 2,367,886

REFRIGERATOR

Filed July 18, 1940

FIG. 1.

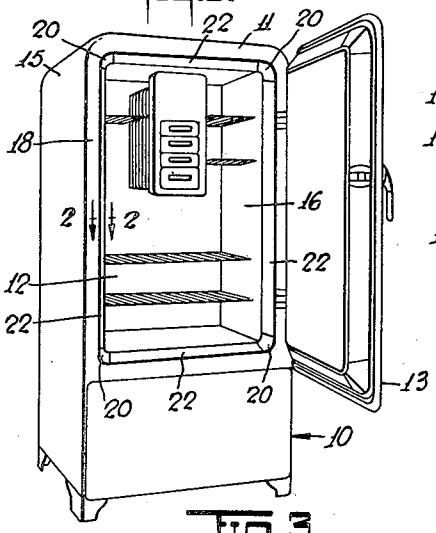


FIG. 2.

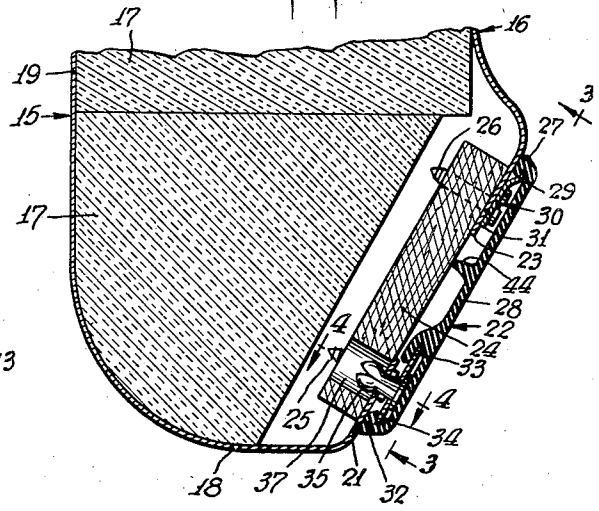


FIG. 3.

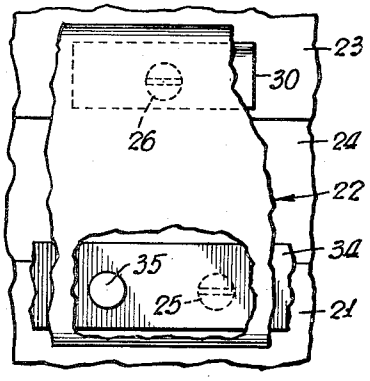


FIG. 4.

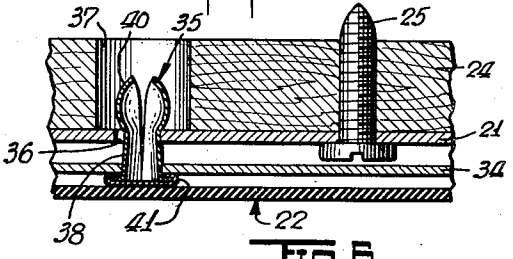


FIG. 5.

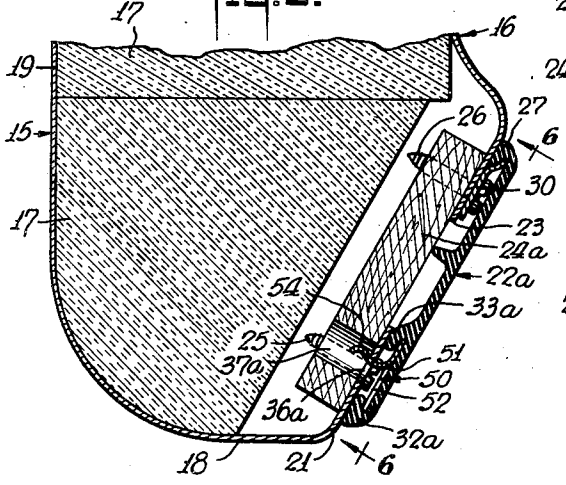
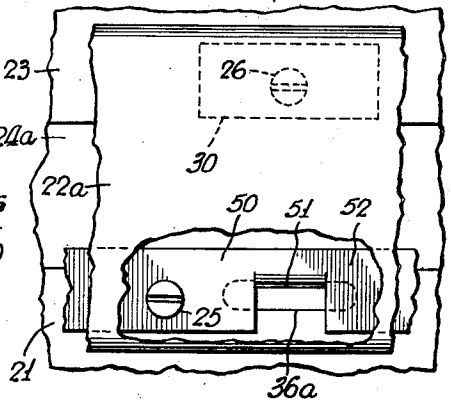


FIG. 6.



INVENTOR

Carl H. Nauert

BY

D. E. Heath

his ATTORNEY

Patented Jan. 23, 1945 2,367,886

UNITED STATES PATENT OFFICE

2,367,886

REFRIGERATOR

Carl H. Nauert, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware

Application July 18, 1940, Serial No. 346,126

1 Claim. (Cl. 220—9)

This invention relates to refrigerator cabinet wall structure having spaced metal panels connected by insulating strips, and it is an object of the invention to provide a trim strip of uniform cross-section for manufacture by the plastic extrusion process and having fastening means concealed from view as set forth in the following description and accompanying drawing, in which:

Fig. 1 is a perspective of a household refrigerator cabinet embodying the invention;

Fig. 2 is a detail section taken on line 2—2 of Fig. 1;

Fig. 3 is a detail view taken on line 3—3 of Fig. 2, and showing parts broken away to more fully reveal details of construction;

Fig. 4 is a detail section taken on line 4—4 of Fig. 2;

Fig. 5 is a view similar to that of Fig. 2 showing a modified form of trim strip embodying the invention; and

Fig. 6 is a fragmentary elevation taken on line 6—6 of Fig. 5, and showing parts broken away to more fully reveal details of construction.

Like reference characters denote like parts in the several figures of the drawing.

In Fig. 1 is shown a refrigerator 10 of the household type comprising a cabinet 11 having a doorway 12 and a door 13. The trim strip construction is shown applied to the cabinet 11 around the doorway 12.

In the form of the invention shown in Figs. 1 to 4, the cabinet 11 comprises an outer metal panel 15 and an inner metal liner 16, separated by blocks of suitable insulating material 17. The outer panel 15 has a section 18, bent inward substantially at right angles to the main side body section 19 thereof to form the front face of the cabinet 11 bordering the doorway 12, and terminates in an inturned rim flange 21 serving as a shoulder for one side of a breaker or trim strip 22 to be more fully described. The inner liner 16 terminates in an outward rim flange 23 extending substantially in co-planar relationship with respect to the rim flange 21, and serving as the shoulder for the other side of the trim strip 22.

Extending between the two panels 15 and 16 adjacent the rim flanges 21 and 23 thereof and holding said panels in spaced relationship is a member 24 connected to said flanges by fastening means shown in the form of screws 25 passing through the rim flange 21 and screws 26 passing through the rim flange 23. Member 24 may be made of wood or of plastic and may be in the form of a frame or a series of spaced cross braces.

Mounted between the two panels 15 and 16 are the breaker or trim strips 22 made from suitable insulating plastic material such as hard rubber or synthetic resin, each having a uniform cross-section throughout its length so that it can be made by the process of extruding the plastic material through a die. Four of these extruded plastic strips are shown framed around the doorway 12 and interconnected by suitable corner pieces 20 to complete the doorway frame.

In order to secure the inner side section of the trim strip 22 against the rim flange 23, the edge of said side section has an inturned lip 27, forming with the main web or body section 28 of the strip a recess for the retention of the edge sections 29 of two or more spring clips or catches 30, spaced along said rim flange. Each spring clip 30 has a main body section 31 supported against the rim flange 23 and secured thereto by one of the screws 26 which supports the member 24. The spring clip 30 is made of spring plate metal with its edge section 29 offset outward from its main flat body section 31 to permit said edge section to be yieldably flexed.

For securing the other outer side section of the trim strip 22 against the rim flange 21, the edge of said side section is provided with an inturned rib or lip 32. A rib 33, formed integral with the inner face of the strip 22 and spaced from the lip 32 is bent towards said lip to form therewith and with the main web section of the strip an undercut channel extending the full length of said strip. The lip 32 and the rib 33, serving as inturned side flanges of the channel, retain therebetween and in said channel a metal holding strip or plate 34 supporting a series of snap fasteners 35 spaced therealong. Each snap fastener 35 is adapted to pass through a pair of aligned openings 36 and 37 formed in the rim flange 21 and frame member 24 respectively. The openings 37 on the member 24 are of larger area than that of the rim flange openings 36 to permit expansion of the fasteners 35 in said openings 37 as will be more fully described.

Each of the snap fasteners 35 is shown comprising a split sleeve 38 having an enlarged outer end 40 and a flat head 41 having its rim reversely bent to receive the flanged inner ends of the two sleeve sections. The two parts of the sleeve end 40 are tapered so that they are automatically cammed together as they slide through their respective rim flange opening 36 upon application of axial pressure to the head 41. After in-

sertion of the fastener 35 through the rim flange opening 36 as described, the two parts of the split sleeve 38 spread apart in their respective frame bar opening 37 to prevent withdrawal of said fastener.

The snap fasteners 35 pass through and are held by the holding strip 34 in spaced relationship therealong, with the flat heads 41 of said fasteners retained between said holding strip and the main web or body section of the trim strip 22. The spacing between these snap fasteners 35 corresponds to the spacing between the rim flange openings 36 for alignment during assembly.

The inturned ribs or lips 27 and 32, and the rib 33 on the trim strip 22 serve not only to fasten said strip in position as described, but also serve to impart substantial rigidity to said strip against bending or warping. If desired, a further strengthening rib 44 may be provided integral with the inner face of the trim strip 22, and formed simultaneously with the inturned lips 27 and 32 and the rib 33 during the extrusion process of manufacture.

In assembling the trim strip 22, the holding strip 34 with the snap fasteners supported thereon is first slipped into the channel between the lip 32 and the rib 33 in predetermined longitudinal position corresponding to the position of the rim flange openings 36. The holding strip 34 will be frictionally retained in this longitudinal position during the remaining assembling operation. The inturned rib 27 on the inner side of the trim strip 22 is then hooked over the offset edge sections 29 of the spring clips 30, and said strip pushed inward towards the member 24 to insert the snap fasteners 35 through the respective rim flange openings 36, and in the latched position shown in the drawing. These openings 36 are desirably so positioned as to require a pull on the trim strip 22 away from the spring clips 30 and against the spring action of said clips to align the snap fasteners with their respective openings 36. When the trim strip 22 is released after the assembling operation described, the snap fasteners 35 will be spring pressed against the inner sides of their respective rim flange openings 36 by the action of the spring clips 30 so that said strip will be supported firmly against play.

In the construction shown in Figs. 5 and 6, instead of providing fasteners 35, a strip or plate 50 provided with snap members 51 for latch engagement with the rim flange 21 is retained between ribs 32a and 33a of the extruded plastic trim strip 22a. The ribs 32a and 33a are so formed as to hold the main body section 52 of the strip 50 against the inner face of the trim strip 22a. The strip 50, made of spring plate metal, has tongue sections bent or stamped out of the plane of the main body section 52 thereof to form the snap members 51. Each of these tongue sections 51 is sinuously bent to present at its free end a convex curved section 54 to the inner edge of the corresponding rim flange opening 36a.

The rim flange openings 36a are shown of oblong formation, and the recesses or openings 37a of the member 24a aligned therewith are also of oblong conformation but of larger area to permit latch movement of the snap tongues 51 therein.

The assembling of the trim strip 22a is effected in a manner similar to that described with reference to the construction of Figs. 1 to 5. For that purpose, the strip 50 is first slipped between the ribs 32a and 33a of the trim strip 22a for frictional retention therein. The rib 27 is then hooked over the spring clips 30 and the strip 22a pushed towards the connecting member 24a to latch the tongues 51 into their respective rim flange openings 36a.

Various changes and modifications may be made within the scope of the invention as set forth in the following claim.

What is claimed is:

In a refrigerator cabinet wall structure having inner and outer panels secured in spaced relation, a trim strip of substantially rigid thermal insulating material bridging the space between said panels, said trim strip having longitudinal ribs on its undersurface, one of said ribs being formed for hooked engagement with holding means on a flange of one of said panels for securing one edge of the trim strip in place, another pair of said ribs forming between them an undercut channel, and a series of snap fastening elements slidably held in said channel, a flange of the other of said panels having a corresponding series of fastening elements which cooperates with said first series for securing the other edge of the trim strip in place.

CARL H. NAUERT.