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## WINDOW CONSTRUCTION FOR REFRIGERATORS

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2 Claims. (Cl. 20—56.5)

The present invention relates to window construction for refrigerators.

Where refrigerators, show cases, and the like are to be provided with windows to permit observation of the contents, it is generally preferable to employ a plurality of glass panels, spaced from one another to form dead air spaces and thereby retard the conduction of heat from the outside to the inside of the box.

The present invention contemplates a window construction, particularly designed for a multiple ply glass panel window arrangement and wherein means is provided for effectively sealing in the glass in such a way as to prevent moisture from entering between the panels of glass. The present invention also contemplates a window construction according to which each glass panel is provided with a continuous or substantially continuous soft rubber gasket about its edge. The panels are arranged side by side with the gaskets or rubber channels acting as spacers to hold the glass panels apart and as gaskets against the supporting structure.

The invention also contemplates an arrangement whereby two metal strips of cooperative shape are provided so that the glass panels and gaskets may be placed in the window opening and then held against undesired movement while being clamped tightly.

A further object of the invention is to provide a window construction employing two metal strips, one relatively fixed to the refrigerator or show case and the other relatively movable relative thereto, the two strips being so designed that they may be clamped against interposed glass and gaskets and are yet held out of actual metallic contact so as to reduce the flow of heat through the metallic parts.

The accompanying drawing shows, for purposes of illustrating the present invention, one of the many embodiments in which the invention may take form, it being understood that the drawing is illustrative of the invention rather than limiting the same. In the drawing:

Fig. 1 is a sectional view through a show case window;

Fig. 2 is a side elevational view of a show case window; and

Fig. 3 is a section on the line 3—3 of Fig. 1.

The refrigerator show case may be made in any conventional or convenient manner and is generally provided with a rectangular window opening having a sill forming member 10, a top member 11, and side members 12 and 13. These are generally made of wood.

A thin rubber sealing strip 20 is preferably secured by suitable adhesive to the frame members. A stationary or fixed metal strip 21 is secured to the frame by screws indicated at 22 and 23. The stationary or fixed strips 21 are made by cutting strips of metal to the proper length and providing them with mitered joints as indicated. The strip is preferably made by extruding aluminum or similar metal to the desired shape.

According to the shape shown in the drawing, the strip 21 has a base 24, an upwardly extending flange 25, and shelf portion 26 which extends away from the intermediate portion of the flange 25. This shelf 26 is parallel with the base portion 24 and narrower, as indicated, so as to facilitate inserting the screw 22. The upper portion of the flange 25 is indicated at 27.

The shelf 26 and the upper portion 27 of the flange are adapted to receive window panes or glass panels 30, 31, 32. Each of these panels is accurately cut to a size slightly smaller than the rectangle formed by the shelf portions 26 of the various strips, and each of the panels is provided with soft, rubber, channel-shaped, gasket-forming members 33. These are preferably cut with mitered joints and are secured to the glass by some suitable form of cement.

The movable clamping strip is indicated at 35. It has a base portion 36, an upper clamping edge 37, and a reinforcing and stiffening web 38. Holes 39 are tapped into the web 38 and spaced the same as holes 40, provided in the flange 25 of the fixed member 21. Clamping screws 41 are threaded into these holes 39 and are employed for obtaining clamping pressure, as will be obvious. The upper flange 37 of the movable member engages the outer face of the left hand gasket member 33, as indicated in the drawing, and hence when the screws 41 are tightened, pressure is applied to all the gaskets and a very effective and tight joint is obtained. The base 36 of the movable member is pressed downwardly against the upper surface of the frame or against the rubber sheet 20 where such a sheet is employed.

The parts are preferably designed so that the movable member is provided with a groove 42 opposite the shelf 26 and with a cut out portion 43 opposite the base 24. In this way there is no metallic contact between the two strips and hence a conduction of heat is reduced to that which passes through the screws.

It will be noted that the shelf 26 engages the exposed web portions, of each of the channel shaped rubber gaskets and holds them securely

against the glass so that there is no possibility of squeezing them off the glass or away from the glass during clamping operation. It will also be noted that the squeezing of the rubber gaskets would tend to stretch them somewhat and hence tightly close the joints at the corners.

The window construction described herein is one which is exceedingly tight and unlikely to become fogged by reason of water vapor entering between the glass plates. In case of breaking of the glass, or the necessity of doing any other servicing to this portion of the refrigerator, it is obvious that one could easily remove the screws, take off the clamping strips, and clean, repair, or replace the glass panels and rubber channels. At all times there is an effective clamping action available and no reliance is made upon holding parts together by nails, screws embedded in wood, or other devices likely to loosen or otherwise deteriorate.

It is obvious that the invention may be embodied in many forms and constructions, and I wish it to be understood that the particular form shown is but one of the many forms. Various modifications and changes being possible, I do not otherwise limit myself in any way with respect thereto.

What is claimed is:

1. In a refrigerator, or the like, a frame defining a window opening, a window therein comprising a plurality of panes of glass of the same size, channel shaped rubber gasket members secured about the edges of the glass panes, plates fixedly secured to the members of the frame,

movable clamping plates, the plates having opposed parts to receive the glass panes with the gaskets about them, and clamping bolts for drawing the plates toward one another to squeeze the gaskets, the plates of one set having shelves forming flanges which engage the exposed faces of the webs of the channel shaped gaskets to hold the gaskets onto the glass, the other plates having recesses into which the flanges may enter without contacting, whereby thermal conduction is reduced, the free edges of the movable plates bearing on the frame members.

2. A device for securing multiple ply glass panels in place comprising a flat support, two strips of metal of uniform cross section and indefinite length, one strip having a base fixedly secured to the support, a flange at right angles to the base near one edge, and a shelf connected with an intermediate part of the flange parallel to base and spaced from the base for receiving the panels, the other strip having a clamping face opposite the free end of the flange, and a bearing face in the same plane as the outer face of the base and movable over the face of the support, and screws passing through holes in the first strip and threaded into the other strip, the second strip having set backs opposite the shelf and base so that the two strips are not brought into contact when clamping a predetermined thickness of glass together, whereby thermal conduction is reduced and the entire clamping pressure produced by the screws is transferred to the panel.

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