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SKYLIGHT RIB CONSTRUCTION

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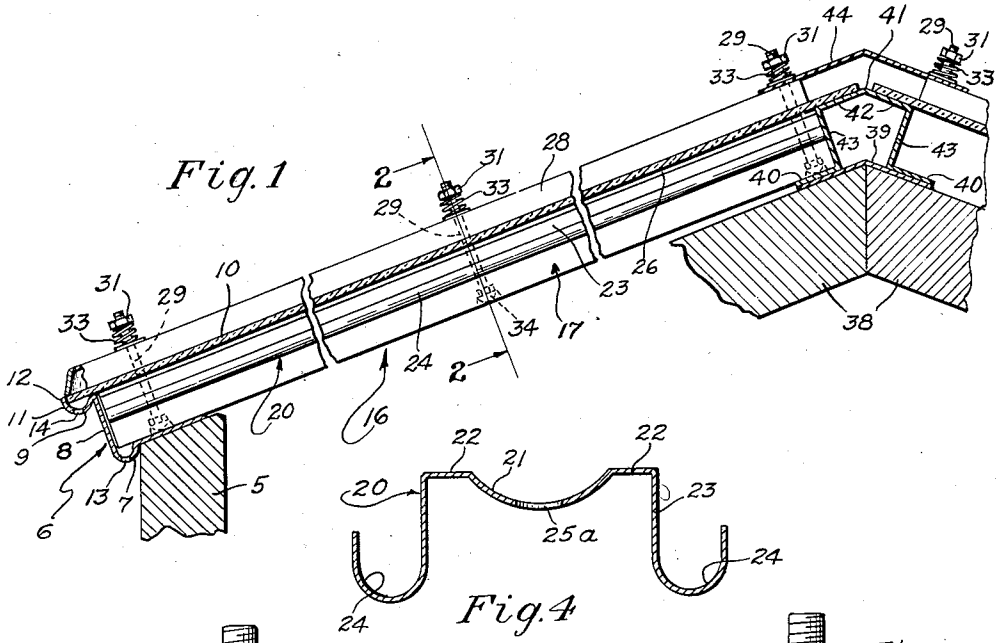


Fig. 1

Fig. 4

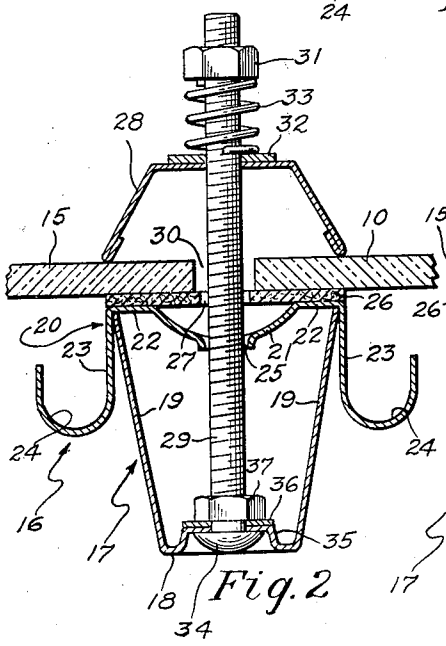


Fig. 2

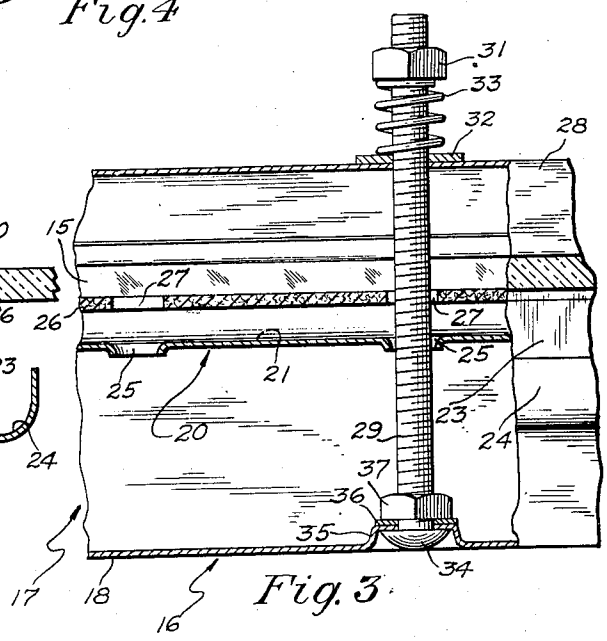


Fig. 3

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SKYLIGHT RIB CONSTRUCTION

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5 Claims. (Cl. 108—16)

This invention relates to new and useful improvements in glass holding and supporting means, and has particular relation to a skylight rib construction.

An object of the invention is to provide a simple glass holding and supporting means or rib so constructed that all water, whether condensation formed on the glass or rain or the like, is collected and carried off so that there is no danger of water freezing in the joint between two adjacent panes of glass and so that expansion and contraction of the parts may take place without breakage of glass or other damage.

Other objects and advantages will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawing wherein a satisfactory embodiment of the invention is shown. However, it will be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claims.

In the drawing:

Fig. 1 is a sectional view through a skylight showing my improved rib construction in side elevation;

Fig. 2 is a transverse sectional view through the rib, the view being taken substantially along the line 2—2 of Fig. 1 and on an enlarged scale;

Fig. 3 is a longitudinal sectional view through the rib and a partial side elevation on the same enlarged scale; and

Fig. 4 is a transverse sectional view showing a slightly modified construction of the member forming the sweat gutters.

Referring in detail to the drawing, 5 indicates a curb of any suitable construction surrounding an opening in a roof and mounted on the upper edge of this curb is a base member 6 formed of sheet metal and including a downwardly and outwardly curved portion forming a gutter 7. The outer wall of this member extends upwardly beyond the curb as shown at 8 and is then bent downwardly and outwardly as at 9 to form a seat for the lower edge of a glass 10. Beyond the point 9 the member is carried downwardly below the glass to provide a drip gutter 11 and is then extended upwardly to form a stop wall 12 for the lower edge of the glass. Gutters 7 and 11 are provided with suitable openings 13 and 14 respectively for the exit of moisture.

The side edges or the adjacent edges of the pieces of glass 10 and 15 are supported by my improved rib construction generally designated 16. The construction includes a supporting bar 17 made of relatively heavy gauge sheet metal bent into the form of a trough and being substantially U-shape in transverse section and with the side walls preferably flared upwardly somewhat. This bar or trough 17 therefore includes a bottom wall 18 and side walls 19 which as here shown diverge upwardly and are free at their upper ends. As the description proceeds it will become evident that this particular construction of the trough is not essential. A longitudinally extending member 20 is arranged on the bar or trough 17 straddling the open upper side thereof and this member 20 includes a trough like central or body portion 21 at each edge of which is a relatively flat seat portion 22 and beyond said portion the sides 23 of the member are carried downwardly at the outer sides of the walls 19 of the trough. Then the longitudinal edge portions of said member 20 are curved outwardly and upwardly and spaced laterally from the side walls 23 to provide sweat gutters 24.

At spaced points along its depressed trough or gutter portion 21 the member 20 is provided with openings 25 providing drain openings and they may be flanged as shown in Figs. 2 and 3 or the holes may be flat, or that is without flanges, as shown at 25*a* in Fig. 4. Resting on the upper surface of member 20 is a packing 26 which may be of any suitable material, as roofing, felt, asbestos, or any kind of hair felt, or soft metal, as lead. This packing is at spaced points provided with drain openings 27 which openings are preferably aligned with the openings 25 in the member 20.

The adjacent edges of the glass panes 10 and 15 are seated on the packing 26 and disposed on the upper surface of the glass is a cap 28 somewhat in the form of an inverted U having one of its sides engaging each pane of glass. This cap spans the space 30 between the adjacent edges of the glasses and a bolt 29 is connected with the bar or trough 17 and extends upwardly through the space 30 between the glass and through the cap 28. On the upper end of this bolt there is threaded a nut 31 and surrounding the bolt and located between nut 31 and a washer 32 is a coil spring 33. This spring serves to press the cap against the glass and thus press the glass down onto the packing.

Bolt 29 has its head 34 disposed at the under side of the trough and it is to be noted that this head of the bolt is seated in the bottom of an inverted cup 35 through which the bolt extends whereby the opening for the bolt is located above

the bottom of the trough or gutter 17 so that moisture cannot leak through the opening. Within the gutter a washer 36 may be disposed about the bolt and clamped against the upper side of the cup 35 as by a nut 37. It will be appreciated that bolts 29 are arranged at desired intervals along the length of the rib 16 and these bolts extend through the openings 25 in the member 20 and the openings 27 in the packing 26 and through the space 30 between the adjacent edges of panes of glass. The openings 25 and 27 are preferably arranged in relatively close relation, as for example about eight inches apart, and there are more of such openings than there are bolts.

At its upper end the rib construction may be supported as on a ridge beam 38. A ridge plate 39 rests on the top of this beam and the lower flanges 40 of a ridge member 41 rest on this plate. It will be noted that the ridge member 41 is of sheet metal so bent that its top walls 42 are inclined to substantially the pitch of the glass and then the side walls 43 extend downwardly to the flanges 40 which are also substantially of the same pitch as the glass. Thus, the upper end portion of the supporting bar or gutter 17 rests on a flange 40 and abuts a wall 43 of the member 41. The upper edges of the glass are enclosed and clamped in position as by a ridge cap 44.

From the foregoing description it will be understood that the adjacent edges of the panes of glass are supported by the bar or trough 17 which carries the longitudinal member 20 in turn supporting the packing 26. Any moisture entering between the adjacent edges of the glass panes passes through the openings 27 in the packing to the member 20 and thence through the openings 25 to the trough or bar 17 which drains into the small gutter 7 at the outer side of the sill 5 and onto the roof. Condensation forming on the inner surface of the glass drains into the sweat gutters 24 to be carried to the gutter 7. Therefore, no moisture can gather in the joint to freeze the entire skylight into one solid mass such as would prevent normal expansion and contraction of the various parts. All water entering the joint is immediately drained from it and carried outwardly beyond the sill 5. Also, it will be noted that the construction described is relatively simple and such as may be made from relatively heavy gauge sheet metal whereby to be strong and durable and that the parts may be easily and quickly assembled.

Having thus set forth the nature of my invention, what I claim is:

1. A skylight construction comprising a trough shaped supporting bar having upwardly extending spaced side walls, a longitudinally extending member spanning the open side of the trough and supported on the upper edges of the side walls thereof, two pieces of glass having their adjacent edges in spaced relation and supported on said member, and said member having a series of openings therein spaced longitudinally, said openings being between the edges of the glass and the side walls of the trough to drain water entering between the said edges freely into the trough, and a cap secured on top of the glass and covering the space between the edges thereof.

2. A skylight construction comprising a trough shaped supporting bar having upwardly extending spaced side walls, a longitudinally extending sheet metal member spanning the open side of the trough and supported on the upper edges of the side walls thereof, a packing on the upper surface of said member, two pieces of glass having their adjacent edges in spaced relation and seated on said packing so as to be supported on said member, said member and packing having a series of spaced openings therethrough located between the edges of the glass and the side walls of the trough to drain water entering between said edges freely into the trough, and a cap secured on top of the glass and covering the space between the edges thereof.

3. A skylight construction comprising a trough shaped supporting bar having upwardly extending spaced side walls, a longitudinally extending member extending between and supported on the upper edges of said side walls, said member having a depressed longitudinal trough in its top wall, two pieces of glass having their adjacent edges in spaced relation and supported on said member with the space between its edges over the trough so that water passing through said space enters the trough, said member being provided with spaced openings through the lower part of the trough to drain the water into the supporting bar, and a cap secured on top of the glass and covering said space.

4. A skylight construction comprising a trough shaped supporting bar having upwardly extending spaced side walls, a longitudinal member extending between and supported on the upper edges of said side walls, two pieces of glass having their adjacent edges in spaced relation and supported on said member, said member being provided with a longitudinal trough in its top wall under the space between the edges to collect water passing therethrough and having openings in the trough to drain the water into the supporting bar, said member also having side portions extending downwardly and then upwardly at the outer sides of said side walls to provide sweat gutters, a longitudinal cap on the glass and covering the said space, and securing bolts passing through the cap and the bottom of the supporting bar to clamp the members together.

5. A skylight construction comprising a trough shaped supporting bar having upwardly extending spaced side walls, a longitudinal sheet metal member extending between and supported on the upper edges of said side walls, a packing on the top of said member, two pieces of glass having their adjacent edges in spaced relation and seated on said packing so as to be supported on said member, said member being provided with a longitudinal trough in its top wall under the space between the edges of the glass, said packing having openings over the trough to conduct water passing through the space to the trough, said member also provided with openings in the said trough to drain the water to the supporting bar, an inverted trough shaped cap on the glass and covering the space between the glass, and bolts passing through the cap, trough and the bottom wall of the supporting bar to clamp the members together.

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