Nov. 7, 1933. H. W. PRATT 1,934,002

GLASS HOUSE ROOF CONSTRUCTION

Filed July 31, 1931

Fig. 1

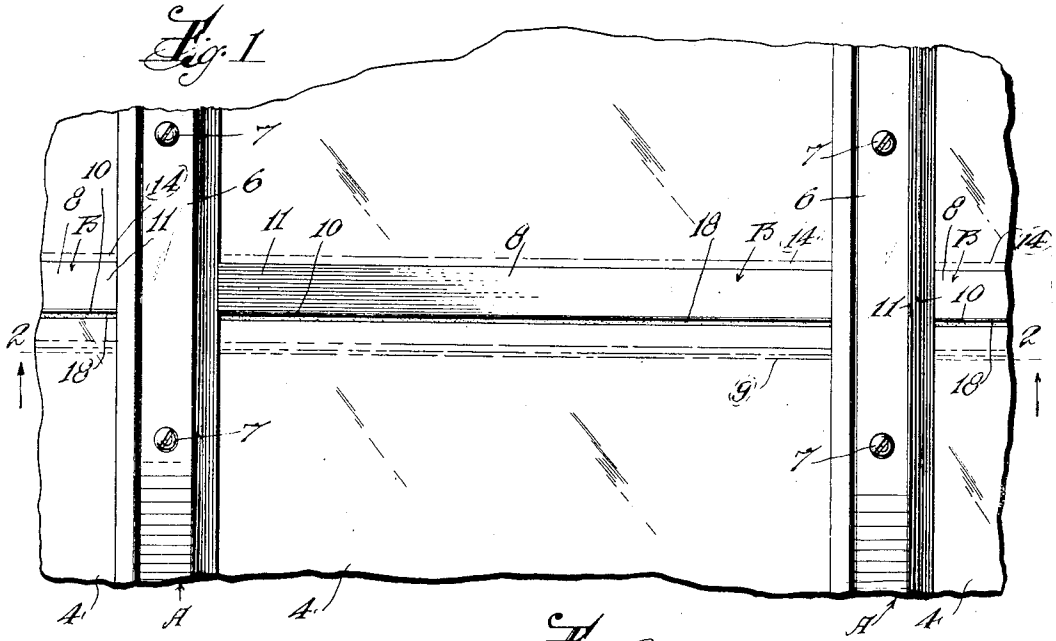


Fig. 2

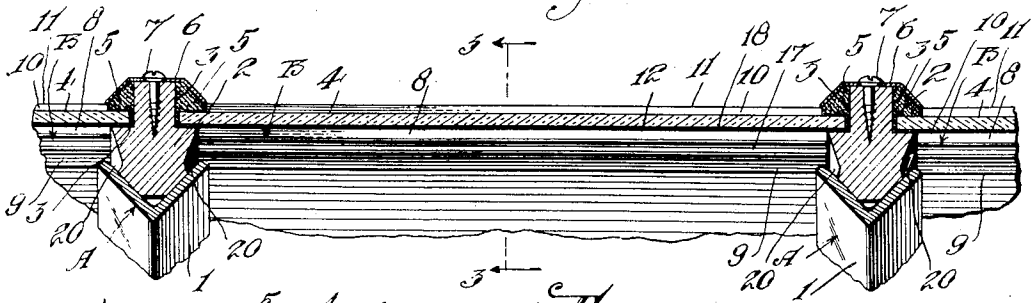


Fig. 3

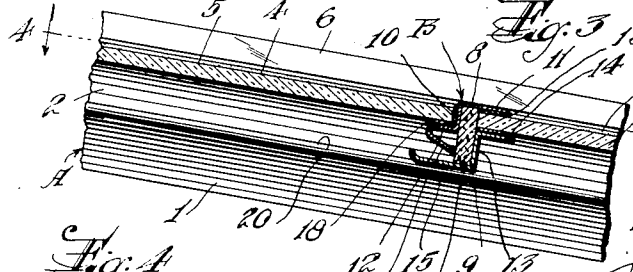


Fig. 5

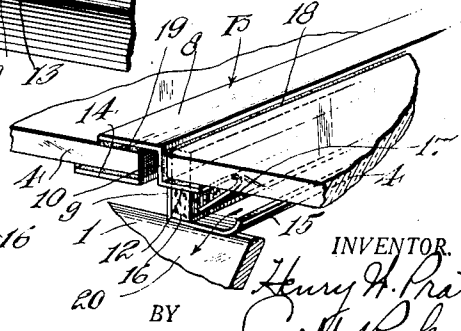
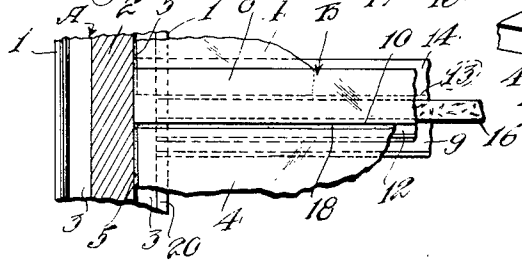


Fig. 4



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GLASS HOUSE ROOF CONSTRUCTION

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10 Claims. (Cl. 108—16)

This invention relates in general to glass roof constructions, and more particularly to roof constructions for conservatories, greenhouses, and the like.

One object of the invention is to provide a roof construction of this character embodying novel and improved means for joining or connecting the abutting ends of panes of glass which extend transversely to the glazing bars or rafters, whereby the edges of the panes may be arranged in substantially the same plane instead of overlapping, and so that the joints between the panes shall be water-proof and the possibility of fracturing or breaking of the panes shall be reduced to a minimum.

Further objects are to provide a glazing header for joining the adjacent edges of two panes of glass which include a cushion strip to compensate for relative movement of the panes of glass, for example, expansion and contraction thereof under variations in temperature, and at the same time maintain the joints water-proof, and to provide such a glazing header whereby the conduction of low temperatures during cold weather from the outside of a structure embodying the header into the inner parts of the header will be materially retarded so as to reduce the amount of moisture condensation on the underside of the header.

Other objects are to provide a glass roof construction including a novel and improved construction of glazing header consisting of two strips of metal having cooperating flanges to support adjacent ends of the panes of glass, and a cushion strip interposed between said metal strips and said ends of the panes; to provide such a construction by which the tendency of water to run between the parts, is reduced to the minimum, so that there is little or no possibility of water freezing in the joints so as to cause fracturing of the glass; to provide a novel and improved glazing header of this character having a gutter for carrying off water of condensation on the undersides of the glass; and to obtain other advantages and results as will be brought out by the following description.

Referring to the accompanying drawing in which corresponding and like parts are designated throughout the several views by the same reference characters,

Figure 1 is a fragmentary top plan view of a glass roof construction embodying my invention.

Figure 2 is a vertical sectional view on the line 2—2 of Figure 1.

Figure 3 is a vertical longitudinal sectional view on the line 3—3 of Figure 2.

Figure 4 is a fragmentary horizontal sectional view on the line 4—4 of Figure 3, and

Figure 5 is a fragmentary perspective view of one end of the glazing header and the adjacent ends of two panes of glass connected by the header.

Specifically describing the illustrated embodiment of the invention, the roof construction includes glazing bars A of known construction which extend in the direction of the slope of the roof, for example from the ridge to the sill or eaves. These glazing bars are shown as comprising metal angles 1 having secured therein wooden cores 2 which are provided with rabbets 3 to receive and support the side edges of panes of glass 4. The glass panes are set in putty 5 in the usual manner, and preferably a metal cap 6 is secured to the top of the core 2 over the putty 5 by screws 7.

The end edges of the panes of glass, that is the edges extending transversely of the glazing bars or longitudinally of the roof, are joined by the glazing header B embodying my invention. This header is shown as comprising two metal strips 8 and 9, one of which, in the present instance the strip 8, has a body portion 10 of a width substantially equal to the thickness of the panes of glass 4, said strip also having flanges 11 and 12 projecting perpendicularly from the body portion 10 in opposite directions at its sides.

The other strip 9 is similarly shaped and includes a body porton 13 disposed in spaced and parallel relation to the body portion 10 of the strip 8 with a flange 14 projecting perpendicularly from the body portion 13 and spaced from the first flange 11 of the strip 8 a distance substantially equal to the thickness of the panes of glass. Another flange 15 of the second strip 9 projects perpendicularly from the body portion 13 oppositely from the flange 14.

A cushion strip 16 of any suitable material, for example, cork, is interposed between the body portions 10 and 13 of the strips 8 and 9, and the flanges 11 and 16, as clearly shown in Figure 3 of the drawing. Preferably the strip 8 has a third flange 17 returned from the outer edge of the flange 12 so as to abut the cushion strip 16 opposite the body portion 13 of the strip 9.

In use, the header B is mounted with its opposite ends disposed in the rabbets 3 of adjacent spaced glazing bars A, as clearly shown in Figure 4, with the flange 12 of the strip 8 facing upwardly and extending toward the highest point

in the roof. One end of one pane of glass is seated upon the flange 12 in abutting relation to the body portion 10 of the strip 8, putty 18 being utilized in the joint as usual. The adjacent end of another pane of glass is inserted between the flanges 11 and 14 in abutting relation to the cushion strip 16; the pane preferably being seated in putty 19.

With this construction, it will be observed that the cushion strip 16 is interposed between the strips 8 and 9 and between the adjacent ends of the panes of glass so as to compensate for relative movement of the panes, as by expansion and contraction and also to relieve the ends of the two panes from pressure by the upper pane. Also, the flange 11 of the strip 8 overlies the end of the lower pane so as to prevent water from flowing inwardly between the cushion strip and the edge of the pane, said flange extending in the direction of the flow of any water passing downwardly over the roof. Preferably the material of the strip 10 also has heat insulating properties so as to insulate the two strips 8 and 9 from each other and retard the conduction of cold from the outer flange 11 to the other strip 9, whereby to reduce condensation of moisture on the underside of the strip 9.

The flange 15 of the strip 9 faces upwardly and extends toward the highest point in the roof so that water of condensation on the underside of the glass will fall upon said flange which thereby serves as a gutter. The ends of this flange 15 overlie the edges of the condensation gutters 20 in the glazing bars, so as to direct the water into the gutters 20 which in turn conduct the water to the eaves or sills.

It will be observed that my glazing header is simple and inexpensive in construction, provides a firm and at the same time yielding joint for the panes of glass, is water-proof, and serves as a condensation gutter. The header is neat in appearance, and can be easily installed.

While I have shown the invention as embodied in certain details of construction, it should be understood that this is primarily for the purpose of illustrating the principles of the invention and that many modifications and changes may be made in the details of construction without departing from the spirit or scope of the invention.

Having thus described my invention, what I claim is:

1. A glass roof construction, comprising parallel glazing bars, glass panes supported at their sides on said glazing bars, and a header supported at its ends on said glazing bars and comprising two strips of metal one having a body portion to abuttingly engage one end of a pane of glass and two flanges projecting perpendicularly from said body portion in opposite directions one underlying the underside of said pane of glass and the other overlying the upper side of the adjacent end of another pane, the other strip having a body portion in spaced and parallel relation to the body portion of the first-mentioned strip and provided with two flanges extending perpendicularly from the body portion in opposite directions with one underlying said end of the second-mentioned pane of glass, and a cushion strip interposed between said body portions, the second-mentioned flange of the first strip and the second flange of the second strip.

2. A glass roof construction, comprising parallel glazing bars, glass panes supported at their sides on said glazing bars, and a header supported at its ends on said glazing bars and comprising two strips of metal each having a body portion in spaced and parallel relation to the other and a pair of flanges extending perpendicularly from said body portion in opposite directions, the flanges of one strip respectively overlying the end of one pane of glass and underlying the adjacent end of another pane, while one flange of the other strip underlies said end of the first-mentioned pane, and a cushion strip interposed between said body portions, the first-mentioned flange of the first strip and the other flange of the second strip, the second-mentioned flange of said second strip forming a condensation gutter.

3. A glass roof construction, comprising parallel glazing bars, glass panes supported at their sides on said glazing bars, and a header supported at its ends on said glazing bars and comprising a strip of metal having a body portion of a width approximately equal to the thickness of said panes and two flanges projecting perpendicularly therefrom in opposite directions, a second strip similarly shaped having its body portion in spaced and parallel relation to the body portion of the first strip with one flange spaced from the corresponding flange of the first strip a distance equal to the thickness of said panes of glass and its other flange spaced from the second flange of the first strip, and a cushion strip between said body portions of said strips, one end of one pane of glass being disposed between the first flanges of said metal strips and abutting said cushion strip, and the adjacent end of another pane resting upon the second flange of the first strip and abutting the body portion of said first strip.

4. The glass roof construction set forth in claim 3 wherein said second flange of the second strip forms a condensation gutter.

5. A glazing header comprising a strip of metal having a body portion of a width substantially equal to the thickness of panes of glass to be installed and two flanges projecting perpendicularly therefrom in opposite directions, a second similarly shaped strip having its body portion in spaced and parallel relation to the body portion of the first strip with one flange spaced from the corresponding flange of the first strip a distance equal to the thickness of said panes of glass and its other flange spaced from the second flange of the first strip, and a cushion strip between said body portions of said strips, the first flanges of said metal strips to receive one end of one pane of glass between them in abutting relation to said cushion strip and the second flange of the first strip to underlie the adjacent end of another pane with the latter in abutting relation to the body portion of said first strip.

6. The glass roof construction set forth in claim 1 wherein said glazing bars have rabbets to receive the glass, and the ends of said glazing header rest in said rabbets.

7. A glass roof construction, comprising parallel glazing bars, glass panes supported at their sides on said glazing bars, and a header supported at its ends on said glazing bars comprising two metal strips having cooperating flanges to support adjacent ends of two panes of glass, and a cushion strip interposed between said metal strips and said ends of said panes.

8. A glass roof construction, comprising parallel glazing bars, glass panes supported at their sides on said glazing bars, and a header supported at its ends on said glazing bars comprising two metal strips each having a flange to under-

lie and support one of the adjacent ends of two panes of glass and one strip having another flange overlying one of said ends of said panes, and a cushion strip interposed between said metal strips and said ends of said panes.

9. A glazing header comprising two metal strips each having a flange to underlie one of adjacent ends of two panes of glass, and a cushion strip interposed between said metal strips and said ends of said panes, one of said strips having another flange overlying said cushion strip and to overlie one of said ends of said panes.

10. The glass roof construction set forth in claim 2 wherein said glazing bars have rabbets to receive the glass and also have longitudinal condensation gutters at their sides, and the ends of the first-mentioned flanges on said metal strips rest in said rabbets while the ends of the second-mentioned flange of the second strip enter said condensation gutters on the glazing bars.

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