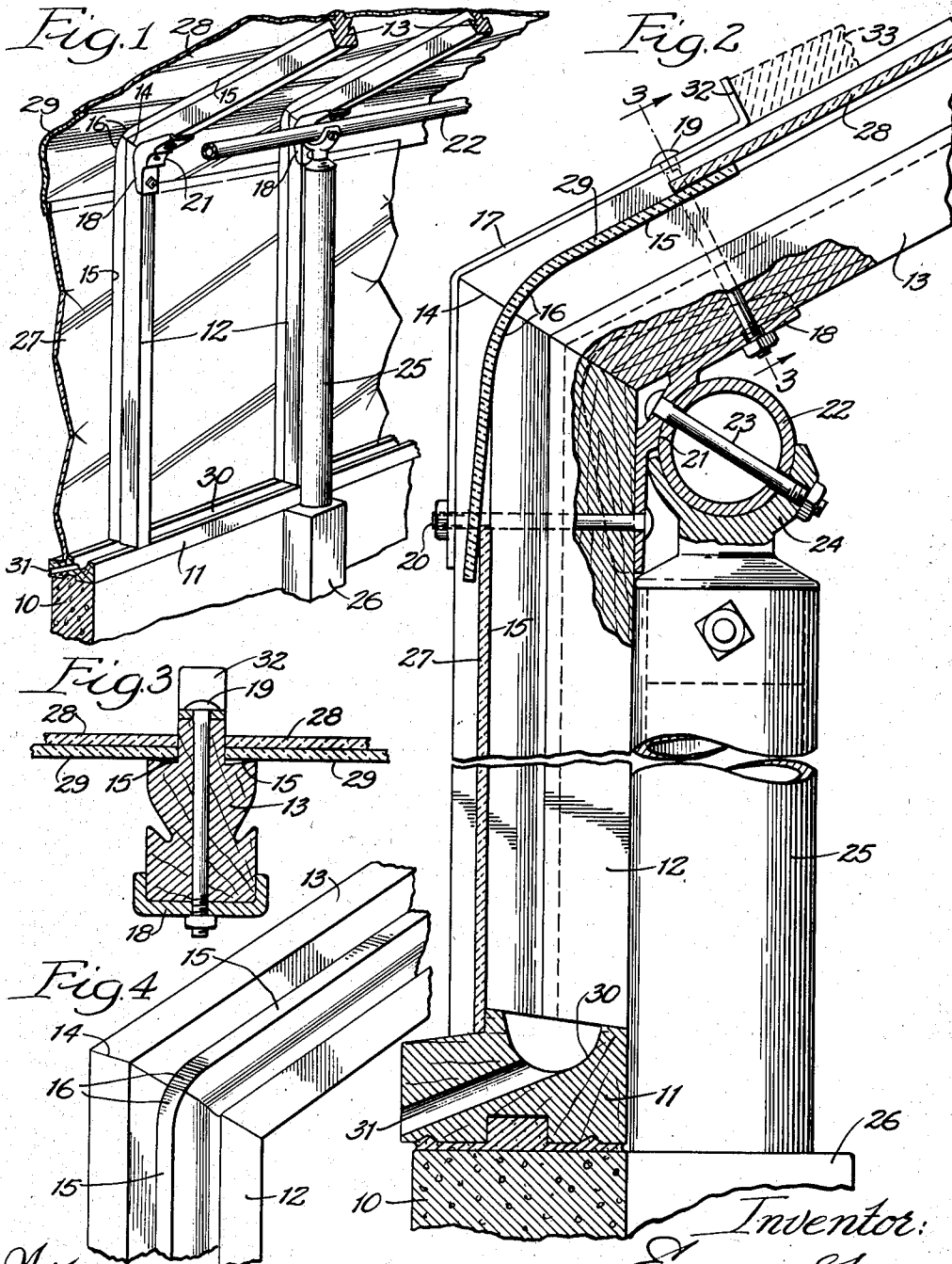


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GREENHOUSE

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GREENHOUSE

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This invention relates to greenhouse structures of the type employing glazed side walls usually supported on low masonry walls and a glazed roof supported on the top edges of the side walls, and wherein the roof structure includes rafters that form roof glazing bars, and the side wall structure includes side glazing bars usually disposed in the same vertical plane with roof glazing bars.

Heretofore, so far as I am aware, it has been the universal practical to interpose at the joint between the roof and side wall a wide metal eave plate having the form of a shallow gutter that directly supports the rafters and extends laterally both inwardly and outwardly of the greenhouse structure to catch and drain off condensed moisture on the inside of the roof and rain on the outside. This wide eave plate casts a considerable shadow and reduces the total amount of sunlight received by the plants. One object of this invention has been to provide an improved construction doing away entirely with this wide eave plate and its disadvantages.

Another object has been to provide an improved splice for directly and rigidly connecting the lower ends of the roof glazing bars or rafters to the upper ends of the side glazing bars.

Another object has been to provide an improved roof and side wall joint that will permit the roof and side wall glazings to be continuous and uninterrupted, and will avoid the necessity of bending the meeting end portions of the glazing bars.

Another object has been to provide an improved roof and side wall joint that will avoid the nailing or screwing of the wooden glazing rafters to an eave member, since such nailed or screwed ends have heretofore been the first spots in greenhouses where decay started.

Another object has been to provide an improved roof and side wall joint of a construction avoiding sharp corners and edges on which icicles easily form.

Another object has been to provide an improved longitudinal eave member for connecting, bracing and rendering rigid the roof and side wall joints that shall be located wholly internally of the greenhouse where it is exposed only to the inside temperature and consequently will not sweat, and which shall be so small, as compared with the wide eave plates heretofore used, as to cast a much narrower shadow.

Other objects and attendant advantages of the invention will be apparent to persons skilled in the art from the following detailed description, taken in connection with the accompanying

drawing, wherein I have illustrated an approved embodiment of the invention, and in which—

Fig. 1 is an interior perspective of a fragment of the roof, eave and side wall structure.

Fig. 2 is an enlarged vertical transverse section of the same.

Fig. 3 is a sectional detail on the line 3—3 of Fig. 2.

Fig. 4 is a fragmentary exterior perspective of the joint formed by the meeting end portions of roof and side wall glazing bars, and showing the continuous glazing supports or shoulders thereon.

In the drawing, 10 designates the usual low concrete or brick foundation wall that supports one of the glazed side walls of the greenhouse. Laid on and suitably secured to the wall 10 is the horizontal glazing sill 11, on which, at suitably spaced intervals, are secured the vertical wooden side wall frame members 12 that form glazing bars and are mitered at their upper ends to contact with and support the correspondingly mitered lower ends of the wooden rafters 13 forming roof glazing bars, the two ends meeting in the miter joint 14 which bisects the angle formed by the bars 12 and 13. The bars 12 and 13 are preferably of the same form and size in cross-section, such cross-sections being old and standard and illustrated in Fig. 3, and including lateral ledges or shoulders 15 that seat the edge portions of the glazing panes. Preferably, and as shown, the meeting end portions of the shoulders 15 are chamfered or rounded to form at the joint 14 a continuously rounded seat or support 16 for a correspondingly bent glazing member later referred to.

The meeting ends of bars 12 and 13 are strongly and rigidly connected by an outer angle bar 17 overlapping the outer sides of the bars 12 and 13, an inner angle bracket 18 similarly overlapping the inner sides of said bars, and clamp bolts 19 and 20 which also extend through the bars 13 and 12 respectively. On and crosswise of the outer side of the inner bracket 18 is formed a concave seat 21 to receive and seat a hollow rod 22 that forms an internal eave member and spaces and braces the adjacent connected vertical and inclined supports 12 and 13. The rod 22 is secured to each seat by a bolt 23 extending there-through and through the seat portion of the inner bracket 18, as clearly shown in Fig. 2. The bolt 23 also serves to attach to the rod 22 the upper end 24 of a vertical side post 25 that is stepped on an internal offset 26 of the foundation wall 10. These side posts 25 are employed at spaced intervals lengthwise of the greenhouse

structure and carry most of the roof load. As shown in Fig. 2, the upper ends 24 are concaved to form seats for the eave rod 22.

The glazing comprises wall panes 27, roof panes 28, and, between the panes 27 and 28 and spanning the eave region, a bent pane 29. These panes are supported on the adjacent shoulders 15 of adjacent roof and wall glazing supports 13 and 12; and for the purpose of shedding rain, they are overlapped, shingle fashion, the lower end portion of the pane 28 overlapping the upper end portion of the intermediate glazing member 29, and the lower end of the latter similarly overlapping the upper end of the wall glazing pane 27. The intermediate bent portion of the glazing member 29 overlies and substantially fits the rounded corner portions 16 of the meeting shoulder portions 15, as clearly shown in Fig. 2. This construction provides uninterrupted glazing from the ridge pole to the sills 11; and the only obstruction to the light rays passing therethrough is the relatively narrow eave bar or rod 22, for which a 1 1/4" steel pipe amply suffices, the side post 25 lying behind the vertical frame bars 12. For the purpose of disposing of the internal condensate that forms on the inner sides of the frame bars and glazing, there is formed in the upper surface of each sill 11 a longitudinal gutter 30, and communicating at intervals with the bottom of the gutter 30 are downwardly and outwardly inclined drain ducts 31 leading through the outer side of the sill 11. The portion of the top surface of the sill 11 lying outwardly of the panes 27 is given a downward slope to shed rain as is common on an ordinary window sash.

The upper portions of certain of the outer angle brackets 17 are bent upwardly to form stop lugs 32 for a transverse bar indicated in dotted lines at 23 which serves as a ladder support when cleaning, painting, or repairing the roof.

The foregoing description of the structural features of the invention will, I believe, make clear how the same effectuates the stated purposes and objects of the invention. The method of splicing the wooden glazing bars 12 and 13 at their junction in the eave region makes it possible to use bent or curved glass such as 29 along the eaves of greenhouses without the necessity of bending or curving the glazing bars themselves. The usual drip conductor which serves to collect the condensation drip along the eaves in known constructions is entirely eliminated, since the condensation follows the glass through the eave region to the sill and is there carried away by the gutter 30 and its drains 31. The described construction eliminates the necessity of nailing or screwing the wooden glazing rafters 13 to an eave member; and, due to the round shape of the eave glazing member 29, no icicles can form thereon. The condensation arising from the excessive moisture in the greenhouse and forming on the glass roof surface, while running down the latter collects dirt in its course; but since in the structure herein disclosed there is no stoppage of the flow of the condensate in its downward flow to

the gutter 30, there is no collection of dirt to obstruct such downward flow. By eliminating the customary longitudinal wooden or steel eave member, which is exposed to the outside as well as the inside temperature, and locating the eave member entirely on the inside where it is exposed only to the inside temperature, the creation of condensate by the eave member is avoided.

Variations and changes in the structural details may be resorted to within the scope of the appended claims.

I claim:

1. In a greenhouse structure of the class described, a vertical side glazing bar and an inclined roof glazing bar having their adjacent ends meeting in a joint, outer and inner angle brackets respectively overlying the outer and inner sides of said ends across said joint, clamp bolts passed through said brackets and ends, and an eave member extending crosswise of and bolted to said inner bracket.

2. In a greenhouse structure of the class described, a vertical side glazing bar and an inclined roof glazing bar having their adjacent ends meeting in a joint, outer and inner angle brackets respectively overlying the outer and inner sides of said ends across said joint, said inner bracket formed with a seat on its inner side, clamp bolts passed through said brackets and ends, and an eave member occupying said seat and bolted to said inner bracket.

3. In a greenhouse structure of the class described, a vertical side glazing bar and an inclined roof glazing bar having their adjacent ends meeting in a joint, outer and inner angle brackets respectively overlying the outer and inner sides of said ends across said joint, said inner bracket formed with a concave seat on and crosswise of its outer side, clamp bolts passed through said brackets and ends, a tubular eave member occupying said seat, and a securing bolt passed through said eave member and seat.

4. In a greenhouse structure of the class described, the combination with a side glazing bar and a roof glazing bar having their adjacent ends meeting in a joint, of a bracket secured to said bars and spanning said joint, a vertical side post formed with a seat on its upper end, an internal eave member occupying said seat, and a bolt extending through said bracket, eave member and seat and bonding said parts together.

5. In a greenhouse structure of the class described, the combination with a vertical side glazing bar and an inclined roof glazing bar having their adjacent ends meeting in a miter joint, of an angle bracket secured at its ends to the inner sides of said bars and spanning said joint and formed with a concave seat, a vertical side post formed with a concave seat on its upper end, an internal eave member in the form of a round rod occupying said seats, and a bolt extending through said bracket seat, rod and post seat and bonding said parts together.

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