Jan. 6, 1953 S. JACOBS 2,624,427

GREENHOUSE STRUCTURE

Filed Dec. 31, 1949

Fig. 1

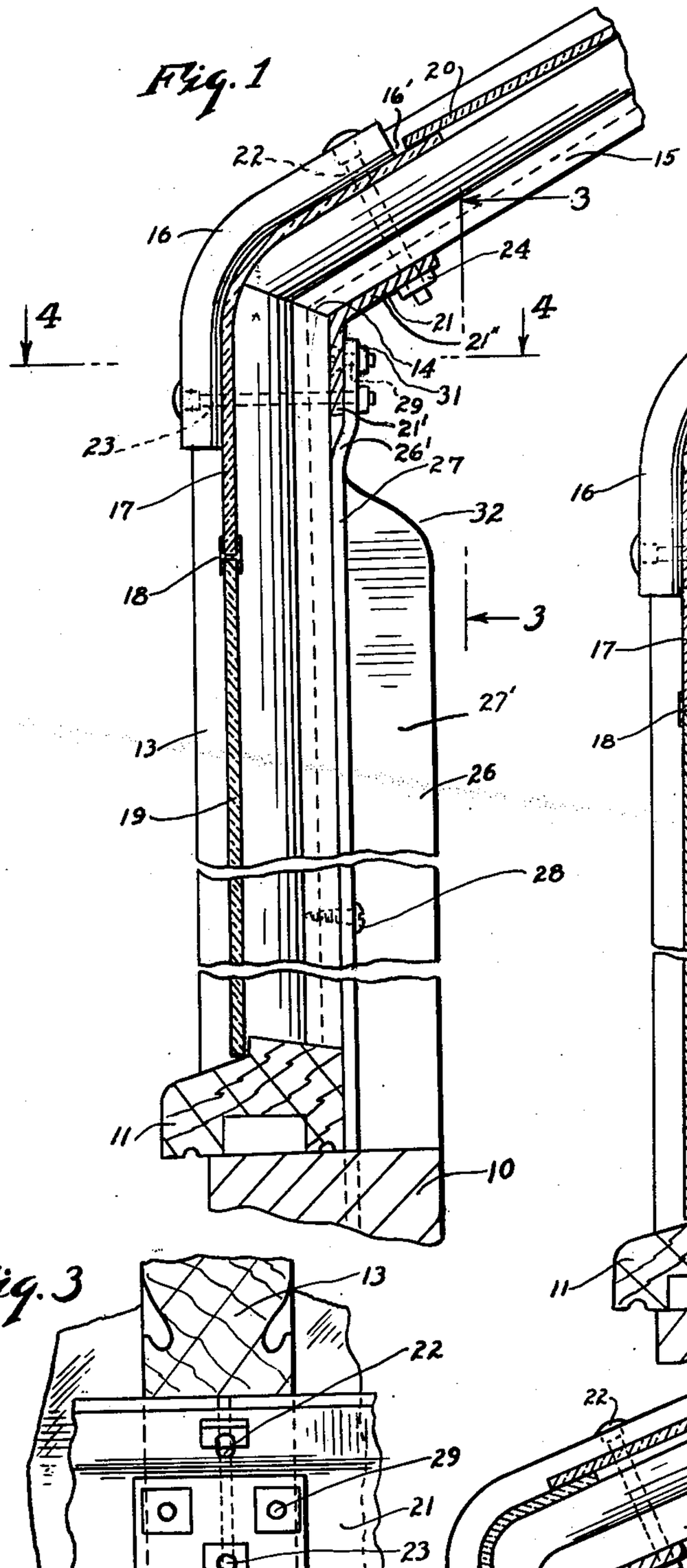


Fig. 2

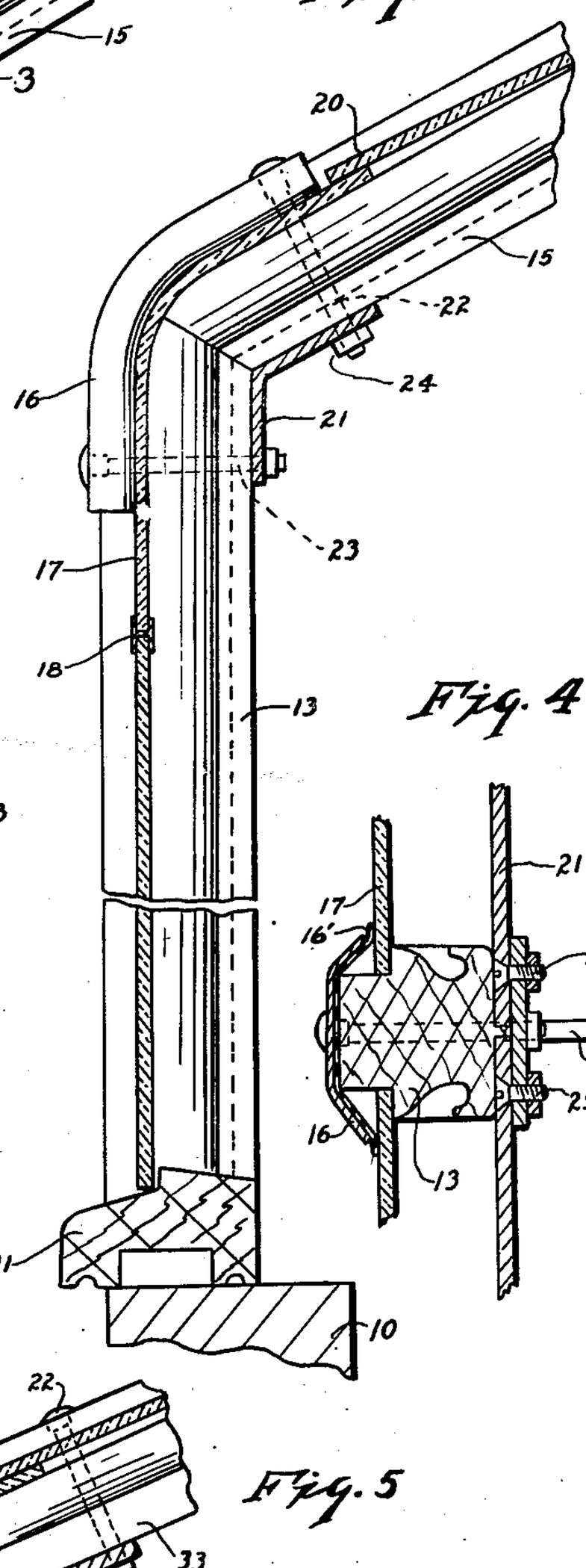
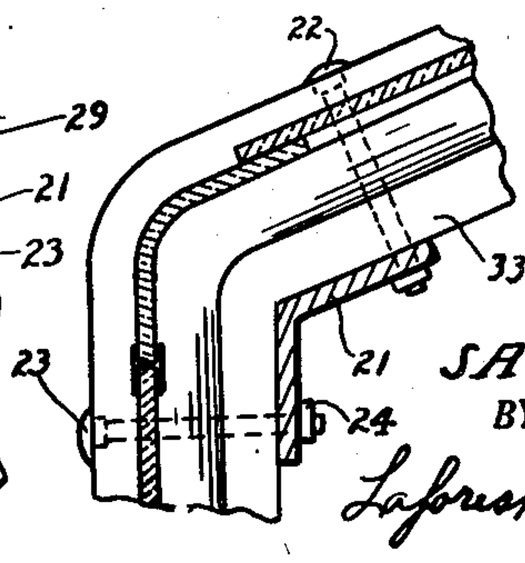


Fig. 4

Fig. 3

Fig. 5



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GREENHOUSE STRUCTURE

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1 Claim. (Cl. 189—4)

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This invention relates to greenhouse structures.

It is an object of the present invention to provide a greenhouse structure with a horizontally extending eave bar which extends between the rafters and side frame members at their joints to tie together their assemblies and to serve as inner angle bracket means connected by through bolts with the outer angle bracket and wherein the supporting posts for the roof are connected to the eave bar at intervals along the greenhouse assembly and by one of the through bolts connecting the eave bar with the outer bracket.

It is another object of the present invention to provide a greenhouse structure which can be made from standard structural shapes and wherein only a minimum number of these parts are needed and the bolting operations in effecting the assembly is kept to a minimum.

Other objects of the present invention are to provide a greenhouse which is of simple construction, inexpensive to manufacture, provide continuous roof and side wall glazings, free of sharp corners and edges on which icicles might form, provides for rigid joints wherein the structural members consume little space, durable and of long life.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which

Fig. 1 is a vertical sectional view of the roof, side wall and eave structure at the vertical side post station along the greenhouse assembly.

Fig. 2 is a vertical sectional view of the greenhouse structure and of the roof, side wall and eave at stations between the post stations.

Fig. 3 is a vertical fragmentary view taken generally on line 3—3 of Fig. 1.

Fig. 4 is a transverse sectional view taken on line 4—4 of Fig. 1.

Fig. 5 is a fragmentary vertical sectional view of an eave structure where the side wall frame and rafter is of integral and bent formation, made out of the same piece.

Referring now to the figures, 10 represents the usual low masonry of a greenhouse on which is rested a glazing sill 11. Longitudinally spaced upon the sill are upright side frame members 13 each having its upper end cut at an angle to provide a joint, as indicated at 14, with a rafter 15. The joined ends of the side frame 13 and the rafter 15 are rounded on their outer edges to receive a curved plate 16 having inwardly directed flanges 16' whose free edges engage and support a rounded or bent glass pane 17. The lower edge

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of the bent pane 17 is connected by a zinc H-section connector 18 with side glass plates 19. The glass panes on the rafters 15 are arranged in single fashion and the lower one overlaps the upper edge of the bent pane 17 as indicated at 20.

On the inside of the greenhouse is a tie plate or bar 21 of angle section comprising a vertical flange 21' and an obtusely angled flange 21'' and running along the structure from one joint to the other to provide an eaves bar and to tie the joints together longitudinally of the structure.

Long carriage bolts 22 and 23 extend between the outer bent plate and the tie bar 21 in the manner as shown in Fig. 2. The bolts extend through the rafters 15 and the side frame members 13. The bolts are secured respectively by nuts 24 and brought tight against the angle type plate or bar 21.

At different stations throughout the length of the greenhouse, posts 26 are embedded in the masonry wall 10 and extend upwardly along a side frame member 13 for connection with the tie bars 21. These posts are made of T-section having a flange portion 27 and an extending web 27'. Portion 27 is secured to the side frame member 13 by screws 28 and at the upper end 26' is bent inwardly or offset to lie flush upon the vertical member 21' of the tie plate or bar to which it is secured by the long carriage bolt 23 and thereabove by short spaced stove bolts 29 carrying nuts 31 thereon. The construction described results in the positive locking of the parts together and against their displacement and particularly against the displacement of the tie plates.

As shown in Fig. 3, the ends of tie members 21 lie on the side frame piece 13 and there are provided two stove bolts 29 whereby through these bolts and the upper end of the flange 27 of post 26, the ends of the tie bars are positively locked together against outward displacement.

The web 27' of the post 26 is cut away, as indicated at 32, to permit the bending of the flange 27 and offset inwardly as at 26' to lie upon the face of the tie bar 21 and in a flush manner.

In Fig. 5 there is shown a slightly modified form of the invention wherein the rafter and side wall frame piece are formed of the same member and merely bent to provide for the eave structure. This bent member is indicated at 33 and tie member 21 is secured between the members by the same bolts 22 and 23 extending through the tie member 21 and secured by the nuts 24. The posts 26 will be connected to the tie member or eaves bar 21 in the same manner as above described. These posts serve to assume the load

of the greenhouse roof and independently of the side frame pieces and to relieve them from the greater extent of the load of the roof.

It will be apparent that there has been provided a simple construction for the joining together of the greenhouse members at the eaves which comprises minimum parts and requires only minimum number of attaching bolts.

It should be further apparent that the same eaves bar **21** runs for several feet throughout the greenhouse structure and that the ends of the same are held together and joined through the flange **27** of the supporting post **26** whereby to positively lock the tie bars together and to prevent the lateral spreading of the side frame pieces and the rafters respectively coupled thereto.

It should be further apparent that all of the parts can be formed of standard stock pieces and and sections and that it is not required to provide special brackets and plates and special tie pieces.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claim.

I claim:

A greenhouse structure comprising a substantially horizontally extending rafter and a vertically extending frame-member, said rafter and frame-member having intersecting ends at an obtuse angle, an obtusely-angled flanged eave member closely fitting within the corner formed by said intersecting ends and having one flange

thereof extending longitudinally of said rafter and engaging the underside thereof and the other flange of said eave member engaging a side of said frame-member, glass panes including curved panes and closing the intersecting ends of said rafter and frame member supported by and positioned on opposite side portions of said rafter and frame-member, an outer curved plate having inwardly directed oppositely disposed flanges having free edges engaging the curved panes externally, a vertically extending T-post having a flange and an integral web, said flange being positioned in engagement with the frame member, an upper portion of said web being cut away to present an unobstructed bent portion of said flange offset embracing the obtuse eave member, and spaced bolts connecting the outer flanged plate and the obtuse inner eave member and the flanged offset holding said curved panes, flanged plate, and eave member in weatherproof assembly on the rafter and frame member.

SAUL JACOBS.

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The following references are of record in the file of this patent:

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