May 17, 1938. J. F. CAMPION 2,117,939

GLASS PANE HOLDING DEVICE

Filed Nov. 10, 1936

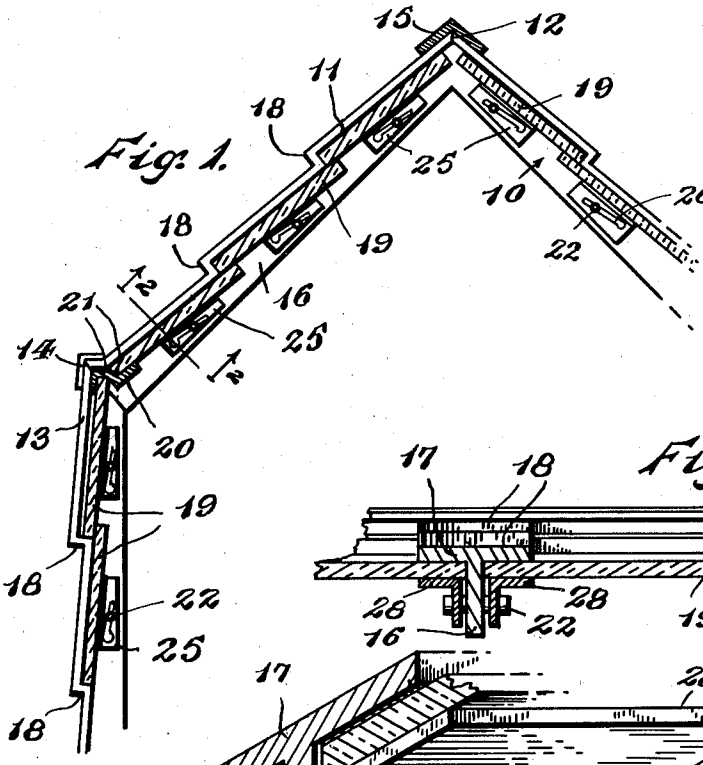


Fig. 1.

Fig. 2.

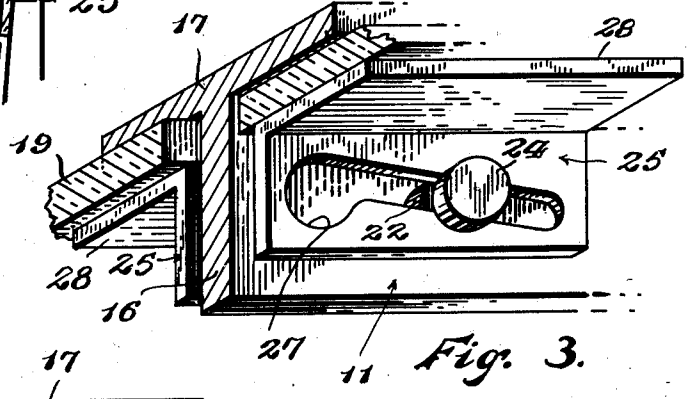


Fig. 3.

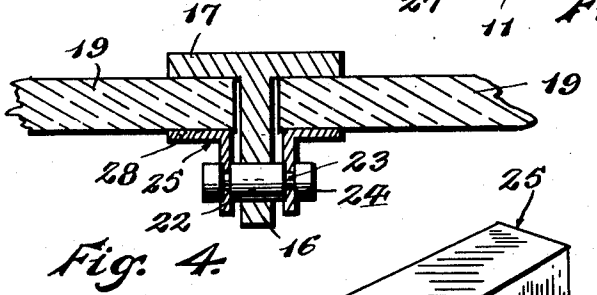


Fig. 4.

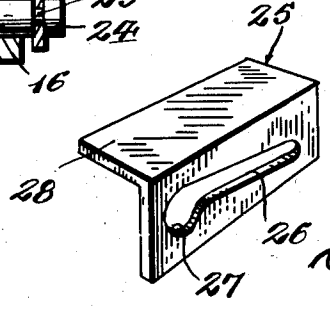


Fig. 5.

INVENTOR:
JAMES F. CAMPION,
BY:
Christian R. Nielsen.
ATTORNEY

Patented May 17, 1938 2,117,939

UNITED STATES PATENT OFFICE

2,117,939

GLASS PANE HOLDING DEVICE

James F. Campion, Freeport, N. Y.

Application November 10, 1936, Serial No. 110,173

1 Claim. (Cl. 189—78)

My invention relates to greenhouse constructions, and more particularly to a means for securing the glass panes within the frames thereof, and it consists in the constructions, arrangements and combinations herein described and claimed.

It is an object of the invention to provide a structure in which the glass panes may be installed and removed from the frames from within the structure, thereby obviating the need for scaffolding as is required in the present-day structures.

It is a further object of the invention to provide a simplified securing means for the glass panes which is readily operable for installation and removal of the glass.

Additional objects, advantages and features of invention will be apparent from the following description and accompanying drawing, wherein

Figure 1 is a partial vertical sectional view of a greenhouse constructed in accordance with my invention.

Figure 2 is a cross section on the line 2—2 of Figure 1.

Figure 3 is a detail perspective view illustrating the securing means.

Figure 4 is an enlarged cross sectional view.

Figure 5 is a perspective view of one of the securing means.

There is illustrated generally a frame structure 10 representing the skeleton frame of a greenhouse upon which glass panes are to be mounted. Any number of rafters 11 may be employed, this depending upon the structure of building under construction, the rafters being spaced according to the length of glass to be employed in the greenhouse. The rafters 11 at opposite sides of the roof abut at the ridge 12 and terminate at their lower ends in abutting relation with uprights 13 and preferably an angle bar 14 permanently connects the rafters and uprights to provide a rigid foundation structure. A ridge cap 15, of angle formation effects connection of the hip rafters at their upper ends.

The hip rafters 11 and the uprights 13 are each in the form of a T bar, the rib 16 of which is presented toward the interior of the building, the cross portion 17 of the rafters and uprights being formed in stepped formation, as at 18, and positioned outwardly of the building. The steps 18 thus provide recessed portions within each of which a pane of glass 19 is seated, the glass panes being of a width to overlap the next adjacent pane, as may be clearly seen in Figure 1. This structure applies, with exception of the juncture of the lowermost pane supported by the hip rafters and the uppermost pane of the uprights, in which case a bar 20 is provided, having seat portions 21 for reception of the panes.

Approximately intermediate the length of the stepped portions and in the rib 16 of the uprights and rafters there are mounted pins 22. The pins 22 project beyond the rib 16 at opposite sides a slight distance, and include a reduced shank 23, each shank terminating in a button 24. Upon each side of the rib 16 a pane-securing plate 25 is provided, which, as clearly shown in Figure 5, is of angular formation, and includes a bayonet slot 26. The enlarged portion 27 of the slot receives the button 24 of a pin when positioned thereover, and in such position, the portion 28 of the securing plate will be presented upon the underside of the pane, affording support thereof when the securing plate is moved to final position, as will now be described.

The slot 26 is formed at an angle with respect to the longitudinal axis of the plate, and in application of the plate to the pins, the enlarged portion 27 is positioned over the head 22 and by exerting a sliding movement of the plate, the shank 23 will be received in the narrower portion of the slot, and by reason of the inclination of the slot, the portion 28 will be brought into snug contact with the glass, and thus effectively support the glass, it being understood that the pane will be supported at opposite ends by plates 25.

At the side walls of the greenhouse structure, angle bars 29 are provided, which will include stepped portions, as previously described, and aligned therewith, but will include a pin 30, the interior end only of which will include the recess and button previously described, the securing plate 31 of which will be constructed as described heretofore.

From the foregoing it will be readily seen that in order to replace a broken pane, it will only be necessary to slide the securing plate 25 backwardly or upwardly as the case may be, which by reason of the inclination of the slot 26 will release the glass pane for ready removal. The securing plate 25 may be entirely removed, if desired, by moving the plate so as to align the button 24 with the enlarged portion 27. With the plate removed and it is desired to replace the pane, it is merely positioned in the stepped portion, the securing plate applied to the pin and moved longitudinally along the slot 26 so that the portion 28 will abut and support the pane. It will be understood that the entire operation will be carried out upon

the interior of the greenhouse and that the need for scaffolding or similar support is obviated.

While I have shown and described a preferred embodiment of the invention, this is by way of illustration only, and I consider as my own, all such modifications in structure as fairly fall within the scope of the appended claim.

I claim:—

Means for securing panes of glass to a frame comprising spaced bars, said bars having a cross piece and a rib member, pin members on the rib member projecting at opposite sides thereof, said pin members having reduced shanks and terminating in head members, said reduced shanks being spaced a distance apart greater than the width of the rib member, an angle plate slidably engaged on the reduced portion of each shank and each angle plate having a portion disposed in a plane parallel to the cross member but spaced therefrom for reception of a pane of glass therebetween.

JAMES F. CAMPION.