

A. KLOKNER.
CLAMP FOR GREENHOUSE ROOFS.
APPLICATION FILED FEB. 17, 1921.

1,387,409.

Patented Aug. 9, 1921.

FIG. 1.

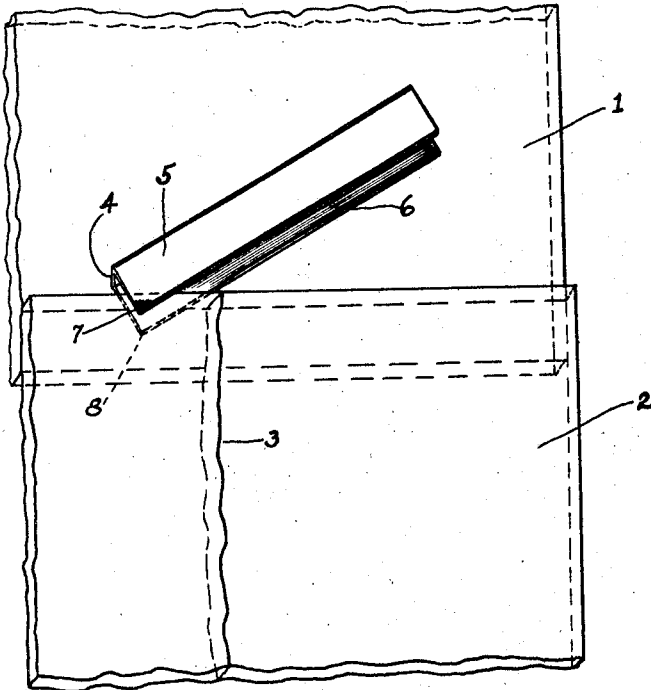


FIG. 2.

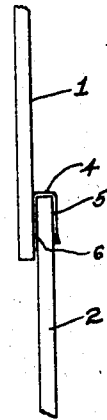


FIG. 3.

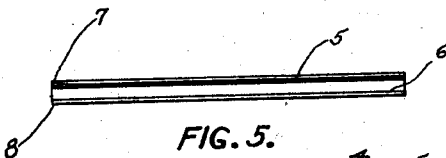


FIG. 4.

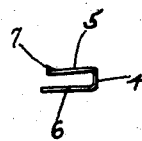
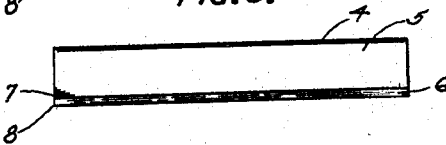


FIG. 5.



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CLAMP FOR GREENHOUSE-ROOFS.

1,387,409.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALEXANDER KLOKNER, a citizen of the United States, residing at Wauwatosa, county of Milwaukee, and State of Wisconsin, have invented new and useful Improvements in Clamps for Greenhouse-Roofs, of which the following is a specification.

This invention relates to repair clamps for greenhouse roofs and is an improvement upon the construction illustrated in my former Patent No. 798065 of Aug. 29, 1905.

Greenhouse roofs are usually formed of an overlapping series of glass plates held between supporting sash members or standards. It often happens that one or more of the plates becomes cracked between their points of support and will tend, therefore, to sag as they are in effect a beam supported at the two ends with the center weakened. This effect is enhanced by the weight of the superimposed glass plates. Usually, a cracked glass will not fall out immediately but will gradually sag more and more until finally the broken parts drops completely out. It often happens that the damage occurs at a time when it is impossible to substitute a new glass and it has been found that an opening resulting from a cracked or broken glass may cause a serious damage to the plants in the greenhouse in the brief period elapsing before the repair can be permanently made.

This invention relates to a clamp which may span the crack at the margin of the glass plate and will reinforce the plate at its weakest point, thereby preventing the glass from dropping out.

Objects of this invention are to provide a clamp which will hold the broken parts of the pane together; to provide a clamp that may be easily applied from the under side of the roof; and to provide a clamp that will automatically guide itself over the edges of the glass without requiring the use of auxiliary implements to effect its positioning.

An embodiment of the invention is shown in the accompanying drawings, in which:

Figure 1 is a fragmentary perspective view of two of the overlapping panes of a greenhouse showing the clamp in its initial position during insertion.

Fig. 2 is an edge view illustrating the clamp in its final position.

Fig. 3 is a front edge view of the clamp.

Fig. 4 is an end view of the structure shown in Fig. 3.

Fig. 5 is a plan view of the structure shown in Fig. 3.

Fig. 1 is a view of the under side of a greenhouse roof and shows the upper pane 1 intact and the lower pane 2 cracked as indicated at 3. The clamp comprises a relatively short arm 5, a rear portion 4, and a longer arm 6 extending from the back portion. It is made of non-corrosive resilient metal and is so bent that the distance between the shorter and longer arms is slightly less at their outer edges than the thickness of the pane of the glass to which it is to be applied.

An outer corner of the shorter arm has an upturned ear 7 which is designed to ride over the upper edge of the cracked pane of glass. The corresponding corner 8 of the longer arm is first inserted between the panes 1 and 2 as illustrated, and while the clamp is held in an angular relation to the edge of the glass, it is pushed downwardly into the position illustrated in Fig. 1. It will be noted that it is relatively easy to insert the straight, longer projecting corner 8 between the panes of glass and that the curved corner 7 automatically rides over the corresponding edge of the broken pane and serves to gradually separate the shorter arm from the longer arm a distance sufficient to permit the broken pane to be received between the arms,—the inherent resiliency of the clamp providing a constant binding pressure to maintain the clamp in correct position upon the broken pane. After the corner of the clamp is in position, it is a relatively easy matter to rock the clamp about such corner and to slide it into its final position as indicated in Fig. 2.

It will be seen that a clamp has been provided which may be positioned from the under side of the greenhouse roof without removing any of the panes of glass to permit such insertion. It will also be seen that a relatively serious damage may be repaired with the greatest facility and dispatch.

It will be understood that the ear 7 may be formed on either corner of the short arm or flange 5 in accordance with the preference of the user.

I claim:

1. A repair clamp for broken panes of glass, comprising a rear portion and a pair of arms extending therefrom, one of said

arms having an outwardly turned ear to automatically aid in guiding the associated arm over the edge of the pane.

5 2. A repair clamp for broken panes of glass, comprising a member formed of resilient sheet material and having gripping jaws, and an outwardly turned ear formed upon one of said jaws.

10 3. A repair clamp for broken panes of glass, comprising a rear member, a pair of

relatively wide jaws formed integrally therewith and extending outwardly therefrom, one of said jaws being flat throughout its extent and projecting beyond the other jaw, and an outwardly turned ear formed at a 15 corner of the shorter jaw to aid in guiding the shorter jaw over the edge of the pane during positioning, said clamp adapted to engage the pane with a binding pressure.

ALEXANDER KLOKNER.