V. G. CRITTALL.

WINDOW SASH.

APPLICATION FILED JAN. 10, 1912.

1,046,444

Patented Dec. 10, 1912.

Fig. 1.

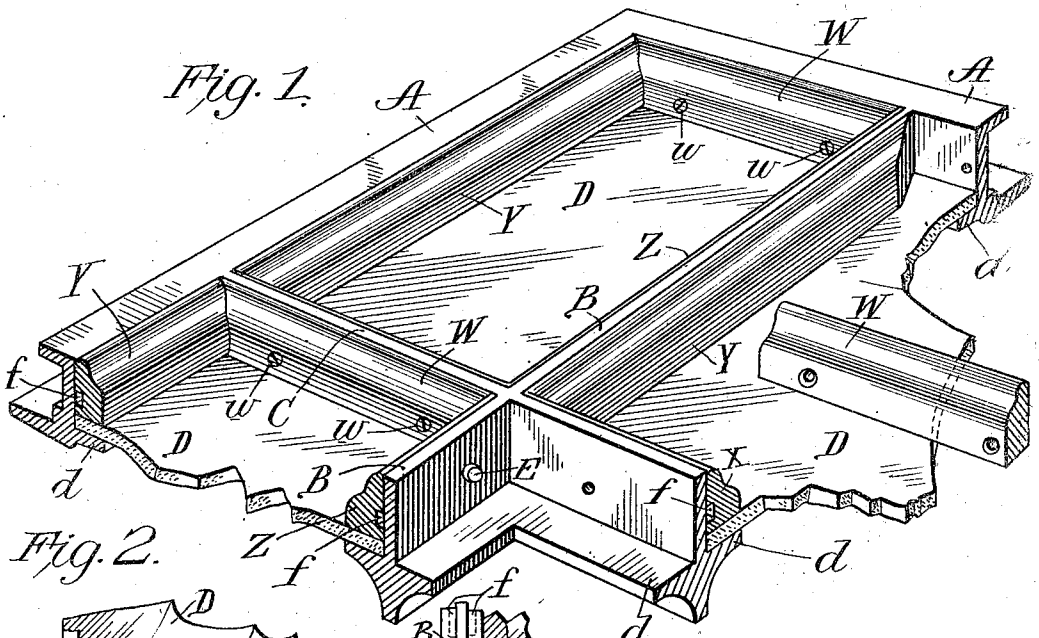


Fig. 2.

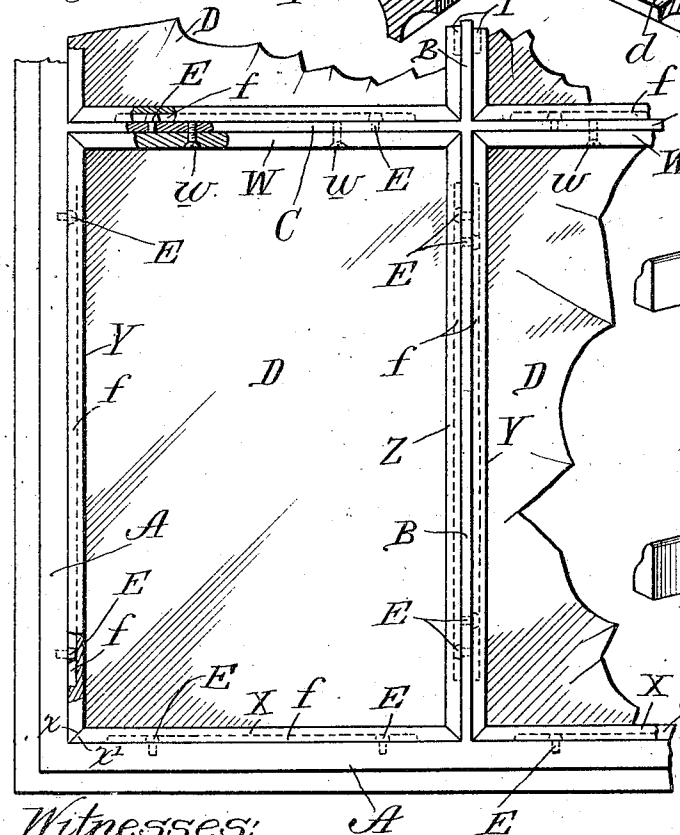


Fig. 3.

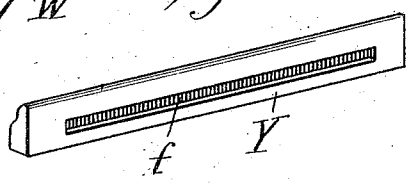
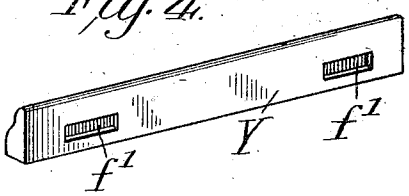


Fig. 4.



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UNITED STATES PATENT OFFICE.

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WINDOW-SASH.

1,046,444. Specification of Letters Patent. Patented Dec. 10, 1912.

Application filed January 10, 1912. Serial No. 670,483.

To all whom it may concern:

Be it known that I, VALENTINE GEORGE CRITTALL, a subject of the King of Great Britain, residing at The New House, Chelmsford, in the county of Essex, England, have invented certain new and useful Improvements in Window-Sashes, of which the following is a specification.

This invention relates particularly to the construction of window sashes in which the sash frame is made of metal bars, and the object of this invention is to provide improved means for securing panes of glass to the window frame.

According to this invention the outer frame bars, the mullions and the transoms of the sash, are preferably, as usual, made of metallic T bars having flanges or ledges to receive the panes of glass, and metallic beads which are detachably connected in an improved way with the frame, serve to hold the panes in place. Ordinarily each bead is secured in place by two or more screws, necessitating the driving of at least eight screws to secure each pane of glass in position. By my improvements three of the four beads are connected with the sash frame by means of studs attached to the frame which enter grooves in the beads while the fourth bead only is attached by means of screws.

In the accompanying drawing:—Figure 1 is a perspective view of part of a window sash, with my improvements applied, some of the parts being detached and broken away in order to better illustrate the construction. Fig. 2 is a plan view of part of a window sash with portions in section, illustrating my improvements. Fig. 3 is a perspective view of one of the beads, preferably employed. Fig. 4 is a similar view of a modified form of bead.

The outer frame bars A, the mullions B and the transoms C are in general form of the kind commonly employed. The panes of glass D rest on the flanges *d* of the outer frame bars, mullions and transoms, as usual. Studs or pins E project laterally from the outer and inner frame bars on three sides of each glazed opening, and three of the beads for each sash opening are each formed with a longitudinal groove *f* while the fourth bead is not thus grooved. Preferably the studs are widely separated, as shown, and the groove of each grooved bead is of sufficient length to receive both studs. The glass is first placed on the flanges *d* and then the studs E are inserted.

In applying the beads, I preferably proceed as follows: The bead X is first placed in position in such manner that its groove shall receive the studs E. Then the bead Y is applied, its mitered end *x* being placed next to the mitered end *x'* of the bead X and then the bead is swung over to a vertical position, the studs E being received by the groove *f;* then the bead Z is applied in a similar way. Lastly the bead W is placed parallel with the transom C and moved into position, its mitered ends joining the mitered ends of the beads Y and Z. The bead W carries screws *w* which engage the transom. In this way the four beads may be very quickly applied, three of them being merely placed in position and automatically held in place when thus applied, while only one of the beads requires screws to hold it. As soon as the fourth bead W is secured in place all the others are firmly locked in position.

It is obvious that the beads may be quickly removed by first loosening the screws *w*, removing the bead W and then quickly withdrawing the other three beads. Preferably each bead is provided with a long groove *f* but a plurality of shorter grooves *f'*, of the kind shown in Fig. 4, may be used instead.

While my improvements are especially adapted for metallic structures they may also be applied where wooden frames are used, and while my improvements are primarily applicable to windows they may also be used in other glazed structures.

I claim as my invention:

1. A window sash having flanges on which a pane of glass rests and other flanges provided with laterally projecting studs, beads having grooves receiving the studs resting on the glass and bearing against the stud-carrying flanges, and another bead carrying fastening devices engaging the sash frame.

2. A window sash having flanges on which a pane of glass rests and other flanges provided with laterally projecting studs, beads having mitered ends and grooves for receiving the studs and which bear on the glass and on the stud-carrying flanges, and another bead having its ends mitered and engaging the mitered ends of two of said first mentioned beads, and screws carried by one of the beads for attaching it to the sash frame.

3. A window sash composed of metal angle bars having flanges on which a pane of glass rests and other flanges provided with studs projecting laterally across the edges of the glass, beads having grooves in their sides which rest against the flanges of the angle bars and which receive the studs and rest on the glass, and another bead engaging the ends of two of the beads first mentioned and holding them in place and which carries fastening devices engaging the sash frame.

In testimony whereof, I have hereunto subscribed my name.

VALENTINE GEORGE CRITTALL.

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