(No Model.)

D. CROSSER.

WINDOW SASH.

No. 437,980. Patented Oct. 7, 1890.

Fig. 1.

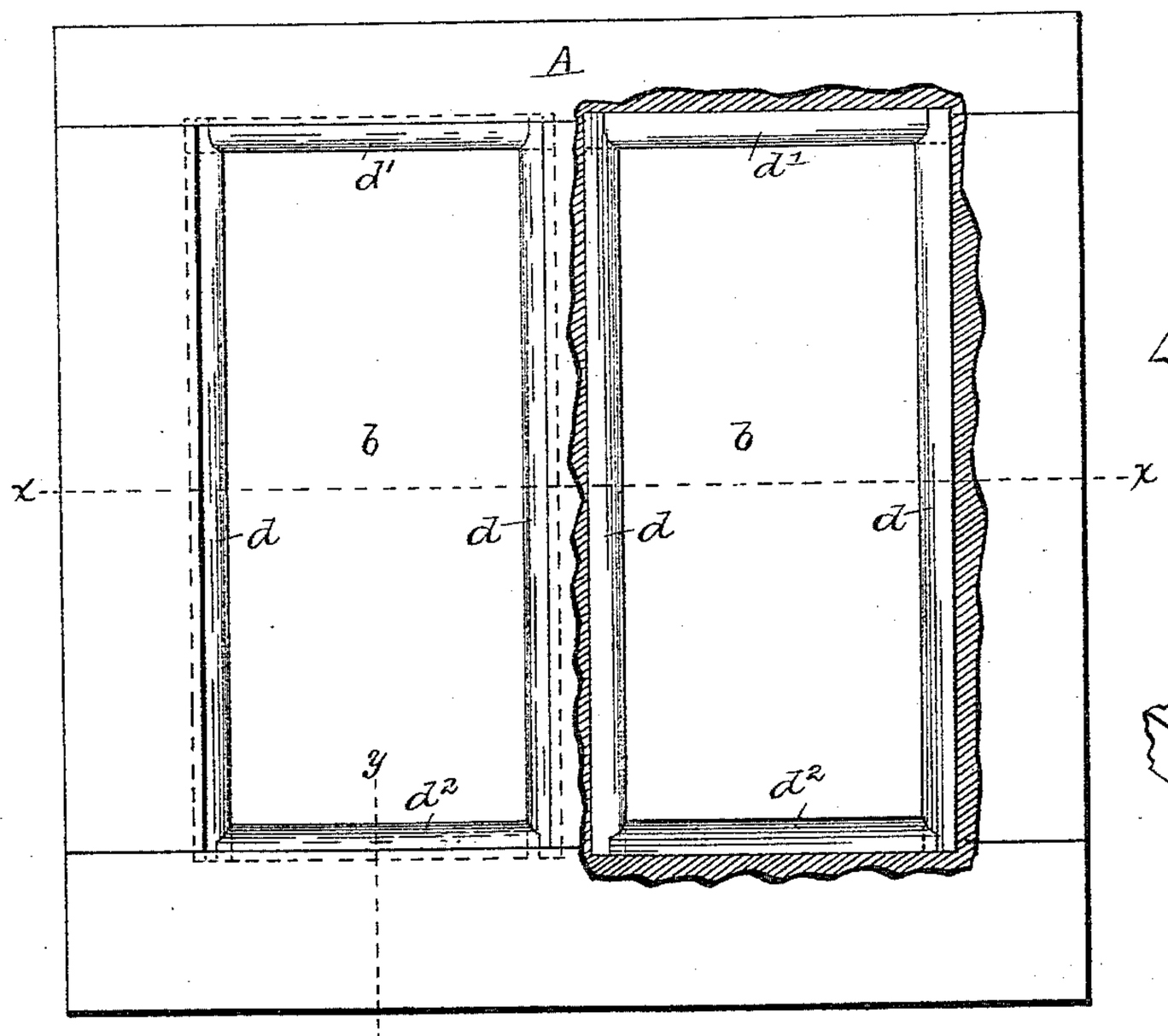


Fig. 4.

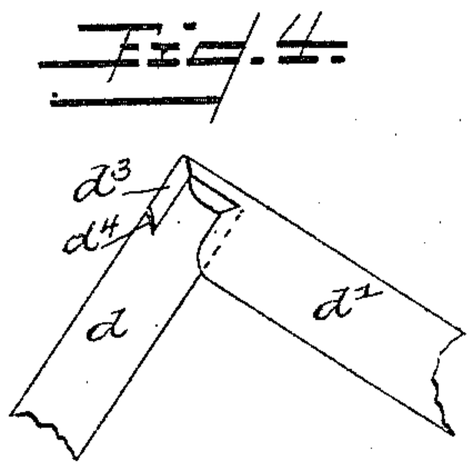


Fig. 5.

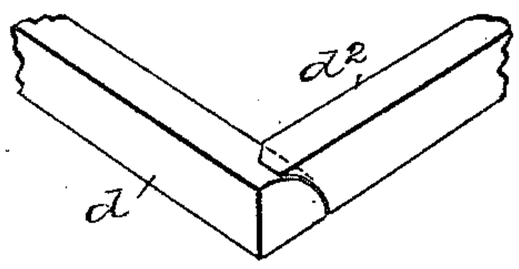


Fig. 2.

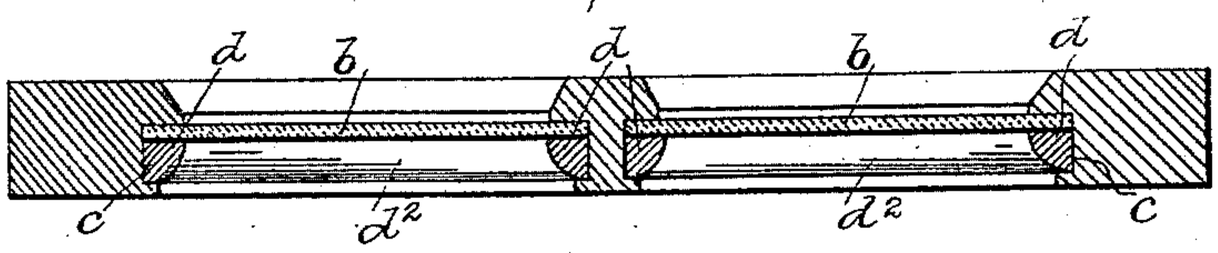
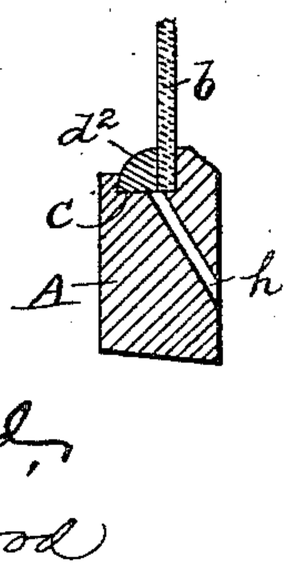


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

DAVID CROSSER, OF CARDONIA, INDIANA.

WINDOW-SASH.

SPECIFICATION forming part of Letters Patent No. 437,980, dated October 7, 1890.

Application filed March 17, 1890. Serial No. 344,211. (No model.)

To all whom it may concern:

Be it known that I, DAVID CROSSER, a citizen of the United States, residing at Cardonia, in the county of Clay and State of Indiana, have invented certain new and useful Improvements in Window-Sashes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in the means of fastening glass in window-sashes, doors, picture-frames, show-cases, and frames of all kinds; and the objects of my improvements are, first, to dispense with the use of putty, joints, nails, &c., and in securing the glass in a frame and at the same time to make the glass easily detachable when required by the use of a single locking-strip inserted in such a manner as to render unnecessary the use of brads or nails in fastening the strips in the frame, and, second, to provide in the base of said frame a small aperture or sweat-hole to conduct off the moisture or water of condensation that frequently forms on the inner surface of a glass, especially in windows and show-cases, owing to the differences of temperature to which the two surfaces of the glass may be exposed. I accomplish these objects by the device illustrated in the accompanying drawings, which illustrate my invention as applied to a window, and in which—

Figure 1 is a side elevation, partly in section, of a window-sash, showing my improvements from the inside. Fig. 2 is a cross-section of the same on the line *x x* of Fig. 1, showing the adjustments of the strips in the groove. Fig. 3 is a cross-section on the line *y y* of Fig. 1, illustrating the position and form of the sweat-hole; Figs. 4 and 5, details of the fastening-strips.

A is a sash-frame containing two panes *b b* of glass. The frame is rabbeted about the four interior sides to form grooves *c*, designed as a bed for the glass and the fastening-strip. These grooves are of sufficient depth and width to insure a good bearing for the glass about its exterior edge and a good bed or seat for the strips *d*. The fastening-strips *d' d²* are shown separately in Figs. 4 and 5, in position in Fig. 1, and in cross-section in Fig. 2. The top fastening-strips *d'* are made with a convex outer surface and at each end are undercut to form a tongue d^3, which passes into an under-cut d^4, formed in the ends of the side strips *d*. A lap-joint is thus formed and the cut-out in the strip *d'* is curved so as to form a close joint with the convex surface of the side strip.

d^2 is the key or locking-strip that fits in the bottom of the sash, as shown in Fig. 5, having a concave cut out of its ends adapted to fit and engage with the rounded or convex outer surfaces *d d* and crowd them securely into the grooves *c*, forming the bed.

In Fig. 1 the right-hand side of the sash is shown broken away to show the entire fastening in place. The other side of the same figure shows the complete sash with pane secured therein by the fastenings as it appears from the inside.

Fig. 2 illustrates in cross-section the sash, pane, and fastenings all in position.

The fastening-strips constituting the lock may be made of any desired material and of any exterior shape.

In Fig. 3 is shown in cross-section on the line *y y* of Fig. 1 the base, fastener, and base of the sash, showing the shape and position of the sweat-hole *h*. I have designed this latter feature in combination with my fastener to furnish a convenient escape for the water of condensation that frequently forms on the inner surface of the pane and that works its way down through the joint between the pane and the fastener, and but for this means of escape would tend to swell and rot the parts. By such an outlet the water, instead of collecting in the groove *c*, can escape to the outer surface of the sash and thus obviate such difficulty.

In operation, when it is desired to set a pane, the glass is laid squarely in place on the rear face of groove *c*. The top piece *d'* is first inserted and pushed hard into its seat in the groove *c*. The side pieces *d d* follow, and finally the key or locking-piece d^2 is pushed into place and automatically secures and maintains the side pieces *d d* in place. To remove a glass the operation is simply reversed, the key or locking-piece being first

removed by a penknife or other suitable means, and then the rest may be easily removed.

I am aware that wooden strips in various forms have been used as window-pane fasteners. I do not therefore claim such, broadly; but

What I do claim, and desire to secure by Letters Patent, is—

1. A glass-fastener comprising a frame provided with the groove *c*, in combination with the corresponding side strips *d d*, undercut at their upper ends, the top strip *d'*, having its ends undercut to fit the mortised ends of *d d*, and the key or locking-strip d^2, having its ends cut concave to engage with the convex faces of *d d*, substantially as described.

2. In a glass-fastener, the frame provided with the groove *c*, in combination with the corresponding side strips *d d*, undercut at their upper ends, the top strip *d'*, having its ends undercut to fit the undercut ends *d d*, the key or locking-strip d^2, of similar form, having its ends cut concave to engage with the convex faces of *d d*, and the sweat-hole *h*, formed in the base of the frame to conduct off any water that may percolate down between the glass and the fastener, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID CROSSER.

Witnesses:
WILLIAM BAXTER,
EDWARD CROSSER.