(No Model.)

W. HENDERSON.

BAR AND FASTENING FOR SASHES AND LIKE STRUCTURES.

No. 482,087. Patented Sept. 6, 1892.

Fig. 1.

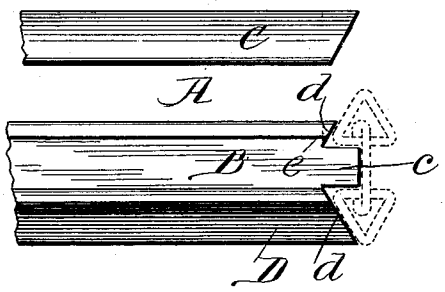

Fig. 2.

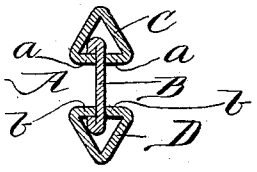

Fig. 3.

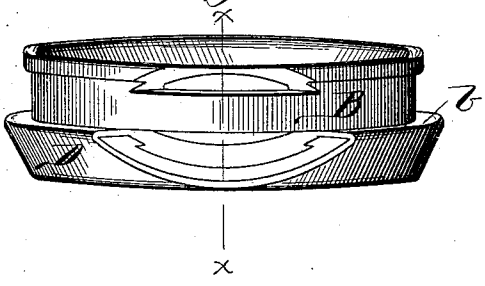

Fig. 4.

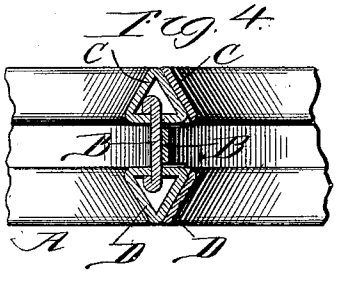

Fig. 5.

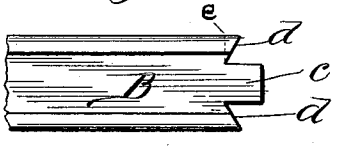

Fig. 6.

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BAR AND FASTENING FOR SASHES AND LIKE STRUCTURES.

SPECIFICATION forming part of Letters Patent No. 482,087, dated September 6, 1892.

Application filed March 2, 1891. Serial No. 383,478. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENDERSON, a subject of the Queen of Great Britain, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bars and Fastenings for Sashes and Like Structures, of which the following is a specification.

My invention relates to improvements in bars and fastenings for sashes and like structures, and more especially to that class of sashes and bars which are designed for stained-glass windows, in which the pieces of glass are cut into a variety of forms, sizes, and configurations and necessarily require that the bars shall be so bent, placed, and united to conform to their forms and to hold them in position; and it consists in certain peculiarities of the construction of the bars and in the novel and peculiar method of uniting them, as will be hereinafter more fully set forth and specifically claimed.

Heretofore it has been generally customary in constructing window-sashes to first place and unite the bars proper in the required positions and then glaze the glass in the sash, after which the caps or fastenings which fit on the ribs of the bars and secure the glass in place are put in position, and in so doing every transverse cap or fastening must be cut in two or deeply recessed on its under side at the point where it meets the transverse bar, while by using my bars and fastenings I am enabled to clasp the cap or fastening to its respective bar proper, either by hand or machinery, thus permitting the cutting, bending, or notching to be done as in a bar or fastening composed of one piece, and also to construct or build up the sash piece by piece, the joining and glazing being done simultaneously, as in lead glazing.

It will be distinctly understood that it is essential in all bent work to have the cap or fastening and its respective bar proper of the same curve, and it is obvious that in lateral bending if the cap and fastening was bent separately and apart from the bar proper the slot in the cap or fastening would be closed or otherwise defaced; but in cutting, bending, or notching the bar as one, as above described, I avoid this difficulty. It is apparent that it is not necessary to perform the cutting, bending, or notching in the order named, but in any desired order, or the notching may be omitted.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a side view of a portion of a bar with one of the caps or fastenings removed, showing the manner in which it is united with the transverse bar, an end view of which is shown in dotted lines. Fig. 2 is an end view of the bar with the caps or fastenings in position. Fig. 3 is a view in side elevation of the bar slightly tipped, with one of the caps or fastenings removed, bent circularly or into a circle, and showing the manner of forming the bar to unite with the transverse bar. Fig. 4 is a vertical sectional view taken on line X X of Fig. 3 and showing portions of two pieces of circular bars as they appear when united. Fig. 5 is a view in side elevation of the rib of the bar with the caps or fastenings removed; and Fig. 6 is a plan view of the bar, showing the manner of beveling the end.

A represents the bar proper, which is made of three or more pieces of material.

B is a rib which unites the upper or lower caps or fastenings C and D, respectively, which caps or fastenings are formed by bending the metal back upon itself, with shoulders *a* and *b*, which form a support for the sheet of glass, which is held between the two parts C and D. The ends of the bars are formed with notches *d* of any formation; but I prefer to form them with angular ones, as seen in Figs. 1 and 5, thus allowing the projecting portion *c* of the rib B to fit into the space between the shoulders *a* and *b* of the transverse bar and permit the caps or fastenings C D thereof to fit snugly in the notches *d*, and also to allow the cap or fastening C, which is a distinct and separate piece from the rib B and takes the place of putty or other fastening, to hold the glass in place.

By reference to the drawings it will be seen that the caps C and D have no seams on their outer surfaces, and thus present a smooth and attractive appearance adapted to receive a suitable finish and polish.

In Figs. 3 and 4 I have shown the manner

of joining curved or circular bars, in which one of the circular pieces is cut away at the point of contact with the other and formed with notches at said point, into which the fastening or cap C and the lower cap D will snugly fit in a like manner, as shown in Fig. 1. It will therefore be understood that I do not desire to limit myself to form the bar with the notches at the ends of the bars, for I may form them at any point thereon that may be desired, or may dispense with said notches entirely, and I may also bevel the notched ends of the bars, as shown by dotted lines in Fig. 6, so that they will unite snugly with the transverse bar when not running at right angles or otherwise therewith, be they circular or otherwise.

On account of the readiness with which the caps or fastenings C can be removed from the bar proper to permit of repairing I use the construction shown, and when it is necessary to remove the caps or fastenings of the bar to insert a piece of glass instead of a piece which has been broken the end of the rib B may be cut, as shown by dotted lines, as at *e* in Figs. 1 and 5, when the transverse fastenings may be removed without hinderance by the upper notch.

I am aware that it is old to provide the upper and lower portions of the ends of the bars with notches, so that in "tenoning" one of the notches will receive the shoulder of the transverse bar and the projection or tenon *c* will fit into the mortise in the rib of the transverse bar, thus closely uniting the ribs and preventing the fastening coming down on the glass without being cut in two or deeply recessed.

While it is necessary for me to use the notch for the reception of the shoulder of the transverse bar and to mention the same in my claims, yet I do not tenon my bars, nor do I claim the notches to permit tenoning of the bars. I usually construct my bars of three pieces of metal—that is, the caps C and D and the rib B, each being a separate and distinct piece; but I may sometimes reinforce the rib by making it of two or more pieces.

One of my objects in constructing the bars of three or more pieces is to enable me to use for the upper and lower caps or fastenings thin sheets of precious metals—such as silver, German silver, copper, brass, &c.—and a cheap and thicker or stronger metal for the rib.

I claim—

1. A bar and fastenings consisting of the marginal doubled caps or fastenings C and D, without seams on their outer surfaces, and the rib B, connecting them, said caps or fastenings being separate and distinct pieces from the rib, substantially as and for the purpose set forth.

2. A bar and fastenings consisting of the marginal doubled caps or fastenings C and D, without seams on their outer surfaces, and the rib B, connecting them and forming the bar A, having the notches *d*, said caps or fastenings being separate and distinct pieces from the rib, substantially as and for the purpose set forth.

3. A bar and fastenings consisting of the marginal doubled caps or fastenings C and D, without seams on their outer surfaces, and the rib B, connecting them, and the ledges or shoulders *a* and *b* on each side of the rib and substantially at right angles therewith, said caps or fastenings being separate and distinct pieces from the rib, substantially as and for the purpose set forth.

4. A bar and fastenings consisting of the marginal doubled caps or fastenings C and D, without seams on their outer surfaces, and the rib B, connecting them and forming the bar A, having the notches *d*, and the ledges or shoulders *a* and *b* on each side of the rib and substantially at right angles therewith, said caps or fastenings being separate and distinct pieces from the rib, substantially as and for the purpose set forth.

5. A bar and fastenings consisting of the hollow marginal doubled caps or fastenings C and D, without seams on their outer surfaces, and the rib B, connecting them, and the ledges *a* and *b* on each side of the rib and substantially at right angles therewith, said heads being separate and distinct pieces from the rib, substantially as and for the purpose set forth.

6. A bar and fastenings composed of three pieces, consisting of the hollow marginal doubled caps or fastenings C and D, without seams on their outer surfaces, and the ribs B, connecting them, said caps or fastenings being separate and distinct pieces from the rib, substantially as and for the purpose set forth.

7. A bar and fastenings composed of three pieces, consisting of the doubled marginal caps or fastenings C and D, without seams on their outer surfaces, and the rib B, connecting them and forming the bar A, having the notches *d*, and the ledges or shoulders *a* and *b* on each side of the rib and substantially at right angles therewith, substantially as and for the purpose set forth.

8. A bar and fastenings composed of three curved pieces, consisting of the hollow marginal doubled caps or fastenings C and D, without seams on their outer surfaces, and the rib B, connecting them, and the ledges and shoulders *a* and *b* on each side of the rib and substantially at right angles therewith.

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