

1,058,909.

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UNITED STATES PATENT OFFICE.

LUCY A. SHRADER, OF ELMIRA, NEW YORK.

WINDOW-SASH.

1,058,909.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed April 23, 1912. Serial No. 692,643.

To all whom it may concern:

Be it known that I, LUCY A. SHRADER, citizen of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Window-Sashes, of which the following is a specification.

This invention relates to window sashes and has for its object the provision of a window sash in which the glass may be firmly secured without the use of putty or similar material.

A secondary object of the invention is to provide a construction which will facilitate the removal of a broken pane and the insertion of a new pane therefor.

The invention resides in certain novel features of construction and arrangement of parts which will be hereinafter first fully described and then particularly pointed out in the appended claims.

In the accompanying drawings, which fully illustrate my invention:—Figure 1 is a perspective view, partly broken away, of a window sash embodying my improvements; Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1. Figs. 3 and 4 are horizontal sections taken, respectively, on the lines 3—3 and 4—4 of Fig. 1; Fig. 5 is a vertical section taken on the line 5—5 of Fig. 1; Fig. 6 is a detail perspective view showing the joint between the bars of the sash; Fig. 7 is a detail perspective of one of the horizontal mullion bars.

In carrying out my invention, I employ side bars, 1, a top bar 2, and a bottom bar 3, the top and bottom bars being of the same construction, and the two side bars being also of the same construction. These sash bars have their inner edges rabbeted and grooved, the grooves 4 being adapted to receive the edges of the window pane securing devices, and the rabbeted construction presenting shoulders 5 and 6 which respectively support the glass and the glass securing devices and also presenting a flange 7 at the outer side of the sash bars against which the panes of glass rest and are secured. The ends of the sash bars are reduced, as shown in Fig. 6, thereby presenting overlapping tongues 8 and 9. The inner edge of the tongue 9 merges through a concave curve into the end of the flange 7 on the side bar, while the end of the top or bottom bar, adjacent to the tongue 8, merges by a convex curve into the flange 7 on said bar,

said convex and concave curves fitting snugly together, as indicated at 10.

The outer end of the tongue 8 is mitered, as indicated in dotted lines in Fig. 6 and in full lines at 11 in Fig. 1, and the end of the side bar, adjacent to the tongue 9, is likewise mitered to fit closely to the mitered end of the top bar and of the bottom bar, as will be readily understood. This form of joint produces an interlocking structure whereby the sash bars will reinforce each other and be prevented from movement about each other, and, at the same time, will present a neat finish on both sides of the sash and prevent the entrance of moisture through the sash. The bars may be securely fastened together by coating the meeting surfaces of the joint with glue or some other strong adhesive, but, if so desired, small nails or other fastening devices may be driven through the members of the joint.

A vertical mullion 12 is disposed between the top and bottom sash bars, and this mullion is provided at its outer side with longitudinal flanges 13 against which the panes of glass 14 rest, and the ends of the mullion are extended to fit over the flanges 7, as shown at 15, and rest against the shoulders 5 of the sash bars, it being understood that the flanges 13 of the mullion are of the same width as the flange 7 of the sash bar, so that the mullion will lie flush with the outer surfaces of the sash bars. At intermediate points of the said mullion and of the side sash bars, I provide the horizontal mullions 16 which are similar in construction to the vertical mullion 12, but are considerably shorter, the projecting ends 17 of these horizontal mullions fitting over the flanges 13 of the vertical mullion 12 and over the flanges 7 of the side sash bars, as shown most clearly in Fig. 3. The edges of the glass panes rest against the flanges 13 of the mullions 16 and against the bodies of said mullions in the same manner that they engage the side sash bars and the central mullion 12, as will be readily understood; and the panes are thus firmly supported around all four edges. These horizontal mullions, however, are not essential to the invention and may be omitted if desired, thereby providing for the use of panes which will extend the full height of the sash.

The panes of glass are held against the flanges 7 and the shoulders 5 of the sash bars by stops 19 consisting of strips of wood,

rubber, or other material and constructed with longitudinal flanges 20 adapted to fit snugly in the grooves 4 of the sash bars, the said grooves being flush with the inner 5 faces of the glass panes, so that the stops will bear against the panes, as clearly shown in Fig. 4. It will be noted that these stops hold the panes of glass firmly against the flanges of the sash bars so that the use of 10 putty, cement, or similar material is rendered unnecessary, and if these stops be formed of heavy rubber, rattling of the glass will be prevented.

Over the mullions 16, I place locking bars 15 21 which are adapted to extend over the edges of the glass and are provided at their ends with tongues 22 adapted to enter the grooves 4 of the side sash bars, between the ends of the stops 19, as will be readily understood. Similar tongues at the inner ends of 20 these locking bars rest upon the central mullion 12 and are held thereto by a vertical locking bar 23 which extends between the top and bottom sash bars and is provided 25 at its lower end with a projecting tongue 24 adapted to engage the groove 4 of the bottom sash bar, between the meeting ends of the stops 19 thereon. A turn-button or similar device 25 is mounted upon the inner face 30 of the top sash bar 2 and is adapted to extend over the upper end of the locking bar 23 and thereby hold the same in its operative position.

It is thought the advantages of my improved window sash will be readily understood and appreciated from the foregoing description, taken in connection with the accompanying drawings.

The mullions are fitted to the sash bars, 40 and the panes of glass or other transparent material are engaged with the mullions, after which the locking bars are placed in position, as described, and the turn-button or other fastening device caused to engage 45 the upper end of the central vertical locking bar. The four edges of each pane of glass are thus held firmly between flat engaging faces, and a single fastening device secures all the parts in place, the shorter 50 horizontal locking bars having tongues which engage the side sash bars and being held against the central mullion by the central locking bar, as clearly shown in Fig. 3, and the ends of the several stops and locking 55 bars being beveled so that they will fit closely and neatly together at the meeting points.

The several parts may be rapidly assembled or dis-assembled, so that the insertion 60 or removal of a pane of glass is a very simple matter, and the use of putty or cement, which will tend to disintegrate and

fall away from the sash and the glass, is entirely overcome. The several parts are exceedingly simple in their construction and 65 may be placed in their operative positions by an unskilled person without exertion.

Having thus described my invention, what I claim is:—

1. In a window sash, the combination of 70 sash bars having their inner edges provided with longitudinal grooves and inner and outer longitudinal shoulders, a mullion constructed at its ends to engage said grooves and bear against said outer shoulders, said 75 outer shoulders and said mullion being adapted to support the panes, a locking bar fitting over the mullion and engaging the inner faces of the panes and constructed at one end to engage a sash bar, and means on 80 the opposite sash bar to engage the adjacent end of the locking bar and hold said bar in its operative position.

2. In a window sash, the combination of sash bars having their inner edges provided 85 with longitudinal flanges at their outer sides, longitudinal shoulders adjacent to said flanges, longitudinal grooves adjacent said shoulders and other longitudinal shoulders between said grooves and the inner faces of 90 the bars, a mullion constructed at its ends to engage said grooves and to bear against the outermost shoulders, the said mullion and the said outer shoulders being adapted to support the window panes, stops fitted in 95 the grooves of the sash bars and bearing against the window panes, a locking bar extending over the mullion and bearing against the window panes supported thereby, and a fastening device on one of the sash bars en- 100 gaging the end of said locking bar.

3. In a window sash, the combination of sash bars constructed to support window panes, a mullion extending between opposite sash bars and constructed to support the 105 inner edges of window panes, other mullions engaging the first-mentioned mullion and the other opposite sash bars and also constructed to support the window panes, stops engaging the sash bars and bearing 110 against the window panes, locking bars extending over the several mullions and constructed to engage the sash bars between the said stops, one of said locking bars extending over and holding the meeting ends of 115 the other locking bars, and a fastening device on one sash bar adapted to retain the said locking bars.

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

LUCY A. SHRADER. [L. s.]

Witnesses:

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