E. H. JOHNSON.

FIREPROOF WINDOW SASH.

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996,986.

Patented July 4, 1911

Fig. 1.

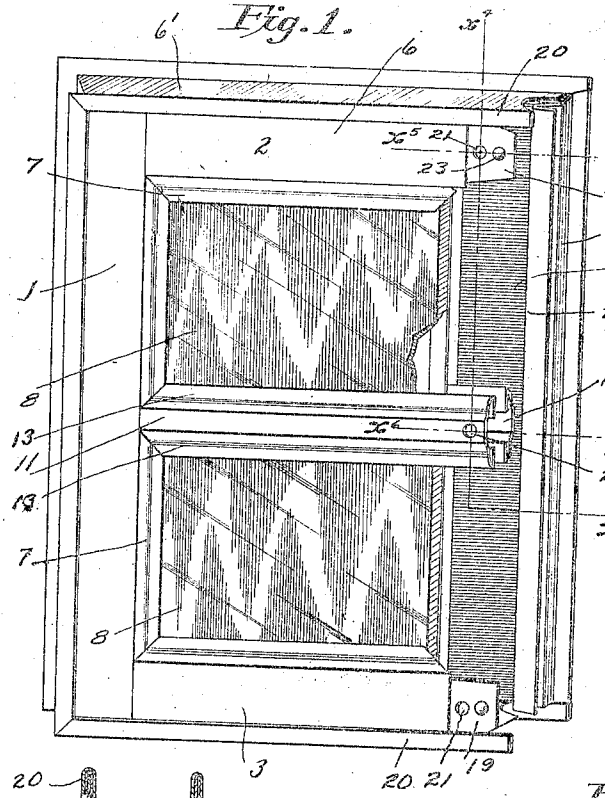


Fig. 3.

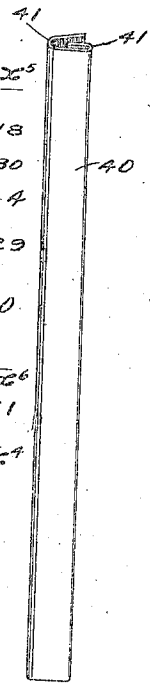
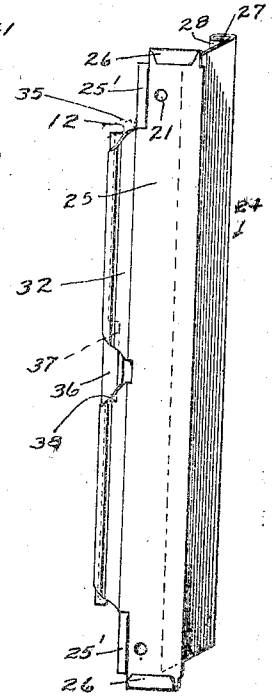


Fig. 2.



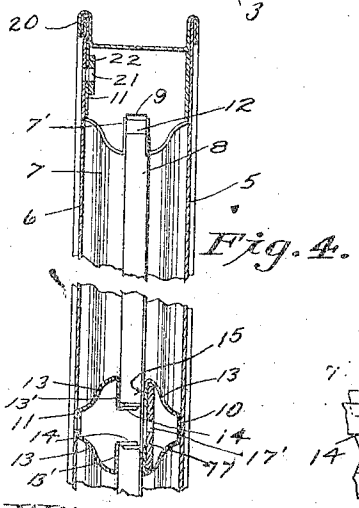


Fig. 4.

Fig. 5.

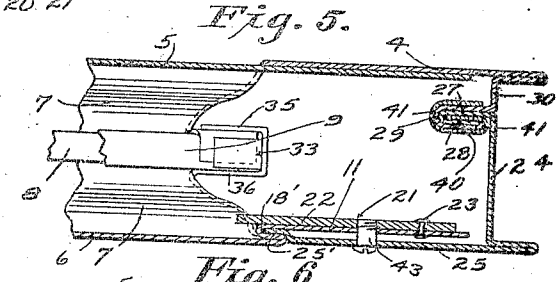
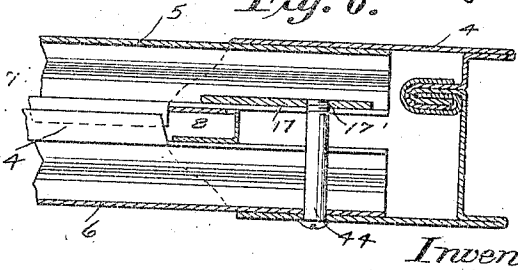


Fig. 6.



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UNITED STATES PATENT OFFICE.

EDWARD H. JOHNSON, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-THIRD TO CHRISTIAN SPECHT AND ONE-THIRD TO JOSEPH C. SPECHT, BOTH OF LOS ANGELES, CALIFORNIA.

FIREPROOF WINDOW-SASH.

996,986. Specification of Letters Patent. **Patented July 4, 1911.**

Application filed September 20, 1910. Serial No. 582,909.

To all whom it may concern:

Be it known that I, EDWARD H. JOHNSON, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Fireproof Window-Sash, of which the following is a specification.

This invention relates to the construction of window sashes of sheet metal in such manner as to be substantially fire proof, and the invention relates particularly to means for enabling the panes to be put in place in the sash and to be retained therein.

The main object of the present invention is to provide a metallic sash construction in which the use of removable or separate mullions is obviated, and a firmer and more fire proof construction of the mullion is thereby obtained.

Another object of the invention is to provide means for holding the panes in such manner that the usual provision of a free space at one edge of the pane is dispensed with, thereby enabling the pane to be held more firmly.

A further object of the invention is to provide a sash construction wherein the panes can be inserted by a direct sliding motion without necessitating the two-way movement generally required for such insertion.

Other objects of the invention will appear hereinafter.

The accompanying drawings illustrate my invention.

Figure 1 is a perspective of the rear of the sash body with a detachable side member thereof removed. Fig. 2 is a perspective of the said detachable side member. Fig. 3 is a perspective of a locking strip for securing said member to said side body. Fig. 4 is a partial vertical section of the sash on line x^4—x^4 in Fig. 1. Fig. 5 is a horizontal section on the line x^5—x^5 in Fig. 1, with the side member in position. Fig. 6 is a horizontal section on line x^6—x^6 in Fig. 1, with the side member in position.

The sash comprises a body member consisting of rails 1, 2 and 3 and a rail portion 4, connected to form a rectangular frame, said rail portion 4 being open to permit of insertion of the glass panes, and the sash also comprises a removable rail member 24 for closing said open rail to complete the frame structure and hold the panes in place. The said rails are formed of sheet metal bent to form a tubular construction. The walls of said tubular construction comprise front walls 5 and rear walls 6 with connecting plates 6′, said front and rear walls having inwardly extending flanges 7 having portions 7′ extending into proximity and in parallelism and with their edges seamed together at 9 to form a U-shaped portion forming a groove 12 between the portions 7′ for receiving the sash panes 8.

The incomplete rail portion 4 is preferably provided at the front side of the sash frame and is connected at its ends to the rails 2 and 3. Fig. 1 of the drawings shows the sash arranged with this incomplete or open side of the frame at one side, but it will be understood that this open rail may be at the top or in any position according to the direction in which the sash stands, and when the sash is turned with its mullions extending vertically, as will generally be the case, this open rail of the sash will be at the top.

The mullion comprises front and rear strips, the front strip 10 extending between the side members of the front plate and preferably extending behind the side plate 4 of the body. A rear mullion member 11 is connected at one end to the rear plate 6 at one side of the body and extends across the glass receiving space and parallel to the front mullion member. Both of said mullion members are provided with flanged portions 13, extending inwardly toward the pane and then parallel to the pane as at 13′ and having their end portions interlocked or seamed together, as shown at 14, forming grooves 15 between the parallel portions 13′ of said flanges. The grooves 12, 15 formed between the parallel portions of the respective flanges 7 and 13 and bounded by the interlocking or seamed portions 9 and 14 connecting said flanges, form guides for receiving and guiding the edges of the glass pane 8 which is adapted to be slid into said spaces. A reinforcing plate 17 is provided within the hollow mullion member 10, and is provided with a screw threaded hole 17′, said plate being behind the side plate 4 of the sash body.

The rear portion of the sash body is cut away at the open side of the body and the rails 2 and 3 are provided with extensions 18 and 19 extending at the rear of the side

member of the sash body and seams 20 are provided by rolling over the rear plates of the members 2 and 3 of the sash body, said seams extending respectively above and below the respecti e extensions 18, 19 aforesaid. Reinforcing plates 22 are secured, as by means of rivets 23, to the respective plates or extensions 18, 19 of the rails 2 and 3 of the body, these plates being tapped or provided with screw-threaded perforations 21.

The removable rail member 24 of the window frame is provided with a rear plate portion 25 which is adapted to slide laterally in front of the extensions 18, 19 aforesaid, the ends of said rear plate portion sliding within the seams 20 on the body member 1, and being preferably bent or turned over as at 26 to interlock or form a sliding joint with said seams. Said rail member is further provided with a flange 27 extending forwardly therefrom and terminating in a flange 28, parallel to the front plate 25, said flange 28 being formed by bending over and doubling the end of said flange 27 and being adapted to engage in a groove 29 formed by turning over a flange 30 extending rearwardly from the front plate 4 of the body member. Said side portion is further provided with flanges 32 extending obliquely inward and bent at their ends in U-shape to form grooves 33 for receiving the edges of the glass panes, these grooves being formed between parallel portions 35, 36 of said flanges 32, the forward parallel portion 36 being cut away as shown at 37 to fit the forward front mullion member 10 and the obliquely extending flange 32 being cut away as shown at 38 to fit the rear mullion member 11. Plate 25 of the side member is bent as at 25′ to enter a fold 18′ in the front plates of the top and bottom members 2 and 3. The locking member or strip 40 is formed with a fold or U-shaped bend 41 along each side, one of said bends extending within the other so as to adapt the strip to be slipped over the flange and around the groove portion 29 of the flange 30 on the body of the frame so as to interlock the side member and the body of the frame together.

The frame is assembled as follows: The side of the frame being open as shown in Fig. 1, the glass plates 8 are slipped sidewise into the channels or grooves 15 formed between the flanges 13 of the mullions and within the grooves 12 formed between the flanges 7 of the body. The side member 24 is then put in place by sliding it laterally on the body, the rear plate 25 of said member sliding on the extensions 18, 19 and within the seam portions 20 on said body, the bends 26 on said side member interlocked or seaming with the said seam portions on the body. When the side member has thus been brought to proper position, the flanges 32 thereon will embrace the edge of the glass and hold the same firmly in place and the flange 28 on said side member will enter the groove 29 on the body member. Said parts are then locked together by sliding the locking strip 40 endwise over the groove portions 29 of the body member with its inner flange or fold engaging within the doubled flange 28 of the side member. This rigidly secures the side member to the body member at the front portion thereof. In order to more effectually lock the parts together at the rear portion, screws indicated at 43 are inserted through the movable side member and screwed into the openings 21 in the extensions 18, 19 of the body member and a screw 44 is also inserted through said side member and through the perforation 21 in the rear mullion 11, screwing into the hole 17′ in reinforcing plate 17 in the front mullion member.

What I claim is:

1. A window sash construction comprising a body member consisting of rails connected at their ends to form a rectangular frame, one of said rails being open for insertion of the panes into the frame and the other of said rails being provided with U-shaped bends forming rail-receiving grooves, and a removable rail member formed with a U-shaped bend constituting a rail-receiving groove and removably secured to said body member, said removable rail member sliding laterally on the body member and said removable rail member and body member having laterally extending flange portions forming a sliding seamed joint.

2. A window sash construction comprising a body member formed of sheet metal and provided with pane-receiving grooves, a rail member formed with pane-receiving grooves and removably secured to said body member, said rail member sliding laterally on the body member and said rail member and body member having laterally extending flanged portions forming a sliding seamed joint, and said rail member and body member having vertically extending flanged portions which interlock when the said members are in assembled position, in combination with a locking strip sliding longitudinally over said vertically extending flanges and interlocking therewith.

3. In a window sash construction, the combination with a sheet metal sash body consisting of rails connected to form a rectangular frame, one of said rails being open to permit the insertion of the panes and the other of said rails being provided with U-shaped portions forming pane-receiving grooves, a sheet metal mullion extending across said frame and having portions bent in U-shape to form pane-receiving grooves, and a removable rail member slidable laterally into engagement with said body and

into engagement with said mullion and having U-shaped portions forming pane-receiving grooves above and below said mullion, and means for fastening said removable rail member to the said body and to the said mullion.

4. In a window sash construction in combination with the sash body consisting of rails connected to form a rectangular frame, three of said rails having grooved pane-receiving portions, a mullion extending between the rails of said body and having pane-receiving grooves, one rail of said body being open to permit the panes to be slid laterally into the said grooves in the body, a removable rail member, slidable laterally into engagement with said body and having pane-receiving groove portions above and below said mullion, said body and removable rail member being formed with vertically extending flanges interlocking when said members are in assembled position, and a locking strip slidable vertically on said vertically extending flanges to lock the body and rail member together.

5. In a window sash construction, in combination with the sash body consisting of rails forming a rectangular frame and having grooved pane-receiving portions, a mullion extending between the sides of said body and having pane-receiving grooves, one rail of said body being open to permit the panes to be slid laterally into the grooves in the body, a removable rail member, slidable laterally into engagement with said body and having pane-receiving groove portions above and below said mullion, said body and removable rail member being formed with vertically extending flanges interlocking when said members are in assembled position, a locking strip slidable vertically on said vertically extending flanges to lock the body and rail member together, and screws connecting said rail member to the said body to prevent relative lateral movement.

In testimony whereof, I have hereunto set my hand at Los Angeles, Cal., this 10th day of September, 1910.

EDWARD H. JOHNSON.

In presence of—
A. P. KNIGHT,
FRANK L. A. GRAHAM.