R. C. KEOGAN.

WINDOW SASH.

APPLICATION FILED APR. 18, 1921.

1,400,683. Patented Dec. 20, 1921.

Fig. 2.

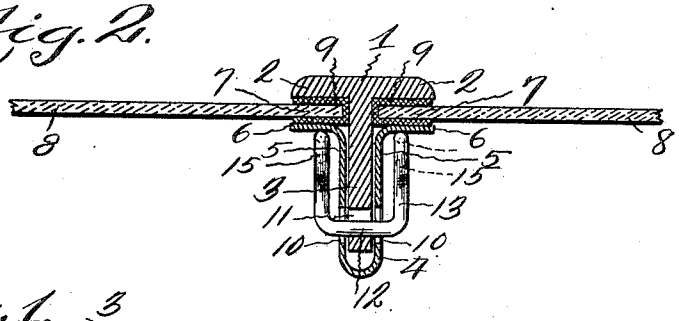
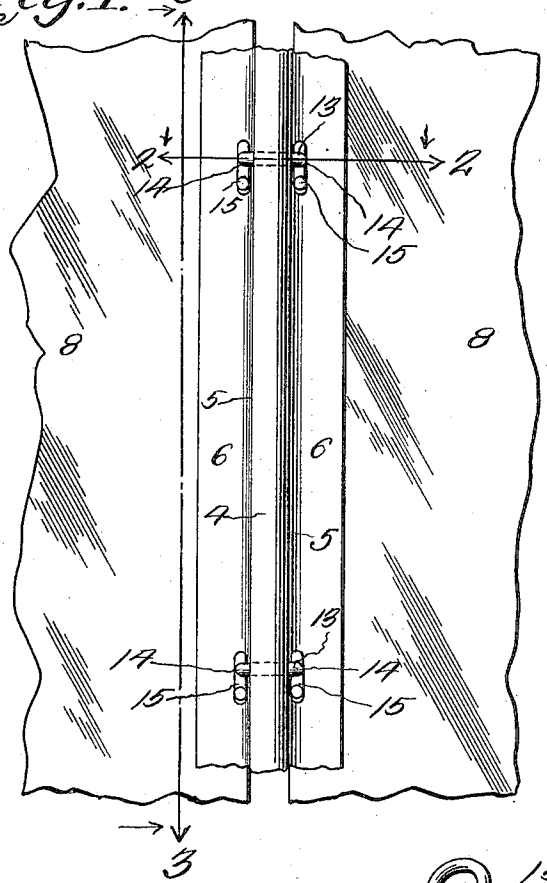


Fig. 1.



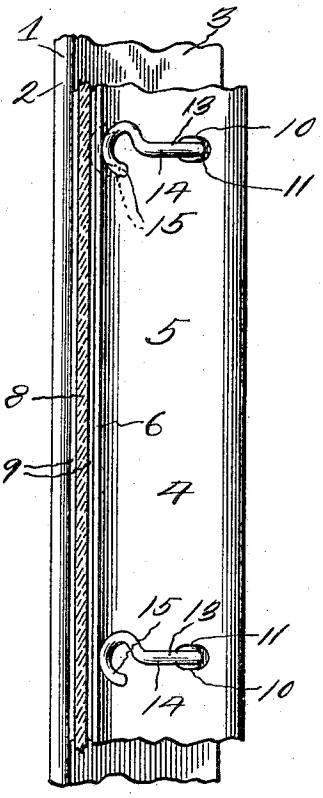


Fig. 3.

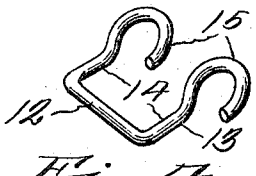


Fig. 4.

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WINDOW-SASH.

1,400,683. Specification of Letters Patent. Patented Dec. 20, 1921.

Application filed April 13, 1921. Serial No. 462,314.

To all whom it may concern:

Be it known that I, RICHARD C. KEOGAN, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Window-Sashes, of which the following is a specification.

The invention relates to window sash and has for its object to provide a window sash so constructed that panes of glass may be held therein in such a manner that the use of putty is eliminated, thereby providing means for holding the glass in place which will withstand great shock, such for instance as is common in shop construction, and especially in places where heavy machinery, such as drop hammers and the like are used, and the incessant pounding of which set up a vibration which soon shakes putty loose and breaks much glass.

A further object is to provide means for holding window panes resiliently, thereby obviating breakage of the panes incident to shock.

A further object is to provide a window sash so constructed as to permit broken panes to be easily and quickly replaced through the medium of clamping members. Also to provide a window pane holding device for windows so constructed that the use of putty is obviated, which putty in case of fire soon crumbles and allows the pane to drop from the sash, and consequently admit drafts to the fire.

A further object is to provide a window sash mullion T-shaped in horizontal cross section, on one flange of which is slidably mounted a U-shaped channel having outwardly extending flanges, between which flanges and the other flanges of the mullion, the adjacent ends of window panes are received. Also to provide registering apertures in the U-shaped channel and the flange of the mullion in which apertures a transverse portion of a U-shaped clamp is loosely mounted, the arms of which clamp terminate in hooked spring portions which are adapted to be forced into engagement with the flanges of the U-shaped channel for clamping the adjacent edges of the window panes into position.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawings, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:—

Figure 1 is a front elevation of a portion of a window sash mullion showing the invention applied thereto.

Fig. 2 is a horizontal sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a vertical sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is a perspective view of a flexible U-shaped clamping member.

Referring to the drawings, the numeral 1 designates a mullion of a window sash, which mullion is T-shaped in horizontal cross section as shown in Fig. 2, and comprises flanges 2 which are in the same vertical plane and the flange 3 which is disposed at a right angle to the flanges 2. Disposed on the flange 3 is a U-shaped channel 4, the flanges 5 of which channel terminate in outwardly extending flanges 6, which are preferably in parallel relation to the flanges 2 of the mullion, and between the flanges 6 and between the flanges 2 of the mullion the adjacent sides 7 of window panes 8 are disposed and are adapted to be held resiliently in resilient packing members 9, which are U-shaped in cross section and disposed on the adjacent edges of the pane. The packing members may be formed from felt, rubber or any other packing material, however the material used is preferably a resilient one, which resilient material will take up shocks where the construction is used in connection with factories, and consequently prevent breakage of the glass and eliminate the use of putty, which putty if jarred loose releasing the glass and allowing the same to fall and break.

Extending through registering apertures 10 in the flanges 5 in the channel member 4, and through a registering aperture 11 in the flange 3 of the mullion is a transverse portion 12 of the pivoted U-shaped clamping member 13, the arms 14 of which terminate in flexible curved members 15, which members when the clamping members are moved to the positions shown in Fig. 3, engage the outwardly extending flanges 6 of the channel member 4 and force said flanges into binding engagement with the packing members 9, thereby securely holding the adjacent

edges 7 of the window panes 8 between the flanges 6 of the U-shaped channel 4, and the flanges 2 of the mullion. It will be seen by referring to Fig. 3 that when the U-shaped clamping members 13 are moved into clamping position, that the curved portions 15 thereof will flex, thereby resiliently holding the panes in such a manner that any looseness which may develop will be taken up, and at the same time resiliently holding the panes in such a manner that shocks, such for instance where the device is used on windows of factories wherein heavy machinery is used, will be taken up in such a manner that the window panes will be prevented from breaking. The registering apertures 10 in the channel 4 are elongated and are preferably larger than the apertures 11 in the flanges 3 of the mullion, thereby allowing a range of clamping action when the clamping members are moved into clamping position as shown in Fig. 3.

From the above it will be seen that a window pane holder is provided for sash which is particularly adapted for use in factories where windows are subjected to constant vibration, which vibration loosens the putty of conventional forms of windows and causes the panes of glass to drop from the windows and become broken. It will also be seen that a window pane fastener is provided which obviates the use of putty, thereby overcoming the difficulty now experienced in case of fire where putty when subjected to intense heat crumbles, thereby allowing the panes to drop from the windows and consequently allowing the spread of fire.

The invention having been set forth what is claimed as new and useful is:—

1. A window pane holding device comprising a member T-shaped in cross section, a U-shaped channel disposed on one of the flanges of said T-shaped member, outwardly extending flanges carried by the flanges of the U-shaped channel and disposed adjacent the flanges of the T-shaped member, said flanges of the U-shaped channel and the T-shaped member being adapted to receive therebetween adjacent edges of window panes, U-shaped clamping members having their transverse portions disposed in apertures of the T-shaped member and channel member, the arms of said U-shaped clamping members terminating in curved flexible members, said curved flexible members being adapted to be forced into engagement with the outwardly extending flanges of the channel member, thereby forcing said channel member inwardly.

2. The combination with a window sash mullion T-shaped in horizontal cross section and having one of its flanges disposed between adjacent edges of window panes, of means for holding said panes in said mullion, said means comprising a U-shaped channel member disposed on the flange of the mullion which is disposed between the panes, a U-shaped clamping member extending through enlarged registering apertures in said channel member and mullion flange, said clamping member having its arms provided with flexible members, and outwardly extending flanges carried by the U-shaped channel member and adapted to be engaged by the flexible members of the arms of the U-shaped clamping members.

3. A window pane holder comprising a T-shaped mullion, a U-shaped channel disposed on one flange of said mullion and provided with outwardly extending flanges registering with the other flanges of the mullion, resilient members disposed between the flanges of the mullion and the flanges of the U-shaped channel for the reception of adjacent edges of window panes, and a U-shaped clamping member having its transverse portion extending through enlarged registering apertures in the U-shaped channel and the flange of the mullion, said clamping member having its arms so proportioned that when they are forced inwardly they will engage the outwardly extending flanges of the channel member and force said channel member inwardly, thereby clamping the adjacent edges of the window panes.

4. The combination with a T-shaped mullion having a U-shaped channel disposed on one flange thereof and provided with outwardly extending flanges between which flanges and the flanges of the mullion adjacent edges of window panes are disposed, of a U-shaped clamping member extending through enlarged apertures of the channel member and a flange of the mullion, the arms of said U-shaped clamping member being so proportioned that when they are forced inwardly they will engage the flanges of the channel member and force the channel member inwardly.

5. The combination with a T-shaped mullion having a U-shaped channel disposed on one flange thereof, said channel being provided with outwardly extending flanges between which flanges and the flanges of the mullion adjacent flanges of window panes are disposed, of a U-shaped clamping member extending through enlarged registering apertures of the channel member and a flange of the mullion, the arms of said U-shaped clamping member terminating in curved flexible members adapted to be forced into frictional engagement with the flanges of the channel member.

In testimony whereof I affix my signature.

RICHARD C. KEOGAN.