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SASHLESS WINDOW CLAMPING MEANS

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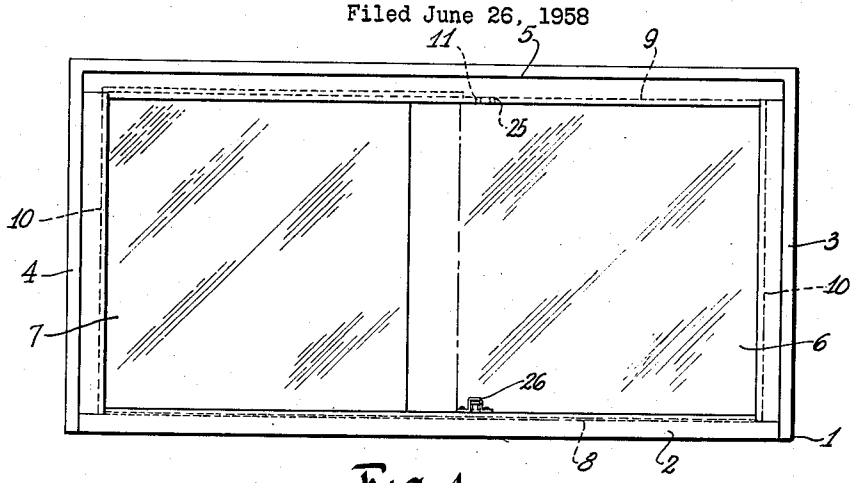


Fig. 1

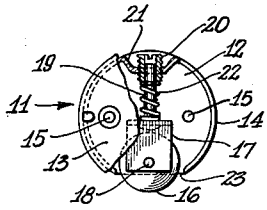


Fig. 2

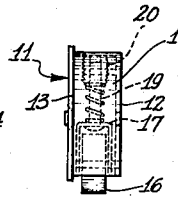


Fig. 3

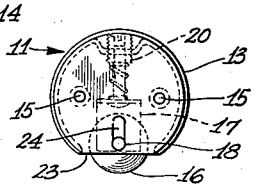


Fig. 4

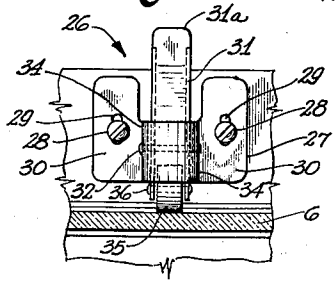


Fig. 6

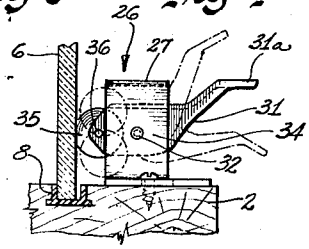


Fig. 5

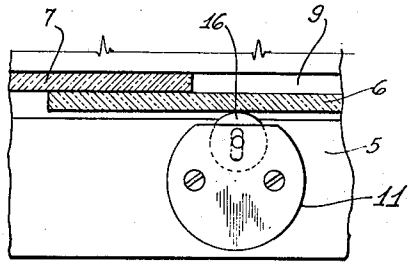


Fig. 7

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SASHLESS WINDOW CLAMPING MEANS

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4 Claims. (Cl. 20—52)

This invention relates to sashless window clamping means.

Sashless window structures usually include two or more glass panels slidably mounted in a frame. Sufficient clearance must be provided between two adjacent panels to permit ready sliding movement thereof. Such clearance frequently results in a space between the panels for undesirable inlet of drafts, moisture and the like. Moreover, it is difficult to lock the panels together, especially in partly open position and, therefore, in many structures heretofore proposed, no means is provided for such locking procedure.

An object of the present invention is to provide associated means for maintaining the glass panels of a sashless window in closely fitting relationship while permitting relative movement thereof and for locking such panels together in any desired relative position.

The invention resides in the provision, in combination with a sashless window structure having a frame and a pair of glass panels slidably mounted therein, of a roller resiliently mounted in the head piece of said frame and having its periphery riding upon one of said panels to apply pressure thereon adjacent the top edge thereof, and a clamping lever mounted on the sill of said frame and having a surface engageable with said one panel to apply pressure thereon adjacent the bottom edge thereof.

The invention will be described with reference to the accompanying drawing, in which:

Figure 1 is a side elevation of a window structure in accordance with the invention,

Figure 2 is an elevation, partly broken away, of one side of a pressure applying device,

Figure 3 is an end elevation of the device shown in Figure 2,

Figure 4 is an elevation of the other side of the device shown in Figure 2,

Figure 5 is a side elevation of a clamping device in accordance with the invention,

Figure 6 is a plan view of the device shown in Figure 5, and

Figure 7 is a side elevation of the device shown in Figure 2 in panel engaging position.

In the drawing, the window assembly illustrated comprises a wood frame 1 having sill 2, jambs 3 and 4, and head piece 5. One or more pairs of glass panels 6 and 7 are mounted in the frame. The sill 2 has a groove or channel 8 for reception of the lower edge portions of panels 6 and 7 and the head piece 5 also has a groove 9 for reception of the upper edge portions of the panels. Jambs 3 and 4 also have the usual grooves 10 for reception of the side edge portions of the panels.

It will be apparent that, in the normally closed position of panels 6 and 7, as shown in Figure 1, their meeting edge portions will overlap. It will also be apparent that, as in conventional structures of this type, panel 6 is slidable relatively to panel 7 to open or close the window to a desired degree subject to the width of panel 6. Sufficient clearance must be provided between the overlapping portions of the panels to permit ease of sliding movement of panel 6. It is substantially essential that, in closed position, the panels be locked against relative movement and that there be substantially no clearance therebetween for inlet of drafts, dust, moisture and the like. Moreover, it is highly desirable that in any partially opened position of panel 6, the same conditions apply in respect of the overlapping portions of the panels.

Means are therefore provided for maintaining the upper overlapping portions of the panels in close-fitting engagement at all times without interference with normal sliding movement of panel 6. To this end, a pressure applying device 11 is provided and comprises a metal or plastic housing having, as shown, a circular rear wall 12, a circular forward wall 13, and an intermediate annular side wall 14. Preferably, wall 13 is removably mounted to permit access to the interior of the housing as by means of bolts 15. A roller 16 is rotatably mounted in a U-shaped bracket 17 by means of a spindle 18. Bracket 17 is supported in the housing by means of a rod 19 fixed to the bracket and extending slidably into a sleeve 20 having a screw threaded mounting with an inwardly recessed portion 21 of wall 14. A spring 22 on rod 19 has one end bearing on sleeve 20 and its end bearing on the bracket to resiliently urge the bracket and roller in an outward direction. The roller 16 projects through an opening 23 in wall 14 which is located diametrically opposite the recessed portion 21. One end of the roller spindle 18 extends into a slot 24 in rear wall 12 of the housing to guide and support the roller and bracket during any reciprocal movement thereof. The device 11 is mounted in a recess 25 in the face of head piece 5 with roller 16 projecting into groove 9 and in resilient engagement with panel 6. Preferably, roller 16 engages panel 6 in adjacent but slightly spaced relation to the adjoining edge of panel 7, as clearly shown in Figure 7. The axis of roller 16 is parallel to the surface of panel 6.

Roller 16 is preferably formed of a plastic composition such as polyethylene, polystyrene, polyamide, hard rubber or other similar plastic.

The resilient pressure applied by roller 16 may be adjusted by adjusting the position of sleeve 20 relatively to the housing.

A clamping device 26 is mounted on sill 2 in generally opposed relation to pressure applying device 11 for cooperation therewith. Device 26 comprises a U-shaped metal bracket 27 adjustably fixed to sill 2 as by screws 28 which extend through slots 29 in the mounting flanges 30 of the bracket. A lever 31 is pivotally mounted by means of pin 32 between opposed walls 33 of the bracket. Lever 31 has a U-shaped cross section to provide opposed walls 34 between which is rotatably mounted a roller 35 as by means of a spindle 36 closely adjacent the inner end of the lever which projects inwardly beyond the walls 33 of the bracket. Roller 35 also projects inwardly beyond the end of lever 31.

The outer end of lever 31 is provided with a handle portion 31*a* which is somewhat angularly disposed or offset with respect to the remaining portion of the lever. It will be observed that the axis of roller 35 and the pivotal axis of lever 31 are parallel to the face of glass panel 6 and to the lower edge thereof and that, in the upper or lower positions of the inner end of lever 31, the roller 35 will be free of engagement with panel 6 as shown in dotted lines in Figure 5. However, in the intermediate position of the lever, as shown in full lines, the roller will engage panel 6 and apply pressure thereon.

Roller 35 is preferably formed of a material such as rubber which will be slightly yieldable with respect to the glass surface and which will impose a frictional

resistance to movement of the glass panel when the roller is pressed against the same. Thus the roller 35, in conjunction with the roller 16, will act not only to clamp the panels together, which clamping effect will tend to prevent relative movement of the panels, but will also act to resist such movement by reason of its own frictional contact with panel 6. As a result, a substantially positive locking action is imposed upon the panels in any desired position thereof.

We claim:

1. In a sashless window having a sill, head piece, and jambs constituting a frame, and a pair of glass panels slidably mounted therein, clamping means for said panels comprising a roller rotatably mounted in said head piece about an axis parallel to the surface of one of said panels, a spring resiliently urging said roller into pressure contact with said one panel, and a lever pivotally mounted on said sill and having a roller rotatably carried thereby, said second roller having an axis parallel to the adjacent edge of said one panel and being movable into and out of frictional contact with said one panel in response to actuation of said lever.

2. A sashless window clamping means as defined in claim 1, including a housing for said first roller, a bracket carrying said first roller, a rod fixed to said bracket slidably mounted in said housing, said spring being mounted on said rod, and a sleeve adjustably mounted on said rod for varying the tension of said spring.

3. A sashless window clamping means as defined in claim 1, said first roller being formed of a plastic composition and said second roller being formed of rubber.

4. In a sashless window having a sill, head piece, and jambs constituting a frame, and a pair of glass panels slidably mounted therein, clamping means for said panels comprising a roller rotatably mounted in said head piece about an axis parallel to the surface of one of said panels, a spring resiliently urging said roller into pressure contact with said one panel, and a lever pivotally mounted on said sill and having a surface thereon engageable with said one panel and being movable into and out of frictional contact with said one panel in response to actuation of said lever.

No references cited.