June 4, 1940. O. L. DAUTRICK 2,203,427

WINDOW CONSTRUCTION

Filed Sept. 10, 1938

Fig. 1.

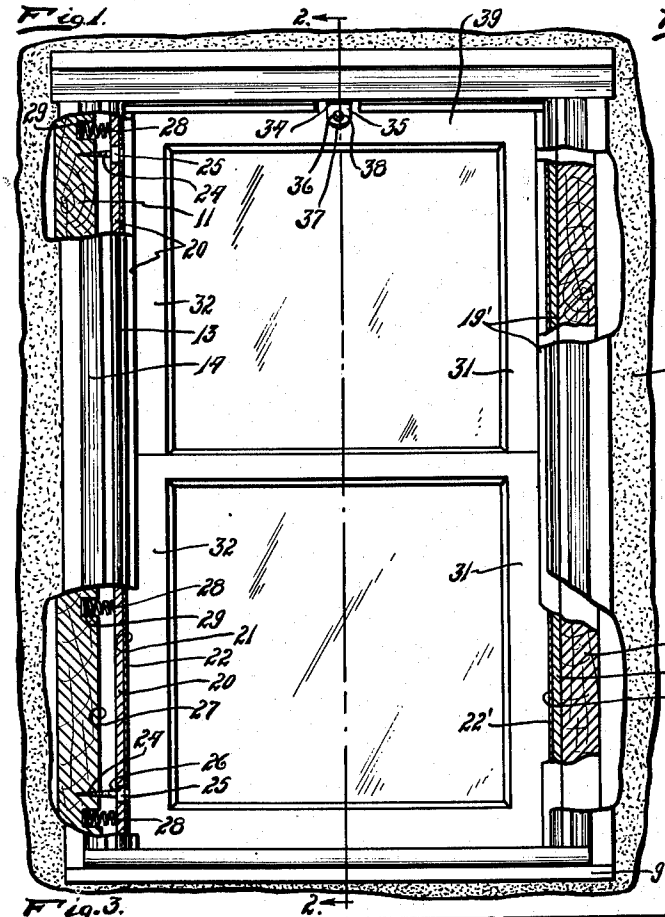


Fig. 2.

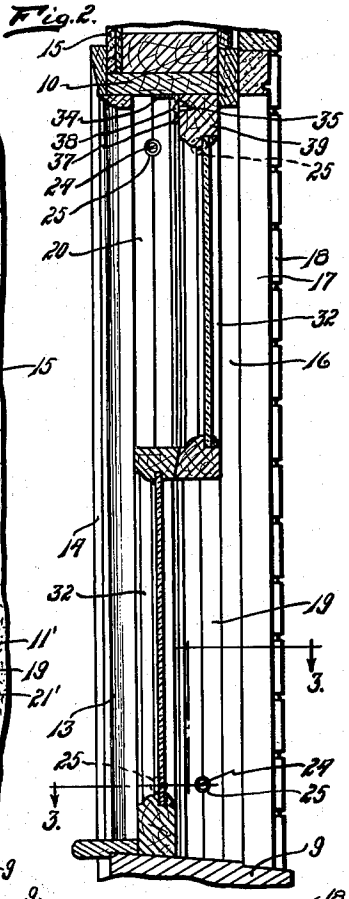


Fig. 3.

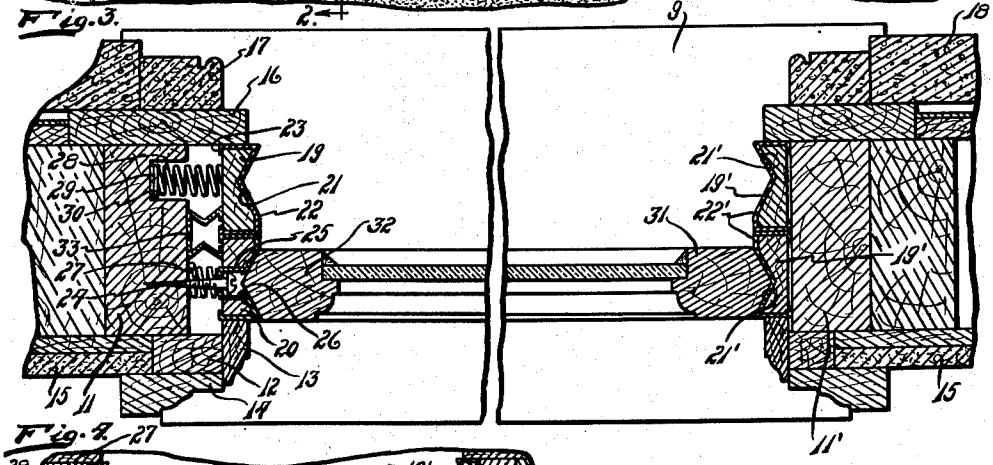
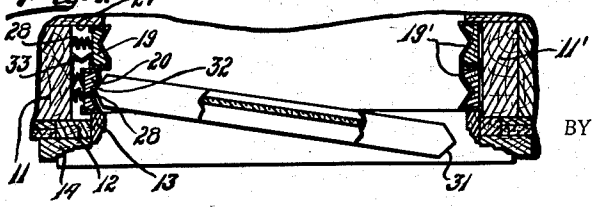


Fig. 4.



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UNITED STATES PATENT OFFICE

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WINDOW CONSTRUCTION

Owen L. Dautrick, Detroit, Mich., assignor of one-third to Lewis G. Erb and one-third to Arthur E. Blow, both of Royal Oak, Mich.

Application September 10, 1938, Serial No. 229,243

3 Claims. (Cl. 20—52.2)

My invention relates to a new and useful improvement in a window construction in which a window sash is slideably mounted in a frame. In the ordinary construction of such windows, it is common to employ pulleys, sash cords and weights for counterbalancing the window sash in its slideable movements.

It is an object of the present invention to provide a window construction in which the sash cords and sash weights may be eliminated.

It is another object of the invention to provide a window construction in which the window sash may be slid into any desired position in the frame and retained therein against undue movement, while at the same time it may be moved in either direction with the application of a slight amount of pressure.

Another object of the invention is the provision of a window construction in which the sash slideably mounted in the frame is prevented from rattling, is closely sealed at its opposite edges and is capable of easy and free movement.

Another object of the invention is the provision of slide bars engageable with opposite sides of the window sash and having longitudinally directed V-shaped grooves for the reception of a wedge-shaped edge formed on the window sash.

Another object of the invention is the provision in a window construction of sash engaging slide rails one of which slide rails, at one side of the sash, will be moved inwardly and outwardly against spring pressure to maintain proper engagement with the window sash and also permit the removal of the sash from the frame.

Another object of the invention is the provision of a window construction having a slideable sash mounted in a frame which is provided with slide rails for engaging opposite edges of the sash, one of which slide rails is movable inwardly and outwardly to maintain engagement with the window sash and which, when moved inwardly its maximum distance, will permit an easy removal of the sash from the frame but which is provided with means for preventing the removal of the sash from the frame when the window is in closed position.

Another object of the invention is the provision of a window construction having movable sash engaging slide members and means for adjusting the tension of said slide members with the sash.

Other objects will appear hereinafter.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

The invention will be best understood by a reference to the accompanying drawing which forms a part of this specification, and in which,

Fig. 1 is a front elevational view of a window embodying the invention with parts broken away and parts shown in section.

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

Fig. 3 is a sectional view taken on line 3—3 of Fig. 2 with parts broken away.

Fig. 4 is a section view similar to Fig. 3 on a reduced scale with parts broken away and illustrating the removal of the window sash from the frame.

In the drawing I have illustrated the invention used with a window frame having the lower rail or sill 9 and the upper rail 10. The sides of this frame are of special construction and embody an upright 11 secured to one side of which and projecting outwardly therefrom is a stop 12. This stop 12 is faced on its faces with the molding 13 and 14, the molding 14 overlying the end of the inner wall 15 which is formed from plaster or the like. A similar stop 16 is secured to the outer face of the upright 11 and projects outwardly beyond the face thereof a distance greater than the outward projection of the stop 12. Secured to this stop plate or board 16 is a brick molding 17 against which is adapted to abut the brick 18.

Positioned between the inner face of the molding 13 and the inner face of the stop 16, are slide rails 19 and 20, these slide rails being duplicates of each other and engaging at their opposing faces. These slide rails are provided on their inner face with a longitudinally extending groove 21 which is V-shaped in cross section. The inner face as well as the side face is covered with a layer 22 of thin material such as zinc, copper or the like, the end edges 23 of this metallic layer being bent inwardly around the rear face of the body 19. These slide rails are secured in position adjacent their upper and their lower ends by means of a suitable screw or nail 24 which is inserted into the upright 11 and which passes through the base of a metallic cup 25 pressed into an opening 26 formed in the body 19. The rail thus is slideably mounted on the nails or screws 24.

Formed at spaced intervals in the outer face of the upright 11 are pockets 29 in each of which is positioned one end of a coil spring 28, the other end engaging the inner face of the body or slide rail 19 as shown in Fig. 3. If desired, washers 30 may be positioned in the bottom of the socket for the purposes of adjusting the compression of the spring 29. These springs are normally, when the sash is mounted in position, under compression to retain the slide rails in snug engagement with the side faces of the sash.

The sash is illustrated as comprising the side rails 31 and 32, each of these side rails is formed with its outer face formed wedge-shaped in cross section so as to snugly fit in the groove 21 formed

in the slide rails. As shown in Fig. 3 at the side of the frame opposite where the movable slide rails are mounted, I have mounted similarly constructed slide rails in stationary position. These slide rails comprise the body 19' having the V-shaped groove 21' formed on the outer face and covered with a metallic layer 22'. The slide rails 19' are secured to the upright 11' by means of nails or in any other suitable manner. When the sash is in position, the side rails 31 and 32 are engaged as clearly appears in Fig. 3 and when so mounted, the springs 28 serve to retain the movable slide rails pressed into position against the rail 32 and thus form an engagement which is leakproof as to wind and rain and which will also serve to prevent rattling of the window regardless of the position to which it is raised.

It will be noted that the use of sash weights and cords has been eliminated and with a construction as described the sash may be easily moved upwardly and downwardly to any desired position. The nails or screws 24 are so positioned that when the sash is moved to closed position, the sash will overlie one of the screws or nails 24.

In order to remove the sash from the frame, it is but necessary to force the movable slide rail, against which the sash engages inwardly a sufficient distance to permit the opposite end of the sash to clear its stationary slide rail as shown clearly in Fig. 4. In order to do this, the sash is moved bodily to the left of the drawing forcing the slideable slide rail inwardly toward the member 11 against the compression of the spring 28. This, of course, cannot be accomplished when the sash overlies one of the nails or screws 24 as the screw would engage against the sash and prevent the necessary movement. However, when the sash is moved to a position to lie clear of any of these screws 24, the movement may be effected and the sash easily and quickly removed from the window for painting, washing, etc. Positioned in the space 27 is an auxiliary spring clip 33 which engages between the member 11 and the inner face of the slideable slide rails and serves to cooperate with the coil springs 28 in maintaining the proper contact of the slide rail with the sash rail.

Mounted on the member 10 is an L-shaped resilient clip 34 having a depending portion 35 provided with an opening 36 formed therein and flared outwardly at its lower end 37 so as to ride over the semi-spherical head 38 of the screw which is carried by the upper rail 39 of the upper sash. The construction is such that as the upper sash is moved upwardly into closing position, the clip will ride over the nail and this nail serve to enter the slot 36 thus serving as a yieldable means for securing the upper sash in closed position.

It is believed obvious that a window construction formed in this manner is one in which considerable saving of labor is effected in the construction and mounting of the window frame and sash in position while the various advantages referred to are also present.

While I have illustrated and described the preferred form of construction, I do not wish to limit myself to the precise details of structure shown, but desire to avail myself of such variations and modifications as may come within the scope of the appended claims.

What I claim as new is:

1. A window construction of the class described, comprising: a window frame; a pair of oppositely disposed slide rails mounted on the inner faces of opposite sides of said frame and extending longitudinally thereof, one of said slide rails being fixed relatively to said frame and the other being movable toward and away from said fixed slide rail, the outer faces of each of said slide rails having a longitudinally directed groove formed therein; a window sash slideably mounted between said slide rails; oppositely disposed side rails on said window sash and having their outer faces shaped to conform to and engaging in the grooves in said slide rails, said sash, in unison with said movable slide rail being movable away from said stationary slide rail a sufficient distance for clearing said stationary slide rail; and means engageable with the sash, upon movement of said sash to a predetermined position relatively to said slide rails, for preventing movement of said sash and said movable slide rail away from said stationary slide rail a sufficient distance for effecting clearance of said sash with said stationary slide rail.

2. In a window construction of the class described, a window frame having oppositely disposed side members; a pair of slide rails, one of said slide rails being fixedly mounted on the inner face of one of said side members of said frame and the other of said slide rails being movably mounted on the other of said side members for movement toward and away from said stationary slide member, said slide members being oppositely disposed and having on their inner faces a longitudinally directed groove; a spring member for forcing said movable slide member outwardly from its side member toward said oppositely disposed slide member; a metallic covering for the grooved faces of said slide rails; a sash slideably mounted between said slide rails, said sash having oppositely disposed side rails, the outer faces thereof being shaped to conform to the shape of said grooves and engage in the same, said sash being movable, in unison with said movable slide rail, away from said stationary slide rail a sufficient distance for clearing said oppositely disposed slide rail; and means operable, upon the movement of said sash longitudinally of said slide rail to a predetermined position, for preventing the movement of said sash away from said stationary slide rail a distance sufficient for clearing said stationary slide rail.

3. A window construction of the class described, comprising; a window frame; a pair of oppositely disposed slide rails mounted on the inner faces of opposite sides of said frame and extending longitudinally thereof, one of said slide rails being fixed relatively to said frame and the other being moveable toward and away from said fixed slide rail, the outer faces of each of the said slide rails having a longitudinally directed groove formed therein; a window sash slideably mounted between said slide rails; oppositely disposed side rails on said window sash engageable in the grooves in said slide rails and slideable therein, said sash, in unison with said moveable slide rail, being moveable away from said stationary slide rail a sufficient distance for clearing said stationary slide rail; and means engageable with the sash, upon movement of said sash to a predetermined position relatively to said slide rails, for preventing movement of said sash and said moveable slide rail away from said stationary slide rail a sufficient distance for effecting clearance of said sash with said stationary slide rail.

OWEN L. DAUTRICK.