April 3, 1945. A. G. NORDEN 2,372,975

COMBINED WEATHER STRIP AND SASH CONTROL

Filed May 26, 1942

Fig. 1.

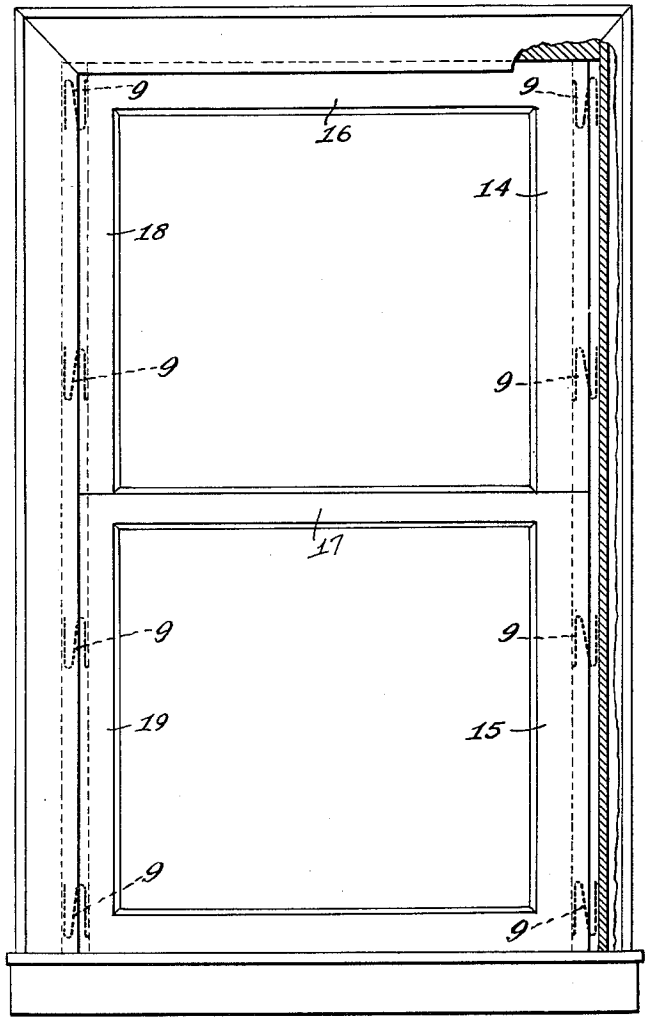


Fig. 3.

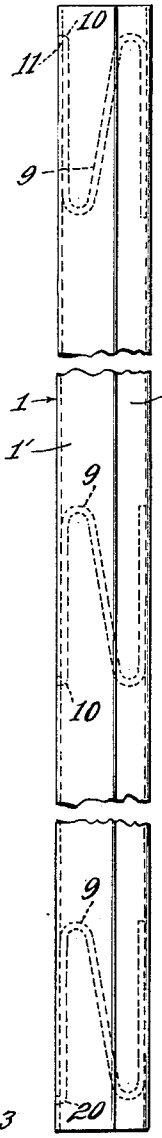


Fig. 4.

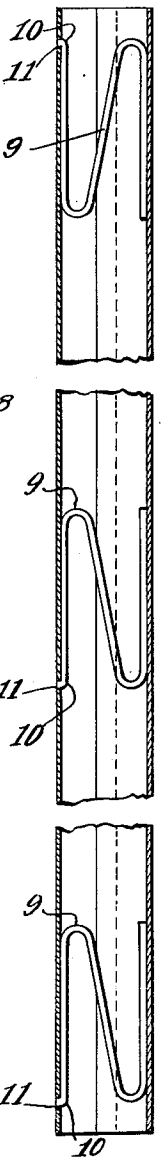
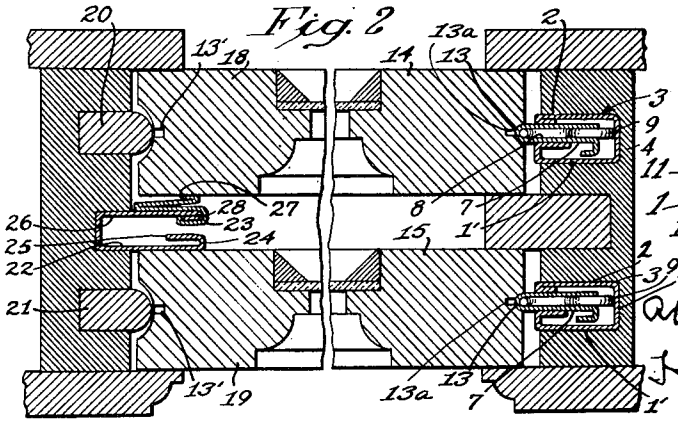


Fig. 2.



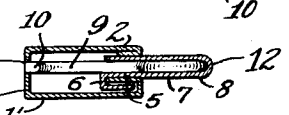


Fig. 5.

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COMBINED WEATHER STRIP AND SASH CONTROL

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3 Claims. (Cl. 20—52)

My invention relates to the construction of window frames and more specifically to windows in which the sashes are vertically slidable and are separated by a parting strip. Windows of this type are usually provided with sash cords, sash weights and pulleys over which the cords run the pulley being recessed into the frame. The windows become loose in use and permit the cold to enter the house and the heat to escape. I remedy this by providing a combined weather strip and sash control which preferably is substituted for the parting strip and is supplemented by auxiliary controls.

I am aware that various attempts have been made to provide a weather strip which will prevent the entrance of cold air and permit the heat to escape. But such prior art patents are objectionable in that they extend the length of the sash with the result that in time the end of the spring pressed member tends to dig into the wood, or if it does extend the height of the frame, the pressure of the friction wears away the wood of the sash so quickly, that in a comparatively short time the device becomes useless for the purpose intended.

My invention has for its principal object to overcome both of these objections, and provide a construction in which the spring pressed member is continuous so that it can not dig into the wood, and to provide for the lubrication of the device, so that it will not show appreciable wear even after a long period of use, and thus minimize the frictional resistance to movement of the sashes.

My means of accomplishing this result may be more readily apprehended by having reference to the accompanying drawing which is hereunto annexed and made a part of this sepcification in which—

Fig. 1 is a front elevation of a window equipped with one form of my invention;

Fig. 2 is an enlarged fragmentary view of a modification thereof in cross-section;

Fig. 3 is an enlarged elevational detail view of the device in Fig. 1;

Fig. 4 is a vertical sectional view of the same, and

Fig. 5 is a cross-section thereof.

Similar reference numerals refer to similar parts throughout the entire specification.

As shown in the drawing my improved device is illustrated in Fig. 1, which shows a window comprising a frame having upper and lower vertically sliding sashes equipped with my improvements which consist of a channel 1 which as shown in Fig. 2, and Fig. 5, is rolled or formed in the shape shown. It is rectangular in cross-section and may be formed of metal or plastic as desired. The sides 1' and 2 of the rectangle are flat and are adapted to fit in grooves 3 which are milled in the side casings 4. These rectangular strips extend the entire length of the frame. The edge 5 of the side 1' is inturned and then bent inwardly forming a stop 6. This stop 6 is arranged to engage one leg 7 of a member 8 which is U shaped in cross-section. The leg 7 is bent or folded upon itself forming a slot which fits the stop 6. The U shaped member is held normally projected outwardly by a plurality of springs 9 which may be of any suitable or desired shape as illustrated they are formed of spring wire in a Z shape. It will be apparent to those skilled in the art that any desired shape may be employed. The end 10 of the bottom of the Z is bent at right angles and fits a hole 11 formed in the bottom of the rectangular strip 1. This prevents movement of the springs 9 during the raising or lowering of the window sashes and anchors them nicely in position. In the drawing I have illustrated four such springs, but obviously any number more or less may be utilized.

The top 12 of the U shaped member 8 bears against grooves 13 formed in the side rails 14 and 15, of the upper and lower sashes 16 and 17, in which the U shaped members slide.

In the side rails 18 and 19 of the sashes 16 and 17 I form arcuate grooves which are fitted to strips 20 and 21. These strips 20 and 21 are preferably formed of hard wood though other material may be found desirable. In the bottom of these grooves I form a saw cut slot 13', I fill this slot with wax. I have found in practice that beeswax gives the best result, but obviously any other wax, or lubricant, such as a graphite compound may be used. This construction thus provides a self-lubricating bearing surface for the tops of the hard-wood strips 20 and 21, to slide upon with the result there is no tendency for the sash to stick. I have found in practice that if similar slots 13a are placed in the grooves 13, and filled with wax it produces the desired result and gives an extremely smooth performance.

Intermediate the side rails 18 and 19 of the sashes 16 and 17 I mount a combined parting and weather strip 23, as shown it consists preferably of a single piece of metal which may be formed or rolled or extruded into the desired shape which as is clearly shown in Fig. 2, is rectangular in cross-section but open at one edge. One side

22 of the parting strip 23 is flat, the edge 24 of which is bent at right angles and then bent inwardly as at 25. The other side 26 of the parting strip 23 has a flexible tongue 27 fitted over the edge 28 of the side 26, and slidable thereon for assembly purposes. This flexible tongue 27 extends longitudinally the entire length of the parting strip 23, its free end bears against the sash 16 and thus affords a very satisfactory weather strip. It will be clear to persons skilled in the art that I produce a complete window which is nearly impervious to wind and weather and which overcomes the objections pointed out in the preamble of this specification.

Although I have described with some detail specific embodiments of different forms of my invention, it is to be understood that the form of the invention herewith shown and described is only to be taken as the preferred one, but it should be understood that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the following claims.

Having thus described my invention, that which I claim and desire to secure by Letters Patent of the United States is:

1. In a window, a frame, vertically sliding upper and lower wooden sashes, a parting strip intermediate the sashes mounted in each side of the frame; there being a pair of grooves in each side of the frame which extend the entire length of the frame said grooves located opposite the side rails of the two sashes, a strip rectangular in cross-section which extends the full length of the frame located in each groove, one side of the strip being bent inwardly and downwardly to form a stop which extends the full length of said strip, a U shaped member mounted in said strip one leg of which is folded over said stop, and springs to hold said U shaped member normally projected against said stop, there being a longitudinal arcuate groove in each side rail adjacent the frame which is fitted to the top of said U shaped member, said groove having a recess in the bottom filled with a solid lubricant, said recess and lubricant extending the entire length of the rail.

2. In a window, a frame, vertically sliding upper and lower sashes, a parting strip intermediate the sashes mounted in each side of the frame; there being a pair of grooves in each side of the frame which extend the entire length of the frame said grooves located opposite the side rails of the two sashes, a strip rectangular in cross-section which extends the full length of the frame located in each groove on one side of the frame, one side of the strip being bent inwardly and downwardly to form a stop which extends the full length of said strip, a U shaped member mounted in said strip one leg of which is folded over said stop, and springs to hold said U shaped member normally projected against said stop, there being a longitudinal arcuate groove which extends the entire length of the rail in each side rail adjacent the frame which is fitted to the top of said U shaped member, said groove having a recess extending longitudinally of the bottom thereof and filled with a lubricant throughout the length thereof, longitudinal strips which extend the entire length of the frame fitted to the grooves in the opposite side of the frame which bear against arcuate grooves in the adjacent rails of the sashes, and a solid lubricant located in recesses extending longitudinally of the rails to lubricate said grooves.

3. In a window, a frame, vertically sliding upper and lower sashes, a parting strip intermediate the sashes mounted in each side of the frame; there being a pair of grooves in each side of the frame which extend the entire length of the frame said grooves located opposite the side rails of the two sashes, a strip rectangular in cross-section which extends the full length of the frame located in each groove, one side of the strip being bent inwardly and downwardly to form a stop which extends the full length of said strip, a U shaped member mounted in said strip one leg of which is folded over said stop, and springs to hold said U shaped member normally projected against said stop, means to anchor said springs, there being a longitudinal arcuate groove in each side rail adjacent the frame which extends the entire length of the rail, said groove having a recess at its bottom which extends the entire length of said groove, said recess being filled with a solid lubricant.

AXEL G. NORDEN.