A. M. LANE.

WINDOW ADJUSTER.

APPLICATION FILED NOV. 18, 1915.

1,176,969. Patented Mar. 28, 1916.

Fig. 1.

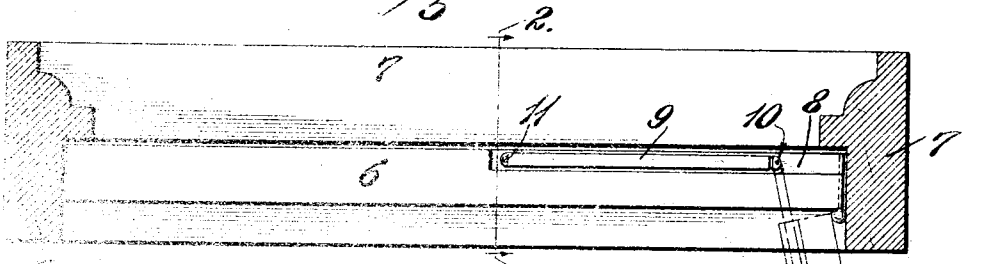


Fig. 2.

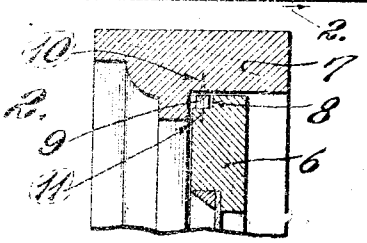


Fig. 3.

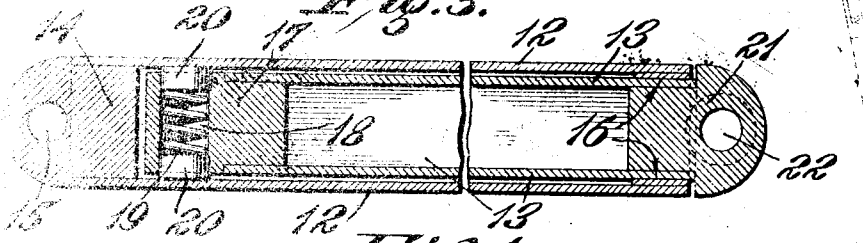


Fig. 4.

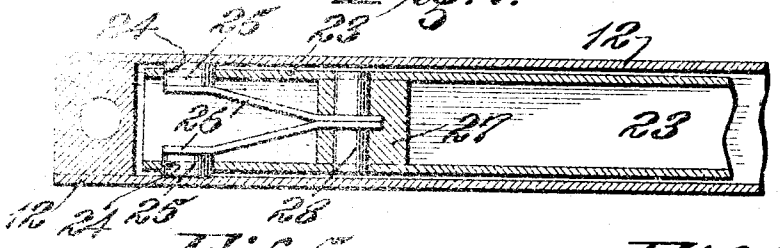


Fig. 5.

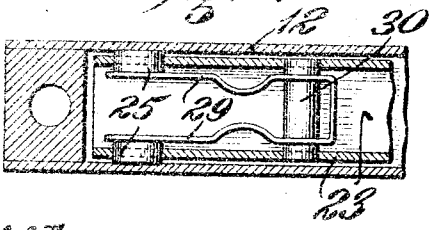
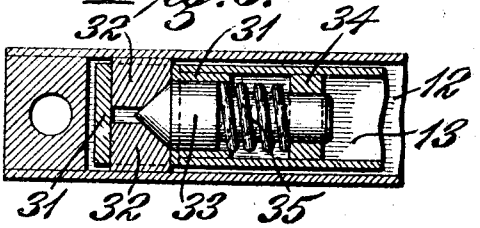


Fig. 6.



Witnesses:
Edgar T. Farmer.
A. M. Holcombe.

Inventor:
Alfred M. Lane,
by Cornell Cornell
his attys.

UNITED STATES PATENT OFFICE.

ALFRED M. LANE, OF ST. LOUIS, MISSOURI.

WINDOW-ADJUSTER.

1,176,969. Specification of Letters Patent. Patented Mar. 28, 1916.

Application filed November 18, 1915. Serial No. 62,116.

To all whom it may concern:

Be it known that I, ALFRED M. LANE, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Window-Adjusters, of which the following is a specification.

This invention relates particularly to self-adjusting rods or props for holding swinging windows in open or partly open position. The invention may also be applied to doors, blinds and similar swinging members which it may be desired to hold in an angularly adjusted position.

The principal object of the invention is a simple, compact device which is neat in appearance and which has no exposed parts liable to injury, and in which the working parts are protected from the weather.

Further objects of the invention appear in connection with the following description thereof; and what the invention consists in is more particularly defined in the appended claims.

In the accompanying drawings, wherein like reference characters designate the same parts in the several views—

Figure 1 is a horizontal section through the upper part of the frame of a casement window, showing the window sash and window adjuster in top plan view, the adjuster and the window sash being shown in closed position in full lines, and in open position in dot and dash lines; Fig. 2 is a vertical section of the same on the line 2—2 in Fig. 1; Fig. 3 is an enlarged longitudinal sectional view of the preferred form of window adjuster; and Figs. 4, 5 and 6 are longitudinal sectional views of different constructions of the inner ends of the telescoping tubes constituting modifications of the invention.

Referring to the drawings, the device is shown applied to an ordinary casement window wherein the window sash 6 is hinged at one vertical edge to one side of the window frame 7 to swing outwardly. The top rail of the sash is provided with a groove or rabbet 8 along its inner edge to receive the telescoping adjusting rod 9, one end of which is pivotally attached to the top cross member or head of the window frame by means of a screw or other suitable fastening 10, and the other end of which is pivotally secured in the inner end of the groove 8 by means of a screw or other suitable fastening means 11.

The adjuster is pivotally attached to the frame 7 near the hinged edge of the window and far enough from the latter to permit the window to swing open a little more than 90°, as shown in Fig. 1. The adjuster 9 is composed of two telescoping members, an outer tubular member 12 and an inner rod or tube 13. The outer member 12 has one end closed by a plug 14 which is fitted into it and pinned or otherwise secured in place. The plug 14 has a transverse hole 15 through it for the screw 11 which secures the adjuster to the bottom of the groove 8 in the window sash. The other end of the outer tubular member 12 has a ring or bushing 16 fitted in it and secured by any suitable means. This bushing 16 fits nicely around the inner member 13 so the latter can slide through it easily. As shown in the drawings, the inner member 13 is a tube, and its inner end has a plug 17 fitted in it and secured in place by a rivet or other suitable means. The plug 17 projects out of the end of the inner member 13, and its projecting end fits loosely in the tube 12 and has a transverse hole 18 through it in which a spiral spring 19 is arranged. Friction shoes 20 are arranged in the ends of the hole 18 to bear against the inner walls of the outer member 12, being pressed outward by the spring 19. The outer end of the inner member 13 has a plug 21 fitted in it and secured in place by a rivet or other suitable means. The end of the plug 21 projects beyond the end of the tube 13 and has a transverse hole 22 through it for the pivot screw 10 which secures the adjuster to the under side of the top member of the window frame.

In the modified forms of construction shown in Figs. 4 and 5, the inner member 23 is a tube, and at its inner end it has two oppositely disposed holes 24 through its walls in which the friction shoes 25 are arranged. In the form shown in Fig. 4, the friction shoes are pressed apart against the walls of the outer tubular member 12 by a pair of flat springs 26 which have their inner ends firmly held in a slot in a block 27. The block 27 is held in the tubular member 23 by means of a pin 28, which also holds the springs 26 in the slot. In the construction shown in Fig. 5, a single U-shape spring

29 is arranged in the inner tube 23, with its ends between the friction shoes 25, and pressing the friction shoes 25 against the walls of the outer tubular member 12. The spring 29 is secured in place by a transverse pin 30 passing through the closed end of the U and fixed in the walls of the tube 23.

The modified form of the invention shown in Fig. 6 is similar to that shown in Fig. 2, but instead of the plug 31 having one transverse hole and a single pair of friction shoes, there are two transverse holes arranged at right angles to each other, and two pairs of friction shoes 32 positioned therein. The friction shoes 32 have inclined back faces against which the tapered end of an axially disposed plunger 33 bears to force them apart. The plunger 33 has a stem which is guided in the inner collar or bushing 34 in the tubular inner member 13, and a spring 35 which surrounds the stem of the plunger 33 bears against this bushing 34 and against the head end of the plunger 33 and presses the latter against the inclined faces of the friction shoes.

When the window is swung open (as shown by dotted lines in Fig. 1) the two portions of the adjuster rod are pulled apart, the frictional contact of the shoes against the inner surface of the tubular casing not being sufficient to prevent such movement. The spring is made of such strength as to cause sufficient friction between the friction shoes and inner surface of the tubular casing to hold the window in adjusted position against ordinary wind pressure or similar forces tending to open or close the window.

It is noted that all of the moving parts of the device are housed in the outer tubular member and are completely protected from dust, water, and accidental displacement or injury. Moreover, the location of the adjuster wholly within the groove in the top rail of the window sash completely protects it when the window is closed, and it cannot interfere with screens, awnings, or other fixtures either in closed or in open position of the window.

It is evident that modifications in the shape of the tubular casing and shape of the frictional face of the shoes may be made without departing from the invention; and the invention is not restricted to the particular forms and arrangements shown and described.

I claim the following as my invention:

1. A retainer for swinging windows and the like, said retainer comprising a tube and a rod slidable within the tube, said rod having a transverse hole through its inner end, a pair of friction shoes held in the ends of said hole, and spring means in said rod between said shoes for pressing said shoes outward against the inner walls of said tube.

2. A retainer for swinging windows and the like comprising two telescoping tubes, the outer tube having a bushing fixed in one end slidably fitting around the inner tube and the inner tube having an extension at its inner end loosely fitting within the outer tube whereby said tubes are maintained in alinement, said extension having a transverse hole in the ends of which friction shoes are arranged to bear against the inner walls of said outer tube, and means within said inner tube for pressing said shoes apart.

3. A retainer for swinging windows and the like, said retainer comprising two telescoping members, the inner member having a transverse hole through its inner end, a friction shoe arranged in said hole to bear against the inner wall of the outer telescoping member, and spring means in said inner member bearing against said shoe for maintaining it in frictional contact with said outer member.

4. A swinging window having a groove in its inner edge at its top, said groove extending from the hinge edge of the window toward the free edge thereof, an extensible adjusting rod pivoted at one end to the bottom of said groove at its end away from the hinge edge of the window and pivoted at the other end to the window frame near the hinge end of the groove, said last named pivot being spaced from the hinge edge of the window a distance somewhat greater than the thickness of the window, whereby said adjusting rod will be substantially protected in said groove in both closed and open positions of said window.

Signed at St. Louis, Missouri, this 15th day of November, 1915.

ALFRED M. LANE.