Mar. 3, 1925. 1,527,981

F. I. KIMBALL

CASEMENT WINDOW ADJUSTER

Filed Nov. 7, 1921

Fig. 1.

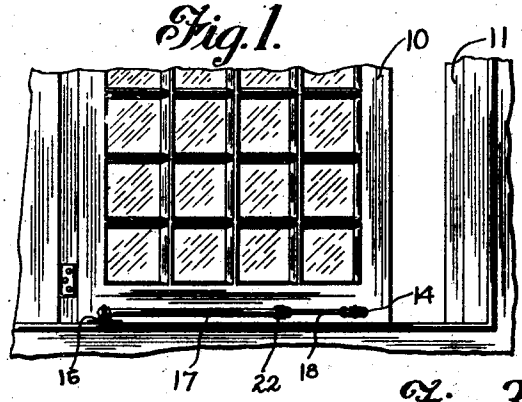


Fig. 2.

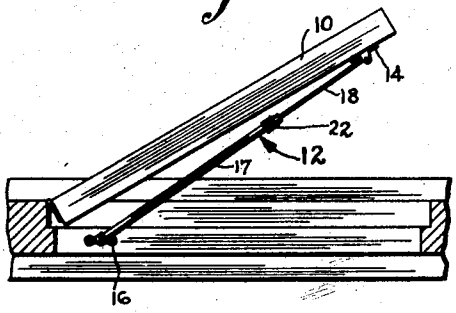


Fig. 3.

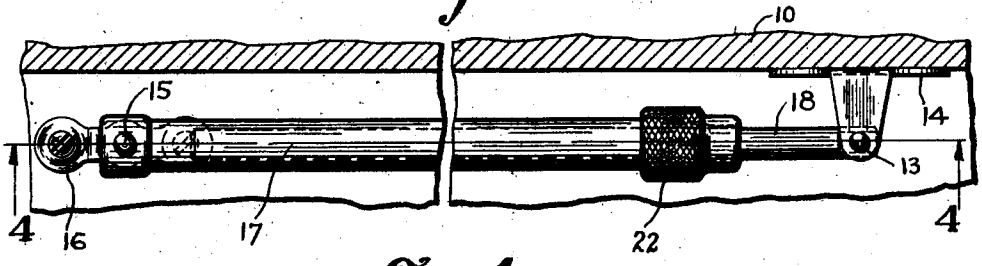


Fig. 4.

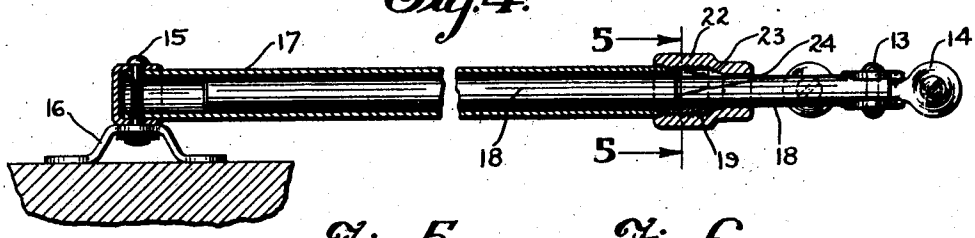


Fig. 8.

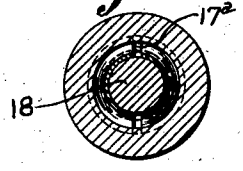


Fig. 5.

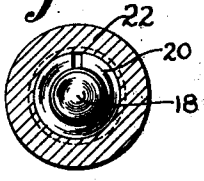


Fig. 6.

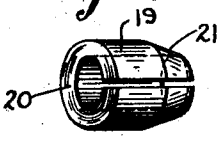
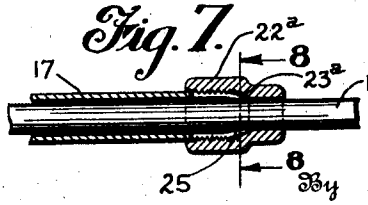


Fig. 7.



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UNITED STATES PATENT OFFICE.

FRANK I. KIMBALL, OF WEST HAVEN, CONNECTICUT, ASSIGNOR TO SARGENT & COMPANY, OF NEW HAVEN, CONNECTICUT.

CASEMENT WINDOW ADJUSTER.

Application filed November 7, 1921. Serial No. 513,396.

To all whom it may concern:

Be it known that I, FRANK I. KIMBALL, a citizen of the United States, residing in West Haven, county of New Haven, State of Connecticut, have invented certain new and useful Improvements in Casement Window Adjusters, of which the following is a full, clear, and exact description.

My invention relates to extensible elements usually called casement window adjusters and consisting of a pair of telescopically arranged members, one end of one of which is connected to a window frame and one end of the other connected to a hinged window, while the other ends of the two members are arranged to telescope and thus the length of the element may be adjusted to vary the amount of opening of the window. It is desirable to be able to open the window any desired amount without the manipulation of the parts of the window adjuster and yet have sufficient friction between the telescoping portions so that when the window has been opened or closed, it will be automatically held in a predetermined position.

One object of my invention is to provide an improved window adjuster of this type.

A further object of my invention is to provide an improved window adjuster comprising a pair of telescopically arranged members which will be efficient and positive in operation and will at the same time be economical to manufacture and sightly in appearance.

A still further object of my invention is to provide a window adjuster of this character wherein the friction between the parts which tends to resist relative movement thereof may be adjusted at will and in a simple and convenient manner, the adjusting element being accessible and easily operated.

Another object of my invention is to provide a window adjuster of this character such that the part or parts which might tend to become worn by long usage of the device may be easily and cheaply replaced without the necessity of discarding the complete device and purchasing a new one.

To these and other ends the invention consists in the novel features and combination of parts to be hereinafter described and claimed.

In the accompanying drawings,

Fig 1 is an inside elevational view of a window with my improved window adjuster applied thereto;

Fig. 2 is a top plan view of the parts shown in Fig. 1;

Fig. 3 is an enlarged top plan view of my improved window adjuster;

Fig. 4 is a sectional view along line 4—4 of Fig. 3;

Fig. 5 is a sectional view along line 5—5 of Fig. 4;

Fig. 6 is a detail perspective view of the fiber washer or collar;

Fig. 7 is a detail sectional view of a modified form of my window adjuster; and

Fig. 8 is a sectional view on line 8—8 of Fig. 7.

While the novel features of my invention may be applicable to extensible elements used in various relations and for various purposes, I have selected to show a preferred embodiment of my invention in the form of a casement window adjuster applied to a window 10 hinged to swing in a frame 11. The window adjuster is designed generally by the numeral 12 and as will be apparent from Figs. 1 to 3, one end thereof is pivotally connected at 13 to a fitting 14 secured to the window, while the other end is pivoted at 15 to a fitting 16 secured to the window frame.

The window adjuster 12 consists of a tubular member 17 which is adapted to receive in the bore thereof a rod or the like 18. The rod is of such diameter that it will be readily received within the bore of the tube 17 and will ordinarily slide freely therein.

As the pivotal connection 15 of the window adjuster with the window frame is not coincident with the axis about which the wondow swings, it will be apparent that as the window is opened or swung from the position in Fig. 3 to that shown in Fig. 2, the adjuster 12 will be extended or the rod will be caused to be withdrawn to some extent from the tube. If, therefore, the parts are arranged so that there is a considerable amount of friction between the rod and tube, it will be apparent that considerable resistance will be offered to the opening or closing of the window. To this end I have provided a split collar 19 which may be made of hard fiber or other suitable wear re-

sisting material, which is adapted to be mounted upon the rod 18 with one end 20 thereof abutting the free end of the tube 17. The opposite end of this collar is, in this instance, tapered as shown at 21. In order to compress or clamp this collar upon the rod 18 and to connect the collar to the tube 17 so that when the rod and tube move relatively to each other, there will also be a relative movement between the collar and rod, I have provided a clamping sleeve 22 threaded upon the free end of the tube 17. The interior diameter of the clamping sleeve is varied so that a part thereof will cooperate with the tapered end 21 of the collar 19 to compress the latter upon the rod. In the form shown, the sleeve is provided with an interior tapered portion 23 which cooperates with the tapered portion 21 for the purpose described. It will be apparent, however, that it will not always be necessary to have tapered surfaces upon both the collar and sleeve in all instances, as the same result might be secured by the provision of a collar of constant external diameter, relying upon the tapered sleeve alone to produce the clamping or compressing action. On the other hand, the collar might be provided with a tapered end and an internal shoulder or similarly formed reduced portion provided in the sleeve to cooperate with this tapered end of the collar and cause the latter to be clamped tightly about the rod.

It will be obvious that when the sleeve is adjusted upon the tube 17 by means of the threaded connection therewith, any desired amount of friction may be created between the rod and the collar and as when the rod is withdrawn from the tube, the collar is held tightly against the end of the tube by the sleeve 22, the rod must move relatively to the collar and hence any friction between these two elements will tend to resist this movement. Thus while the window may be grasped positively and moved to any desired or predetermined open position, the friction between the parts will hold the window in that position until it is positively closed by the operator. Thus the friction will be great enough to hold it against the wind or any force which might tend to accidentally close it. Moreover, if due to constant usage and wear, it is found that the friction between the parts is no longer sufficient, the sleeve 22 may be further adjusted upon the tube 17 and the friction increased the desired amount. A shoulder 24 may be provided on the rod 18 to more or less positively hold the window in any desired position as considerable resistance will be offered to the passage of this shoulder through the fiber collar 19.

In Figs. 7 and 8 I have shown a modified form of my invention, wherein the tube 17 is provided with two longitudinal slots 17^a extending a short distance from the free end thereof and is provided at this end with a tapered portion 25 which cooperates with a tapered portion 23^a of a sleeve 22^a. In this form of my invention I have omitted the split collar shown in Figs. 1 to 5 and by means of the slots in the tube 17 and the tapered end thereof, I may, by adjusting the sleeve 22^a longitudinally of the tube, clamp the end of the tube tightly against the rod 18 and in this manner create the desired friction to resist relative movements of the parts unless they are positively grasped and moved by an operator.

While I have shown and described in detail some preferred embodiments of my invention, it will be obvious that the same is not limited to the details shown, but is capable of many modifications and variations which come within the spirit of the invention and the scope of the appended claims.

What I claim is:

1. In a casement window adjuster, an extensible member comprising a telescoping tube and rod, a split collar mounted to move with one of said members and means to cause said collar to frictionally engage the other member to resist relative movement of the rod and tube, said collar being generally of cylindrical shape but having a tapered end, and said means comprising a second collar having an interior formation corresponding to the split collar and movable relatively to the split collar to compress the latter.

2. In a casement window adjuster an extensible member comprising a tube and a rod slidable therein, a split collar mounted upon the rod and abutting the tube at one end thereof, said collar being generally of cylindrical shape, but having the end remote from the tube tapered, a second collar adapted to threadedly engage the tube end and encircle the split collar, said collar having an interior bore of a shape corresponding to that of the split collar and being adapted to compress the latter upon the rod, and adjusted toward the tube by its threaded connection therewith.

3. In a casement window adjuster, an extensible member comprising a tube and a rod slidable therein, a compressible split collar mounted on the rod and adapted to abut against the tube at one end, and an outer collar threaded upon the tube embracing said compressible collar to connect it to the tube and to cause it to frictionally engage the rod, said collars being complementally shaped so that the when the outer collar is threaded on the tube the inner collar will be compressed.

4. In a casement window adjuster, an extensible member comprising a tube and a rod slidable therein, a compressible split collar mounted on the rod and adapted to abut against the tube at one end, and having

its other end tapered, and an outer collar having a bore corresponding to the shape of the split collar embracing said compressible collar to connect it to the tube and adjustable to cause it to frictionally engage the rod.

5. In a casement window adjuster, an extensible member comprising a tube and a rod slidable therein, a compressible collar mounted on the rod and adapted to abut against the end of the tube at one end, and having its other end tapered, an outer collar embracing the compressible collar, having a bore adapted to cooperate with the tapered end thereof, and means to connect the outer collar to the tube.

6. In a casement window adjuster, an extensible member comprising a tube and a rod slidable therein, a compressible collar mounted on the rod and adapted to abut against the end of the tube at one end, and having its other end tapered, an outer collar embracing the compressible collar, having a tapered bore adapted to cooperate with the tapered end thereof, and means to connect the outer collar to the tube.

7. In a casement window adjuster, an extensible member comprising a tube and a rod slidable therein, a compressible collar mounted on the rod and adapted to abut against the end of the tube at one end, and having its other end tapered, and an outer collar embracing the compressible collar, having a tapered bore adapted to cooperate with the tapered end thereof, and adjustably connected to the tube, said adjustment being adapted to vary the frictional engagement between the compressible collar and the rod.

8. In combination, a window frame, a hinged window, a rod connected to one end thereof and a tubular member connected to the other, said member having a bore slidably receiving said rod, a split collar on the rod having one end thereof abutting the adjacent end of the tube and having the other end tapered, an outer collar threaded upon the tube arranged to embrace the split collar and having a tapered bore to cooperate with the tapered end of the split collar to compress the latter upon the rod when the outer collar is drawn toward the tube by means of its threaded connection therewith.

In witness whereof, I have hereunto set my hand this 4th day of November, 1921.

FRANK I. KIMBALL.