Jan. 12, 1926. 1,569,634

E. J. SIBLEY

CASEMENT WINDOW FRICTION ADJUSTER

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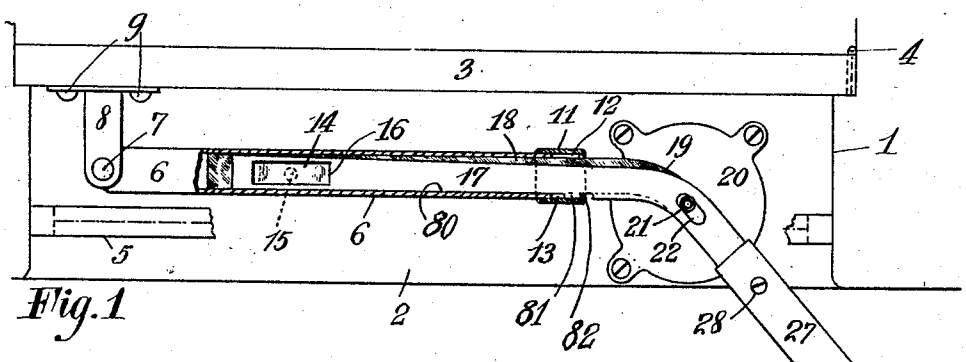


Fig. 1

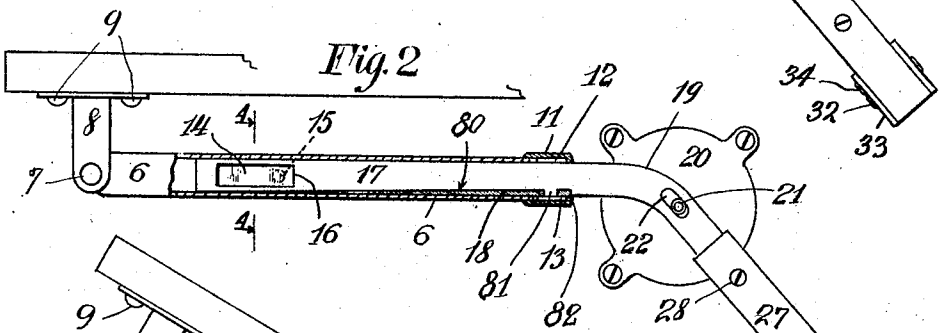


Fig. 2

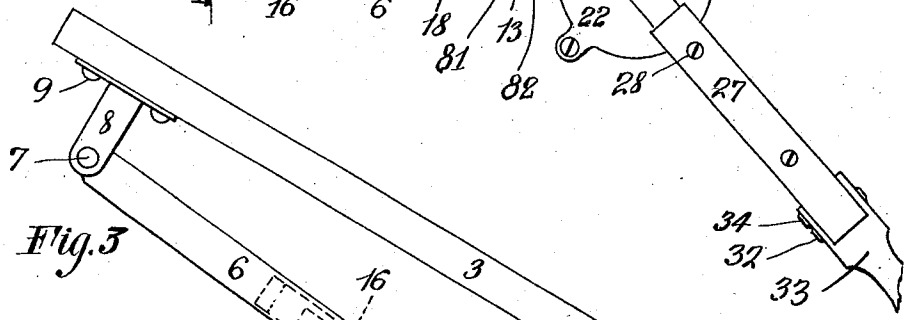


Fig. 3

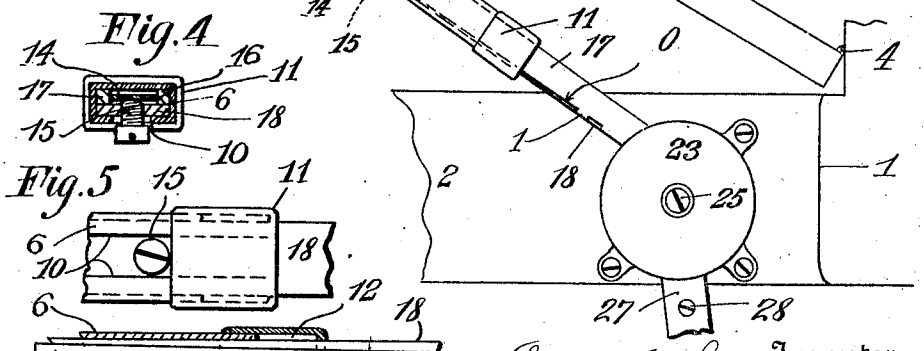


Fig. 4

Fig. 5

Fig. 6

Edwin J. Sibley Inventor

By his Attorney

Isaac E. A. Konigsberg

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Fig. 7

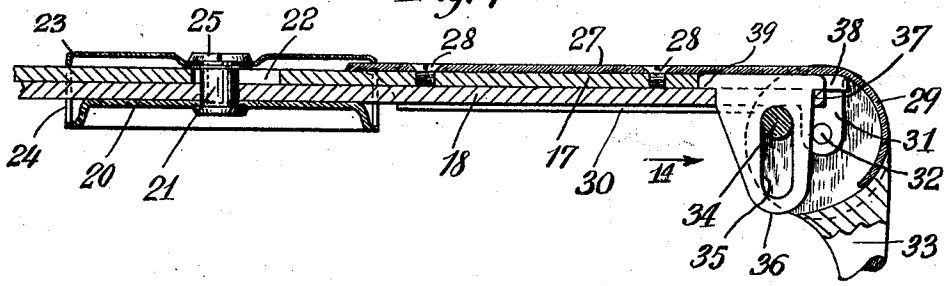


Fig. 8

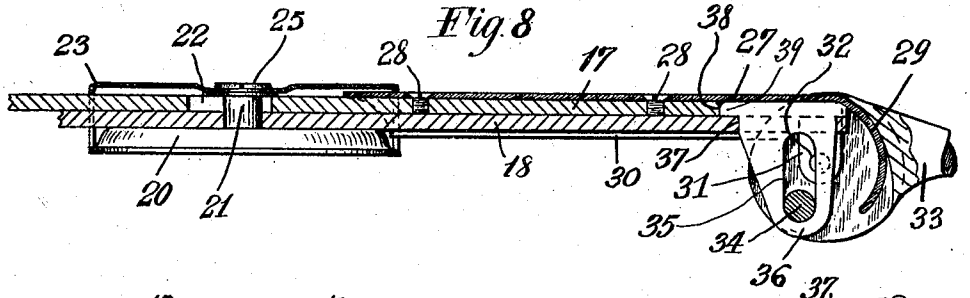


Fig. 9

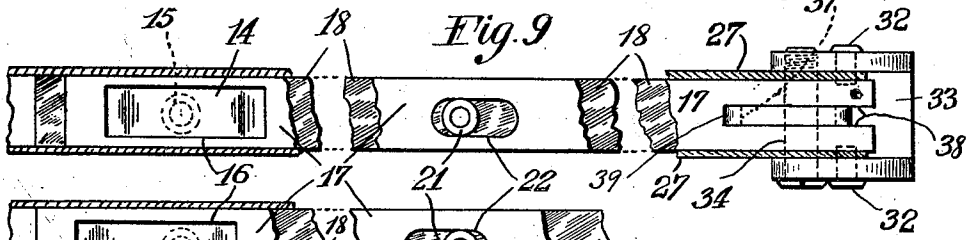


Fig. 10

Fig. 11

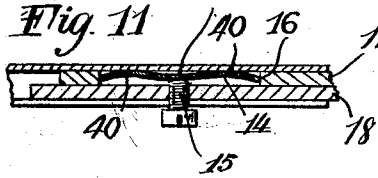


Fig. 12

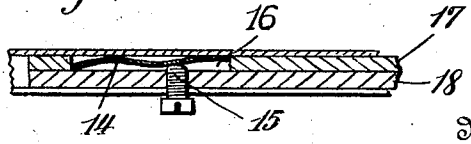


Fig. 13

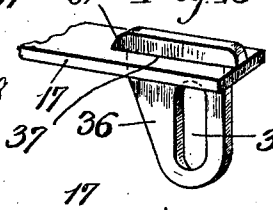
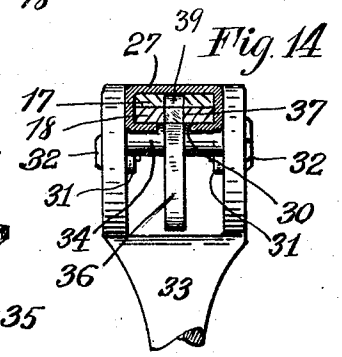


Fig. 14



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Ivan C. A. Koenigsberg

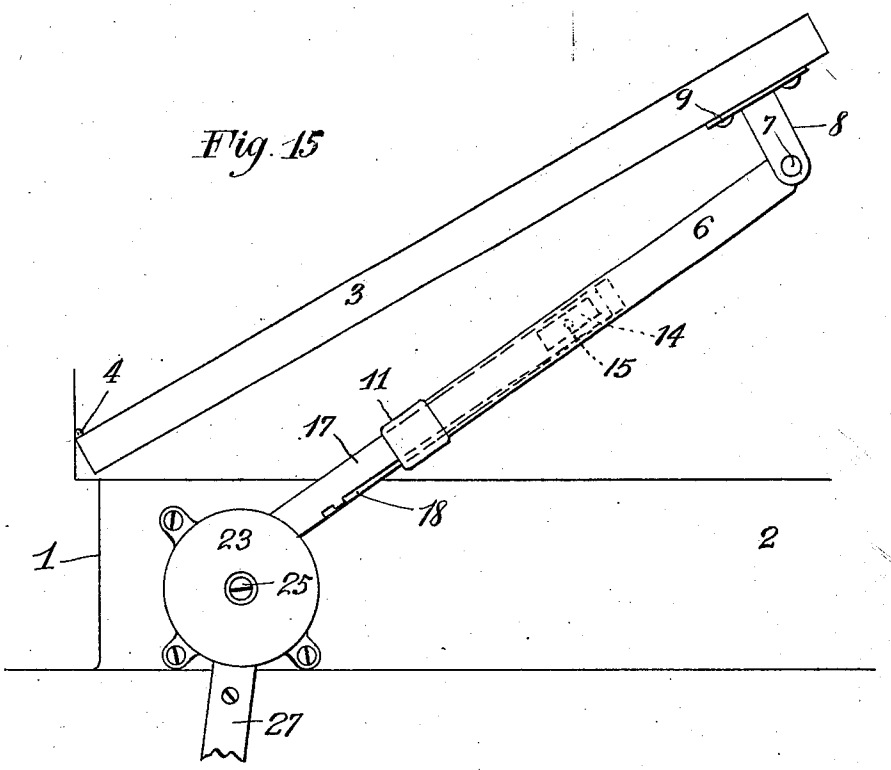
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Fig. 15



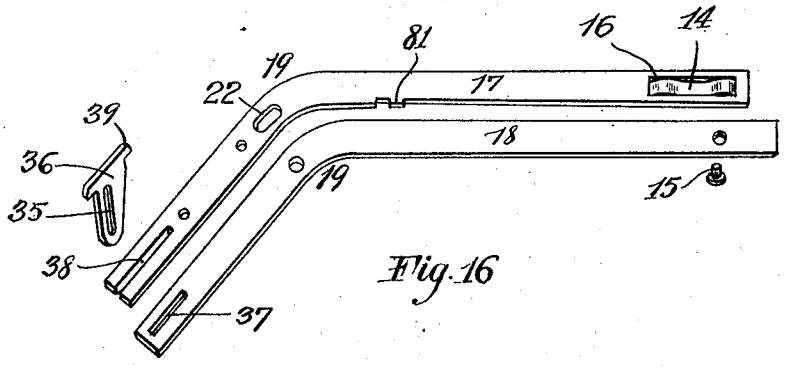


Fig. 16

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Fig. 17

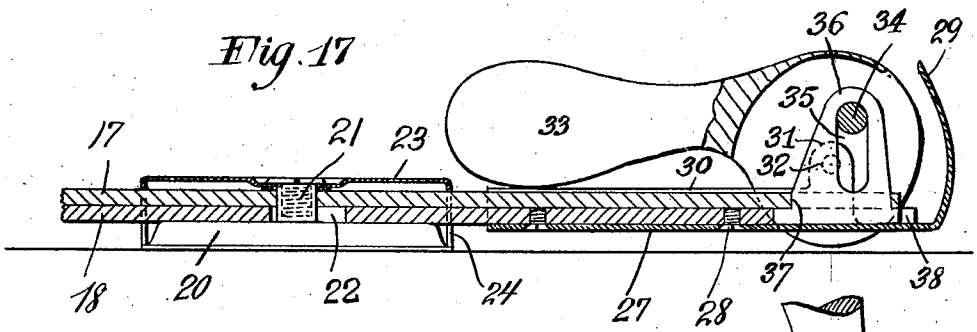


Fig. 18

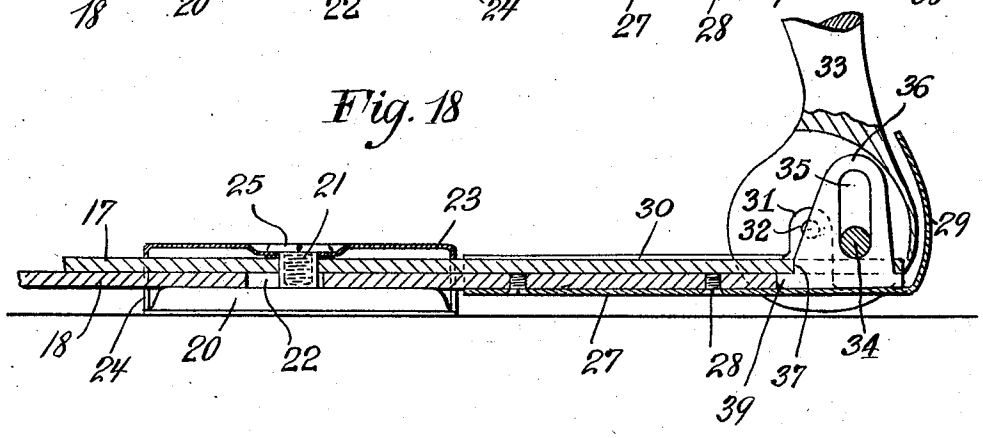
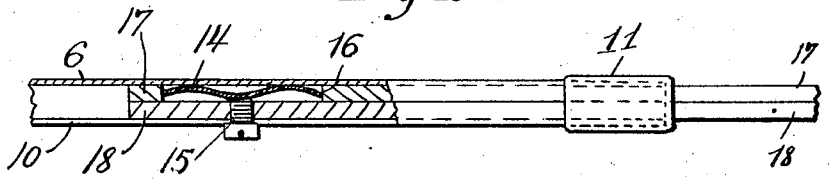


Fig. 19



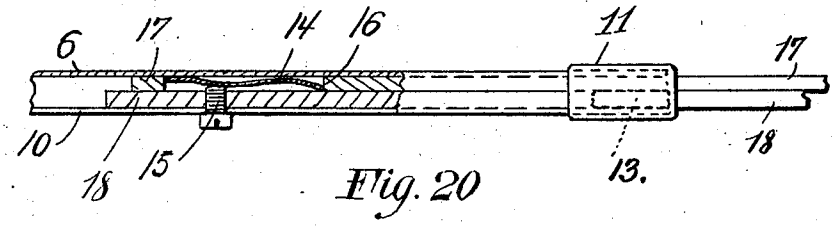


Fig. 20

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Patented Jan. 12, 1926. 1,569,634

UNITED STATES PATENT OFFICE.

EDWIN J. SIBLEY, OF WESTBURY, NEW YORK.

CASEMENT-WINDOW FRICTION ADJUSTER.

Application filed October 18, 1924. Serial No. 744,388.

To all whom it may concern:

Be it known that I, EDWIN J. SIBLEY, citizen of Canada, and resident of Westbury, in the county of Nassau and State of New York, have invented certain new and useful Improvements in Casement-Window Friction Adjusters, of which the following is a specification.

This invention relates to casement window friction adjusters. More particularly this invention relates to a friction adjuster adapted to be operated through the frame of a window screen which is placed inside a casement window.

It is the general object of this invention to provide an improved friction type adjuster for the purpose set forth, and in general to improve the construction, design and arrangement of casement window friction adjusters, providing novel and useful features whereby to improve the operation and increase the efficiency and usefulness of the adjuster.

To this end my invention is embodied in a casement window friction adjuster constructed as hereinafter set forth and as illustrated in the accompanying drawings in which—

Fig. 1 is a plan view, partly in section, of a casement window friction adjuster embodying my invention and showing the adjuster in locked position.

Fig. 2 is a similar view, with parts broken away, showing the adjuster with the friction released or unlocked.

Fig. 3 is a view showing the adjuster in position with the window opened and the friction on or locked.

Fig. 4 is a transverse sectional view on line 4—4 of Figure 2.

Fig. 5 is a detail view showing the parts in a certain extreme position.

Fig. 6 is a detail view illustrating a locking feature of the invention.

Fig. 7 is a longitudinal sectional view of the friction operating means in locked position.

Fig. 8 is a similar view showing the parts in unlocked position.

Fig. 9 is a plan view, with parts broken, showing the friction elements in locked position corresponding to Figure 7.

Fig. 10 is a view similar to Figure 9 and showing the parts in position corresponding to Figure 8.

Fig. 11 is a detail view of the friction elements in locked position.

Fig. 12 is a similar view showing the parts in unlocked position.

Fig. 13 is a detail view of the detachable fixed cam.

Fig. 14 is a transverse view of the parts shown in Figure 7 and looking in the direction of arrow 14 therein.

Fig. 15 is a plan view of the adjuster with the window in open position illustrating a "left" adjuster as distinguished from a "right" adjuster such as is shown in Figure 3.

Fig. 16 is a detail view of certain parts illustrating how the adjuster may be changed to operate a window hung at either the right or the left side thereof.

Fig. 17 illustrates a modification with the operating parts in locked position.

Fig. 18 is a similar view with the parts in unlocked position.

Fig. 19 illustrates the friction elements in modified form in locked position corresponding to Figure 17.

Fig. 20 illustrates the same parts in unlocked position corresponding to Figure 18.

Generally speaking, the invention herein disclosed is embodied in an adjuster comprising a tubular member secured to the window and a pair of friction members adapted to slide within the tube and operable from within the window screen (or other intervening member) by means of a drop handle. The arrangement is such that the friction members and the tube are moved in an arc corresponding to the movements of the window, and while thus moved, the friction members slide within the tube. At any point within the range of movement of the adjuster, the friction may be applied to hold the window.

So far as I am aware it is broadly new to apply telescopic adjustable friction members in a casement window adjuster adapted to be operated through an intervening member such as a window screen. Another feature of this invention, resides in the fact that the adjuster may be easily changed to operate a window hung either right or left. Another novel feature of this invention is

that a positive locking arrangement is provided without requiring any additional mountings or loose parts. Still another feature is that the adjuster may be used in places where a drop handle cannot be used. This feature I also believe to be broadly new.

The foregoing and other incidental features of the invention are fully referred to and explained in the following description.

Referring to the drawings the reference numeral 1 denotes the window frame, 2 is the stool, 3 the window hinged at 4 and 5 is the window screen or intervening member. There is nothing novel about these elements, hence they are illustrated in conventional form.

The casement adjuster comprises a tube or barrel 6 preferably of rectangular cross section. It is pivoted at 7 to a bracket 8 which is secured to the free end or side of the window as by screws 9. As seen in Figure 4, the barrel has an open bottom providing a slot 10. The inner end of the barrel carries a collar 11 which encloses the barrel. Within the collar the barrel is cut away at opposite sides to form slots 12 and 13.

The friction means or friction members for producing friction within the barrel 6 consists of a spring 14 and an abutment 15, see Figures 11 and 12. The spring 14 lies loosely within a pocket 16 arranged in the outer free end of a friction operating and locking lever 17. The abutment 15 is in the form of a screw carried by a friction arm 18. The lever 17 and the arm 18 are both arranged to telescope within the barrel and also to slide within the barrel relative to one another. Also, both of these members 17 and 18 are bent at a suitable angle as at 19 and extend inwardly through the screen 5. The numeral 20 denotes a suitable support or base which carries a fixed pivot 21. The base is fixed to the window sill or stool 3. The members 17 and 18 are pivoted on the pivot 21, the member 17 being provided with a slot 22 so as to have also a sliding movement on the pivot 21. A casing 23, Figure 7, fits over the base 20 to cover the parts thereon and has cut outs 24, 24 permitting the members 17 and 18 to extend therethrough. A screw 25 fits into the pivot 21 and bears against the top thereof to maintain members 17, 18 and the casing 23 in position without clamping said members as is obvious.

The members 17 and 18 extend to both sides of the pivot 21. The inner end of the member 17 carries a channel guide 27 secured by screws 28, 28. The guide forms a shield 29 and is wrapped around the lower member 18. The bottom of the channel forms a slot or guideway 30, see Figure 14. The channel also has two depending lugs 31, 31 in which is pivoted at 32, 32 a drop handle 33. The handle carries a detachable pin 34 which passes through a slot 35 in a cam 36 which latter is seated in a closed slot 37 in the lower member 18 and which cam also lies within an open slot 38 in the member 17, and has a nose 39, which rests on said member.

The arrangement is such and Figures 7 and 8 clearly show, that when the handle 33 is dropped as in Figure 7, the friction operating arm 17, the upper member, is moved rearwardly or to the right in the drawing, slot 22 being then to the right of pivot 21. And when the handle 33 is raised as in Figure 8, the member 17 is moved to the left in the drawing, slot 22 now being to the left of pivot 21.

Figure 11 shows that when the member 17 is in the position of Figure 7 with the handle dropped, the friction is "on" or applied, but when member 17 is moved to the left as in figure 8 the friction is "off" or unlocked as shown in Figure 12.

The relative sliding movement of member 17 on arm 18 is effected by the movement of the handle which in turn moves the pin 34 in the cam slot 35. Inasmuch as the cam cannot move in member 18, the result is that the handle is moved laterally as well as swung up or down and the channel 27 to which the handle is secured is forced to slide, taking the member 17 along.

From the foregoing it will be clear that the lower member 18, the friction arm, is swingable horizontally but not slidably on the pivot 21, and that said arm is relatively fixed with respect to the friction operating lever 17, which is both swingable horizontally and slidably mounted on the pivot 21.

The normal locked position of the parts of the adjuster is as shown in Figures 1, 7, 9 and 11 where it will be observed that the friction is "on," because the spring 14 is flattened to its greatest extent by the abutment 15 which bears against the center of the spring, hence forces the center portion thereof upwards causing a very strong pressure of the spring portions 40, 40 against the barrel 6, while the center portion 41 of course causes an equally strong pressure against the abutment 15 in the member 18, and against the lower portion of the barrel. It follows, that when the window is closed as in Figure 1 or when the window is in any open position within its range, (one of which positions is shown in Figure 3) the window is friction locked when the handle 33 is dropped.

The friction is adjustable by moving the abutment 15 in or out in the arm 18, consequently the friction may be "set" for any desired degree of friction within the range of movements of the window to hold the latter securely. On the other hand, it will

be observed, and it is one of the features of the invention that the construction permits the barrel to slide on the friction members should an extraordinary pressure be applied to the window.

In other words, it is not desirable to provide an adjuster which is absolutely friction locked against excessive pressure, because if more than expected maximum pressure develops against the window, the adjuster would bend or break, or the window may be broken. With my adjuster such a result is impossible because the friction elements will be set to maximum expected pressure without absolutely locking so as to yield when an extraordinary pressure is applied. With nonadjustable friction members this condition cannot be taken care of. On the other hand, the friction is designed and adjusted to securely hold the window under ordinary circumstances and this construction also provides for taking up wear as is obvious.

The adjuster is preferably mounted as shown in Figure 1 close to the window and the pivot 21 is generally located in the plane of the screen, which is cut out to provide room for the base 20 and the casing 23. The adjuster is then actuated to open or close the window by raising the handle 33, then moving the window to desired position as in Figure 3, then dropping the handle again to apply the friction to hold the window. When the drop handle is raised, the friction operating lever slides obliquely within the barrel 6 due to the bend at 19, hence said lever is shaped as shown in Figures 1 and 2 to permit the oblique movement in that the edge 80 of the lever is cut away or sloped from the outer free end toward the pivot 21. Said edge is further provided with a locking tooth 81. As seen in Figures 1 and 6 when the window is closed and the handle is dropped, the tooth 81 is automatically moved into the barrel slot 13 due to the oblique rightward movement of lever 17. In this position, therefore, not only is the window and the adjuster friction locked, but mechanically locked because any attempt to open the window by pulling at the free side thereof causes a longitudinal pull on the barrel 6, which pull is resisted by the edge 82 of the collar 11 which edge abuts the aforesaid tooth 81, see Figure 6, and the window cannot be opened until the handle 33 is raised as in Figure 2, when the tooth 81 is automatically released from engagement with the barrel and the parts are free to slide.

Another feature is important and is illustrated in Figure 5 which shows that the members 17 and 18 cannot be pulled out of the barrel because of the engagement of the collar 11 with the screw head of the abutment 15. If there was nothing to stop the outward sliding movement of the barrel and collar, the two telescoping parts of the adjuster might become detached and the device would become useless, because the barrel is attached to the window on one side of the screen while the friction members are carried on the base on the other side of the screen, and thus there would be no means of holding the window.

It has been stated above and is a matter of general knowledge that windows are hung at either their left side or right side depending upon local conditions, and it is therefore apparent that an adjuster must be arranged to operate correspondingly. To meet this requirement, adjusters have heretofore usually been made "right" or "left" and are thus sold and carried in stock. It is an obvious advantage to provide an adjuster which may be made in only one pattern changeable from right to left as may be desired. It is a feature of my invention to provide means whereby such change may be effected.

Figures 15 and 16 illustrate a "left" adjuster embodying my invention and which is produced by merely changing certain parts in the "right" adjuster shown in Figure 1. It will be apparent that the change cannot be effected by merely detaching the friction members from the barrel and turning them over, because to do so would reverse all the parts of the adjuster within the screen and this is not practicable nor desirable. I have therefore, provided means for detaching the parts in such a manner that certain of them may be reversed to accomplish the object sought, yet the appearance and operation of the adjuster remain the same.

In changing from a right to a left adjuster or vice versa the screw 25 is removed, the casing 23 lifted off and the adjuster separated from the base. Next the abutment screw 15 is removed and the barrel detached from the member 17 and 18. The handle is removed by taking out the pin 34 and the screws 28 in the channel 27 which then slides off the member 17 and 18. Next the cam 36 is taken out. Now the three members 17, 18 and 36 are separated and the members 17 and 18 are then turned over as shown in Figure 16. Thereafter, the parts are assembled irrespective of the right or left position of the adjuster. The cam 36 is placed in position as in Figure 7, the channel guide 27 is slid on to the two members 17 and 18 and secured by the screws 28, and the pin 34 is passed through the holes in the handle and the slot in the cam 36. At this stage the inner end of the adjuster is now precisely the same as in Figure 7, but the adjuster has been changed from left to right. The spring 14 is put back into the

pocket 16 and the members 17 and 18 are placed in the barrel after which the abutment screw is screwed into position. The adjuster is then mounted on the base and completed as in Figure 7.

The assembled right adjuster in Figure 15 operates exactly like the left adjuster in Figure 1. The tooth 81 now enters the barrel slot 12, Figure 6, instead of the slot 13 as before. The bracket 8 is swung around its pivot at 7 to correspond with the reversed position of the adjuster. Only a screw driver is needed to make the change and it takes but a few minutes to do so.

The fact that the cam 36 is removable and reversible is one of the main features making the change possible. The nose 39 on the cam is useful in preventing binding of the parts when the handle is operated in that it extends the upper surface of the cam against the under side of the channel. It also provides a necessary overhand on arm 18 as seen in Figure 13. It will also be noted that the abutment 15 is reversible in that it may be screwed into the arm 18 from either side.

It is at times impossible or impracticable to use an adjuster as hereinbefore described, because an extraordinary width of the window sill or stool prohibits the use of a drop handle such as described. To meet this condition, my invention includes an adjuster operable by a differently arranged handle together with such other modifications as are necessary to meet the condition.

Figures 17 to 20 illustrate an adjuster which embodies all the features hereinbefore described, but in which the friction is operated by a handle moving from a horizontal to a vertical position to unlock the friction or opposite to the one shown in Figure 7. Inasmuch as I use similar parts but only the arrangement and operation is changed the parts shown in Figures 17 to 20 are numbered to correspond to the parts in the preceding figures.

Referring now to Figure 17, it will be noted that the only changes in the arrangements is that the member 17 which carries the friction spring 14 is not slidably mounted on the pivot 21, while the member 18 which carries the abutment 15 is in this case provided with the slot 22 and is adapted to slide on the said pivot. Also by comparing Figures 7 and 17, it will be seen that in the latter figure the handle pivots 32 are located between the cam 36 and the pivot 21. In Figure 7 the pivots 32 are to the right of the cam. In Figure 17 the cam extends upwards while in Figure 7 the cam is projecting downward. When the friction is applied in Figure 17 the handle is in horizontal position. Under the same condition in Figure 7 the handle assumes a vertical position. Figures 17 and 19 show that the friction is on and the window either closed or held in an open position. When it is desired to move the window, the handle 33 is raised into the position shown in Figure 18, hence the lower member 18 is moved to the left in the drawing and the friction is off, see Figure 20. With the handle held vertically, the window may be moved, When the handle is laid down, the friction is again applied.

Inasmuch as the member 18 is the friction operating member in Figure 17, it follows that the channel 27 is secured to 18 and not to 17 as in Figure 7. It will also be understood without further illustration or detailed description that the barrel 6 is secured to the window as above described and that the obliquely moveable member 18 corresponds to the obliquely moveable member 17 in Figure 1 and has a locking tooth 81 which in Figure 20 enters the slot 13 as before except that the slot is cut in the lower part of the barrel as shown.

It will also be apparent that everything which has been described in connection with Figures 1 to 16 applies to the construction shown in Figures 17 to 20 including the change from right to left and vice versa.

In either form of the adjuster disclosed, it should be noticed that the point at which the force is applied to operate the window remains unchanged, namely at the bracket pivot 7. The length of the effective operating arm between the pivots 7 and 21 never changes. This is a novel feature in this type of adjuster and embodies the correct principle in operating a window, namely that of applying the pressure at the extreme free end of the member to be moved or swung.

The adjuster herein disclosed fills an important place in the art, in that it provides an adjustable friction in an adjuster operable through a screen and includes features of reversibility as well as the features shown in Figures 17 to 20, thus making this adjuster practically universal. The adjuster is not expensive to manufacture. It comprises relatively few parts adapted for quantity production.

While my invention has been disclosed in its preferred form, nevertheless, I do not wish to be limited to the exact details shown as changes and modifications may readily be made without departing from the spirit of invention or the scope of the appended claims.

I claim:—

1. A casement window adjuster comprising a support, a pair of levers mounted thereon, a barrel slidably mounted on said levers, friction elements carried by the levers within the barrel and means for operating one of said levers to actuate the said friction elements to frictionally lock the levers within the barrel.

2. A casement window adjuster comprising a support, a lever mounted thereon, a barrel slidably mounted on said lever, a friction element carried by the lever within the barrel, a second friction element within said barrel and adapted to cooperate with the first named friction element, means extending within the barrel for actuating said friction elements to frictionally lock the said lever within the barrel and a handle for operating the said actuating means.

3. A casement window adjuster comprising a support, a pair of levers mounted therein, a barrel slidably mounted on said levers, friction elements carried by the levers within the barrel, means for operating one of said levers to actuate the friction elements to frictionally lock the levers within the barrel and means for adjusting said friction elements.

4. A casement window adjuster comprising a support, a pair of levers swingably mounted thereon, a barrel slidably mounted on said levers, friction elements carried by the levers within the barrel and means for slidably operating one of said levers within the barrel to actuate said friction elements.

5. A casement window adjuster comprising a support, a pair of levers mounted thereon, a barrel slidably mounted on said levers, friction elements carried by the levers within the barrel and means for slidably operating one of said levers with respect to the other lever to actuate the said friction elements.

6. A casement window adjuster comprising a support, a pair of levers mounted thereon, a barrel slidably mounted on said levers, friction elements carried by the levers within the barrel and means for operating one of said levers to actuate said friction elements to frictionally lock the levers to the said barrel and for releasing the said friction element to permit the barrel to slide upon the said levers.

7. A casement window adjuster comprising a support, a pair of levers mounted thereon, a barrel slidably mounted on the said levers, friction means interposed between the barrel and the levers and means carried by one of said levers for operating the same to actuate the said friction means.

8. A casement window adjuster comprising a support, a pair of levers mounted thereon, a barrel slidably mounted on the said levers, friction means interposed between the barrel and the levers and means carried by one of said levers for operating the same to actuate the said friction means to frictionally lock the levers within the barrel and for releasing said friction means to permit the barrel to slide upon the levers.

9. A casement window adjuster comprising a support, a pair of levers mounted thereon, a barrel slidably mounted on said levers, friction elements carried by the levers within the barrel, means for operating one of said levers to actuate the friction elements, means for adjusting the friction between said friction elements and means in one of the latter preventing disengagement of the barrel from the said levers.

10. A casement window adjuster comprising a support, a lever pivoted thereon, a second lever slidably mounted on said support, a barrel slidably mounted on said levers, friction elements carried by the levers, means for operating the slidable lever within the barrel to actuate the friction elements and means for adjusting the latter.

11. A casement window adjuster comprising a barrel, a pair of levers supported to slide within the same, friction elements supported by the levers within the barrel, means for operating one of said levers to actuate the said friction elements to lock the levers within the barrel and for releasing said friction elements to permit the levers to slide within the barrel, a fixed support, means for swinging said barrel and levers on said fixed support and means for adjusting the said friction elements.

12. A casement window adjuster comprising a support, a lever pivoted thereon, a second lever pivoted on said support and adapted to slide with respect thereto, a barrel slidably mounted on said levers, friction elements supported by the levers within the barrel, a cam carried by said first named lever and a handle pivoted on said second named slidable lever and operative connections between said cam and handle for operating said slidable lever to actuate said friction elements within the barrel when the said handle is manipulated.

13. A casement window adjuster comprising a barrel, a plurality of levers slidably supported within the same, friction elements carried by said levers, operating means for said levers to actuate the said friction elements, said operating means including a plurality of detachable and reversible elements permitting the said adjuster to be changed from a right hand to a left hand adjuster and vice versa.

14. A casement window adjuster comprising a barrel, a plurality of levers slidably held within the same, adjustable friction elements carried by the levers within the barrel, operating means for said levers to actuate the adjustable friction elements, means preventing accidental detachment of said levers from the said barrel, said adjuster being characterized by that all of the aforesaid elements are adapted to be assembled to form either a right hand or a left hand adjuster.

15. A casement window adjuster comprising a barrel, a pair of superposed levers slidably held within the barrel, friction

means carried by the levers within the barrel, said friction means being operable upon a sliding movement of one lever upon the other lever within the barrel, and a handle for operating the said one lever to slide upon the other lever.

16. A casement window adjuster comprising a barrel, a pair of superposed levers slidably held within the same, adjustable friction elements interposed between the levers and the barrel within the latter, said adjustable friction elements being operable by a sliding movement of one lever upon the other lever and a handle for sliding the said one lever upon the other lever, said adjuster being characterized by that all of the aforesaid elements are adapted to be assembled to form either a right hand or a left hand adjuster.

17. A casement window adjuster comprising a pivotal support, a pair of levers mounted thereon, a barrel slidably carried by said levers, friction elements on said levers within the barrel, and arranged to be actuated to lock or unlock the levers with respect to the barrel by a movement of one lever relative to the other lever, a handle pivoted to one of the levers for moving the same to actuate the friction elements as aforesaid and for swinging the said adjuster on the said pivotal support.

18. A casement window adjuster comprising a pivotal support, a lever pivoted on said support, a second lever pivotally and slidably mounted on said support, a barrel in slidable telescopic engagement with said levers, friction elements interposed between the levers and the barrel, a locking member on the sliding lever adapted to enter a notch provided in the barrel and means for sliding the said slidable lever on the said pivoted lever to actuate the said friction elements and cause the said locking member to engage the said notch to lock the said levers within the barrel.

19. The combination with a relatively movable member and a relatively fixed member, of a device for operating said movable member through an opening in the said fixed member, said device comprising a pivotal support mounted with its axis substantially in the plane of the said fixed member, operating means pivoted on said pivotal support and comprising a pair of levers adapted to swing on said support, a barrel slidably mounted on said levers, adjustably frictional elements carried by said levers within the said barrel, means for pivotally connecting the latter to the said relatively moveable member and a handle for operating the said levers to actuate the said frictional elements.

20. A casement adjuster of the character described comprising supporting means, a pair of levers pivoted on said supporting means, a barrel slidably mounted on said levers and secured to a casement window to operate the same in a given direction, fricmeans interposed between said levers and said barrel, operating means for said levers to actuate the said friction means to lock the levers within the barrel, the aforesaid adjuster mechanism including means for reversing the same whereby to operate a casement window in a direction opposite to the direction aforesaid.

21. A casement window adjuster comprising a support, a pair of levers mounted thereon, a barrel slidably carried on said levers, means for securing said barrel to a casement window to operate it in a given direction, friction means interposed between said levers and barrel, a detachable cam carried by one of the levers and means engaging said cam and secured to the other lever for operating said cam to effect relative movement between the said levers to actuate the said friction, both of said levers being reversible whereby to operate a casement window in a direction opposite to the direction aforesaid.

22. A casement window adjuster comprising a barrel, a pair of levers slidably mounted within the same, friction elements interposed between the barrel and the levers, means for actuating the friction elements within the barrel and for manipulating said adjuster to operate a window in a given direction, said levers being reversible and said operating means including elements whereby to reverse the operation of the said adjuster.

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