A second tubular element 17 is now provided to fit snugly and even tightly into sash 13, said tube being provided with a circular stop member 18 at one end thereof. In operating guide-slot 19 is formed in the side of 17, said slot being generally L-shaped in contour; and a coil spring 20 is mounted in the interior of 17 to bear at one end and be anchored in a slot 21 formed in the end of the tube 17, which slot may also be described as a flange, to better distinguish it from 19.

An elongated horizontally reciprocating bolt or plunger 22 operates in the interior of tube 17 against the pressure of spring 20, said bolt being provided with a pin 23 securely anchored in the side thereof and riding in slot 19, said pin also engaging the end of spring opposite to that held in position by flange 21.

Special attention is now directed to the end 24 of bolt 22, which may be formed integral therewith, and which consists essentially of an off-set threaded section 25 of smaller diameter than the spring-engaging section of 24, and having one side machined flat as at 26.

The opposite end of the bolt or plunger may be provided with an ornamental operating handle or knob 27 which enhances the beauty of the assembled and installed device, and at the same time facilitates the operation thereof, which is as follows:

It will be noted that when subject device is in unlocked position, bolt 22 and more particularly, end 24 thereof, is entirely contained in tubular sleeve 17 against the tension of spring 20 on pin 23 which is held against the right end of slot 19 (Fig. 2); and hence makes 11 and 13 may be moved freely as desired, but when these elements are to be locked and the window closed, they are then brought into approximate adjacent positions and the bolt manipulated inwardly through the agency of handle 27. The flat side 26 of the end of the bolt lies on top thereof at this time so as to clear downwardly projecting engaging element 16 or slide in close engagement therewith.

When pin 23 of bolt 22 has reached the left horizontal end of slot 19 (Fig. 2), handle 27 is then turned clockwise which causes teeth or threads 25 to firmly engage the end of 16, which causes several things to happen more or less simultaneously, to wit:

1. The device is locked, bolt 22 being firmly held against displacement by the engagement of pin 23 with the vertical segment of slot 19 at one end and thread 25 with 16 at the other.

2. The sashes are brought closer together until a point of maximum proximity is reached, the semi-screw action of elements 25-16 effecting this result for as long as knob 27 is turned to the right.

3. What is more important, the sashes are brought into nearly perfect horizontal adjustment by this same action as is suggested by Fig. 2, the turning of the handle resulting in off-set member 24 operating in conjunction with threads 25 and element 16, forcing tubular element 15 and hence sashes 11 and 13, upwardly or downwardly as may be necessary to obtain this result, the tolerance characteristics of a given window assembly largely dictating where the "give" will occur to bring about this desired result. Upon reversal of handle 27 to the point where pin 23 engages; the longitudinal extension of slot 19, spring 20 forces plunger 22 to the right, withdrawing 24 from 15 and permitting the window to be opened in the usual manner.

The invention may be used both on conventional windows, and aluminum windows, where the action may be horizontal rather than vertical; may be used as an intermediate lock by placing to the side of an upper or lower pane, and other uses and applications will likewise suggest themselves.
While one form of the instant invention has been disclosed and described in considerable detail herein, it will be apparent that no limitation is intended or implied thereby, but on the contrary that various modifications, reconstructions, additions, deletions and the like may be resorted to without departing from the appended claims, which are to be given a construction and scope fairly in keeping with the contribution to the art.

1. In a device of the character described, a tubular member having a thread engaging element extending from the inner wall thereof and being securely anchored thereto, a second tubular member having a small flange at one end thereof and a stop member at the opposite end, an L-shaped slot formed in the side of said second tubular member, a coil spring inserted in said tubular element so that one end engages said flange, a bolt member inserted in said second tubular member, a handle on one end of said bolt, a pin secured to one side of said bolt at approximate right angles thereto, said pin operating in said slot; and an off-set smaller end segment formed integral with said bolt, said segment having a longitudinally extending flat surface and threads for engaging the inwardly extending element of said first tubular member, whereby when the bolt is forced inwardly and its handle is rotated, said thread members will generate a locking-aligning-tightening action as between said first and second tubular members and any structure to which they may be secured at the time.

2. In a device of the character described, in combination, a thread receiving and engaging member, a tubular member, an angular slot formed in the side of said tubular member, a spring inserted in said member, a plunger inserted in said tubular member against the tension of said spring, means for rotating said plunger, a pin secured to said plunger in operative engagement with said angular slot, and a smaller off-set end segment formed integral with said plunger, said segment having a longitudinally extending flat surface and threads adjacent thereto, whereby when the plunger is forced inwardly and then

rotated in said thread engaging member, a locking-tightening-aligning action is generated as between the receiving member and the tubular member, and hence objects to which they may be securely attached as for example the upper and lower panes of a window.

3. In a device of the character described, in combination, a tubular receiving and engaging member firmly mounted in the upper sash of a window, a second tubular member likewise rigidly mounted in the sash adjacent thereto, an operating slot formed in said second tubular member, a plunger disposed within said second tubular member and kept normally out of engagement with the first tubular element by spring means, a pin anchored to said plunger and riding in said operating slot, and a smaller off-set end segment integral with said plunger and having threads calculated to receive said engaging member in such a manner that when the plunger is forced inwardly into engagement therewith, and said plunger is rotated, a locking action occurs as between the two sashes in which the tubular members are mounted.

4. The device of claim 3 in which the actuation of the plunger also results in an aligning of the sashes.

5. The device of claim 3 in which the rotation of the plunger also results in a tightening action as between the structures with which the tubular members are associated.

6. The device of claim 2 in which the thread receiving member is in the nature of a nut.

7. The device of claim 1 in which the slot in the second tubular member is of any suitable contour to effectively govern the action of the bolt member.

References Cited by the Examiner

UNITED STATES PATENTS

1,221,824 4/17 Boye 292—57
1,346,677 7/20 Porter 292—251
2,198,161 4/40 Grady et al. 292—62
3,112,599 12/63 Brewer 85—1

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