Dec. 24, 1940. F. E. ANDREWS 2,226,301

WINDOW LOCKING DEVICE

Filed May 26, 1939

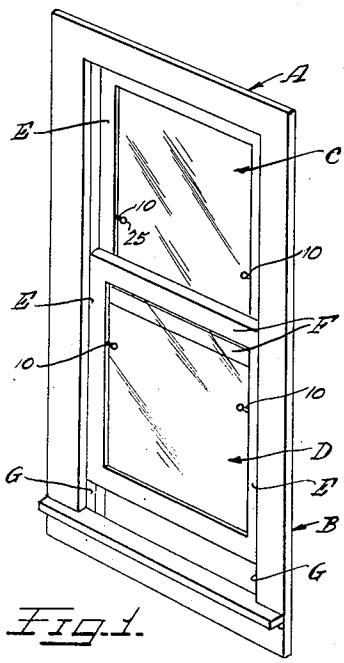


Fig. 1.

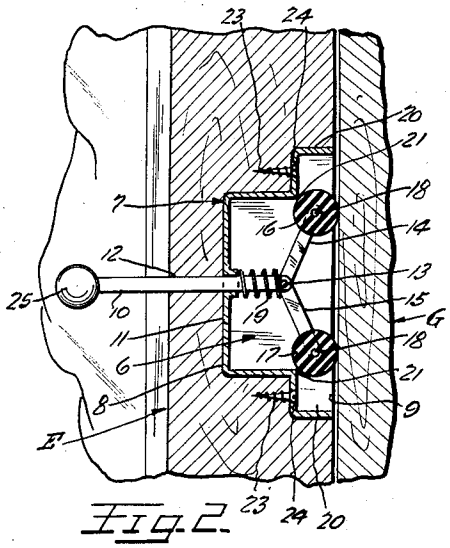


Fig. 2.

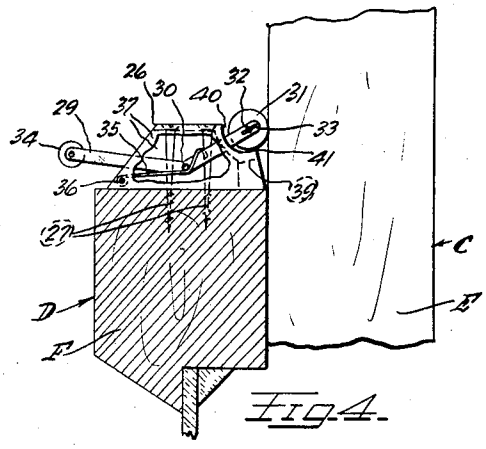


Fig. 4.

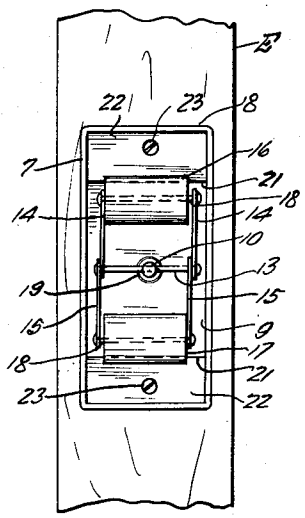


Fig. 3.

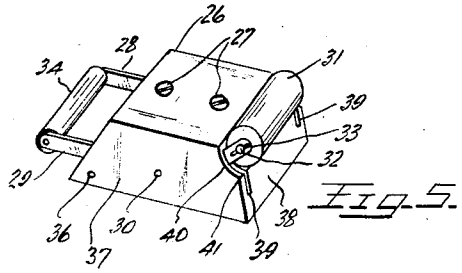


Fig. 5.

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Patented Dec. 24, 1940

2,226,301

UNITED STATES PATENT OFFICE

2,226,301

WINDOW LOCKING DEVICE

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Application May 26, 1939, Serial No. 275,864

3 Claims. (Cl. 292—23)

This invention relates to devices for locking windows in adjusted positions in the window frame.

The primary object of the invention is to provide means for releasably locking a window sash in the frame against either upward or downward movement therein and in such manner that not only is the unauthorized opening of the sash from the outside prevented but so that the usual expensive and frequently troublesome sash weights and cords may be eliminated.

Another object is to provide a device of this nature of a simple and inexpensive form and which may be easily applied to both upper and lower sash of the window.

A further object is to provide a device of this kind embodying as the actual locking means a roller or rollers arranged to wedge between the device itself and the window frame in such manner that the locking effect is directly proportional to the force applied to dislodge the sash, whether by the weight of the sash or by an attempt to move the same from adjusted position.

A further object is to provide conveniently disposed and arranged means within the window for withdrawing the roller means from wedging positions when it is desired to adjust the sash.

Still a further object is to provide a locking device for securing a lower sash against upward movement with respect to an upper sash. This type of device is particularly suited for use as a burglar proof lock for holding the slightly raised sash in position and employs a roller wedge member for positive locking purposes.

The foregoing and other objects of the invention, together with means whereby the same may be carried into effect, may best be understood from the following detailed description taken in connection with the accompanying drawing wherein:

Figure 1 is a perspective view of a window equipped with fastening devices of my invention.

Figure 2 is an enlarged vertical cross sectional view through one sash edge or side and the adjacent part of the window frame, showing my fastening device in use.

Figure 3 is a side elevation of the sash edge showing my fastening device embedded therein.

Figure 4 is a vertical cross sectional view through the upper frame rail or member of a lower sash and a modified form of my device applied thereto, the adjacent edge of the upper sash being also shown.

Figure 5 is a perspective view of the fastener of Figure 4.

Referring now with more particularity to the drawing the reference character A designates a window of substantially conventional form including a frame B and upper and lower sash C and D slidable vertically therein. Each sash includes a glazed frame having vertical side members E and horizontal rails or members F and the window frame has the vertical, grooved stiles G for the slidable reception of the sash edges.

In accordance with my invention as exemplified in Figures 1 to 3 both upper and lower sash are provided at each side with a fastening device indicated generally at **6**. Since these devices are identical in construction only one will be herein described in detail.

The device comprises a housing **7** cast or formed of sheet metal to the generally rectangular box-like shape shown and which is embedded in a recess **8** cut in the outer vertical edge of the sash bar E with the open side **9** turned outwardly and thus faced toward the window frame member G along which the sash slides. A plunger or operating rod **10** is slidably mounted through the closed side **11** of the housing and extends inwardly and horizontally through the vertical inner side of the sash member E within the glass window pane. A hole **12** is bored in the sash to clear this rod. The inner end of the rod carries a cross rod or pin **13** and toggle arms or bars **14** and **15** are pivotally mounted in pairs at the ends of this cross pin. These arms thus extend in spaced parallel relation from the pin and at their outer ends carry wedge rollers or roller members **16** and **17** which are journaled upon the axles **18**. An expansion coil spring **19** is placed over the inner end of the operating rod and braced between the closed side of the housing and the cross pin **13** to normally urge the rod toward the outer side of the assembly, or toward the window frame member G. As a result the rollers **16** and **17** are normally urged into contact with the member G and are normally spread apart vertically with respect to each other.

The housing **7** has offsets **20** at upper and lower ends forming shoulders **21** against which the rollers **16** and **17** will be stopped as they are spread apart by action of the spring **19**. These shoulders are so spaced, with respect to the member G, that the rollers may partially enter between the shoulders and the frame member and may wedge therebetween.

The offsets 20 form convenient areas 22 for the reception of fastening screws 23 which are placed through apertures 24 and screwed into the sash. The rod 10 is provided with a knob 25 at its exposed end.

In operation the rollers 16 and 17 normally are urged by the spring 19 into a wedging position between the shoulders 21 and the frame member G. The equipped sash is thus effectively locked against movement either upwardly or downwardly with respect to the member G, since movement in either direction, while slightly dislodging one roller, will only more tightly wedge the other against the frame member as will be understood. However, the rollers may be withdrawn from wedging position by a pull upon the operating rod 10 which tends to slightly collapse the toggle-like arms 14 and 15. Upon releasing the rod the spring immediately will reassert itself and return the rollers to locking positions. In the arrangement shown therefore it is only necessary to pull upon the oppositely disposed rods of either sash, at the same time raising or lowering the same to the desired position, and the sash will be automatically locked when released.

It is evident that the fastening devices when employed as described will make unnecessary the use of the usual costly and troublesome sash weights and cords, since the locking devices will retain the sash in any desired positions in the frame.

The rollers 16 and 17 may be made of any suitable material but preferably it is such that a good frictional as well as wedging effect may be obtained. The rollers may be readily and inexpensively replaced when worn.

The device shown in Figures 4 and 5 is applied only to the lower sash D and comprises a housing 26 which is secured by screws 27 to the upper surface of the sash rail F in a position at which it faces the side member E of the upper sash as shown. Levers 28 and 29 are fulcrumed upon a cross pin 30 in the housing and at one end they carry a roller or roller member 31 journaled upon a cross axle 32 which is mounted at its ends in slots 33 in said levers. The opposite ends of the levers 28 and 29, extended toward the inner side of the window, are connected by a handle 34. Wire springs, only one of which is shown at 35 but which are identical in form and arrangement, are secured at 36 to the sides 37 of the housing 26 and are hooked over the levers 28 and 29 in such manner that the ends carrying the roller 31 will normally be urged downwardly. The end 38 of the housing has slots 39 for guiding the levers. The upper corner of this same end of the housing is grooved or cut away at 40 to provide a shoulder 41 upon which the roller 31 will be caused to bear by action of the springs 35.

In use the device is so mounted that the roller 31 will bear and wedge against the shoulder 41 when an attempt is made to raise the lower sash and will lock against the upper sash. To release the sash the handle 34 is pressed downward rocking the levers 28 and 29 on the pin 30 and moving the roller clear of its wedging position. The springs 35 will return the parts when released.

This type of lock is particularly suited for use as a burglar lock so that the sash may be slightly raised for ventilation without fear of it being forced further open to permit illegal entry of a person.

It is thought that further details of the advantages and utility of my invention will be understood without additional description herein, and while I have herein set forth certain preferred embodiments of my invention it is to be understood that I may vary from the same within the scope of the appended claims.

Having thus fully disclosed my invention, what I claim as new and desire to secure by Letters Patent is:

1. A device for supporting and locking a window sash in a window frame, comprising a housing secured to the sash, and having an open side adjacent a surface of the frame, offsets at opposite ends of the housing and forming shoulders spaced from the frame, a plunger movably mounted in the housing and extending into the interior thereof, toggle arms connected to an inner end of the plunger, rollers carried at the ends of the toggle arms and engageable between the said shoulders and frame for wedging action to thereby restrain the sash against movement in either of two opposite directions, the said rollers being releasable from the shoulders by movement of the plunger outward in the housing.

2. A device for supporting and locking a window sash in a window frame, comprising a housing secured to the sash, and having an open side adjacent a surface of the frame, offsets at opposite ends of the housing and forming shoulders spaced from the frame, a plunger movably mounted in the housing and extending into the interior thereof, a spring arranged to normally urge the plunger toward the open side of the housing, toggle arms pivotally connected at one end to an inner end of the plunger and adapted to move toward the offset ends of the housing under influence of the spring on the plunger, there being a pair of individually spaced toggle arms extended oppositely from two opposite sides of the plunger, and rollers journaled between free ends of each pair of toggle arms for wedging engagement between the said shoulders and the frame, the said rollers being releasable from such engagement by movement of the plunger away from the frame.

3. A device for supporting and locking a window sash in a window frame, comprising a housing secured to the sash, and having an open side adjacent a surface of the frame, offsets at opposite ends of the housing and forming shoulders spaced from the frame, a plunger movably mounted in the housing and extending into the interior thereof, a cross pin carried by an inner end of the plunger intermediate the offset ends of the housing and extended parallel with the shoulders thereon, arms pivotally connected at one end to the ends of the cross pin and extended oppositely therefrom toward said offset ends of the housing, rollers journaled between the ends of the arms for wedging engagement between each of said shoulders and the frame but releasable from such engagement by outward movement of the plunger away from the frame, and a coil spring on the plunger braced between the housing and the said cross pin to yieldably urge the plunger toward the frame and wedge the rollers against the shoulders.

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