April 8, 1941. E. V. MITCHELL 2,237,996

WINDOW LOCK

Filed Jan. 25, 1940

Fig. 1.

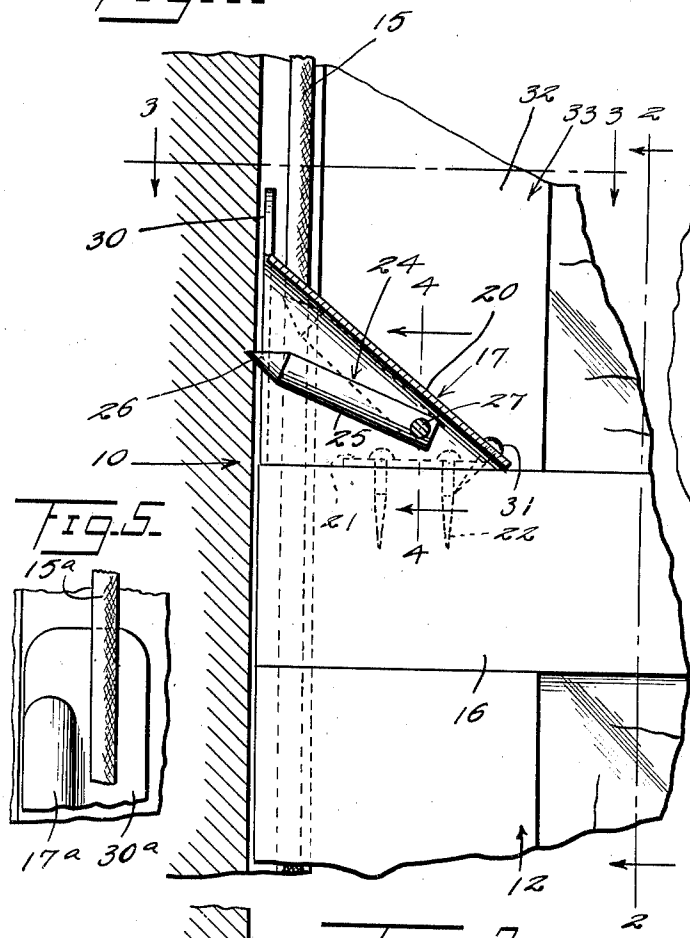


Fig. 2.

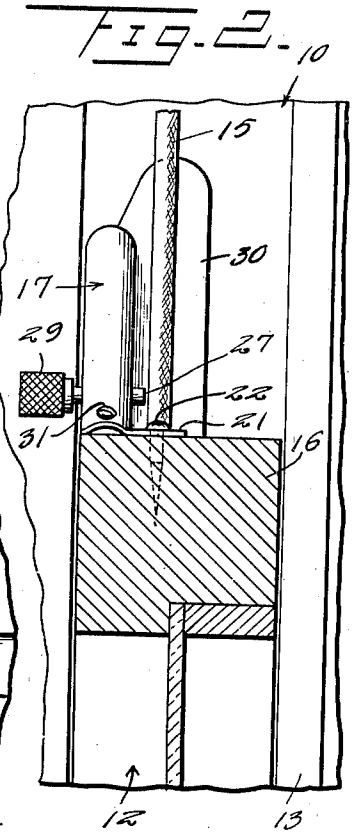


Fig. 5.

Fig. 3.

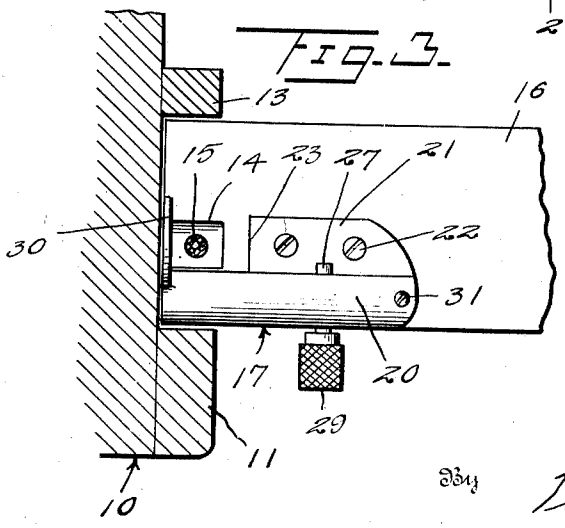
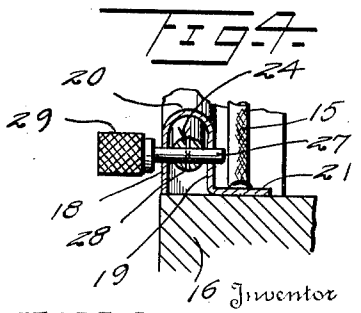


Fig. 4.



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WINDOW LOCK

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3 Claims. (Cl. 292—238)

This invention relates to window locks and more particularly to an improved locking device for a lower sash which cannot be tampered with from the outside of the window.

An object of this invention is to provide an improved window lock which is adapted to be mounted on top of a lowered window sash adjacent one side thereof and which is adapted to firmly lock the lowered sash against upward movement irrespective of the position of the lower sash with respect to the window frame or upper sash.

Another object of this invention is to provide an improved window lock of this kind which is adapted to gravitatingly move into a locked position so that in the event the lower sash is raised to a predetermined point from the inside of the window and locked in its raised position, downward movement of the lower sash will permit the locking device to move to a partly released position, but the locking device will gravitatingly swing into a second locked position so as to lock the sash in its lowered position.

A further object of this invention is to provide a window lock of this type which includes a protecting shield engageable behind the sash cord and which extends outwardly with respect to the locking device so that a tool cannot be inserted to release the locking device.

With the foregoing and other objects in view, my invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawing, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of my invention as claimed.

In the drawing:

Figure 1 is a fragmentary front elevation of a window sash having a locking device constructed according to this invention mounted thereon, the locking device being shown partly in vertical section.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a fragmentary sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a fragmentary end elevation of a modified form of this invention.

Referring to the drawing, the numeral 10 designates generally a window frame provided with an inner stop 11 and a divider 13. A lower sash generally designated as 12 is slidable between the two stop members 11 and 13 and the opposite vertical parts of the sash 12 are provided with a slot 14 in which a sash cord 15 engages. The sash cord 15 is adapted to extend upwardly to the upper portion of the window frame 10 and engage over a pulley with a weight on the opposite end of the cord. One end of the cord 15 is adapted to be secured in any suitable manner to the sash 12.

The sash 12 is provided with an upper stile 16 and a housing generally designated as 17 is secured to the upper surface of the stile 16. The housing 17 comprises an inner or rear wall 18 and an outer or front wall 19 which are connected together by an arcuate wall 20 which inclines downwardly and inwardly from its outer to its inner end. The two walls 18 and 19 are of substantially triangular configuration and the arcuate wall 20 emerges into the upper or downwardly and inwardly inclined edges of the inner and outer walls 18 and 19, respectively. The housing is formed with an outer open side and a closed inner side. The said open outer side is of materially greater height than the said closed inner side. The outer wall 19 at its lower edge is provided with an outwardly directed base plate or flange 21 provided with openings through which fastening devices 22 are adapted to engage. The fastening devices 22 may be in the form of screws which engage in the upper stile 16 of the sash 12. The outer end 23 of the base plate or flange 21 is disposed in inwardly spaced relation to the cord slot 14. The housing 17 is mounted on the upper stile 16 in a position with the inner wall 18 substantially flush with the inner surface of the upper stile 16, and with the outer vertical edges of the walls 18, 19 flush with the side edge of stile 16.

A locking bolt 24 is loosely disposed in the housing 17 between the two side walls 18 and 19 and is constructed in the form of a cylindrical body 25 which at its outer or free end is provided with a conical point 26. The opposite or inner end of the bolt 24 is fixedly mounted on a shaft or pin 27 which is journalled through the side walls 18 and 19 and preferably the bolt 24 is fixed to the shaft 27 by means of a pin 28 which extends through the bolt 24 and the shaft 27. An operating handle or knob 29 is fixed to the inner end of the shaft 27 and provides a means whereby the bolt 24 may be raised to an inoperative position or may be manually swung in a downward direction to a locking position. The bolt 24 is adapted to gravitatingly swing downwardly to a locked position, and if desired, suitable means

may be provided within the housing 17 for holding the bolt 24 in an uppermost or released position. When the bolt 24 is in a released position, it will be disposed in the position shown in dotted lines in Figure 1 wherein the bolt 24 engages in the space formed by the arcuate connecting wall 20.

In order to provide a means whereby the locking bolt 24 cannot be raised to a released position from the outside of the window, I have provided a vertically disposed protecting plate or a shield 30 which is formed integral with and it is of greater height than the outer end of housing 17. The protector 30 is disposed at right angles to and is directed forwardly from the housing 17. In the present instance the protector 30 is formed integral with and is flush with the outer ends of the walls 19, 20. This protecting plate or shield 30 is adapted to engage between the sash cord 15 and the adjacent portion of the window frame 10 and preferably is positioned with the inner surface thereof substantially flush with the adjacent edge of the sash 12. A fastening device 31 in the form of a screw is adapted to engage through the lower portion of the arcuate wall 20 and engage in the stile 16 so as to coact with the fastening devices 22 in holding the housing 17 firmly on the sash 12.

When the locking device herein disclosed is mounted on the lower sash 12, the housing 17 is positioned inwardly of a vertical rail 32 of the upper sash 33. In this position the vertical rail 32 of the upper sash forms a shield or protecting means for the housing 17 and also prevents an instrument from being inserted from the outside of the window behind the protecting shield or plate 30.

In the use of this device the housing 17 is mounted by means of the fastening devices 22 and 31 on the upper stile 16 at one end of this stile. The outer surface of the shield 30 is positioned in substantial alignment with the end of the stile 16. The locking bolt 24 is substantially longer than the distance from the axial center of the shaft 27 to the adjacent face of the window frame 10 so that at no time in the use of this locking bolt will the bolt 24 be disposed in a horizontal position or in a position below the horizontal. The bolt 24 will gravitatingly fall downwardly into engagement with the frame 10 so that when the window sash 12 is raised, the point 26 will project into the frame 10. The sash 12 can readily be lowered by merely pushing the sash downwardly which will release the bolt 24, but at the same time the point 26 will be in constant engagement with the frame 10 so that if it is desired to raise the sash 12, the point 26 will be forced into the frame 10. The upward force on the sash 12 will not only cause the point 26 to engage the frame 10 but will also bind the opposite edge of the sash 12 in the space between the two stops 11 and 13.

It will be apparent from the foregoing that a lock construction according to this invention cannot be readily tampered with, so that when the lock is in a locked position the lower sash cannot be raised until the bolt 24 has been manually swung upwardly by means of the operator 29 which is positioned on the inside of the window structure.

In Figure 5 there is shown a housing 17a which is similar to housing 17 and which encloses a bolt structure similar to bolt 24. In this form the plate or shield 30a extends at right angles to the housing 17a and at its upper portion the plate 30a terminates at the rear wall of the housing 17a.

While I have shown the shaft 27 secured in the bolt 24 by means of a pin 28, the shaft 27 may be secured to the bolt 24 by any suitable means, such as welding, splines, a key, a press fit or the like.

It will also be obvious that if the bolt 24 be forced by extreme pressure on the sash to assume a horizontal position this bolt 24 will still remain in a locking position as the bolt 24 will engage against the upper edge of the sash which will prevent the bolt from rocking downwardly to a released position.

What I claim is:

1. A lock for use with a window sash and window frame comprising a housing having a pair of triangularly shaped side walls and an arcuate wall integral with and connecting said side walls together, a base flange integral with one of said side walls and having a length less than the length of said one side wall, a right angularly disposed plate integral with said one side wall and extending from a vertical edge thereof and positionable between the sash cord and the adjacent face of the frame, a locking bolt in said housing, a shaft journalled through said side walls and fixed to the inner end of said bolt, a conical frame engaging member integral with the opposite end of said bolt and extendible outwardly of the vertical ends of said side walls for engagement with the window frame, and an operator fixed to said shaft, said bolt gravitatingly swinging downwardly to a locked position.

2. In a window sash lock of the shield type including an upwardly inclined locking bolt adapted to have its upper end engaged in a window frame side and its lower end pivoted, the combination of a housing open at its outer side, its inner side and the bottom, said housing including top, front and rear walls, said housing being of inverted U-shape in vertical section and gradually decreasing in height from its outer to its inner side, said housing enclosing and for supporting the lower end of said bolt adjacent said inner side, a forwardly directed base plate integral with the bottom of said front wall and having openings for the passage of holdfast device for securing the housing upon the window sash, and a vertically extending shield for disposing in close proximity to the window frame side, said shield being integral with said top and front walls at the inner side of the housing, said shield being disposed at right angles to said housing, extended above said top and front and directed forwardly from said front wall.

3. In a window lock, a combined housing and guarding means for a locking bolt, said means including a casing for securing to a window sash for housing the locking bolt and having its outer side open for the projecting of the bolt to engage a window frame, and a vertically disposed shield aligned with the outer side edge of the casing and having an upper and a lower part, said upper part having a rear portion and a forward portion, said rear portion being integral at its lower end with the top of the casing, said forward portion extending forwardly at right angles to the casing, said lower part merging at its upper end into the lower end of said forward portion and at its rear into the front of said casing, said forward portion and lower portion disposed in a like plane.

EBB V. MITCHELL.