Sept. 13, 1932. L. C. HINDERER ET AL 1,877,177

PUSH BUTTON WINDOW LOCK

Filed Feb. 11, 1931

Fig. 1.

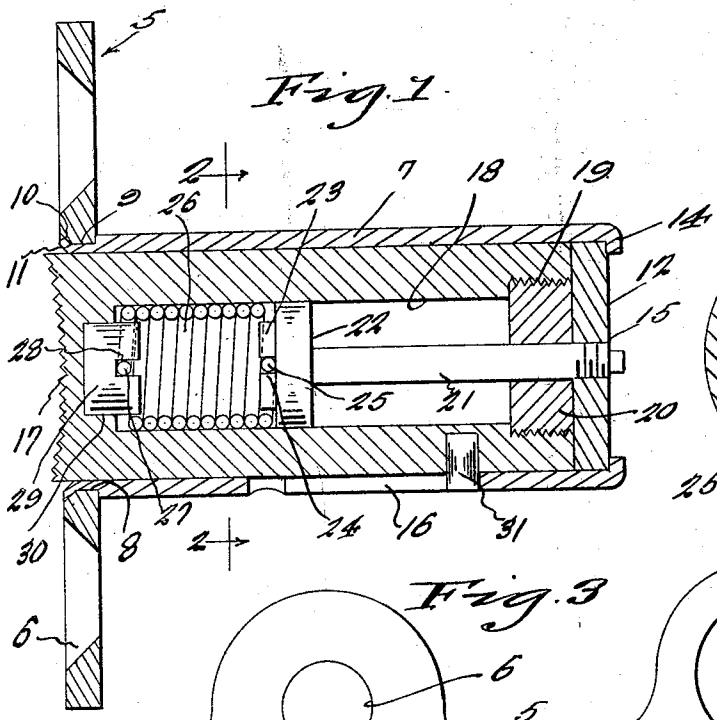


Fig. 2.

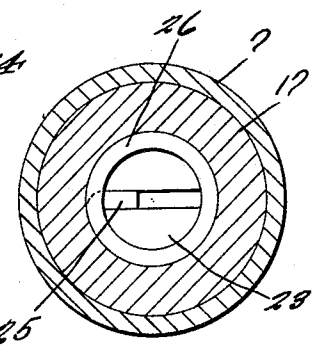


Fig. 3.

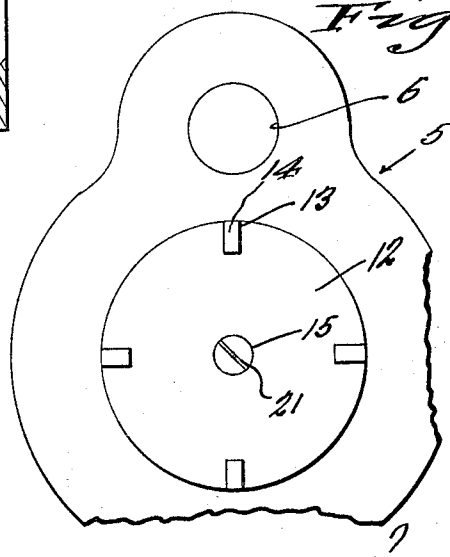
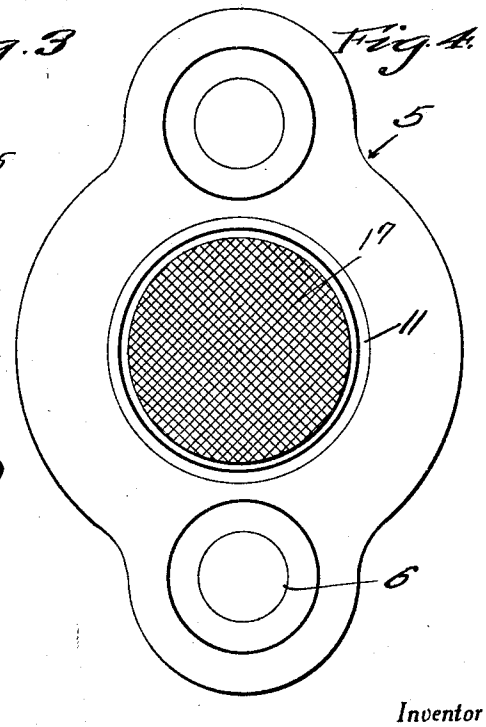


Fig. 4.



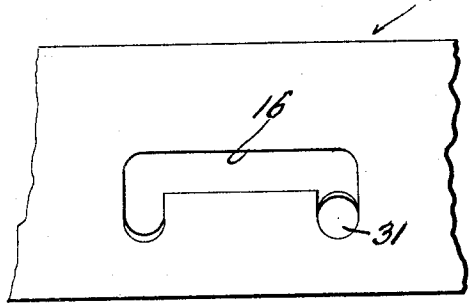


Fig. 5.

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UNITED STATES PATENT OFFICE

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PUSH BUTTON WINDOW LOCK

Application filed February 11, 1931. Serial No. 515,100.

This invention relates generally to an automatic window lock for locking window sashes against relative movement in one direction within a window frame, and particularly to a new and novel type of push button window lock which comprises the features of simplicity and efficiency as set out below.

It is an object of this invention to improve upon window locks of this general type by providing a more efficient, reliable and simple mechanism which will operate automatically to set the lock mechanism in sash locking position upon manual movement of the lock mechanism.

These and other objects of the invention, its nature, and its composition and arrangement and combination of parts will be readily understood by any one acquainted with the art to which this invention relates upon consulting the following descriptions of the drawing, in which:—

Figure 1 is a longitudinal vertical sectional view showing the complete structure of our improved window lock.

Figure 2 is a vertical transverse cross sectional view looking toward the right of Figure 1 on the line 2—2 thereof.

Figure 3 is a rear view of the lock taken from the right of Figure 1.

Figure 4 is a front view of the lock taken from the left of Figure 1.

Figure 5 is a view looking upwardly from under Figure 1 partly broken away.

Referring in detail to the drawing it will be seen that in a preferred embodiment of our invention there is provided an attaching plate generally designated 5 which may be of any suitable shape, preferably oval or rectangular or in the irregularly curvate form disposed in Figures 3 and 4. The attaching plate 5 is provided with countersunk holes 6 for receiving and anchoring the attaching means when the lock is in position on a window sash or the like, and the numeral 7 designates generally a tubular cylinder having at its front end a notch 8 running thereabout on the exterior in which is received the walls of a circular opening 9 in the plate 5, which has a beveled edge portion 10 for accommodating a swedged portion 11 produced on the forward end of the cylinder 7. This arrangement rigidly secures the plate 5 and the cylinder 7 together at their juncture, and the rear end of the cylinder 7 is closed by a disk or plate 12 which is formed with peripheral notches 13 to receive prongs 14 bent over the rearward face thereof as shown in Figures 1 and 3. The back plate 12 is provided with a central screw threaded hole 15 for a purpose to be described. The underside of the cylinder 7 is provided with a U-shaped slot designated 16 the purpose of which will also be subsequently described.

Slidably mounted in the cylinder 7 is a plunger generally designated 17 which constitutes the bolt of the lock. It comprises a longitudinally bored solid cylinder, the bore thereof being designated by the numeral 18. The bore 18 opens at the rearward end of the plunger 17, where it has an enlarged portion 19 screw-threaded to receive a screw-threaded bearing member 20 which is slidably mounted on a rod 21 which has its rearward end screw-threaded into the hole 15 in the back plate 12, the rod 21 extending forwardly in the middle of the bore 18 of the plunger. On the forward end of the rod 21 is a disk-like head 22. It is to be understood that the member 20 is slidable on the rod 21, and the member 22 limits the forward movement of the said member 20. On the forward face of the disk-like member 22 is a boss 23 having a slot therein designated 24 for anchoring a transverse member 25 of a coiled spring 26, which has at its forward end a transverse portion 27 which is anchored in a slot 28 in a plug 29 anchored in a recess 30 formed in the end portion of the plunger 17. The exterior of the end portion of the plunger 17 is concaved or convexed and provided with a roughened or milled surface and to provide a gripping surface for engagement by the fingers in operating the plunger.

On the underside of the plunger 17 toward the rear thereof there is placed a projecting pin 31 for engagement in the slot 16. Before the pin 31 is attached in position, the spring 26 is caused to become tensioned

through torsion in the direction of extension of the right angular portions of the U-shaped slot 16, so that normally the plunger 17 has a tendency to turn into the direction of the extension of the right angular portions of the slot 16, whereby to normally position or urge into position the pin 31 in either of said right angular extensions of said slot 16. Since the spring 26 is compressed in the position shown in Figure 1, namely, the retracted position of the plunger, the spring has also the normal tendency to eject or project the plunger 17 outwardly of the cylinder 7 and at the same time to give it a turn in the direction of extension of the slots mentioned, since both ends of the spring 26 are anchored, one end to the casing structure of the lock, and the other end to the plunger thereof.

Thus upon pushing the plunger 17 inwardly until the pin is opposite the rearward extension of the slot, the plunger will automatically be urged to move the pin 31 into the rearward slot for locking the plunger in full retracted position when desired.

It will also be evident that upon releasing the pin 31 by a movement of the plunger to retract the pin from the slot, that the plunger is automatically freed for outward projection, and when it has reached outward projected position, it will automatically rotate to position the pin 31 in the forward right angular portion of the slot 16, whereby to lock the plunger in outward extended position, and thus prevent vibration and other causes from displacing it from window locking position.

It will be observed that on account of the contour of the plunger, that in any position or relation of the window sashes, the insertion of a knife or other thin instrument between the sashes, or the application of pliers or the like thereto will be ineffectual to move the plunger out of its set positions since there are no gripping surfaces presented, with the result that a degree of safety and freedom from tampering is provided by our invention not heretofore attained in a structure of this general type.

It is to be definitely understood that we do not desire to limit the application of this invention to the particular modification set out herein to illustrate the principles thereof, and any change or changes may be made in material and structure and arrangement of parts consistent with the spirit and scope of the invention.

What is claimed is:—

1. An automatic push button window lock of the type described comprising a tubular cylinder having at its front end an attaching plate and at its rear end a back plate, an outwardly spring pressed hollow plunger closely slidable in the cylinder, said plunger having a spring therein for moving said plunger outwardly of the cylinder into locking position in the cylinder, and a stationary piston in the plunger, the spring having a connection with the said piston and with the forward end of the plunger so that the spring acts to yieldably resist rotation of the plunger.

2. An automatic push button window lock of the type described comprising a tubular cylinder having at one end an attaching plate and at the other end a back plate closing said other end, a hollow plunger slidable in the cylinder, a spring in the plunger for projecting the plunger outwardly of the casing and partially rotating the plunger for moving it into locking positions in the cylinder, said hollow plunger being open and threaded at its rear end, a stationary rod secured in the back plate, a plug screwed into the rear end of the plunger and apertured to slide on the rod, said rod having a piston to which is connected the rear end of the spring, in such manner as to normally rotate the plunger into locking position.

3. An automatic push button window lock of the type described comprising a tubular cylinder having an integral lateral mounting flange at one end and a back plate closing the other end, a hollow plunger in the cylinder having its outward end closed and its inward end provided with a screw threaded opening, and an axially apertured plug in said opening, a rod secured at one end in the back plate and received through the aperture in the plug, a piston on the other end of the rod on which the plunger slidably bears, a coiled spring in the plunger between the piston and the closed end of the plunger, and a pin on the plunger movable through a U-shaped slot in the cylinder, said spring being connected to said piston and said closed end of the plunger so as to rotate said plunger and carry said pin into either leg of the U-shaped slot when the plunger is pressed inwardly and outwardly.

In testimony whereof we affix our signatures.

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