W. S. WIGHTMAN.

LOCK.

APPLICATION FILED AUG. 13, 1917. RENEWED SEPT. 12, 1918.

1,297,427. Patented Mar. 18, 1919.

Fig. 1.

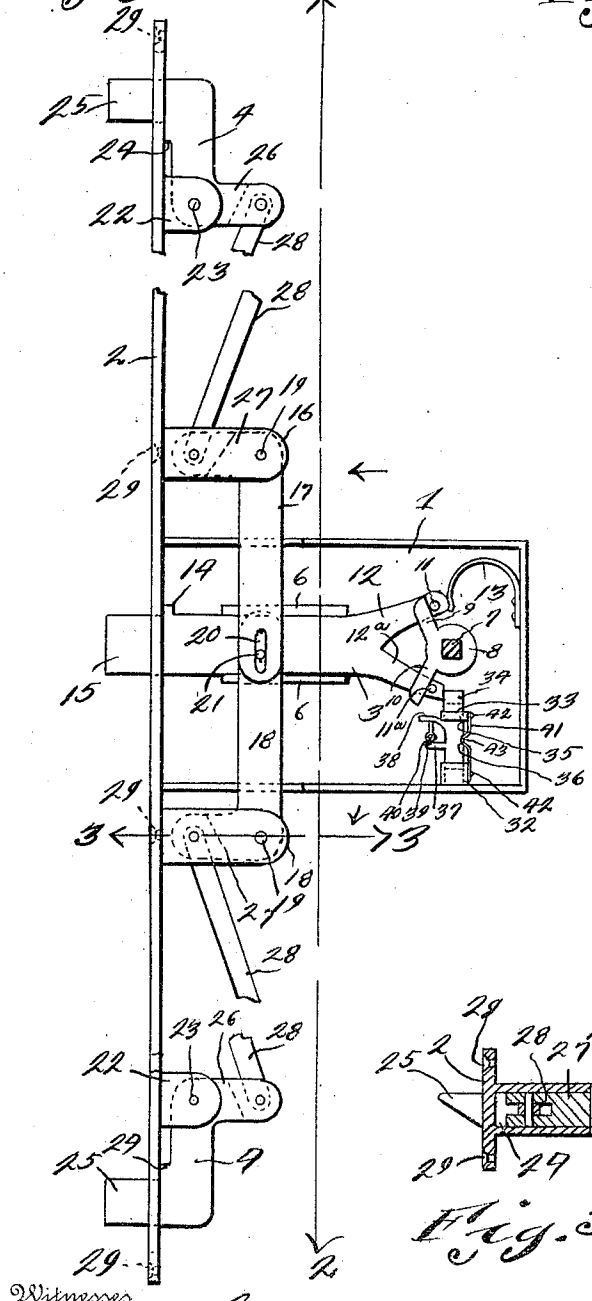


Fig. 2.

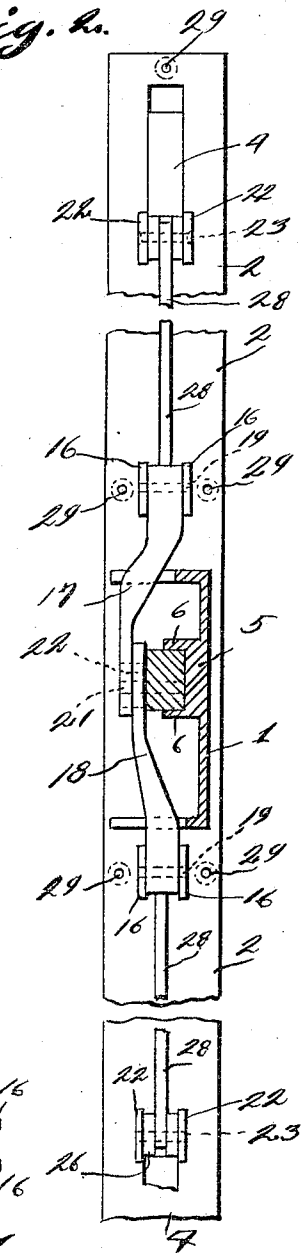


Fig. 3.

Witnesses

Philip Sewell

Francis L. Sewell

Inventor

W. S. Wightman

By D. Swift & Co

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM S. WIGHTMAN, OF NORWICH, NEW YORK.

LOCK.

1,297,427. Specification of Letters Patent. Patented Mar. 18, 1919.

Application filed August 13, 1917, Serial No. 186,000. Renewed September 12, 1918. Serial No. 253,802.

To all whom it may concern:

Be it known that I, WILLIAM S. WIGHTMAN, a citizen of the United States, residing at Norwich, in the county of Chenango, State of New York, have invented a new and useful Lock; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to locks.

One of its objects is the provision in a device of this character of means for locking a door (to which the device is attached) in three places, whereby the door will be prevented from springing at the top and bottom.

A further object is to provide connections between these triple locking means, so that all may be operated simultaneously.

A still further object is to provide a triple lock for use on doors and the like that may be cheaply made and that may be set in the edge of the door.

Other objects will appear in the detailed description which follows.

It is to be understood, that the applicant is not to be confined to the exact construction herein disclosed, but that changes may be made, within the scope of what is claimed as practice may suggest.

Figure 1 is a side elevation of the invention.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is a section on the line 3—3 of Fig. 1.

Referring to the drawings, 1 designates a casing to which there is rigidly attached at one end the plate 2. The plate 2 is apertured at its upper and lower ends and between the points where it adjoins the casing 1 to permit the free movement therethrough of the straight locking bar 3 and the Z-shaped locking bars 4.

The back of the casing 1 is provided with a rectangular boss 5 having the bottom and lower flanges 6 between which the bar 3 slides in moving into or out of the casing 1.

A shaft 7, square in cross section is pivotally mounted in the casing 1, being journaled in the back and in the front cover (not shown) of the casing. The shaft 7 has mounted thereon a sleeve body 8, which has projecting arms 9 and 10. These arms contact with and ride against the pins 11 and 11^a, which project laterally from the arms 12 and 12^a of the bar 3, so that by turning the shaft 7 in one direction or the other, a reciprocating movement is imparted to the bar 3, which is guided between the flanges 6 of the boss 5. This reciprocating movement is effected by the arms 9 and 10 riding against the pins 11 and 11^a.

A flat circular shaped spring 13 is secured at the rear end of the casing 1 and has its free end pressing on the end of the arm 12, thus serving to keep the bar 3 normally toward the front end of the casing 1, where a lug 14, made integral with the bar 3, abuts the inner base of the plate 2 and limits the forward movement of the bar 3, so that its nose 15 only will protrude beyond the front base of the plate 2.

On the back face of the plate 2, both above and below the casing 1, there are provided the integral ears 16. Between the upper pair of ears 16 there is pivotally mounted a bell-crank lever 17, while between the lower pair of ears 16 a bell-crank lever 18 is pivotally mounted. Both the levers 17 and 18 are supported near the ends of their respective ears 16 on the pivots 19 suitably secured to each pair of ears. At their extreme ends, the levers 17 and 18 overlap, both being provided at the overlapping ends with elongated slots 20 by means of which they are connected to the bar 3 through the medium of the pin 21 which is rigidly secured to the bar and projects through the slots 20.

Aside from the ears 16, the plate 2 is further provided with ears 22, both above and below the casing 1 and between these ears the Z-shaped locking bars 4 are pivotally mounted on the pins 21, the Z-shaped locking bars having abutment edges 24 which lie against the inner face of the plate 2 to limit the distance to which the noses 25 of the levers project beyond the front face of the plate 2.

The arms 26 of the Z-shaped locking bars are slotted on their ends and the arms 27 of the levers 17 and 18 are similarly slotted, the Z-shaped locking bars and the levers 17 and 18 being connected together by means of links 28 which are pivotally secured in the ends of the arms 27 and 26.

Counter-sunk screw holes 29 are formed in the plate 2, these holes being designed to secure the lock to a door to which it may

be attached. The lock is intended for setting in the edge of the door after the latter has been appropriately mortised to receive it, and its locking bars 4 and 5 are designed to engage suitable keepers attached to the door jamb. The noses 15 and 25 of the locking bars are tapered or wedge-shaped, so that the locking bars may be forced back to the plate 2 and effect engagement with their keepers without necessity of having to turn the shaft 7.

The casing 1 is provided with a hollow boss 32, and an arched strap 33, the strap is disposed directly above the boss 32. Mounted in and guided by the boss and the strap 32 and 33 is a bolt 34, one edge of which is provided with notches or depressions 35 and 36. The opposite edge of the bolt 34 is provided with a lug 37 and an additional lug 38, which is curved. The cover (not shown) of the casing 1 is designed to have a key hole opening (not shown), and the wall of the casing 1 opposite the cover is provided with a projection 39, over which the barrel of the key 40 telescopes. Consequently when the key is turned, the tongue of the key will sweep against the curved lug until it engages the lug 37, in which case the upper end of the bolt 34 will be moved out of the path of the arm 12^a, so that the shaft 7 may be operated or turned, so as to effect the reciprocating movement of the bar 3. A turning of the key in the opposite direction will lift the bolt 34 so that its upper end will be moved in the path of said arm 12. A spring 41 is secured at 42 to the hollow boss and strap 33. This spring is bent to provide a looped or arched part 43, to engage either one of the notches or recesses 35 and 36, so as to hold the bolt 34 in raised or lowered positions.

The operation of the lock is apparent. Turning the shaft 7 will operate to draw the locking bar 3 backward against the pressure of the spring 13 and to release this bar from its keeper. The backward movement of the bar 3 operates (through the medium of the pin 21 and slots 20) to rock the bell-crank levers 17 and 18 whose link connections with the locking bars 4 in turn operate to rock the bars 4 on their pivots 23 and withdraw said bars 4 from their keepers.

The invention having been set forth, what is claimed as new and useful is:—

1. A lock comprising apertures near its upper and lower ends and at an intermediate point, a locking bar adapted for reciprocating movement through the intermediate aperture, the locking bar having a wedge-shaped nose, a casing inclosing and supporting said bar, bell-crank levers pivotally supported on the plate and having over-lapping arms provided with elongated slots at the overlapping point, a pin secured to the locking bar and engaging the slots of the bell-crank levers, Z-shaped locking bars pivotally connected to the plate and having wedge-shaped noses, said noses being movable through the end apertures of the plate, links connecting the Z-shaped bars to the bell-crank levers, and means for reciprocating the locking bar, whereby the locking bars and Z-shaped bars may be moved simultaneously.

2. A lock comprising apertures near its upper and lower ends and at an intermediate point, a locking bar adapted for reciprocating movement through the intermediate aperture, the locking bar having a wedge-shaped nose, a casing inclosing and supporting said bar, bell-crank levers pivotally supported on the plate and having over-lapping arms provided with elongated slots at the overlapping point, a pin secured to the locking bar and engaging the slots of the bell-crank levers, Z-shaped locking bars pivotally connected to the plate and having wedge-shaped noses, said noses being movable through the end apertures of the plate, links connecting the Z-shaped bars to the bell-crank levers, and means for reciprocating the locking bar, whereby the locking bars and Z-shaped bars may be moved simultaneously, and means comprising a spring retaining key actuated bolt for locking the first means.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM S. WIGHTMAN.

Witnesses:
A. JAMES STOTT,
ROBERT J. TUOHY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."