

Dec. 11, 1923.

1,477,181

A. MONTI

LOCK

Filed May 27, 1922

2 Sheets-Sheet 1

Fig. 1.

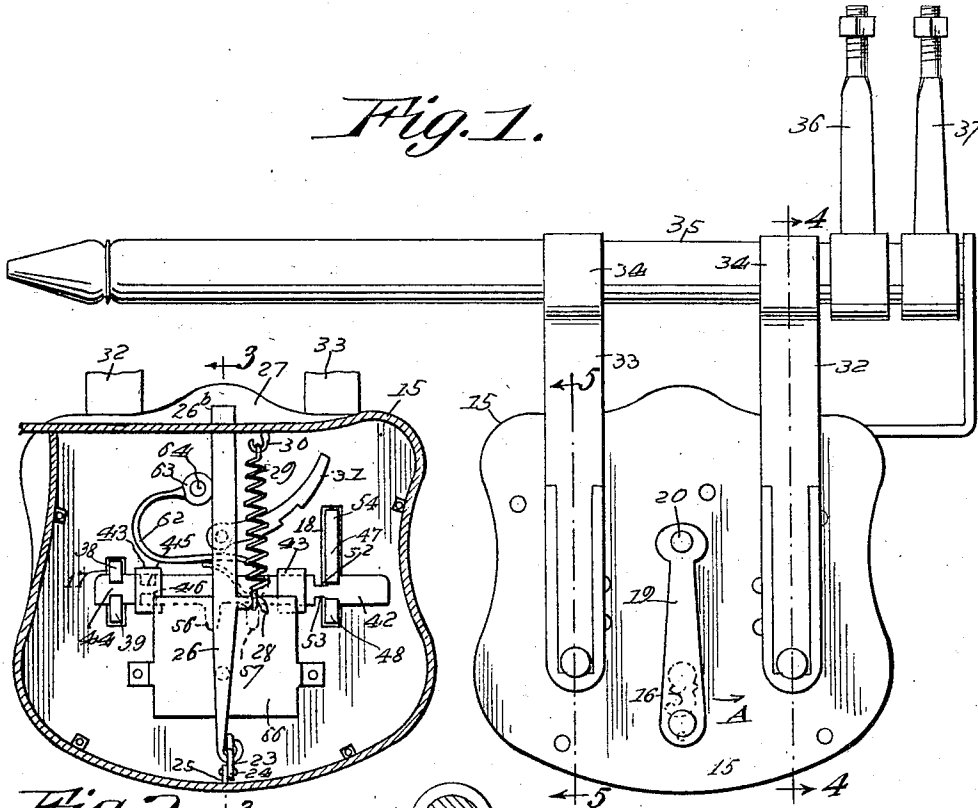


Fig. 2. $\leftarrow +3$

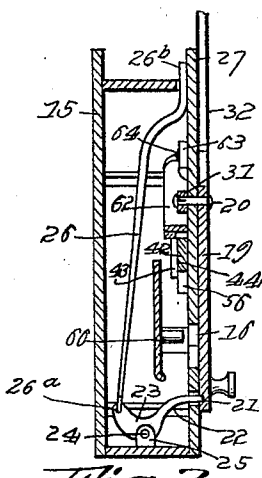


Fig. 3.

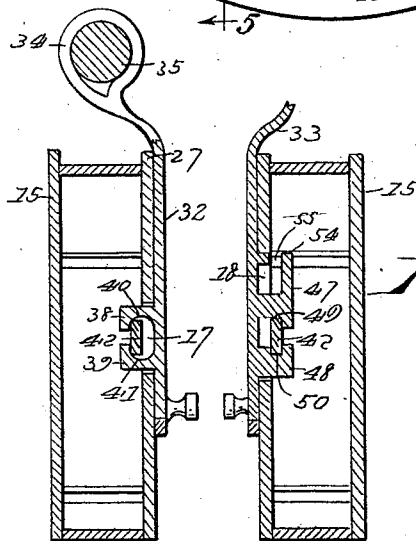


Fig. 4.

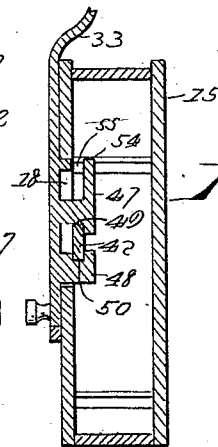


Fig. 5.

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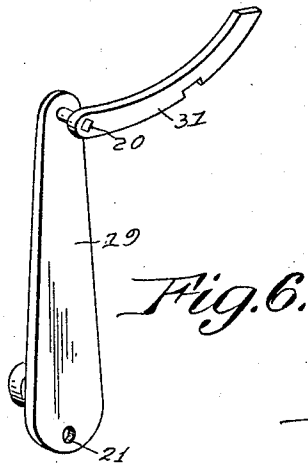
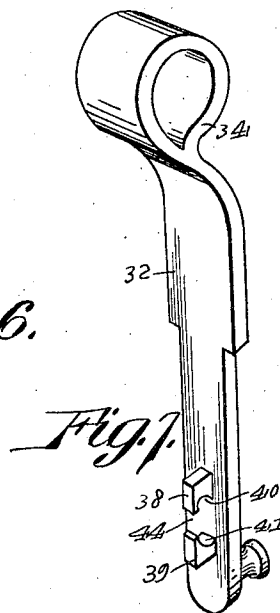
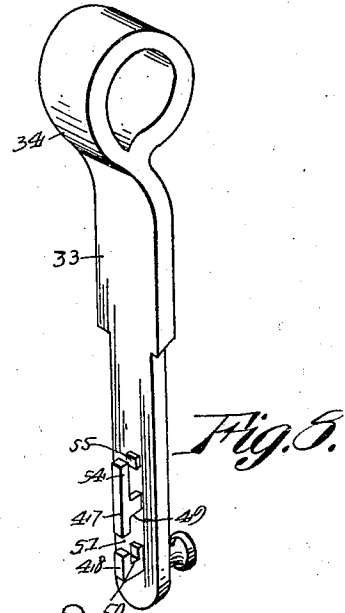
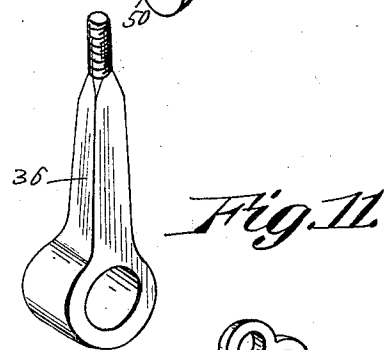
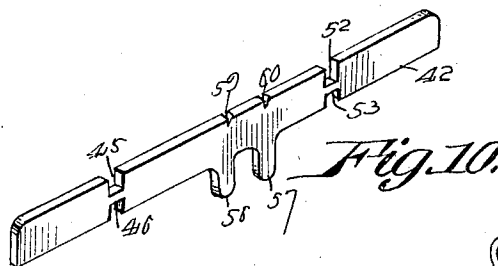
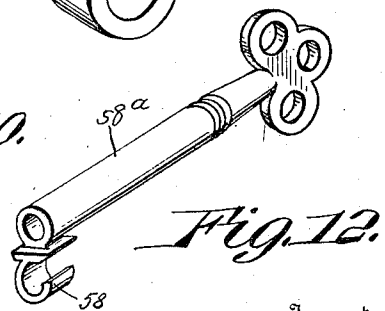
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

ANELLO MONTI, OF MERIDEN, CONNECTICUT.

LOCK.

Application filed May 27, 1922. Serial No. 564,026.

To all whom it may concern:

Be it known that I, ANELLO MONTI, a citizen of the United States, and a resident of Meriden, county of New Haven, and State of Connecticut, have invented certain new and useful Improvements in Locks, of which the following is a specification.

This invention relates to locks and latches, and more particularly to a lock intended to be operated by a key, associated with other mechanical means.

One object of the invention is to provide novel mechanism requiring successive operations to effect the release of the connections between the lock and the closure to be secured.

A further object is to produce a lock of this character, the parts of which must be successively manipulated to effect the release of the locking mechanism.

A further object is to provide a lock which will be simple and inexpensive, composed of comparatively few parts and which will be very efficient, reliable, and durable in use.

With these and other objects in view, there has been illustrated on the accompanying drawings one form in which the invention may be conveniently embodied in practice.

Fig. 1 illustrates a view in elevation of the exterior mechanism of the lock and the securing elements associated with it.

Fig. 2 is a sectional view of the lock casing showing the mechanism located therein.

Fig. 3 is a sectional view taken along the line 3—3 of Fig. 2, looking in the direction of the arrows.

Fig. 4 is a sectional view taken along the line 4—4 of Fig. 1, looking in the direction of the arrows.

Fig. 5 is a sectional view taken along the line 5—5 of Fig. 1, looking in the direction of the arrows.

Fig. 6 is a perspective view of the key hole guard and tumbler associated therewith.

Fig. 7 is a perspective view of one of the locking arms.

Fig. 8 is a perspective view of the opposite locking arm.

Fig. 9 is a perspective view of one of the springs used in the device.

Fig. 10 is a perspective view of the locking bar.

Fig. 11 is a perspective view of an eye-bolt for connecting the lock to the closure.

Fig. 12 is a perspective view of the key employed for operating the lock.

Referring now to the drawings in which like reference numerals denote corresponding parts throughout the several views, the numeral 15 denotes a lock casing, the shape of which may be varied to suit different requirements. The front plate of the casing 15 is provided with a keyhole 16 and also has apertures 17 and 18. As clearly shown in Fig. 3, a keyhole guard 19, which is rigidly secured to a pivot pin 20, is provided with a recess 21 in its rear bottom portion, forming a seat to receive the nose 22 of a latch 23 which, in the present embodiment of the invention, is mounted on a pivot 24 carried by a stud 25 projecting from the lock casing 15. A push bar 26 is connected to the latch 23 at 26^a, and has its top portion 26^b projecting through the top of the lock casing, as shown in Figs. 2 and 3. The top portion 26^b is preferably hidden by a flange 27 formed as a continuation of the face plate of the casing.

The push bar 26 has a side lug 28 engaged by a spiral tension spring 29, which spring is anchored to a hook 30 on the top of the lock casing. The spring 29 exerts a continuous pull on the push bar 26 to hold the parts in the position shown in Fig. 3. As will be evident, when the push bar 26 is forced downwardly, the keyhole guard 19 may be moved to one side in the direction of the arrow A (Fig. 1).

Rigidly mounted on the inner end of the pivot 20 is a locking bar or tumbler 31, and it will be evident that when the keyhole guard is rocked, the tumbler 31 will also rotate an equal amount, as will be hereinafter more fully explained.

Provision is also made of a pair of locking arms 32 and 33, herein shown as being provided with eye members 34 adapted to slidably fit over a locking bar 35. The locking bar 35 will preferably be secured to the door or other guarded structure by eye-bolts 36 and 37, while the lock will preferably be secured to the door frame or other stationary support. It will be obvious,

however, that the position of these parts may be reversed within the scope of the invention. In this case, the lock would be mounted on the door frame, while the locking bar would be secured to the door. In any event, the locking arms 32 and 33 will be pivotally mounted on the bar 35, and when they are released from the lock casing and swung free thereof, the locking bar and associated parts may be moved relative to the lock casing into open position.

As most clearly shown in Figs. 4 and 7, the locking arm 32 is provided with a pair of oppositely faced lugs 38 and 39 projecting from its inner face. The lugs 38 and 39 are recessed as at 40 and 41 respectively, to form seats to receive a locking bolt 42, which is slidable in guides 43 secured to the inner side of the face plate of the lock. The faces of the lugs 38 and 39 are separated by a clearance space 44. The locking bolt has opposed notches 45 and 46 adapted to permit the lugs 38 and 39 to pass therethrough after they are brought into alinement, and thus to allow the locking arm 32 to be swung outwardly to clear the lock casing.

The locking arm 33 is provided with lugs 47 and 48 having opposed recesses 49 and 50 respectively, and the opposed faces of these lugs are spaced apart to form a clearance 51 which will permit the locking arm 33 to be swung outwardly on its pivot when notches 52 and 53 of the locking bolt 42 are opposite the clearance space 51. The notches 45, 46, 52, and 53 of the locking bolt 42 are so arranged that when the locking bolt is in position to free the locking arm 32, it will not be in position to release the other locking arm 33, and vice versa. Consequently, the locking bolt will have to be operated in such a manner as to bring it into position to release the locking arms 32 and 33 successively.

The lug 47 of the locking arm 33 has an upward extension 54 arranged in spaced relation to a projection 55 on the inner face of the locking arm 33, the clearance between the parts 54 and 55 being sufficient to receive the tumbler 31 which will be located therein when the keyhole guard 19 is swung to an open position. By means of this arrangement, the tumbler 31 will prevent the release of the locking arm 33 until the keyhole guard 19 again is moved into the position opposite the keyhole shown in Fig. 1.

Depending from the locking bolt 42 is a pair of lugs 56 and 57, which are in spaced relation to each other and are adapted to be engaged by the wing 58 of a key 58^a, for sliding the locking bar in opposite directions. The locking bar also has a pair of notches 59 and 60 on its upper edge above the lugs 56 and 57. These notches 59 and 60 are adapted to be engaged by the shoulder

61 formed by splitting the end of a spring dog 62, the shape of which is most clearly shown in Fig. 9. The dog 62 is provided on one end with an eye member 63 to receive a rivet or other fastening 64 by means of which the dog is rigidly anchored to the lock casing. The free end of the dog 62 is provided with a reversely curved section 65, shaped to form a cam which is adapted to be moved upwardly against the spring action inherent in the dog by means of the key 58^a. As will be clear, the shoulder 61 normally engages in one of the notches 59 or 60 in the upper edge of the locking bolt 42, and is adapted to be lifted out of engagement with said notch by turning the key 58^a whenever it is desired to free the locking bolt therefrom.

In order to limit the inward movement of the key 58^a, a guard plate 66 is secured to the inner surface of the front face of the lock.

In operation, assuming that the door is closed and that the parts are in locked position, to unlock the door it will first be necessary to push down with the key handle on the top of the push bar 26, thus releasing the nose 22 of the latch 23 from the keyhole guard 19. The keyhole guard 19 will next be rotated in the direction of the arrow (Fig. 1) to uncover the keyhole. When this movement occurs, the tumbler 31 will be swung into locking position between the extension 54 and the projection 55. The key 58^a will then be inserted in the keyhole and turned to the right until the notches 45 and 46 come into registry with the space 44 between the lugs 40 and 41. The locking arm 32 may then be swung outwardly free from the lock casing. The key will next be turned to the left until the shoulder 61 engages one of the notches 59 or 60, which will be evidenced by a clicking sound, at which time the notches or recesses 52 and 53 will be in registry with the space 51 between the lugs 47 and 48. The key should then be removed and the keyhole guard 19 returned to its normal closed position, causing the tumbler 31 to move out from engagement with the extension 54 of the lug 47, after which the locking arm 33 may be readily swung free of the lock casing, permitting the door or other closure to be readily opened by grasping the end of the bolt 35. When it is desired to lock the door, the steps just described must be reversed.

While there has been disclosed in this specification one form in which the invention may be embodied, it is to be understood that this form is shown for the purpose of illustration only, and that the invention is not to be limited to the specific disclosure but may be modified and embodied in various other forms without departing from its spirit. In short, the invention includes all

the modifications and embodiments coming within the scope of the following claims.

Having thus fully described the invention, what is claimed as new, and for which it is desired to secure Letters Patent, is:

1. In a lock, a bolt, a casing, a sliding lock bar in said casing, an arm pivoted on said bolt and having means adapted to be detachably engaged by said lock bar, a movable keyhole guard on the outside of said casing, a detent member rigidly secured to said keyhole guard for holding said arm, said detent member being adapted to be disengaged from said arm when said keyhole guard is moved into normal closed position.

2. In a lock, a bolt, a casing, a sliding lock bar in said casing, an arm pivoted on said bolt, said arm having means adapted to be engaged by said sliding bar and disengaged therefrom by sliding the bar to a

predetermined position, a keyhole guard on the outside of said casing, a detent member rigidly secured to said keyhole guard for holding said arm, said detent member being adapted to be disengaged from said arm when said keyhole guard is moved into normal closed position.

3. In a device for locking a door to a door frame, a casing element and a swinging locking element, one of said elements adapted to be secured to said door and the other of said elements being adapted to be secured to said frame, a keyhole in said casing element, a keyhole guard, and means in said casing element to prevent the disengagement of said elements except when said keyhole guard is in closed position.

In testimony whereof, I have affixed my signature to this specification.

ANELLO MONTI.