

P. VARGA.

LOCK.

APPLICATION FILED AUG. 5, 1912.

1,050,579.

Patented Jan. 14, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

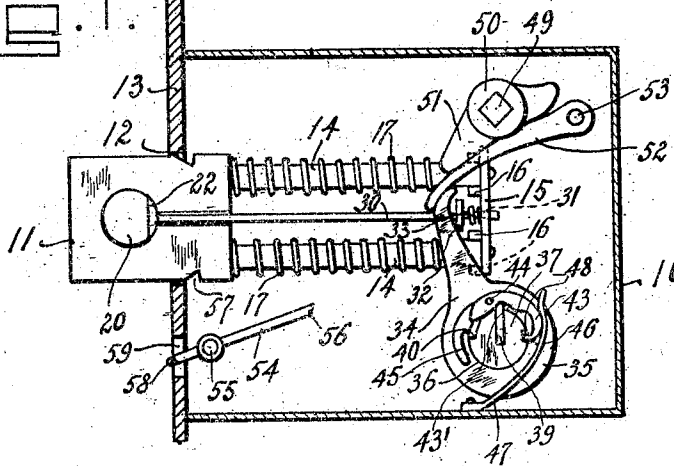


Fig. 2.

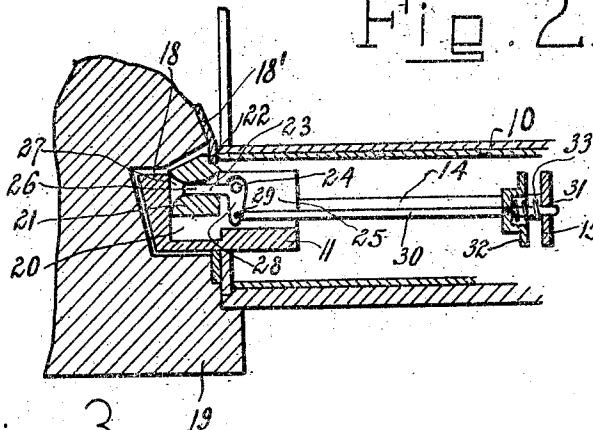


Fig. 3.

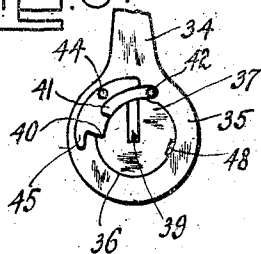
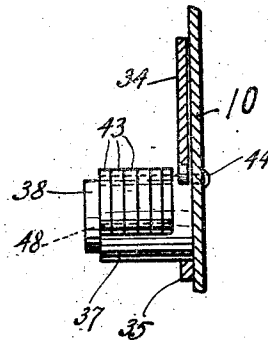


Fig. 4.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 5.

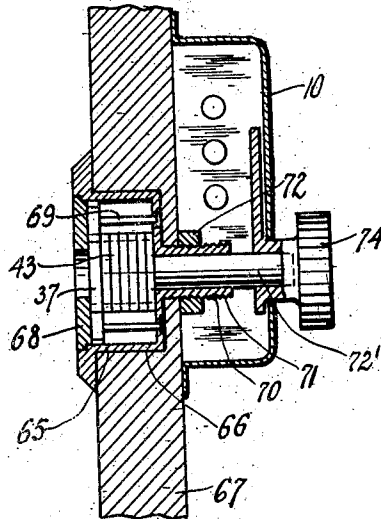
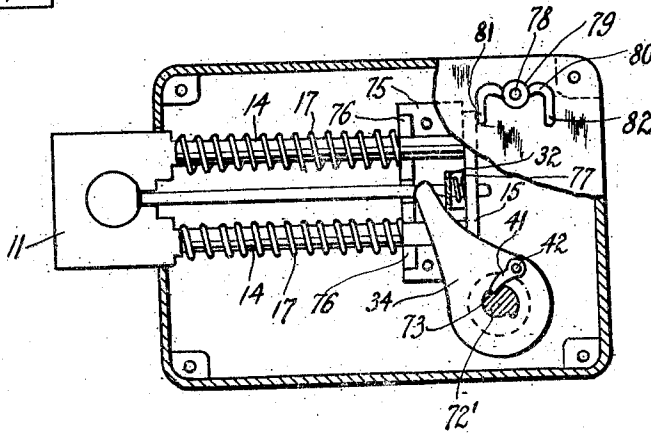


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

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LOCK.

1,050,579.

Specification of Letters Patent.

Patented Jan. 14, 1913.

Application filed August 5, 1912 Serial No. 713,347.

To all whom it may concern:

Be it known that I, PAUL VARGA, a subject of the King of Hungary, and resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Locks, of which the following is a specification.

The present invention relates to improvements in locks of the type embodying a spring projected locking bolt and pivoted tumblers as elements.

One of the objects of the invention is to provide a guard, forming part of the locking bolt, which prevents the bolt from being forced back from the outer side of the door by the insertion of a thin bladed instrument between the door and the jamb.

A further object of the invention is to provide a guard of the character specified which does not necessitate material changes in the construction of the lock.

A still further object of the invention is to provide a mechanism which renders the lock very secure and adapts the same for an exposure of attempts to unlock the lock without a proper key.

With these and other objects in view, which will more fully appear as the nature of the invention is better understood, the same consists in the combination, arrangement and construction of parts hereinafter fully described, pointed out in the appended claims and illustrated in the accompanying drawings, it being understood that many changes may be made in the size and proportion of the several parts and minor details of construction within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

Two of the many possible embodiments of the invention are illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of a lock constructed in accordance with the present invention, the cover plate being removed to disclose the lock mechanism; Fig. 2 illustrates a door having a lock constructed in accordance with the present invention thereon, only the locking bolt and the parts connected therewith being shown; Fig. 3 is a side elevation of a detail of construction; Fig. 4 is a rear elevation of another detail of construction; Fig. 5 is a horizontal section of a modified device; and Fig. 6 is a

side elevation of this modification, certain parts being removed to more clearly show the interior construction.

Referring now more particularly to Figs. 1 to 4, inclusive, the numeral 10 represents a lock-case of rectangular box-like form, which is sufficiently elongated for the reception and support of the operative parts of the lock. This lock case incloses a locking mechanism, the locking bolt 11 of which protrudes through a hole 12 in the face plate 13. The locking bolt is provided within the casing 10 with two rearwardly projecting extensions 14, to the rear ends of which is attached a plate 15. This plate abuts against guides or stops 16, 16, which are fixedly attached to or made integral with the lock-case. Against these stops and against the locking bolt 11 bear springs 17, 17, which are coiled upon the extensions 14, 14 and serve to project the bolt into the socket 18 and keeper 18' upon the door jamb 19. In the locking bolt 11 is provided a transverse, preferably, cylindrical recess 20, into which fits snugly a slidable cylindrical guard 21, which is provided with a shoulder 22, adapted to engage the keeper 18' in a manner and for a purpose hereinafter to be described. The guard 21 is actuated by a bellcrank lever 23, which is fulcrumed at 24 within a slot 25 in the locking bolt 11 to the latter, its arm 26 being seated in an aperture 27 in the guard 21. The other arm 28 of the bellcrank lever 23 is pivoted at 29 to an actuating rod 30, extending rearwardly toward the plate 15 and projecting through an aperture 31 in the plate 15 beyond the same. A recessed plate member 32 is fixedly attached to the actuating rod 30 in front of the stops 16, the recesses in said plate serving as a seat for a spring 33 which is coiled upon the rod 30, and bears against the plate 15.

The locking bolt is withdrawn from its projected or locking position by means of a cam 34, the hub 35 of which is provided with a substantially circular aperture 36, in which is seated a cylindrical key block 37, the outer reduced portion 38 of which is rotatably mounted within an opening in the cover of the lock-case. The key block is provided with a slot 39 for the reception of a flat key of the well known form. It is furthermore provided with a shoulder 40, which is adapted to bear, as the key block is being rotated, against a tongue 41, which

is pivoted at 42 to the cam. A plurality of tumblers 43, 43 are oscillatably arranged upon a pin 44, which is riveted or otherwise attached to the lock-case 10, and extends through an arc-shaped slot 45 in the cam 34. It will be observed that, by reason of this arc-shaped slot, an oscillating movement of the cam 34 will be permitted around the axis of the key block 37. The somewhat inwardly bent ends 46 of the tumblers 43 are kept by means of springs 47 in engagement with a longitudinal peripheral groove 48 in the key block 37.

The locking bolt can be retracted from the inside by means of a knob, upon the squared spindle 49 of which is fixedly mounted the hub 50 of an oscillating lever 51, both arms of which bear against a somewhat curved arm 52, which is fulcrumed at 53 to the lock case, its free end engaging the cam 34, the latter resting normally against the recessed plate 32 above mentioned.

To retain the locking bolt in its retracted position, a stop 54 is provided, which is pivoted at 55 to the lock-case, its pointed end 56 being adapted to be seated in a notch 57 in the locking bolt, and its other end 58 projecting through an aperture 59 in the face plate 13. In depressing the free end 58 of the stop 54, its end 56 will be seated in the notch 57 and prevent thereby the projection of the locking bolt into the keeper. By forcing the arm 58 upward, the end 56 of the lever is disengaged from the notch 57, rendering thereby the springs 17 operative.

The operation of this device is as follows: Assuming that the parts are in the positions shown in Figs. 1 and 2 of the drawings, that is to say that the locking bolt is projected into the keeper 18', it will be observed that the spring 33 upon the actuating rod 30 forces by means of the bellcrank lever 23 the shoulder 22 of the guard 21 into engagement with the keeper 18'. For this reason, if a thin bladed instrument is inserted from outside between the jamb and the door, the locking bolt cannot be withdrawn from its socket.

The locking bolt can be withdrawn from inside by turning the knob in either direction, whereby one of the arms of the oscillating lever 51 will be depressed, as the case may be, forcing the pivoted arm 52 downward, and causing thus the cam 34 to move toward the rear of the lock. This cam, bearing against the recessed plate 32, will shift the same toward the plate 15, and cause thereby a disengagement of the shoulder 22 of the cylindrical guard 21 from the keeper 18'. The cylindrical guard 21 moves into its recess 20 and, as soon as the recessed plate 32 abuts against the plate 15 upon the extension 14 of the locking bolt

11, a further movement of the cam 34 will cause the locking bolt 11 to be withdrawn from the keeper and its socket in the door jamb. It should be noted that during this operating the key block and the parts connected therewith are kept stationary.

The locking bolt is withdrawn by means of a key in the following manner: The key is inserted into the key slot 39 and given a turning movement, whereby it will come into contact with the inclined faces 43' of the tumblers 43, causing thereby a swinging movement of the tumblers around the pin 44 and a disengagement of their ends from the peripheral groove 48 in the key block. As soon as this disengagement occurs, the cylinder is permitted to rotate freely around its axis, and upon its further movement, the shoulder 40 will engage the tongue 41 and cause thereby a swinging movement of the cam 34, which will then act in the same manner as when actuated by the door knob.

A modification of the invention is illustrated in Figs. 5 and 6, which differs from the one hereinbefore described in that it is applied to a cylinder lock. The key cylinder is denoted by the numeral 65, seated in a cylindrical recess 66 of a door 67, and provided with a cover 68, which is held upon the cylinder by screws 69. The inner end of the key cylinder is reduced in diameter, as clearly shown at 70. This recessed portion is provided with screw threads 71, meshing with those of a nut 72, bearing against the inner side of the door. The cylindrical key block 37 is arranged within the key cylinder and so are also the tumblers 43. The block is provided with an extension 72', extending into the lock case 10 and provided with a shoulder 73, adapted to bear, as the block is being rotated, against the tongue 41, which is pivoted to the cam 34. This cam is attached to a milled knob 74, arranged upon the outer side of the lock case. By means of this knob, the locking bolt may be retracted from inside. The plate 15 upon the extensions 14 of the locking bolt bears against a stop plate 75, which is attached to the lock case and provided upon its front ends with lugs 76, against which the springs 17 upon the extensions 14 bear. The recessed plate 32 upon the actuating rod 30 is slidably arranged in a slot 77 in the stop plate 75. Otherwise the construction of the lock is the same as described in connection with Figs. 1 to 4, inclusive. Instead of using, however, the stop 54 for holding the lock in its retracted position, a stop is made use of, which consists of a pin 78, attached to a knob 79, the latter being arranged upon the outer side of the casing. The pin 78 projects through a slot 80 into the lock case and, when brought into the forward end 81 of the slot 80, it will prevent the retraction of the locking bolt by means of a key

from outside. When the bolt is retracted and the pin is brought into the rear end 82 of the slot 80, it will prevent the locking bolt from projecting into the keeper upon the door jamb.

What I claim is:—

1. In a lock, the combination with a casing, of a spring projected locking bolt therein having a transverse recess and rearwardly projecting extensions connected at their rear ends by a plate, a guard block slidably arranged in said recess having a shoulder adapted to engage the keeper upon the door jamb, an actuating rod connected with said guard provided with an enlargement in front of said plate, a spring for projecting said guard block from said recess into engagement with the keeper, and means adapted to engage said enlargement for disengaging said guard block from said keeper and

forcing upon the disengagement of the same said enlargement into contact with said plate to retract said locking bolt.

2. In a lock mechanism, the combination with a casing, of a spring projected locking bolt therein, a key block rotatably arranged in said casing provided with a peripheral longitudinal groove and with a shoulder, a cam rotatably mounted upon said key block adapted to engage said locking bolt, tumblers in engagement with said peripheral groove, and a tongue pivoted to said cam capable of being engaged by said shoulder.

Signed at New York, in the county of New York and State of New York, this 3d day of July, A. D. 1912.

PAUL VARGA.

Witnesses:

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S. BIRNBAUM.