A. LASKI.

LOCK.

APPLICATION FILED MAY 10, 1920.

1,384,392. Patented July 12, 1921.

Fig. 1.

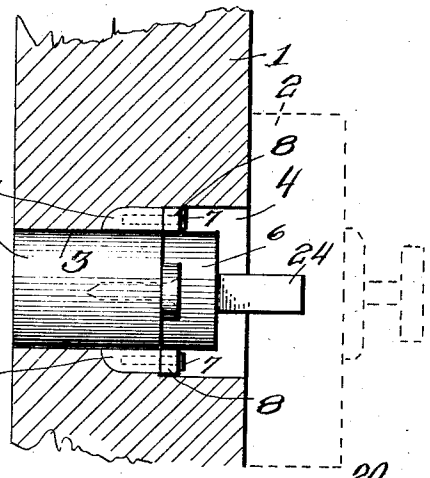
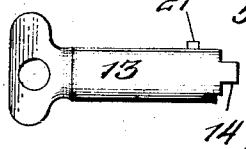


Fig. 9.



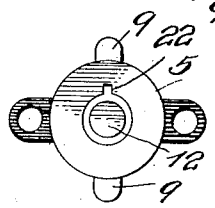


Fig. 8

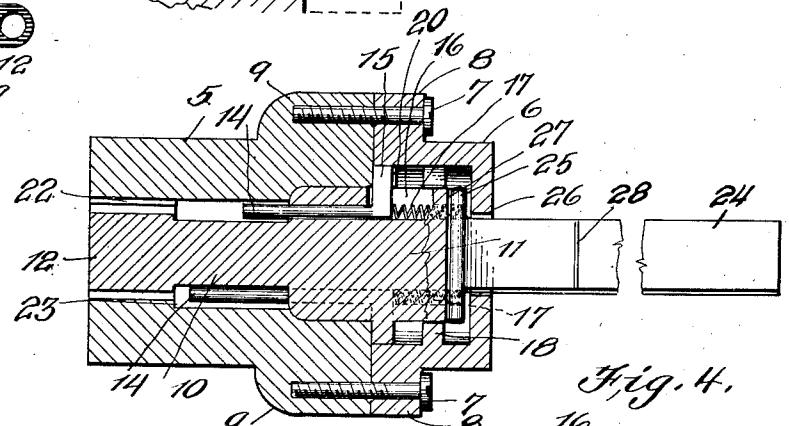


Fig. 2.

Fig. 3.

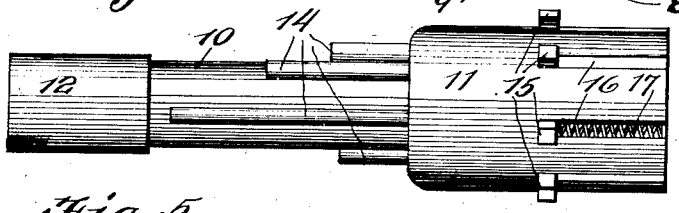


Fig. 4.

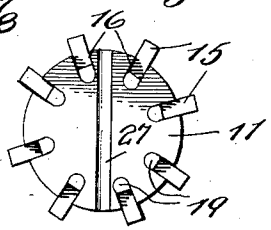


Fig. 5.

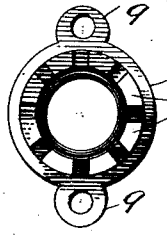
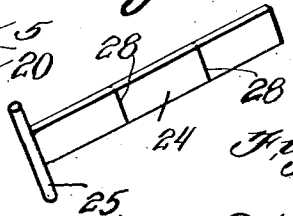


Fig. 7.



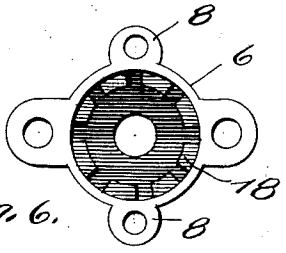


Fig. 6.

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LOCK.

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To all whom it may concern:

Be it known that I, ANTONY LASKI, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Locks, of which the following is a specification.

My invention is an improvement in locks, and has for its object to provide a cylinder lock for use with rim or mortise locks, for controlling said locks from the opposite side of the door to that upon which the rim or mortise lock is placed, as for instance, in locker doors where the rim or mortise lock is arranged on the inner face of the door, and the auxiliary lock being embedded in the door and operable from outside the door and having means for controlling the rim or mortise lock.

In the drawings,

Figure 1 is a vertical section through a portion of a door provided with the improved lock.

Fig. 2 is a vertical section through the lock,

Fig. 3 is a plan view of the tumbler supporting mechanism,

Fig. 4 is an end view,

Fig. 5 is an end view of the lock casing with the inner section removed,

Fig. 6 is a similar view of the outer section,

Fig. 7 is a perspective view of the auxiliary key,

Fig. 8 is an end view of the lock looking at the key-hole,

Fig. 9 is a plan view of the key.

The present embodiment of the invention is shown in connection with a door 1 having arranged upon the inner face thereof a rim or mortise lock indicated at 2. The lock is arranged within an opening 3 in the door, and the said opening is counterbored or enlarged at its inner end as indicated at 4.

The improved lock comprises a tubular casing 5 having at one end a removable section 6 which is held to the section 5 or body of the casing by means of screws 7, the said screws being passed through radial lugs 8 on the section 6 to engage sockets 9 on the body 5.

A tumbler support comprising a body portion 10 having at each end a head 11 and 12 respectively, is arranged within the tubular casing, the said casing having a bore of somewhat greater diameter than that of the head 12, and of less diameter than that of the head 11, the said bore being reamed at the end adjacent to the section 6 to receive the head 11 as shown in Fig. 2.

The tumbler support is rotatable in the head, and the head 12 is adapted to engage within the barrel of a key indicated at 13 in Fig. 9. This key as shown comprises the barrel and the handle, and the end of the barrel remote from the handle is notched as indicated at 14, a series of notches being provided of varying depths. In the present instance, seven notches are provided, leaving at the end of the key eight shoulders, and these shoulders are adapted to engage the tumblers indicated at 14 to line up the tumblers, so that the tumbler support may be rotated in the lock casing.

These tumblers 14 of which there are eight in the present instance are mounted to slide in openings in the head 11, the said openings having their axes parallel with the axis of the tumbler support. Each tumbler has at the end remote from the head 12 an angular radial extension 15, and these extensions extend outwardly through longitudinally extending slots 16 in the head 11, the slots being at that end of the head remote from the head 12.

A coil spring 17 is arranged between each tumbler and that end of the opening in which it moves remote from the head 12, and the springs act normally to force the tumbler toward the head 12. These tumblers are of unequal length as shown in Fig. 3, and when all of the radial lugs 15 are at the ends of the slots adjacent to the head 12 of the tumbler support, the ends of the tumblers adjacent to the head 12 will be in position such that when the key is properly introduced, that is, when the key is introduced in the proper position with respect to the lock, the ends of the tumblers will engage the bottoms of the notches, without the necessity to move any of the tumblers longitudinally. That is, the longest tumbler will engage the bottom of the deepest notch, and when the key is pressed inwardly, all of the tumblers will be simultaneously moved toward the section 6 of the casing.

This section 6 of the casing has an internal rib 18, which fits smoothly about the head 11, and is notched radially as indicated at 19, to receive the lugs 15 of the tumblers,

when the said lugs are pushed too far inwardly. The body or section 5 of the casing has longitudinally extending lugs 20 which are spaced to correspond with the spacing of the lugs 15 of the tumblers, and when the parts are in normal position the lugs 15 engage between these lugs, thus preventing turning of the tumbler support. When however, all of the tumblers are moved simultaneously by the key toward the section 6, the lugs 15 will be moved out from between the lugs 20 of the section 5, and since the outer ends of these lugs 20 are spaced apart from the rib 18 far enough to receive lugs 15 between them, the tumbler support may rotate freely, the lugs 15 moving in the space between the lugs 20 the rib 18.

The key has a radial lug 21 on the barrel, and this lug is adapted to engage and pass through a notch or groove 22 in the bore of the section 5 at the outer end thereof. At a point such that when the lug 21 registers therewith, the lugs 15 will be between the lugs 20 and the rib 18, the bore of the section 5 has an annular groove 23 for receiving the lug 21 to permit the key to rotate. Until this lug 21 registers with this annular groove 23, the key cannot rotate.

Thus with the improved lock, only that key whose end is notched at the proper depths to fit the tumblers and to simultaneously move them to bring the lugs 16 into registration with the space between the lugs 20 and the rib 18, can operate the lock. If any tumbler is pushed too far the lug 15 thereof will engage in the rib 18. If the tumbler is not pushed far enough the lug will not be moved out of engagement with the lugs 20.

The lug 21 on the key is a guide to the proper insertion of the key in the lock. When the lug 21 registers with the groove 22, the notches of the key will be in proper position, with respect to the tumblers. In order to permit the tumbler support 12 to control the lock on the inner side of the door, a key plate 24 is provided, the said key plate being adapted to engage at one end within the barrel of the lock to control said lock. This key plate as shown more particularly in Fig. 7, has a cross head 25 at one end.

The key plate passes through a circular opening 26 in the section 6 of the lock casing, and the head extends transversely of the opening 26 to prevent disengagement of the key plate. The end of the tumbler support at the head 11 is diametrically grooved as shown at 27, to receive this head, and to constrain the key plate to turn with the head.

In use, the rim or mortise lock is arranged on the inner side of the locker door, and within the thickness of the door the auxiliary lock is arranged, with the key plate 24 engaging within the barrel of the lock of the Yale type, and with that end of the casing 5—6 remote from the key plate flush or substantially flush with the outer face of the door.

Preferably the key plate 24 is reduced transversely as indicated at 28, at intervals, to permit portions thereof to be broken off, to provide for different thicknesses of doors. When the door is very thin, perhaps several sections may be broken off the key plate, while when the door is thick, perhaps the entire length of the plate might be used.

I claim:

1. An auxiliary lock for controlling a rim or mortise locks from the opposite side of the door, comprising a tubular casing, a tumbler support mounted to rotate in the casing, tumblers movable longitudinally of the support, said tumblers having at their inner ends radially extending lugs, the tumbler support having slots to receive the lugs, springs normally pressing the tumblers outward, the lock casing having recesses for engagement by the lugs when they are in outermost position, and having other recesses for engagement by the lugs when the tumblers are pressed inwardly beyond a predetermined point, and having an annular groove intermediate the two sets of recesses, for permitting the lugs to rotate, said tumblers terminating at their outer ends at different distances from the end of the tumbler support, a key having a tubular barrel operating between the tumbler support and the casing and having notches of unequal depth for simultaneously engaging the tumblers, and for simultaneously moving them inward when the key is pressed inward, said key and the lock having indicating means for facilitating the proper insertion of the key, and a key plate extending from the inner end of the lock casing to engage the rim or mortise lock to turn the same and connected with the tumbler support to rotate therewith.

2. An auxiliary lock for controlling a rim or mortise locks from the opposite side of the door, comprising a tubular casing, a tumbler support mounted to rotate in the casing, tumblers movable longitudinally of the support, said tumblers having at their inner ends radially extending lugs, the tumbler support having slots to receive the lugs, springs normally pressing the tumblers outward, the lock casing having recesses for engagement by the lugs when they are in outermost position, and having other recesses for engagement by the lugs when the tumblers are pressed inwardly beyond a predetermined point, and having an annular groove intermediate the two sets of recesses, for permitting the lugs to rotate, said tumblers terminating at their outer ends at dif-

ferent distances from the end of the tumbler support, a key having a tubular barrel operating between the tumbler support and the casing and having notches of unequal depth for simultaneously engaging the tumblers, and for simultaneously moving them inward when the key is pressed inward, and a key plate for engaging within the rim or mortise lock connected with the tumbler to turn therewith.

3. A lock comprising a tubular casing, a tumbler support mounted to rotate in the casing, tumblers having guided movement longitudinally of the support and having at their inner ends radially extending lugs, the tumbler support being slotted to permit the passage of the lugs beyond the tumbler support, said casing having means for engaging the lugs to prevent angular movement thereof, except when said lugs are in a definite predetermined position with respect to the tumbler casing, and a key having means for engaging the tumblers and for moving them into such predetermined position when the key is moved inward.

4. A lock comprising a tubular casing, a bolt rotatable in the casing and having tumbler mechanism for preventing rotation of the bolt until such mechanism is released by a key, an extension plate having a cross head, the bolt having a diametrical groove at the end remote from that engaged by the key for receiving said cross head, the casing having a cap shaped section detachably connected therewith through which the extension plate extends, said detachable section holding the extension plate in the groove.

ANTONY LASKI.