

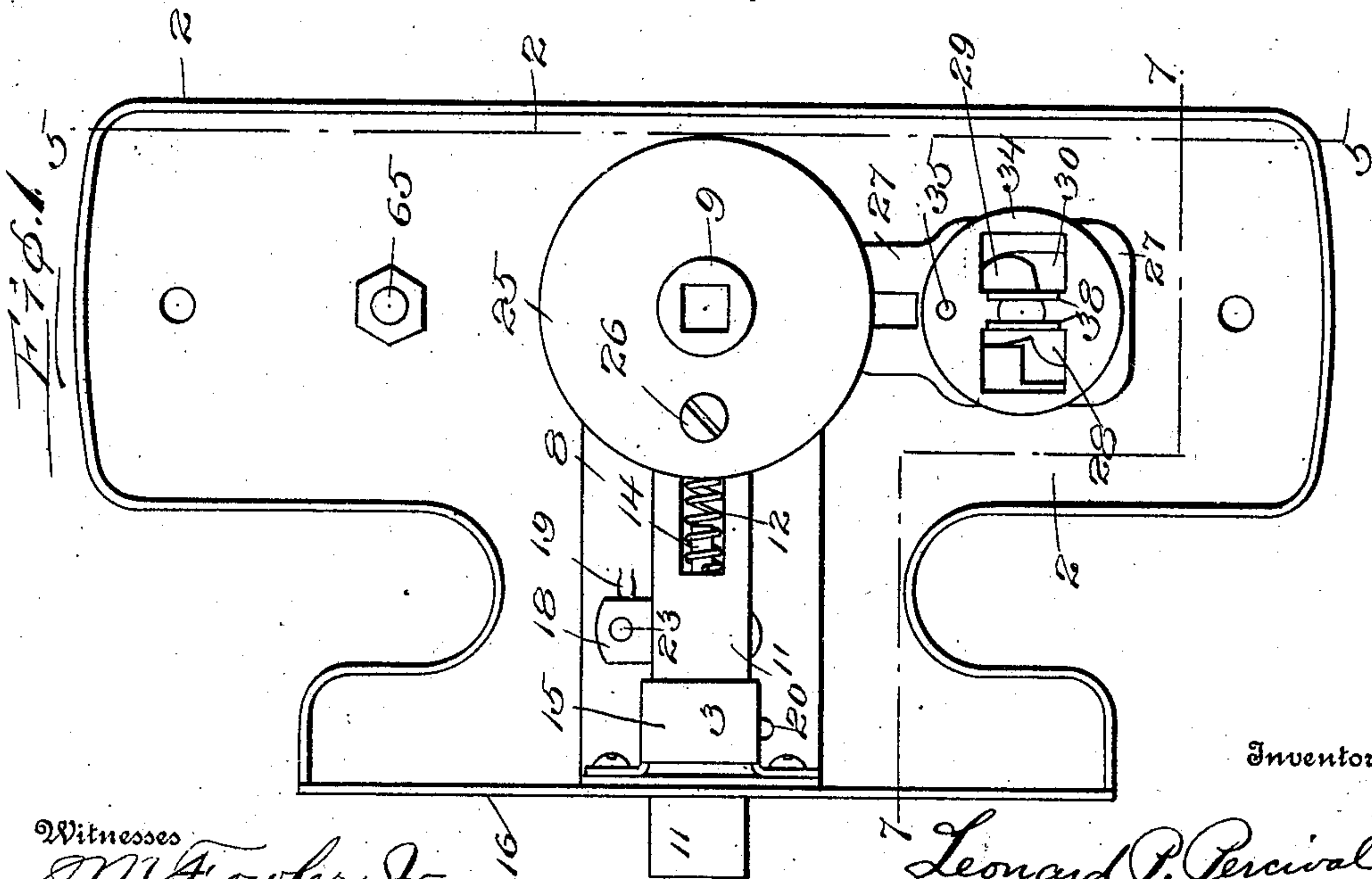
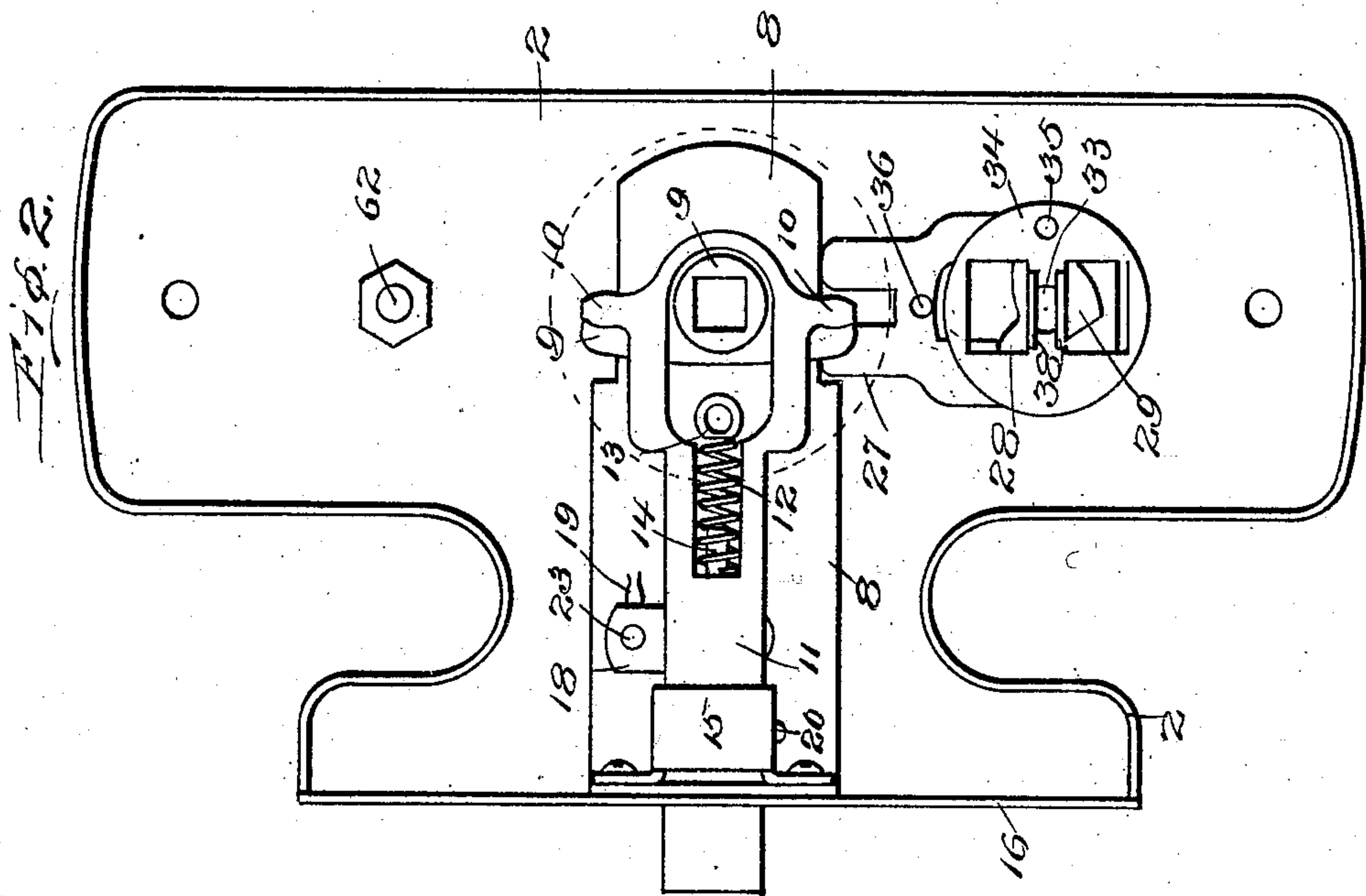
L. P. PERCIVAL.
LOCK.

APPLICATION FILED FEB. 16, 1909.

Patented Dec. 20, 1910.

2 SHEETS-SHEET 1.

978,931.



Inventor

Witnesses

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UNITED STATES PATENT OFFICE.

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LOCK.

978,931.

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To all whom it may concern:

Be it known that I, LEONARD P. PERCIVAL, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Locks; 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.

This invention relates to improvements in door locks or latches, and has particular relation to latches which may be made operable from either side of the door as desired or may be locked against operation from either side of the door.

The object in view is the provision of a latch that may be set to operate from either side of the door as an ordinary latch but may be changed whenever desired so as to be locked against movement from the outside of the door except upon the insertion and turning of a key and from the inside of the door upon the turning of a thumb member.

With these and other objects in view the invention comprises certain novel constructions, combinations and arrangement of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings: Figure 1 is an elevation showing the interior of the lock. Fig. 2 is an elevation showing the interior of a lock similar to the lock shown in Fig. 1, but having the guiding cap removed. Fig. 3 is a section through Fig. 1, approximately on line 5—5. Fig. 4 is a longitudinal vertical section through the lock shown in position on a door. Fig. 5 is a section through Fig. 1 on line 7—7. Fig. 6 is a perspective view of a sliding lock for locking the bolt against movement. Fig. 7 is a rear view of the lock shown in Fig. 6. Fig. 8 is an inverted perspective view of the cap shown in Fig. 1.

In constructing a lock according to the present invention it has been aimed to present one that may be used as an ordinary latch and converted into a night-latch, which necessitates the use of a key from the outside for operation, and the use of a thumb member from the inside. In addition to being converted by proper adjustment into a night-latch, the bolt may be locked posi-

tively in an outer position or locked positively in an inner position. Also in constructing the lock means are provided by which an auxiliary lock is used which is adapted to lock the bolt either in an outer or inner position according to the desire of the operator after the removal of the key.

In order that the invention may be more clearly understood an embodiment of the same is shown in the accompanying drawings in which—

1 indicates a door of any desired description to which a lock is secured. A pair of plates 2 and 3 are secured to the door 1 by means of bolts 4 and 5 and nuts 6 and 7. The nuts 6 and 7 have elongated threaded shanks and rounded heads that have the appearance of rivets and are adapted to receive bolts 4 and 5 which are arranged with their heads upon the inside of the door. In this way, the plates are removably secured in position, and yet firmly, and to all appearances as if they were riveted by large rivets.

Secured to plate 2 is a supporting plate or base 8 that is secured to plate 3 in any desired manner and is arranged with an aperture for accommodating the tubular extension of the operating arms 9. The operating arms 9 are designed to act upon lugs or extensions 10—10 in the usual manner of latches for withdrawing or moving inwardly bolt 11 against the action of spring 12. Spring 12 bears against a threaded lug 13 and is held in place by an extension 14 on bolt 11 and acts to give the bolt a continuous tendency to remain in an outer position as shown in Figs. 1 and 2. The bolt 11 passes through a guiding member 15 and through an aperture in the turned up edge 16 of plate 3. The bolt 11 is formed with a lug or extension 17 that spaces the bolt a short distance from base plate 8 at one end, while the lugs 10—10 space the opposite end from base plate 8. Pivotaly mounted in base plate 8 and beneath bolt 11 is an arm 18 which is adapted to rest against a lug 19 pressed up from base 8 when the bolt 11 is permitted to freely reciprocate, but when it is desired to lock the bolt against movement arm 18 is turned until the same is in the position at right angles to that shown in Fig. 5, and then will engage extension 17 and prevent any return movement of the bolt. Arm 18 when in this position rests against lug 20 that is preferably pressed out

from base 8. Arm 18 is connected with a thumb member 24 by means of pin 23.

Mounted so as to cover arms 9 and lugs 10—10 and surrounding parts is a cap 25 clearly shown in Fig. 1. Cap 25 has passed therethrough a screw 26 that engages the threaded lug 13 for positively holding the cap in position. The cap is notched out properly for bearing against plates 2 and 8 and permitting sufficient room for proper movement of bolt 11 and a locking arm 27.

The forked locking arm 27 is adapted to be reciprocated by a cam shaped lever 28 that has formed integral therewith the guiding member 29 which, together with cam shaped lever 28, operates in an opening 30 in arm 27, as clearly seen in Figs. 6 and 7. Rigidly connected with the cam shaped lever 28 is a bolt or extension 31 (Fig. 4) that is threaded at its outer end for receiving a thumb member 32 which in turn is held in place by a screw 33. By this means whenever it is desired to operate locking arm 27 from the inside of the door thumb member 32 is rotated which will rotate cam shaped lever 28. This will cause arm 27 to be reciprocated either for engaging one of the lugs 10—10 and locking bolt 11 against movement, or for disengaging arm 27 from said lugs. In addition to cam shaped lever 28 being secured to extension or bolt 31 a disk shaped member 34 is rigidly secured thereto and is provided with a lug or extension 35 that is adapted to snap into apertures 36 and 37 formed in locking arm 27. The thumb member 32 when forced down into place against plate 2 will hold the disk shaped member 34 against locking arm 27 for retaining the same in proper position and for causing the lug 35 which is preferably pressed from disk shaped member 34 to snap into openings 36 and 37. The disk shaped member 34 has the central part thereof pressed out for forming ears 38 which are adapted to receive the end of a key 39. The key 39 is arranged to pass through a rotatable cylinder 40 secured in a housing 41 that is rigidly secured to plate 3. By this construction and arrangement whenever a person having the proper key desires to either lock or unlock bolt 11, he may insert a key as 39 into cylinder 40, and after turning the same a partial revolution withdraw locking arm 27 from the position shown in Fig. 2 to the position shown in Fig. 1. The cylinder 40 is arranged to accommodate only a particular kind of key having grooves extending longitudinally thereof so that no ordinary key may be brought into engagement with ears 38.

Upon the insertion of key 39 through the cylinder the same passes between ears 38 and may freely operate arm 27. The operation of arm 27 is thus provided for by the use of a key from the outside of the door,

while the thumb member 32 and connected parts are used to operate the locking arm 27 from the inside of the door. When it is desired to use the latch as an ordinary latch or catch for the door, locking arm 27 is moved to the position shown in Fig. 1 and then bolt 11 may be withdrawn by turning either of knobs 42 or 43 which act through a squared bar 44 that engages the squared opening in member 9. If it is desired to positively lock bolt 11 against anyone from the outside operating the same either with a proper key or without, arm or lever 18 is turned until the end thereof engages the lug or extension 17. This arm is only operated by a thumb member 24 on the interior of the door and after having been turned will positively lock the bolt 11 from withdrawal or retraction. In case it is desired to positively lock bolt 11 in an outer position locking arm 27 is moved to the position shown in Fig. 2. When in this position the arm engages one of the lugs 10—10 and also the sides of the aperture in cap 25 through which the same passes and as cap 25 is firmly held in position by screw 26 and by engaging the end and sides of plate 8 no movement can be conveyed to the cap, and consequently no movement can be conveyed to bolt 11. If it is desired to positively lock bolt 11 in an inner position the same is retracted by turning one of the knobs 42 or 43 and then locking arm 27 is reciprocated until in the position shown in Fig. 2. This will cause the locking arm 27 to engage one of lugs 10—10. By this construction and arrangement bolt 11 may be positively locked in a retracted or withdrawn position or positively locked in its outer position.

What I claim is:

1. In a lock, a bolt, operating means therefor, engaging members carried by the bolt, a plate provided with a forked device arranged to receive and hold one of the engaging members on the bolt, a rotatable bolt, means for rotating such bolt, and a lever secured to said bolt, such lever comprising a plate guiding arm and a plate operating arm.

2. In a lock, a ratchet bolt, operating means therefor, a slidable plate arranged to lock said bolt, said plate being provided with a recess and with an angular portion projecting into the recess, a rotatable bolt, a member secured to the bolt and provided with key guiding means, and a lever secured to the bolt and having arms projecting on opposite sides of the bolt for engaging the edges of the recess adjacent to the angular portion and moving the plate at right angles to the direction of movement of the ratchet bolt.

3. In a lock, a ratchet bolt, operating means therefor, a slidable plate arranged to lock the ratchet bolt against movement, said

plate provided with a recess and with an angular portion projecting into the recess, a rotatable bolt, a member secured to the bolt for operating the latter, and a lever secured to the bolt and having arms projecting on opposite sides of the bolt for engaging the edges of the recess adjacent to the angular portion and moving the plate at right angles

to the direction of movement of the ratchet bolt.

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In testimony whereof I affix my signature in presence of two witnesses.

LEONARD P. PERCIVAL.

Witnesses:

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