J. H. SHAW.

LOCK.

APPLICATION FILED MAR. 23, 1906.

1,065,557.

Patented June 24, 1913.

2 SHEETS—SHEET 1.

Fig 1

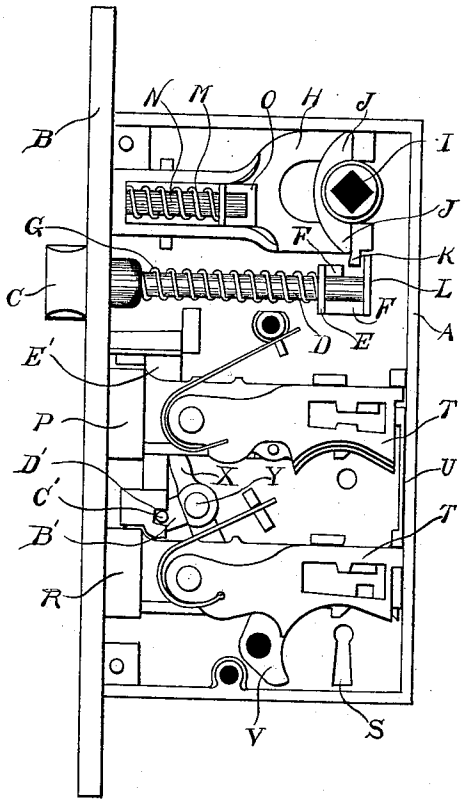
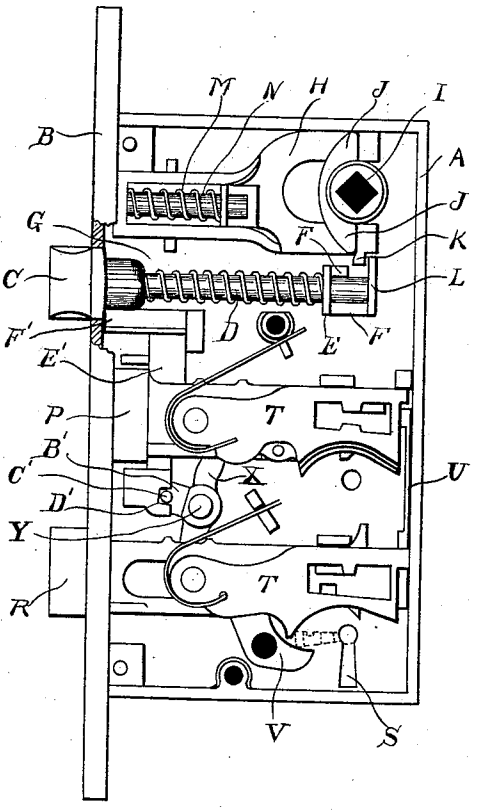


Fig 2



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2 SHEETS—SHEET 2.

Fig 3

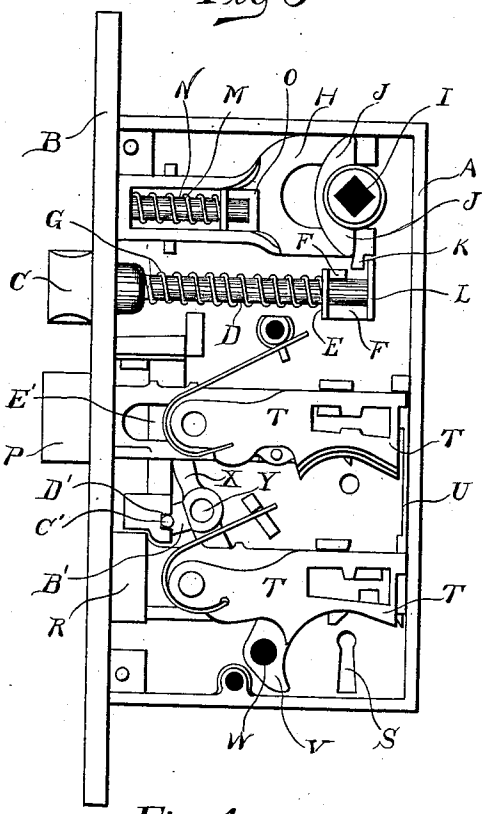


Fig 5

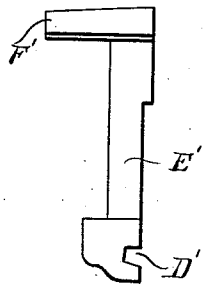


Fig 6

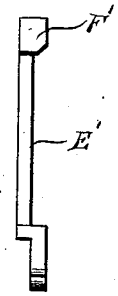


Fig 4

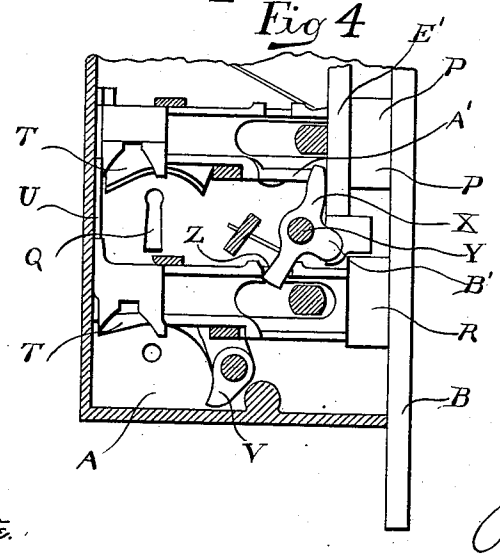
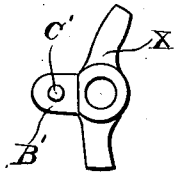


Fig 7



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UNITED STATES PATENT OFFICE.

JOHN H. SHAW, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO SARGENT & COMPANY, OF NEW HAVEN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

LOCK.

1,065,557. Specification of Letters Patent. Patented June 24, 1913.

Application filed March 23, 1906. Serial No. 307,664.

To all whom it may concern:

Be it known that I, JOHN H. SHAW, of the city and county of New Haven and State of Connecticut, have invented new and useful Improvements in Locks, of which the following is a full, clear, and exact description when taken in connection with the accompanying drawings, which form a part thereof, and in which—

Figure 1 represents a side elevation of a lock embodying the invention, with the cap plate removed, Fig. 2, a similar view in which the key bolt operated from the inside is shown protracted, Fig. 3, a similar view in which the key bolt operated from the outside is shown protracted, Fig. 4, a reverse view of the lower part of the lock, Figs. 5 and 6, enlarged detail views, in side and end elevation, of the sliding catch, and Fig. 7, a detail view of the connecting lever.

In all figures, similar letters of reference represent like parts.

This invention relates to locks, and more particularly to locks for use on the doors of hotels, or other public buildings, where a number of keys are in the hands of different individuals.

One of the improvements of the present invention is the production of a novel lock in which when the bolt operated from the inside of the room is protracted, the latch bolt is locked against retraction and the knob against rotation, so that any one on the outside of the door may ascertain at once by the refusal of the knob connected with the latch bolt to turn, that the door is locked on the inside.

The object of this invention is to produce a novel and efficient lock which shall have the feature above set forth, and to this and other ends the invention consists of the several improvements and combinations of parts set forth and claimed hereinafter.

Referring to the drawings for a more particular description, the parts designated by the letter A represent the casing of the lock, and B the face plate.

C designates the latch bolt, with a shank D in the form of a spindle, which projects through a plate E adapted to bear against posts F in the casing. A coiled spring G surrounds the spindle, and bears against the plate E, and normally tends to hold the latch bolt C in its protracted position.

H designates a sliding yoke, and I the hub of the knob spindle, with wings J adapted to bear against the yoke H. The yoke is provided with a lateral offset K, adapted to engage the flanged rear end L of the spindle, so that upon the turning of the hub I and the retraction of the sliding yoke H, the spindle D will be retracted by the engagement of the offset K with the flange L. A coiled spring M surrounds a spindle N, which projects through one end of the sliding yoke H and bears against a stop O in the casing A in well known manner. The spring M tends to hold the sliding yoke in its normal protracted position.

P is a key bolt, adapted to be operated by a key, which may be inserted through the keyhole Q on the outside of the door. R is a second key bolt, adapted to be operated by a key inserted through the keyhole S on the inside of the door. The two bolts P and R are provided with suitable tumblers T. A dog V is shown pivoted at W in the casing, and is connected with the bolt R in such a manner as to prevent the removal of the key from the keyhole S when the bolt R is protracted (see Fig. 2).

X is a connecting lever, pivoted at Y to the casing A, which has one end projecting into a narrow slot Z (Fig. 4) on the under side of the bolt R, so that any movement of the bolt R will tend to swing the connecting lever X on its pivot, as shown more particularly in Figs. 1 and 2. The other end of the connecting lever X projects into a longer slot A′ on the under side of the bolt P, wherein it has limited independent movement, so that as shown in Figs. 1 and 2, the connecting lever may be rotated on its pivot without operating the bolt P, and as shown in Fig. 3, the bolt P may be protracted when the bolt R is retracted without swinging the connecting lever X.

The tumblers T of the respective bolts are connected by a tumbler bar U so that when either one of the bolts is in protracted position and the other is in retracted position, the protraction of the second named bolt will result in the retraction of the first bolt, whereupon the second bolt may be retracted independently, substantially as described in Letters Patent No. 898,434, granted to Sargent & Company on September 15, 1908, as assignee of William J. Carroll.

In carrying out the present invention,

which contemplates *inter alia* the provision of certain novel means for blocking a projecting knob or other test member at the outside of the door automatically when the inside bolt is protracted, the construction may be as follows: The connecting lever X is provided with a lateral offset or extension B′, having a lug C′, adapted to engage a notch D′ in a sliding catch E′, which is adapted to extend under the bolt P (see Figs. 3 and 4), and has a nose piece F′ adapted to extend behind the wider or forward portion of the latch bolt C and engage it when the catch E′ is in its upper position, as shown in Fig. 2.

The rotation of the connecting lever X from the position shown in Fig. 1 to that in Fig. 2 tends to slide the catch E′ upward from the position shown in Fig. 1 to that shown in Fig. 2. In the position shown in Fig. 1, the latch bolt C is free to be retracted by the sliding yoke H and hub I, but when the nose F′ of the sliding catch E′ engages the latch bolt C, the bolt and the sliding yoke H cannot be retracted and the hub I cannot be turned on its axis. When the bolt R, operated from the key hole S on the inner side of the door is in its retracted position, the connecting lever X, as shown in Figs. 1 and 3, draws the catch E′ downward out of engagement with the latch bolt C, but when the bolt R is protracted, as shown in Fig. 2, the connecting lever X is swung on its pivot and forces the catch E′ upward to engage the latch bolt C. By this construction, when the bolt which is operated from the keyhole on the inside of the door is protracted, the latch bolt is prevented from retraction, and, as above shown, the hub which is adapted to be connected with the spindle of the knob cannot be rotated. On the other hand, as shown in Figs. 1 and 3, the bolt P, which is adapted to be operated from the keyhole Q on the outside of the door may be protracted or retracted without affecting the connecting lever X and, therefore, without operating the catch E′ to lock the bolt C and prevent the rotation of the hub I and knob.

I do not claim herein, the broad combination, in a lock, of dead bolt mechanism operable from both sides of the door with indicating manual test means at the outside of the door unaffected by the deadlocking of the door from the outside but set in indicating condition automatically as the door is deadlocked from the inside, nor do I claim other broad combinations of this character set forth in the companion application of William J. Carroll, Serial No. 307,643, filed of even date herewith, but

What I do claim is:

1. In a lock, dead bolt mechanism operable from both sides of the door, a projecting test member at the outside of the door normally movable as the same is touched or grasped by the hand, means including a sliding catch, inoperative when the door is locked from the outside by said dead bolt mechanism, to fix said test member against movement when the door is locked from the inside by said dead bolt mechanism; substantially as described.

2. In a lock, the combination of two bolts protractable exclusively from the outside and inside respectively of the door, means for retracting one bolt upon the protraction of the other, a manual test member at the outside of the door normally movable as the same is touched or grasped by the hand, and means including a sliding catch operated by the inside bolt to hold said test member stationary when said inside bolt is protracted; substantially as described.

3. In a lock, dead bolt mechanism operable from both sides of the door, a latch bolt, retracting means for said bolt including a hub operable from the outside of the door, and means including a sliding catch inoperative when the door is locked from the outside by said dead bolt mechanism, to dog said hub automatically when the door is locked from the inside by said dead bolt mechanism; substantially as described.

4. In a lock, the combination of two bolts protractable exclusively from the outside and inside respectively of the door, means for retracting one bolt upon the protraction of the other, a latch bolt, a retracting hub therefor, and means including a sliding catch operated by the inside bolt to dog said hub as said inside bolt is protracted; substantially as described.

5. In a lock, dead bolt mechanism operable from both sides of the door, a latch bolt, and a sliding catch for deadlocking said latch bolt operated automatically when the door is locked from the inside by said dead bolt mechanism but inoperative when the door is locked from the outside by said dead bolt mechanism; substantially as described.

6. In a lock, the combination with a casing; of a plurality of bolts movable in said casing; a connection between said bolts for retracting one bolt upon the protraction of the other; a latch bolt; and mechanism for locking said latch bolt against retraction, actuated by said connection, substantially as described.

7. In a lock, the combination with a casing; of a plurality of bolts movable in said casing; a lever pivoted in said casing and having connection at opposite ends with said bolts; a latch bolt; and mechanism for locking said latch bolt against retraction, actuated by said lever, substantially as described.

8. In a lock, the combination with a casing; of a plurality of bolts movable in said

casing; a lever pivoted in said casing and having connection at opposite ends with said bolts; a latch bolt; and a sliding catch adapted to engage said latch bolt to prevent its retraction, actuated by said lever, substantially as described.

In witness whereof, I have hereunto set my hand on the 19th day of March, 1906.

JOHN H. SHAW.

Witnesses:

WILLIAM H. KIRSCHNER,

ALICE M. RYAN.

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