

W. J. CARROLL.

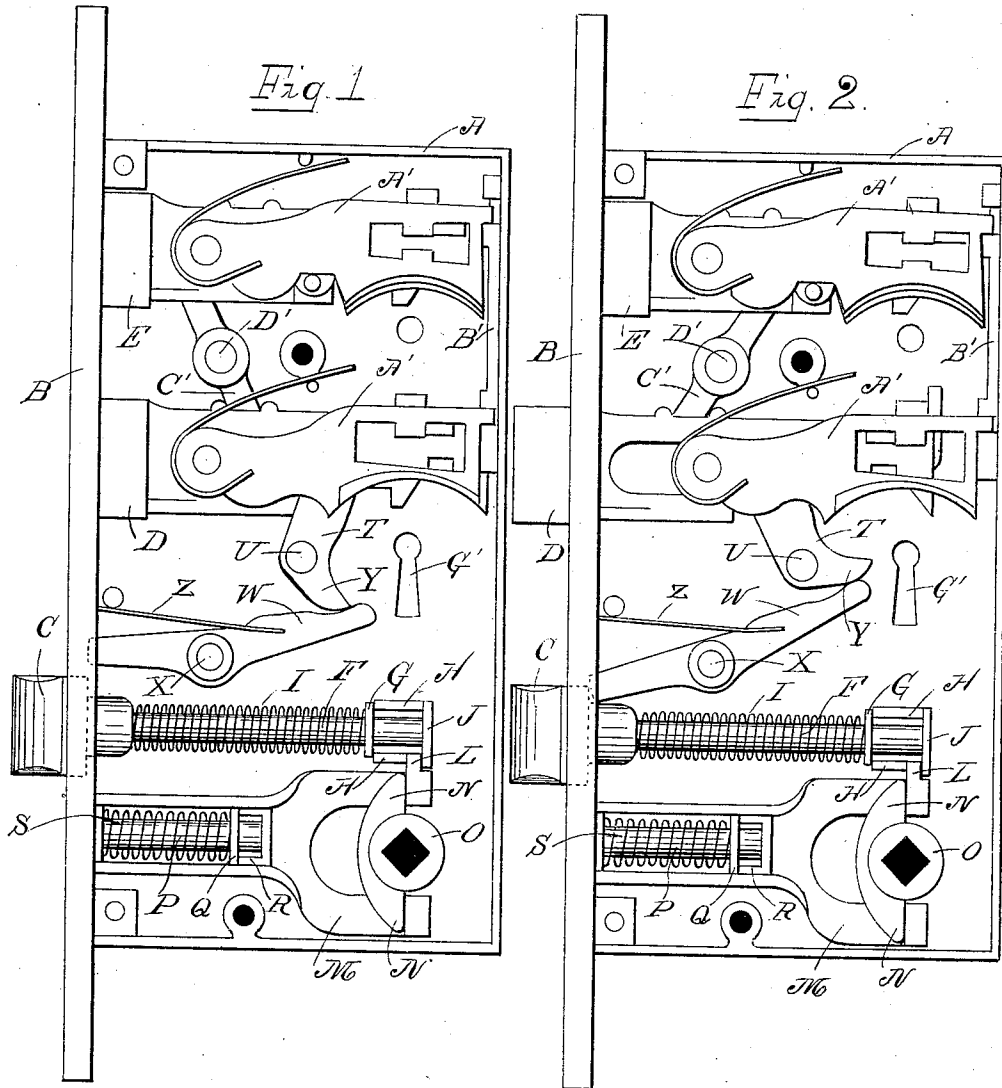
LOCK.

APPLICATION FILED MAR. 23, 1906.

1,065,505.

Patented June 24, 1913.

2 SHEETS—SHEET 1.



Witness
J. S. Coleman
H. E. Cooper.

Inventor
William J. Carroll
by Beach & Fisher
Attorneys

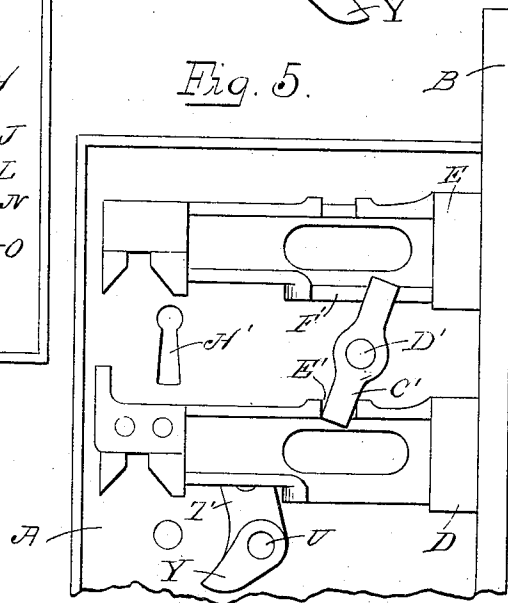
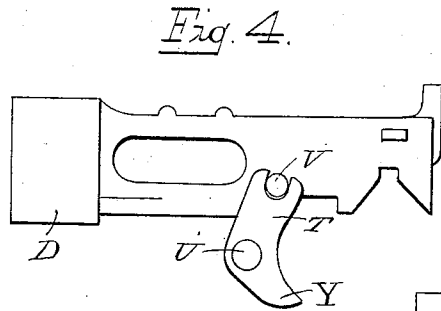
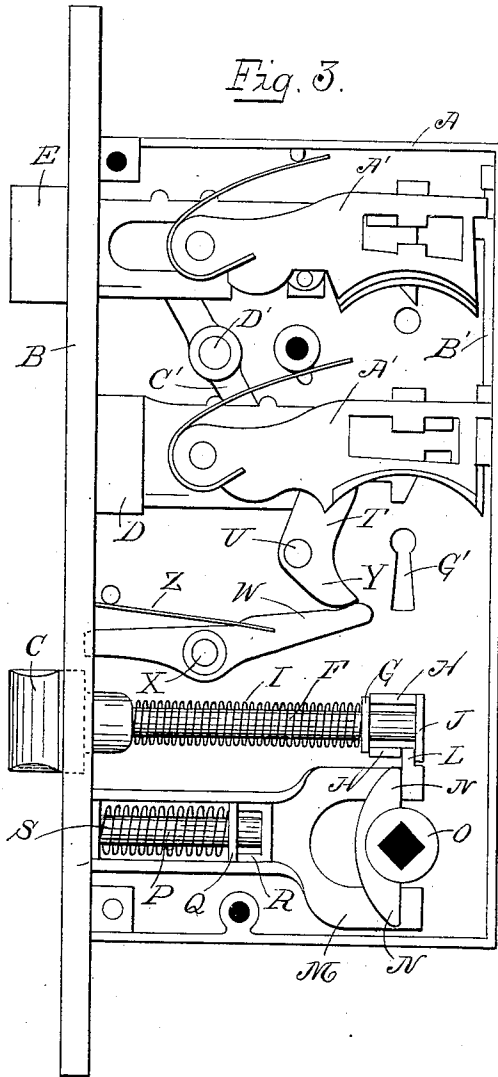
W. J. CARROLL.
LOCK.

APPLICATION FILED MAR. 23, 1906.

1,065,505.

Patented June 24, 1913.

2 SHEETS—SHEET 2.



Witness
J. S. Coleman
H. E. Cooper.

Inventor
William J. Carroll
by Beach & Fisher
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM J. CARROLL, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO SARGENT & COMPANY, OF NEW HAVEN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

LOCK.

1,065,505.

Specification of Letters Patent.

Patented June 24, 1913.

Application filed March 23, 1906. Serial No. 307,643.

To all whom it may concern:

Be it known that I, WILLIAM J. CARROLL, 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, in which the cap plate has been removed, Fig. 2, a similar view in which one of the key bolts, that is, the one operated from the inside of the door, is shown protracted, Fig. 3, a similar view in which the other bolt, that is, the one operated from the outside of the door, is shown protracted, Fig. 4, a detail view of one of the key bolts and the locking dog, and Fig. 5, a reverse view of the two key bolts and their connecting lever.

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

This invention relates to locks, and more particularly to that class of locks for use in hotels and other public buildings where a number of keys are in the hands of different individuals. In locks of this character, it is usual to have a plurality of key bolts, one of which is operated from the inside of the door, and the other from the outside.

The object of the present invention is to provide means for indicating to one on the outside of the door that the door is locked by means of the key bolt operated from the inside of the door, and to this end, the invention consists, among other features, of a novel construction by which the latch bolt is locked against retraction, and the knob thereby prevented from turning when the key bolt operated from the inside of the door is in its protracted position, so that it is only necessary for a chamber-maid, or other person, on the outside of a door to take hold of the knob to ascertain whether the door is locked from the inside.

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, through which are adapted to project the latch bolt C and the two dead bolts or key bolts D and E. The latch bolt C is provided on its rear with a cylindrical shank F, which passes through a plate G, abutting against studs or stops H in the casing.

A coiled spring I surrounds the shank F of the latch bolt C, and bears against the plate G to normally hold the latch bolt in its protracted position. On the rear of the shank F is a plate J, adapted to be engaged by an offset L, on a sliding yoke M, retracted by one of the wings N of the hub O, which hub is adapted to receive the spindle of the knob (not shown). Through the opposite end of the yoke M projects a bar P, which carries a plate Q, abutting against a stop or stops R in the casing. About the bar P is a coiled spring S, which constantly tends to retract the yoke M.

A dog T is pivoted on a post U in the casing, and engages a stud V on the bolt D (Fig. 4), so that when the key bolt is protracted, the dog T will be rotated on its pivot from the position shown in Fig. 1 to that shown in Fig. 2. A catch lever W is pivotally mounted on a post X on the casing, and one end is engaged by the toe Y of the dog T. A spring Z normally holds the catch lever W in the position shown in Fig. 2, wherein the other end of the catch lever W is adapted to drop behind and engage the wider or forward portion of the latch bolt C. When, however, the dog T is rotated by the key bolt D to the position shown in Figs. 1 and 3, the toe Y will push down on its end of the catch lever W and swing the other end of the catch lever against the tension of spring Z out of engagement with and out of the path of the latch bolt C. By this means, when the key bolt D is in its retracted position, the dog T holds the catch lever W away from the latch bolt C, so that the latch bolt may be retracted upon the rotation of the hub O. On the contrary, when the key bolt D is in its protracted position (shown in Fig. 2), the dog T is swung on its pivot to such a position that the spring Z may rotate the catch lever W, so that one end of the catch lever will engage the latch bolt C to dead-lock the same. As the sliding yoke M can-

not be retracted and the hub O cannot be rotated, as shown, unless the latch bolt C is capable of retraction when the catch lever W thus engages the latch bolt C, the knob and the spindle will be incapable of rotation; from which construction, it is easily ascertained by any one taking hold of the knob of the door whether or not the key bolt D is protracted or retracted, for when it is in its protracted position the knob will be incapable of rotation. The knob thus serves as a manual test member to indicate whether the door is locked on the inside.

The bolts D and E are shown of substantially the same construction as that described in a former application of mine for Letters Patent of the United States, filed September 12th, 1904, Serial Number 224,099, and, therefore, do not need detailed description herein. They are provided, as described in the aforesaid application, with tumblers A' and a tumbler bar B' connecting the tumblers of the two bolts. A connecting lever C' is also shown, pivotally mounted on a post D' in the casing, one end of which (as shown more particularly in Fig. 5) enters a narrow slot E' in one of the bolts, so that the lever C' will be rotated upon the movement of this bolt, while the other end enters an elongated slot F' in the other bolt, so that the other bolt is free to move from the position shown in Fig. 1 to that of Fig. 3 without rotating the lever C'. At the same time, the connecting lever C', as set forth in the application referred to, prevents the simultaneous protraction of both bolts, and thus when the bolt D is protracted and the latch bolt locked against retraction, the protraction of the bolt E will retract the bolt D and release the latch bolt.

The key bolt D is operated from the inside of the door by a key inserted in the key hole G' on the inside of the casing, while the key bolt E is operated from the outside of the door through the key hole H' on the outside of the casing.

In so far as I am aware, I am the first to provide, in combination with dead bolt mechanism operable from both sides of the door (and which may include one, two or more bolts), a means normally movable by hand from the outside of the door, which is automatically blocked or dogged by the locking of the door from the inside by said dead bolt mechanism, but which is not dogged by the locking of the door from the outside by said dead bolt mechanism. Moreover, I am also the first, so far as I am aware, to provide in combination with such dead bolt mechanism, and a latch bolt and latch bolt retracting means, a dogging means for said latch bolt retracting means which is automatically operated when the door is dead-bolted from the inside, but inoperative by

the deadbolting thereof from the outside. These features of my invention are of great importance in providing in a very simple, easy and convenient way an indication that the room is occupied, as above explained.

It will be obvious that in certain aspects of the invention it is not essential that the outside manually operable test member to indicate the locking of the door from the inside, be a knob or other manipulating member for the latch bolt. It will be evident also that I do not limit myself in all aspects of the invention to the use of an indicating or test member having a rotary movement, as the main essential is the provision of a test member which projects from the lock so as to be readily accessible, even in the dark, and whose fixed or movable condition, as the same is touched or grasped by the hand, indicates whether or not the door has been locked from the inside.

Having now described my invention (which may vary in its details without departing from the spirit thereof) what I claim and desire to secure by Letters Patent, is:

1. In a lock, the combination with a casing; of a bolt operable from the outside and a second bolt operable from the inside; a latch bolt; a hub for operating said latch bolt; and means for locking said hub against rotation upon the protraction of said second bolt from the inside, to indicate that the inside bolt is protracted, substantially as described.

2. In a lock, the combination with a plurality of bolts; a casing having a single key-hole on the outside thereof and a single key-hole on the inside thereof corresponding separately to said bolts; a hub; a rotatable member outside of said casing connected to said hub, and means for locking said hub against rotation upon the protraction of said second bolt from the inside of the casing, substantially as described.

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

4. In a lock, dead bolt mechanism operable from both sides of the door, a latch bolt, retracting means for said latch bolt including a hub operable from the outside of the door, and means, 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.

5. In a lock, dead bolt mechanism oper-

70

75

80

85

90

95

100

105

110

115

120

125

130

able by a key inserted at either side of the door, a latch bolt, latch bolt retracting means accessible at the outside of the door, and means, inoperative when the door is locked from the outside by said dead bolt mechanism, to dog said retracting means automatically when the door is locked from the inside by said dead bolt mechanism; substantially as described.

6. In a lock, dead bolt mechanism operable from both sides of the door, manually operable means normally movable from the outside of the door, and means, inoperative when the door is locked from the outside by said dead bolt mechanism, to dog or block said manually operable means automatically when the door is locked from the inside by said dead bolt mechanism; substantially as described.

7. In a lock, dead bolt mechanism operable from both sides of the door, a latch bolt, deadlocking means for said latch bolt, and means, inoperative when the door is locked from the outside by said dead bolt mechanism, to operate said deadlocking means automatically when the door is locked from the inside by said mechanism; substantially as described.

8. In a lock, a dead bolt operable from both sides of the door, a latch bolt, latch bolt retracting means, and means to dog said retracting means when said bolt is operated from the inside only, to indicate that the room is occupied; substantially as described.

9. In a lock, the combination with a casing; of a plurality of bolts movable in said casing; a latch bolt; a rotary member pivoted in said casing adapted to be rotated upon the movement of one of said bolts; and mechanism for locking said latch bolt against retraction released for operation by said rotary member upon the protraction of said bolt, substantially as described.

10. In a lock, the combination with a casing; of a bolt movable in said casing; a key hole in said casing; a key for insertion in said hole adapted to operate said bolt; a dog pivoted in said casing adapted to be rotated by said bolt on its protraction into the path of said key to prevent the further rotation of said key; a latch bolt; and mechanism for locking said latch bolt against retraction operated by the movement of said dog, substantially as described.

11. In a lock, the combination with a casing; of a bolt movable in said casing; a dog pivoted in said casing adapted to be rotated by said bolt upon its movement; a latch bolt; a catch lever; a spring tending to hold said lever in engagement with said latch bolt to prevent its retraction, said lever being held from said engagement by said dog when said bolt is in its retracted position, substantially as described.

12. In a lock, the combination with a cas-

ing; of a plurality of bolts movable in said casing; means for retracting one bolt upon the protraction of another; a latch bolt; a hub for actuating said latch bolt; and mechanism for locking said hub against rotation upon the protraction of one of said bolts, substantially as described.

13. In a lock, the combination with a casing; of a plurality of bolts movable in said casing operable by keys inserted one from the outside of the casing and the other from inside; a normally movable manual test member projecting outside of the casing; and means for indicating through said member when the bolt operable from the inside is protracted, actuated upon the protraction of said bolt, substantially as described.

14. In a lock, a dead bolt operable from both sides of the door, a latch bolt, a deadlocking member for said latch bolt, and means to move said deadlocking member automatically into deadlocking position when said bolt is operated from the inside only; substantially as described.

15. In a lock, a dead bolt operable from both sides of the door, a latch bolt, a latch bolt hub, and means to dog said hub when said bolt is operated from the inside only, to indicate that the room is occupied; substantially as described.

16. In a lock, the combination with a plurality of bolts separately operable directly by keys from the outside and inside only; a manual test member projecting outside of the casing for indicating the protraction of the inside operated bolt; and means for setting said member in indicating position upon the protraction of said inside bolt from the inside, substantially as described.

17. In a lock, the combination with a casing; of a plurality of bolts; connecting means between the bolts to retract one upon the protraction of the other; means exterior of the lock to indicate the protraction of one of said bolts; means operable from the inside of the lock only for synchronously setting said member in indicating position and protracting one of said bolts; and a key insertible from the outside and having means to operate the other bolt and having means to synchronously retract the connected bolt and release the indicating member, substantially as described.

18. In a lock, a key bolt, protractable only from the inside of the door but retractable from either side of the door, means manually movable from the outside of the door, and a catch or dogging device operable automatically upon the protraction of said bolt to lock said means against movement; substantially as described.

19. In a lock, a key bolt protractable from one side only of the door but retractable from either side of the door, a latch bolt, a hub for operating said latch bolt, and means

actuated automatically by the protraction and retraction of said key bolt to lock and release said hub; substantially as described.

20. 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, and means, 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.

21. In a lock, the combination of two bolts protractable exclusively from the outside and inside respectively of the door, a manual test member at the outside of the door normally movable as the same is touched or grasped by the hand, and means for holding said test member stationary upon the protraction of the inside bolt; substantially as described.

22. In a lock, the combination of a bolt protractable from the outside only, a bolt protractable from the inside only, a manual test member at the outside of the door, normally movable as the same is touched or grasped by the hand, and mechanism connected with and operable directly by the inside bolt for holding said test member stationary when the inside bolt is protracted; substantially as described.

23. In a lock, dead bolt mechanism operable from both sides of the door, and 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; substantially as described.

24. In a lock, dead bolt mechanism operable from both sides of the door, and an indicating member at the outside of the door unaffected by the deadlocking of the door from the outside but set in a fixed projecting position automatically as the door is deadlocked from the inside; substantially as described.

25. In a lock, a bolt protractable from the outside only, a bolt protractable from the inside only, and an indicating manual test member at the outside of the door unaffected by the protraction of said outside bolt but set in position automatically by the protraction of said inside bolt; substantially as described.

26. In a lock, the combination of a case having outside and inside keyholes, a bolt protractable only by a key inserted in the outside keyhole, a bolt protractable only by a key inserted in the inside keyhole, and indicating manual test means at the outside of the door unaffected by the dead-locking of the door from the outside but capable of being set in indicating condition by a key inserted in the inside keyhole; substantially as described.

27. In a lock, the combination of a case having outside and inside keyholes, a bolt protractable only by way of the outside keyhole, a bolt protractable only by way of the inside keyhole, and an indicating manual test member at the outside of the door unaffected by the protraction of the outside bolt but set in position automatically by the rotation of a certain key in the inside keyhole; substantially as described.

28. In a lock, dead bolt mechanism operable from both sides of the door, and an indicating test member at the outside of the door freely movable when the door is locked from the outside but having a fixed projecting position when the door is locked from the inside; substantially as described.

29. In a lock, a dead bolt retractable from either side of the door, and an indicating test member at the outside of the door freely movable when said dead bolt is withdrawn but having a fixed projecting position when said dead bolt is thrown from the inside; substantially as described.

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

WILLIAM J. CARROLL.

Witnesses:

JOHN H. SHAW,

WILLIAM H. KIRSCHNER.