

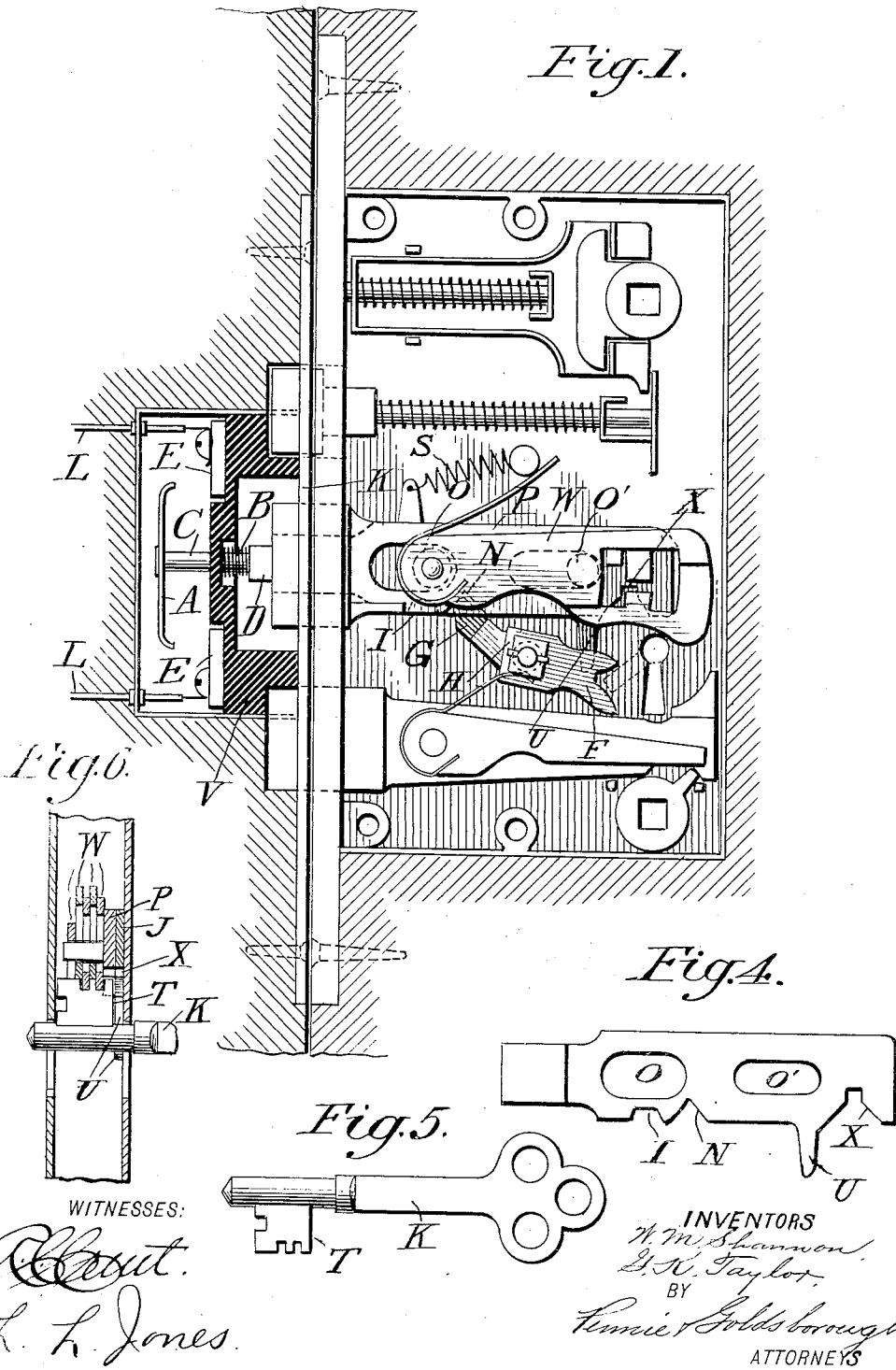
No. 880,168.

PATENTED FEB. 25, 1908.

W. M. SHANNON & G. K. TAYLOR.
COMBINED LOCK AND ELECTRIC SWITCH.

APPLICATION FILED AUG. 22, 1907.

2 SHEETS—SHEET 1.



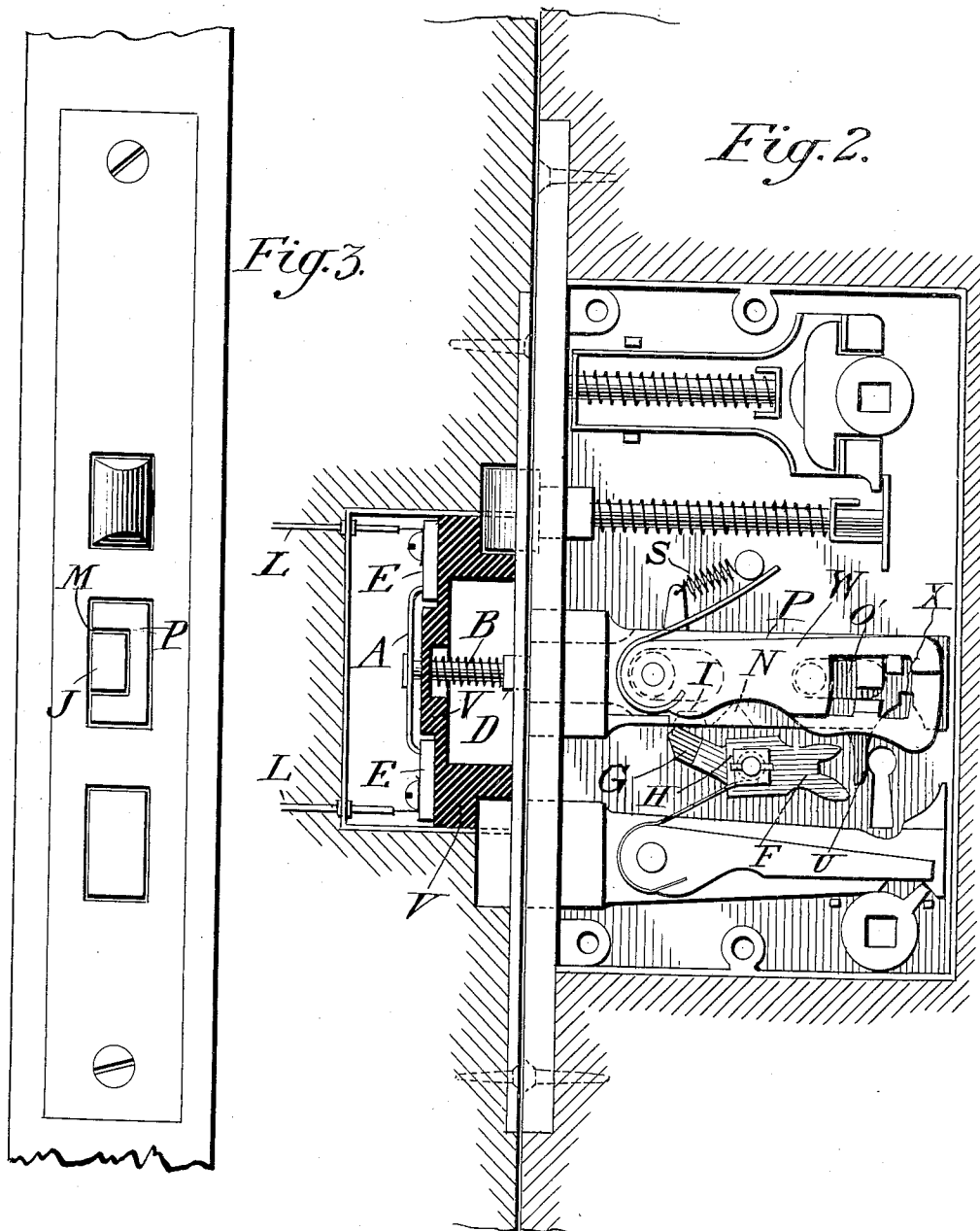
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UNITED STATES PATENT OFFICE.

WILLIAM M. SHANNON AND GEORGE KNOX TAYLOR, OF COLUMBIA, SOUTH CAROLINA.

COMBINED LOCK AND ELECTRIC SWITCH.

No. 880,168.

Specification of Letters Patent.

Patented Feb. 25, 1908.

Application filed August 22, 1907. Serial No. 389,711.

To all whom it may concern:

Be it known that we, WILLIAM M. SHANNON and GEORGE KNOX TAYLOR, citizens of the United States, residing at Columbia, county of Richland, State of South Carolina, have invented certain new and useful Improvements in a Combined Lock and Electric Switch; and we 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.

The invention has for its object to provide a combined lock and electric switch so constructed and arranged that the electric circuits, and more particularly the lighting circuits, in a room or apartment will be opened or disconnected by the operation of locking the door from one side, preferably the outside, and said circuits will be closed or connected when the door is unlocked or when locked from the opposite side, and said invention is intended essentially to subserve economy in the use of electric currents in apartments, office - buildings, hotels, and other buildings, in which the current, supplying the lights or other apparatus, is liable to be left on by a retiring occupant.

In the accompanying drawings, Figures 1 and 2 are sectional views of a door lock in locked and unlocked relation, respectively; Fig. 3 is an edge view of a portion of the door showing the relation of the primary and secondary bolts; Fig. 4 shows the secondary bolt in detail; Fig. 5 illustrates a key employed in operating the lock; and Fig. 6 is a fragmentary section through the lock illustrating the coöperation of the key with the bolts and tumblers when the secondary bolt is not affected.

Referring to the drawings, P indicates the main or primary bolt of the lock, which is adapted to engage a recessed keeper or strike K. Mounted beside the primary bolt P, and held in alinement therewith by means of the usual pin and slot connections O, O', is a secondary bolt J, the large end or head of which engages a generally rectangular recess M in the forward portion or head of the primary bolt P, as clearly indicated in Fig. 3. A spring S secured to said bolt J and to the casing of the lock tends to retract said bolt J. Both the primary and secondary bolts are provided with registering notches X, near their rear ends, adapted to be engaged

by the bit of the key under appropriate conditions to move the bolts in either direction, as will be well understood. The lower edge of the secondary bolt is provided with a recess I, and a notch or shoulder N behind the same. Pivoted below the bolts is a latch H having a tail-piece F and a nose G, the latter occupying the recess I, when the secondary bolt is withdrawn and engaging the shoulder N to hold the secondary bolt in advanced position when the same has been shot. The tail F is bifurcated and lies in the path of the movement of the key bit when the key is turned, first, to swing the latch H to engage shoulder N when the secondary bolt is shot, second to move latch H out of engagement with secondary bolt J when both bolts are retracted, and third, to move latch H so that its nose G enters recess I when the main bolt P alone is shot, as shown in Figs. 1 and 2.

Slidably mounted in the slotted keeper K is a plunger C carrying on its inner end a switch-arm A, which may be formed in any convenient manner, and is preferably made of metal strips bent in U-form to bridge stationary contacts E, E mounted on a suitable insulating block V behind the strike, and forming the terminals of the electric leads L, L. The plunger C is normally advanced to close the contacts and establish the circuits through the leads L, L by means of a helical spring B, surrounding the plunger, bearing at one end on the bottom of the insulating block behind the keeper and at the other end on the under side of a head D, which latter is adapted to be engaged by the end of the secondary bolt J.

W indicates the usual arrangement of plungers with which the bit of the key K coöperates in the locking and unlocking operations respectively. Said key K as illustrated in Fig. 5 has one end of its bit cut away as at T so that when the key is inserted from the inside of the door the bit will pass over secondary bolt J without operating the same. As shown, the inner end of the key bit is cut away, but should the lock be used upon a door which swings or closes in an opposite direction the outer or opposite end of the bit must be cut away to be properly used with the same lock.

The operation of the device is as follows. When the lock is operated, for example, from the outside of the door, the bit of the key engages the notches X on both the primary and

secondary bolts, and shoots both bolts simultaneously. The end of the secondary bolt F strikes the head D on plunger C and forces said plunger against the tension of spring B to separate contacts A and E, thereby opening the circuits L, L. As the secondary bolt moves forward, the nose G of the pivoted latch H engages notch or shoulder N in the secondary bolt and holds the latter in its forward position. In unlocking the door the bit of the key first strikes the tail F of the pivoted latch H and moves said latch so as to disengage nose G from shoulder N and the spring S tends to carry the secondary bolt to unlocked position. The lug or projection U on the lower side of the secondary bolt J, however, strikes the key and follows it back along with the primary bolt. The plunger C and movable contact A also follows the bolt back to the unlocked position as the key turns, thus closing the switch contacts which are held against the contact blocks by spring B.

In operating the lock from the inside of the door, the secondary bolt is not actuated, for as explained the bit of the key is cut away on its inner edge, as at T, so as to pass the secondary bolt and operate the primary bolt alone, leaving the secondary bolt in its retracted position.

While the invention has been described with particular reference to the form of lock illustrated in the drawings, it will be understood that it is not limited to the specific lock shown but may be applied to any type of lock having a key actuated bolt, and it is intended, of course, that the claims shall be given a corresponding interpretation.

What we claim as our invention is:—

1. In a door lock switch, the combination with the main bolt of the lock, a secondary bolt having a sliding connection with the main bolt, an electric switch located in the door jamb and adapted to be operated by the secondary bolt, a key adapted to actuate both bolts when inserted from one side of the lock and to actuate the main bolt only when inserted from the other side of the lock, and a latch for holding the secondary bolt in advanced position said latch being released by the key in the unlocking operation.

2. In a door lock switch, the combination with the main bolt of the lock, a secondary bolt located beside the main bolt and having a head engaging a recess in the head of said main bolt, an electric switch located in the door jamb and adapted to be operated by the secondary bolt, and a key adapted to actuate both bolts when inserted from one side of the lock and to actuate the main bolt

only when inserted from the other side of the lock.

3. In a door lock switch, the combination with a main bolt of the lock, a secondary bolt arranged beside the main bolt and having a head engaging a recess in the head of said main bolt, an electric switch located in the door jamb adapted to be operated by the secondary bolt, a key adapted to actuate both bolts when inserted from one side of the lock and to actuate the main bolt only when inserted from the other side of the lock, and a pivoted lever adapted to engage a shoulder in the secondary bolt to hold the same in advanced position and to be released by the key in the unlocking operation.

4. In a door lock switch, the combination with the main bolt of the lock, a secondary bolt mounted beside the same, both of said bolts having registering notches to be engaged by the key bit, an electric switch located in the door jamb adapted to be operated by the secondary bolt, and a key having a bit recessed or cut away at one edge, whereby the key will actuate both bolts when inserted from one side of the lock and will operate the main bolt only when inserted from the other side of the lock.

5. In a door lock switch, the combination with the main bolt of the lock, a secondary bolt beside the main bolt and having a head engaging a recess in the head of said main bolt, said main and secondary bolts being operated by a key inserted from one side of the lock and the main bolt only being operated by the key when inserted from the other side of the lock, and an electric switch located in the door jamb and operated by the secondary bolt.

6. In a door lock switch, the combination with the main bolt of the lock, a secondary bolt beside the main bolt and having a head engaging a recess in the head of said main bolt, said main and secondary bolts being operated by a key inserted from one side of the lock and the main bolt only being operated by the key when inserted from the other side of the lock, an electric switch located in the door jamb and operated by the secondary bolt, and a latch for holding said secondary bolt in advanced position said latch being released by the key in the unlocking operation.

In testimony whereof we affix our signatures, in presence of two witnesses.

WILLIAM M. SHANNON.
GEORGE KNOX TAYLOR.

Witnesses:

A. DAVIS McFADDIN,
J. TEAM GETTYS.