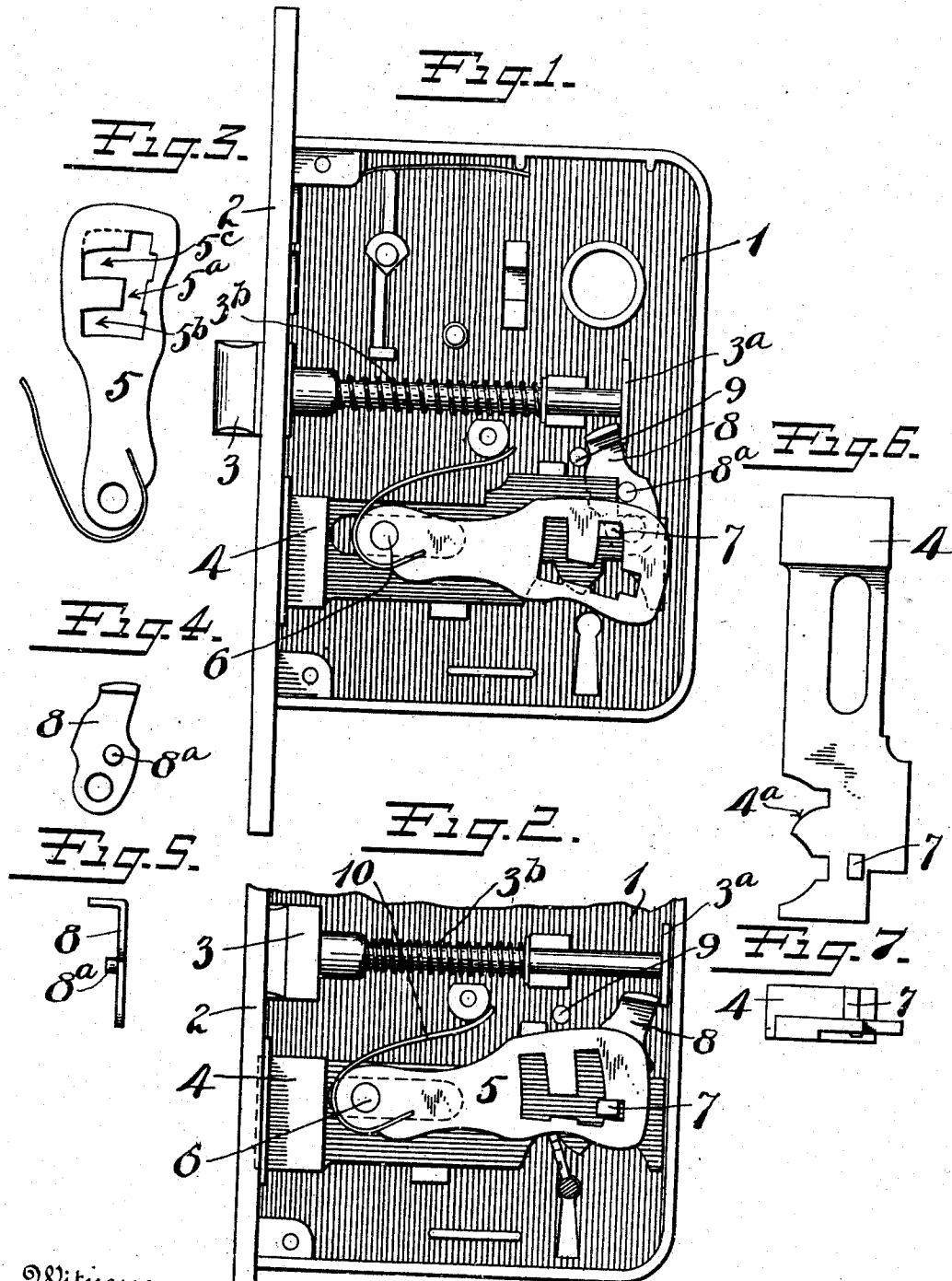


H. G. VOIGHT.
 LOOK AND LATCH.
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Witnesses:
Chas. A. Beard
Fred M. Dammsfeldt

Inventor.
 H. G. VOIGHT.
 By *Attorneys*
Samuel Bernice & Hatch

UNITED STATES PATENT OFFICE.

HENRY G. VOIGHT, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO RUSSELL & ERWIN MANUFACTURING COMPANY, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

LOCK AND LATCH.

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To all whom it may concern:

Be it known that I, HENRY G. VOIGHT, a citizen of the United States, residing at New Britain, county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Locks and Latches, of which the following is a full, clear, and exact description.

My invention relates to improvements in locks and latches, the object being to provide a simple and inexpensive construction whereby the ordinary lock including a latch and dead-bolt, may be operated wholly by a key. In other words, assuming the door is locked, the insertion of the key will first retract the dead-bolt, and following that, the latch-bolt. This I accomplish in a simple manner by providing a connection between the dead-bolt and the latch-bolt whereby when the dead-bolt is abnormally retracted, the latch-bolt will be withdrawn with it.

In the accompanying drawings Figure 1 is a side elevation of a lock constructed to embody my invention, the cap being removed, and showing the parts in one position. Fig. 2 is a similar view, partly broken away, showing the same parts in another position. Fig. 3 is a side elevation of the dead-bolt tumbler. Fig. 4 is a side elevation of another detail, detached. Fig. 5 is an edge elevation of the same detail. Fig. 6 is a side elevation of still another detail. Fig. 7 is an end elevation thereof.

1 is the lock case of any suitable form, the same being provided with a face plate 2.

3 is a spring latch-bolt arranged to project through the face plate 2. 4 is a dead-bolt likewise arranged to project through said face plate 2. The tail of the dead-bolt is mounted in suitable guide-ways on the inner side of the case 1.

5 is a tumbler for the dead-bolt 4.

6 is a stump carried by the case 1, upon which the tumbler 5 is pivotally mounted. The stump 6 stands in an elongated slot in the tail of the bolt 4, so that said dead-bolt 4 may be moved to and fro.

7 is the usual fence on the tail of the bolt for coöperation with the tumbler. The tumbler is provided with the usual gating for coöperation with the fence 7, whereby when the tumbler is lifted to the proper position, as shown in Fig. 2, the dead-bolt 4

may be moved to and fro, whereas when the tumbler is in its normal position shown in Fig. 1, the fence 7 will be located in one of the lateral notches of the tumbler holding the bolt from movement in the usual manner. In the particular form of tumbler shown in the drawings, the gating includes the longitudinal clearance slot 5^a and the two lateral notches 5^b 5^c. The notch 5^c may extend fully back to the end of the clearance slot 5^a, as indicated in dotted lines (Fig. 3), or may terminate slightly in front of the rear end of said slot, as shown in solid lines, the latter form being preferable.

The tail of the latch 3 is provided with a head 3^a, while said latch is normally projected by a spring 3^b. The tail of the dead-bolt 4 is operatively connected, either directly or indirectly, with the tail 3^a of the latch-bolt. In the form shown, the connection is indirect, the same being through the medium of a swinging coupling 8 suitably pivoted to the lock case.

8^a is a pin on the coupling 8, which is engaged by the tail of the bolt 4. The coupling 8 is always free, being moved ahead by the spring 3^b of the latch bolt until it encounters a suitable stop 9 on the lock case.

The arrangement of the parts is such that when the dead-bolt is retracted, so that its forward end stands flush with the outer surface of the face plate 2, the parts will assume the position shown in Fig. 1, the latch-bolt 3 being projected. If a suitable key is inserted and turned, the tumbler 5 will be lifted in the usual manner, freeing the dead-bolt. A continued rearward movement of the key will cause the bit to engage the shoulder 4^a (Fig. 6) forcing the bolt 4 rearwardly to an abnormal extent until its forward end recedes from the outer surface of the plate 1 to about the position indicated in dotted lines, Fig. 2. This abnormal retractive movement of the dead-bolt causes the latch-bolt 3 to be withdrawn through the medium of the connection between the tail of the dead-bolt 4 and the head 3^a on the tail of the latch-bolt 3.

The only advantage of providing the swinging coupling 8 between the dead-bolt and the latch-bolt is that the range of retractive movement of the latch-bolt is increased relatively to the dead-bolt, so that a comparatively slight retractive movement of

the latter will produce a full retractive movement of the latch bolt. A spring 10 may be employed to actuate the tumbler 5 in the usual manner. The usual knob mechanism for retracting the latch independently 5 of the dead-bolt may be employed, but since such mechanism is well known, it is not shown or described herein.

What I claim is:

10 1. In a lock, a case, a spring-actuated latch-bolt, a key-actuated dead-bolt, a tumbler for the latter, and an operative connection between the tail of the dead-bolt and the tail of the latch-bolt, said dead-bolt hav- 15 ing an abnormal rearward movement for retraction of the latch-bolt, said operative connection comprising a lever pivoted at one end to said case and at its other end to said

latch bolt, said dead-bolt engaging said lever intermediate its length. 20

2. In a lock, a case, a spring-projected latch-bolt, a key-actuated dead-bolt, a tumbler for the latter, said dead-bolt being capable of an abnormal retractive movement by its key, a coupling between said dead- 25 bolt and latch-bolt, said coupling being operable only when said dead-bolt is abnormally retracted, said coupling being constructed to produce in the latch-bolt a greater length of retractive movement than the 30 length of abnormal retractive movement of the dead-bolt.

HENRY G. VOIGHT.

Witnesses:

M. S. WIARD,
C. E. RUSSELL.