

No. 875,177.

PATENTED DEC. 31, 1907.

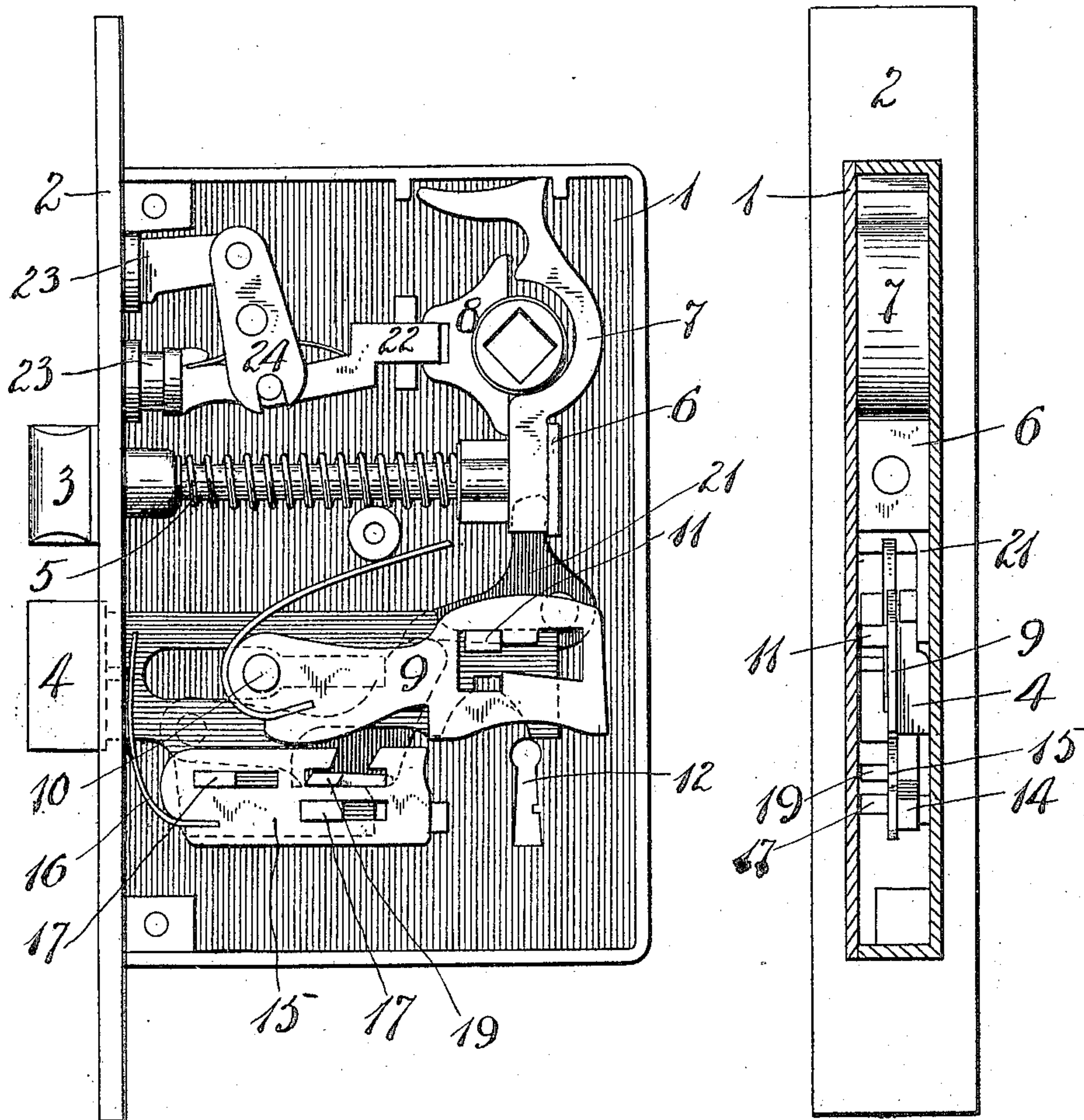
N. B. HURD.  
LOCK AND LATCH.

APPLICATION FILED JULY 3, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

Fig. 2.



Witnesses:  
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Inventor  
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By his Attorneys  
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2 SHEETS—SHEET 2.

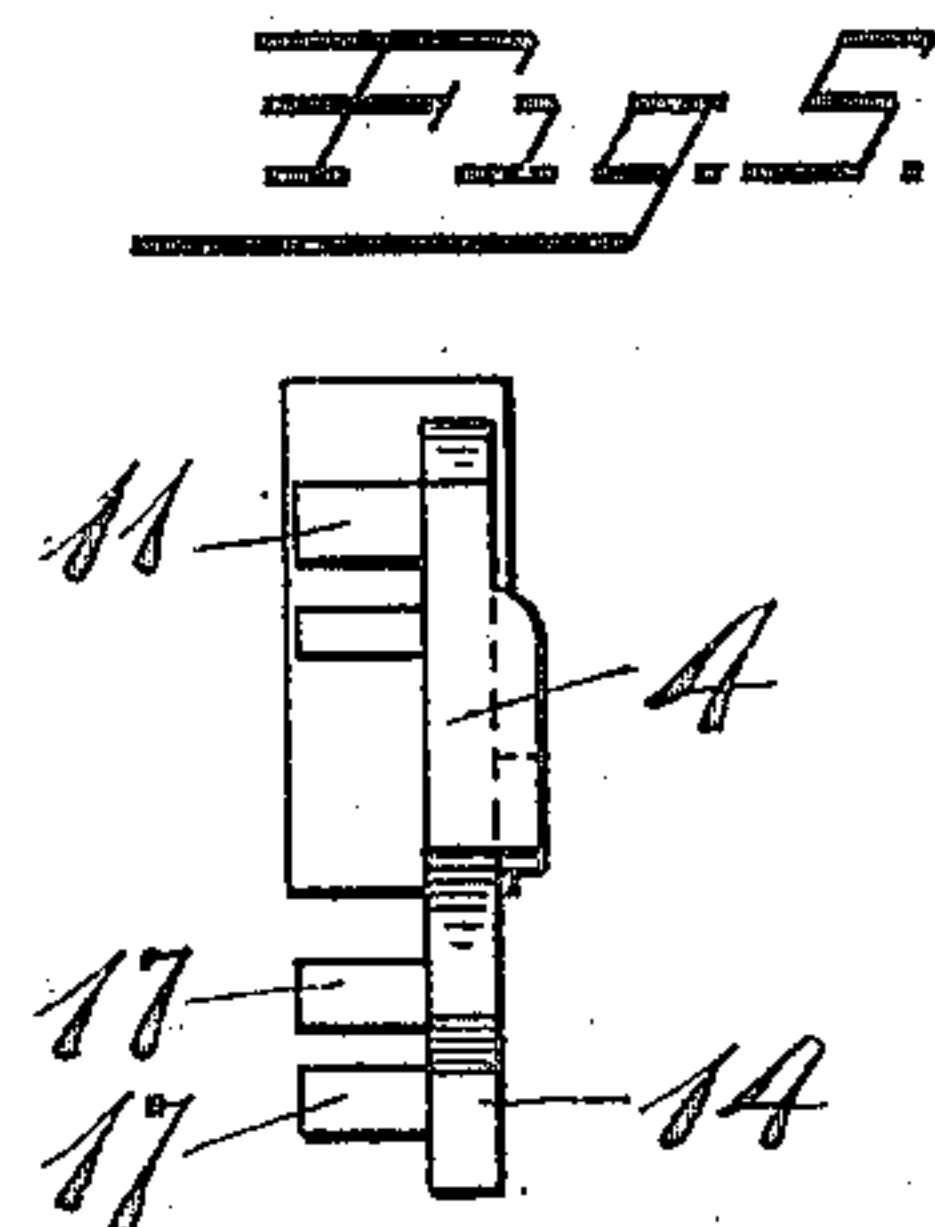
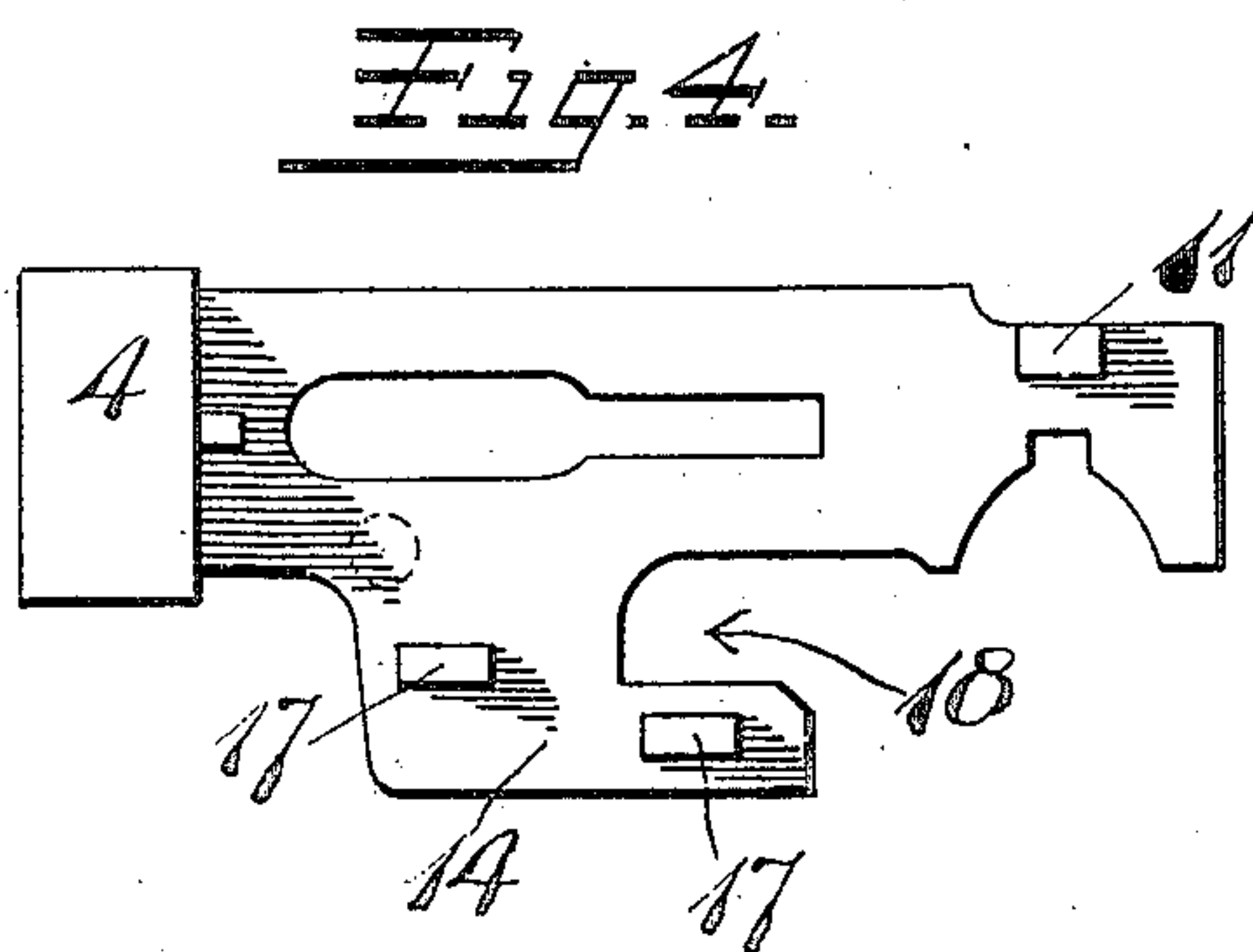
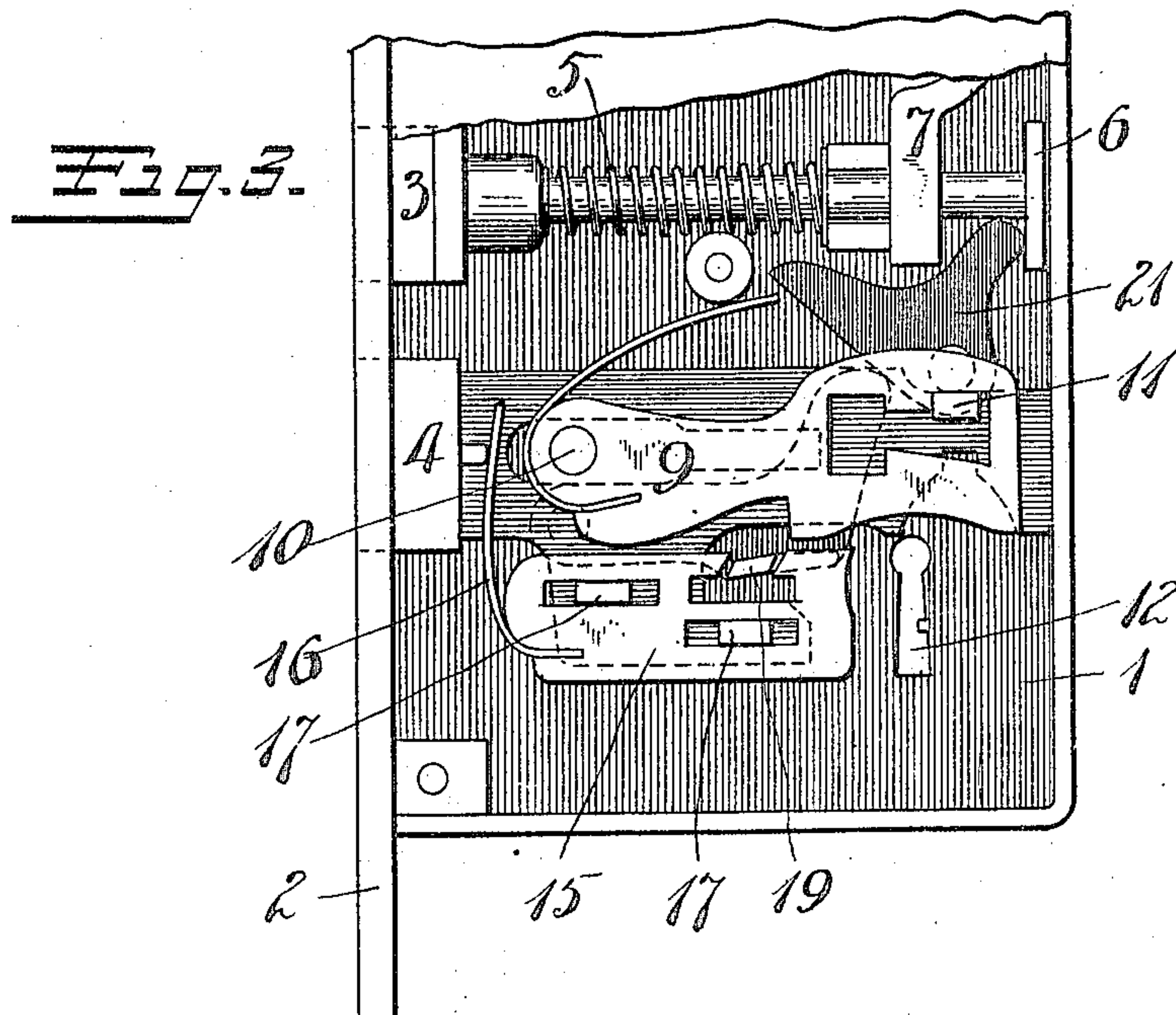
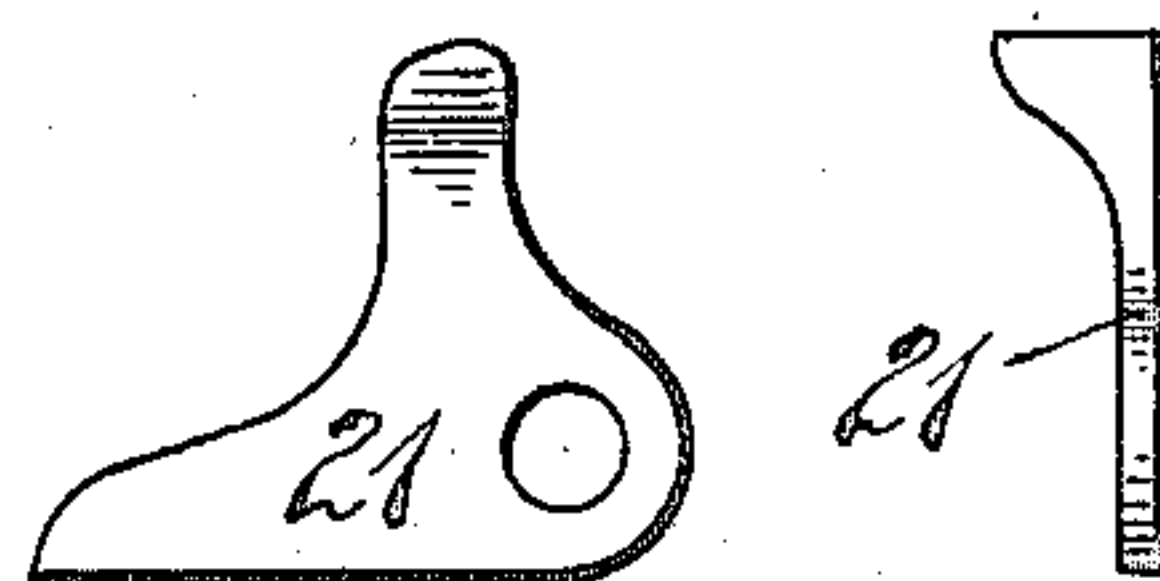
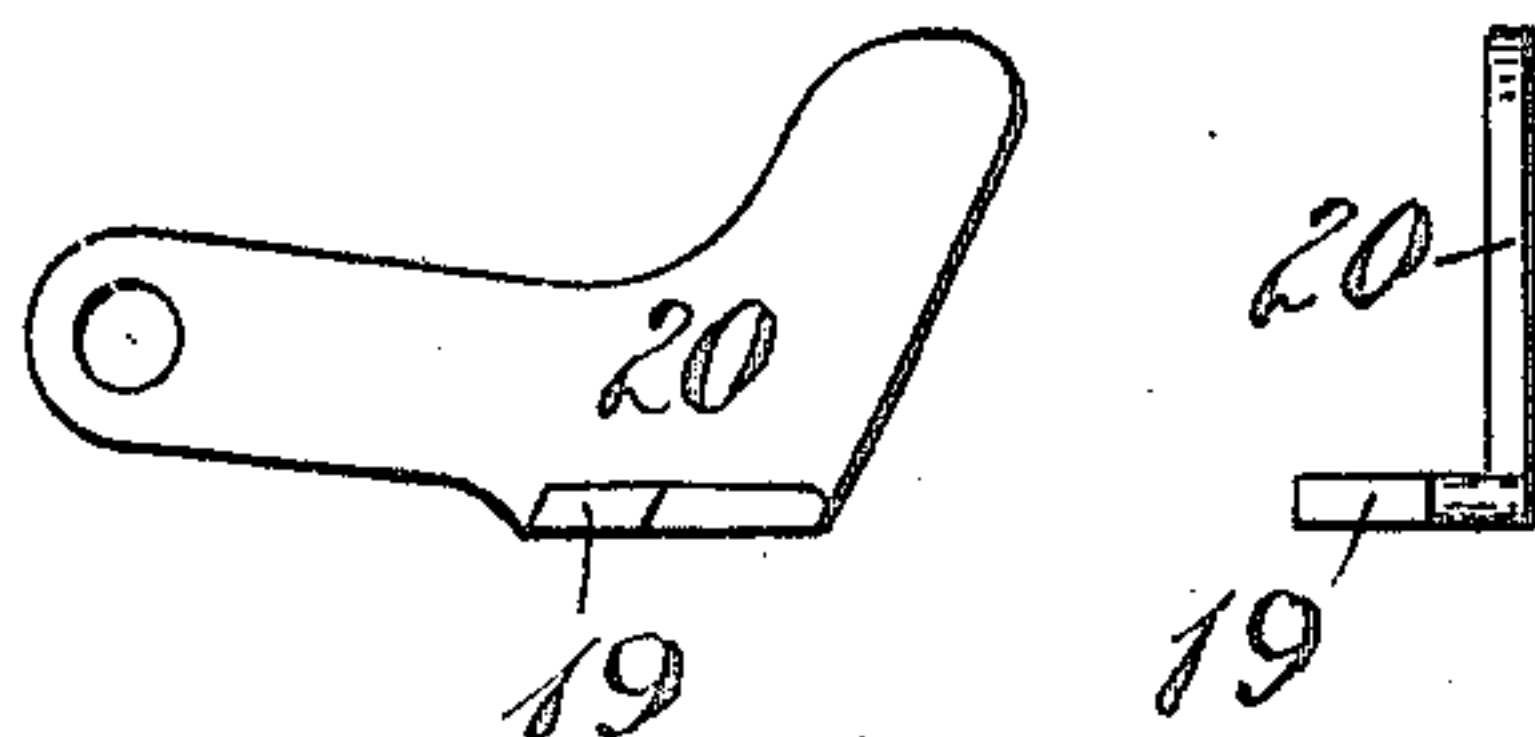


Fig. 6.

Fig. 7.

Fig. 8. Fig. 9.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## LOCK AND LATCH.

No. 875,177.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed July 3, 1907. Serial No. 381,976.

*To all whom it may concern:*

Be it known that I, NORMAN B. HURD, 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 lock and latch mechanism, the object being to provide a simple and effective construction whereby both the dead bolt and the latch bolt may be operated by a single key. This end I attain by a simple arrangement of parts, which coöperate in such a manner that in the event the dead bolt is advanced the first movement of the key will retract the dead bolt. The construction also is such that it in no way interferes with other means for operating the latch bolt, such as, for example, the ordinary knob.

In the accompanying drawings, Figure 1 is a side view of a lock with the cover removed, showing both the latch bolt and dead bolt in their extended positions; Fig. 2 is a rear elevation, the rear end of the case being removed; Fig. 3 is a view similar to Fig. 1, the upper part of the lock being broken away, both the latch bolt and the dead bolt in this illustration being retracted; Fig. 4 is a side view of the dead bolt detached; Fig. 5 is a rear elevation thereof; Fig. 6 is a side elevation of a lever; Fig. 7 is an end elevation thereof; Fig. 8 is a side elevation of another lever; Fig. 9 is an end elevation thereof.

1 is a lock case of conventional form.

2 is the front plate.

3 is the latch bolt.

4 is the dead bolt.

5 is a spring for advancing the latch bolt.

6 is a head at the rear of the latch bolt for engagement by suitable mechanism, whereby said latch bolt may be retracted.

7 is a latch bolt retractor operated by a roll-back 8, of conventional form, controlled by the usual knob spindle (not shown).

9 is a tumbler pivoted at 10 to the lock case, having a gated passage through which the fence 11, carried by the pilot of the dead bolt 4, passes, when said tumbler is lifted to the proper height and the bolt 4 is moved to and fro.

12 is a key passage. The key adapted to the lock is entered through the passage 12 and when turned lifts the tumbler 9 to the

proper height, then engages the tail of the bolt head 4 in the usual manner so as to retract the same. 14 is a carrier for another tumbler. As shown in the drawings, the carrier is an extension on the lower side of the tail of the dead-bolt head 4 (see Fig. 4), upon which is mounted a reciprocating tumbler 15 (see Figs. 1 and 3). This tumbler 15 is normally pressed to the right, as viewed in the drawings, by means of a spring 16, and may be guided in any suitable manner, for example, by means of studs 17—17.

18 is a clearance passage between the tail of bolt 4 and the extension 14 (see Fig. 4), said clearance passage being provided for the purpose hereinafter set forth. In the upper side of the sliding tumbler 15 is a gated passage, so located that when the said tumbler 15 has been shifted to the proper position (see Fig. 2), the fence 19 will pass up and down therethrough, sufficient room for vertical movement being afforded by clearance 18. This fence 19 is carried by the lever 20, which is pivoted to the dead bolt. The free end of lever 20 engages the bell crank lever 21, which is pivoted to the lock case, so that when lever 20 is lifted from the position shown in dotted lines (Fig. 1) to that shown in dotted lines (Fig. 3), it will shift the bell crank lever 21 from the position shown in Fig. 1 to the position shown in Fig. 3. The lever 21 bears against the tail 6 of the latch bolt.

Operation: Assuming the parts are in the position shown in Fig. 1, a proper key inserted through the passage 12 and turned will release the bolt 4, drawing the same back. During the first of this movement the bitted end of the key will entirely clear the tumbler 15, because the same, being carried by the dead bolt 4, will be out of range of movement of said key, the bolt 4 being advanced. When the bolt 4 is retracted, however, as shown in Fig. 3, the end of tumbler 15 will then come within the range of operation of the bitted end of the key; consequently a continued rotation of said key will push the tumbler 15 forward the requisite distance, so that when the end of the key engages the lower side of lever 20, it may lift the same to retract the latch bolt 3 through the medium of lever 21. Inasmuch as the tumbler 15 is being moved forward at the same time the lever 20 is being lifted, it is desirable to have the edges of the gated passage formed ob-



liquely, as best seen in Figs. 1 and 3. It is also desirable to have the adjacent edges of the part 19 similarly beveled. By this arrangement a more accurate unlocking position of the tumbler 15 may be provided, thus making it more difficult to "pick" the lock. This is of particular advantage where, as in the present case, a suitable dogging device is employed to prevent the turning of the outer knob. Such dogging device is commonly termed "night latch mechanism" and in the drawings that form of the night latch mechanism comprises a sliding dogging bolt 22, operated by the thumb pieces 23—23, connected to walking-beam 24. The bolt 22 makes engagement with the roll-back for the outer knob, consequently when this roll-back is dogged, the only way that the latch bolt 3 can be retracted is through the medium of a suitable key which operates in the manner already described.

What I claim is—

1. In a lock and latch, a latch bolt, a dead bolt, tumbler mechanism including one tumbler carried by the case for locking the dead bolt, and another tumbler slidingly mounted on the dead bolt for locking the latch operating mechanism.

2. In a device of the character described, a dead bolt, a latch bolt, a knob-controlled roll-back for operating the latch bolt, stop-work for said roll-back, means for operating both the latch bolt and the dead bolt, tumbler mechanism for locking the dead bolt, and other tumbler mechanism for locking the latch retracting mechanism, the latter being slidingly mounted on the dead bolt.

3. In a device of the character described, a dead bolt, a tumbler therefor, a latch bolt, a key-actuated means for retracting said latch bolt, a tumbler for locking said means, said tumbler being slidingly mounted on the dead bolt.

4. In a device of the character described, a dead-bolt tumbler, a latch bolt, key-actuated means for retracting said latch bolt, a reciprocating sliding tumbler for locking said key-actuated latch bolt operating means, and a shiftable carrier for the last-mentioned tumbler arranged to shift it to a non-operating position when the dead-bolt tumbler is projected.

5. In a lock and latch, a latch bolt, a dead bolt, two independent means for operating the latch bolt, stop-work for dogging one of said means, a reciprocating tumbler for dogging the other of said means, a reciprocating support for the last-mentioned tumbler, a separate tumbler for the dead bolt, and a single means for operating both of said tumblers.

6. In a lock and latch, a dead bolt, a tumbler therefor, a latch bolt, two independent means for operating the latch bolt, a sliding tumbler for locking one of said means against operation, said tumbler being carried by the dead bolt and movable relatively thereon.

7. In a lock, a dead bolt, a latch bolt, a swinging tumbler for the dead bolt, a sliding tumbler carried by the dead bolt, latch-operating means, said last-mentioned tumbler cooperating therewith.

8. In combination, two bolts, two tumblers, a lever carried by one of said bolts and operatively connected with the other, a tumbler carried by the case for engaging one of said bolts, another tumbler slidably mounted upon the same bolt but movable independently thereof, and arranged to dog said lever, whereby both bolts may be operated through one key hole.

NORMAN B. HURD.

Witnesses:

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