No. 843,607. PATENTED FEB. 12, 1907.

N. B. HURD.

LOCK.

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Fig. 1.

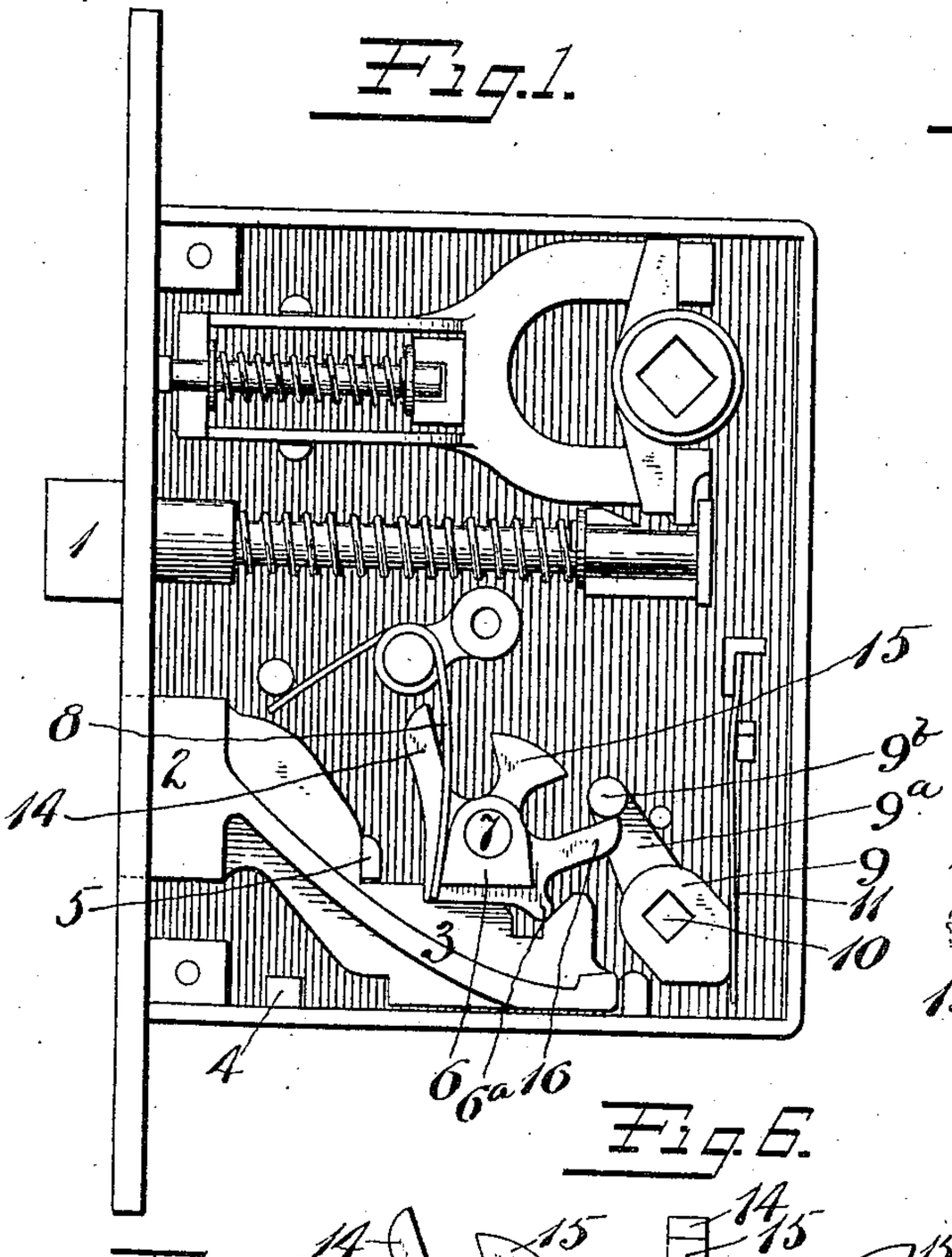


Fig. 2.

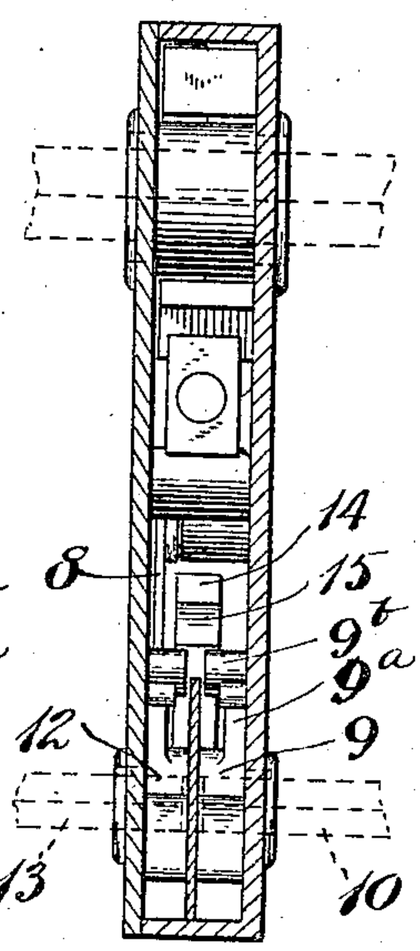


Fig. 6.

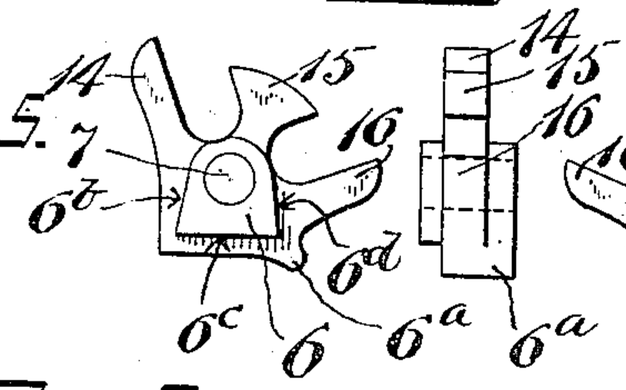


Fig. 5.

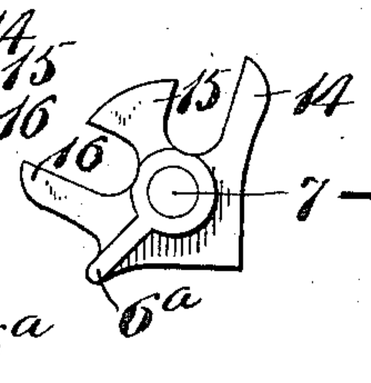


Fig. 7.

Fig. 3.

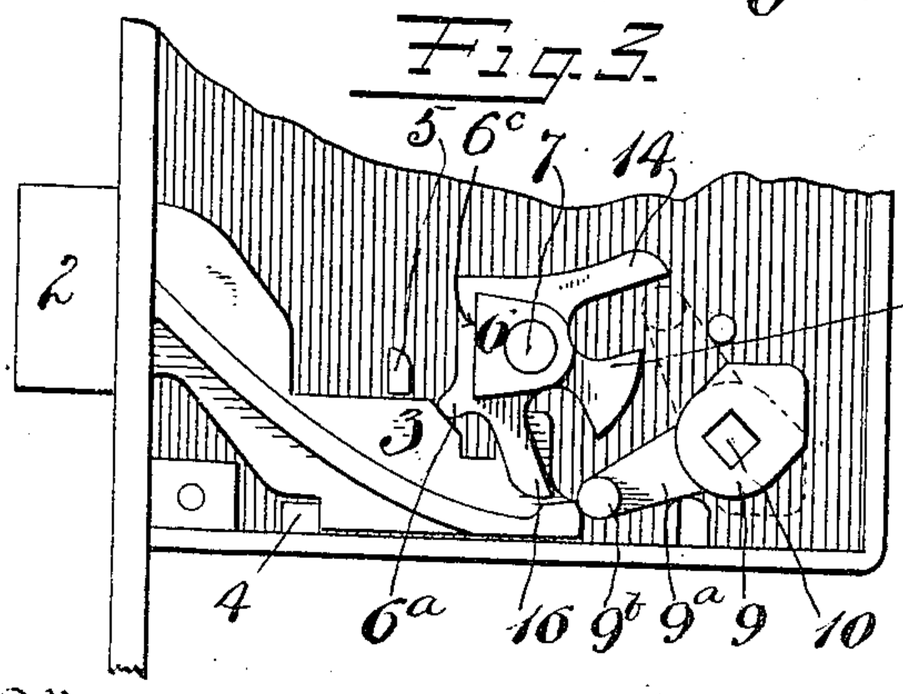
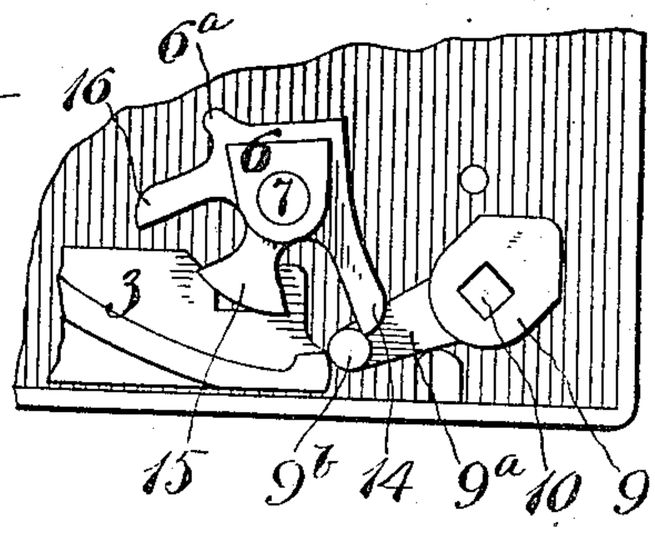


Fig. 4.



Witnesses

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LOCK.

No. 843,607. Specification of Letters Patent. Patented Feb. 12, 1907.

Application filed November 28, 1906. Serial No. 345,476.

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, Connecticut, have invented certain new and useful Improvements in Locks, of which the following is a full, clear, and exact description.

My invention relates to improvements in dead-locking devices for so-called "communicating doors"—for example, doors between communicating rooms in hotels and the like.

The object is to provide a simple and effective means for dead-locking a door from either side, the construction being such that when the door is dead-locked from one side it cannot be cast off from the opposite side, although the opposite thumb-turns act on the same bolt. In every instance it requires that the thumb-turns or controlling means on both sides of the door shall be in the unlocked position before the dead-bolt is retracted.

The apparatus is very simple, there being a single dead-locking bolt employed and a single roll-back, the latter being operated by two independent spindles located on opposite sides of the lock.

Figure 1 is an elevation of the interior of a lock constructed to embody my invention. Fig. 2 is a vertical section thereof. Figs. 3 and 4 are detail views showing certain parts in different positions. Fig. 5 is a side view of the roll-back. Fig. 6 is an edge view thereof. Fig. 7 is a view of the side of the roll-back opposite to that shown in Fig. 5.

1 is the ordinary latch-bolt. The construction of the same is immaterial. So, also, it is immaterial what kind of latch-bolt-operating means are employed therefor.

2 is a dead-bolt having a rearwardly-extending shank 3.

4 is a stop arranged to limit the outward movement of the bolt 2. 5 is a stop arranged to limit the inward movement of the same.

6 is what I shall term the "roll-back." This device is pivotally mounted at 7.

6^a is a projection on the hub or roll-back 6, said projection being arranged to operatively engage with the side walls of a notch in the shank 3. As shown in Fig. 1, the dead-bolt 2 is retracted, and the shoulder 6^a bears against an incline at the edge of the notch in the shank thereof in such a manner as to hold said dead-bolt retracted.

8 is a spring arranged to bear at all times against one of three flat faces on the roll-back 6. These three flat faces are indicated at 6^b 6^c 6^d. (See Fig. 5.) In Fig. 1 this spring 8 bears against the face 6^b, in which position the retracted bolt is held against accidental displacement. In Fig. 3 the spring bears against the flat face 6^c, the bolt being projected. In Fig. 4 the spring bears against the flat face 6^d, the bolt still being projected.

9 is a hub carried by one of the side plates of the case and controlled by a spindle 10. 9^b is a lateral stud-like projection on arm 9^a, said stud being arranged to engage the roll-back 6. This hub 9 has two positions, in either of which it is held against accidental disengagement by spring 11. On the opposite side plate of the lock-case there is another hub 12, corresponding to the hub 9 and facing toward the same. Hub 12 is operated by spindle 13. The spindles 10 and 13 are entirely independent and opposite.

On the roll-back there are three arms 14, 15, and 16, the arm 15 being shorter than the arms 14 and 15 and being located intermediate the same.

The operation is as follows: Assuming the parts stand as shown in Fig. 1, the dead-bolt may be projected by rotating either hub. If hub 9 is rotated, the roll-back 6 will be rotated by stud 9^b pressing against arm 16. This rotation of the roll-back will shift the dead-bolt 2 from the position shown in Fig. 1 to that shown in Fig. 3. The dead-bolt is now advanced and cannot be retracted, excepting by the reverse rotation of hub 9. The position of the opposite hub 12 is indicated in dotted lines, Fig. 3. If this hub is now turned by spindle 13, the stud thereon will engage with the shoulder 15, and will swing the roll-back from the position indicated in Fig. 3 to that indicated in Fig. 4, in which position the arm on hub 12 will line up with the arm on hub 9, and the roll-back will assume the position in which the spring 8 will bear against the flat face 6^d. In moving the roll-back from the position shown in Fig. 3 to the position shown in Fig. 4 the arm 15 (being shorter than the arms 14 and 16) will clear the stud 9^b. The arm 14 will now stand in a position to be returned the first step by either one of the hubs 9 and 12. For example, if the hub 9 is swung back to its original posi-

tion the stud 9^b will engage arm 14, swinging the roll-back to the position indicated in Fig. 3, wherein it will be frictionally held by spring 8 bearing against flat face 6^c. It will be observed that this movement will not retract the dead-lock 2, but it will position the roll-back so that it stands ready to retract the bolt as soon as the hub 12 is turned back to its original position. On this return movement of the roll-back the arm 15 thereon will of course clear the stud 9^b on roll-back 9. When the roll-back 6 is in the position shown in Fig. 4, the end of the arm on hub 9 or hub 12 will stand to the rear of the shank 3, and thus lock the bolt against retraction just as effectively as though the projections 6^a engaged said shank.

What I claim is—

1. In a device of the character described, a dead-bolt, means for reciprocating the same comprising a roll-back coöperating with said bolt, and independently oppositely arranged manually-controlled devices coöperating with said roll-back, whereby when both manually-controlled devices are retracted the bolt will be retracted and when either manually-controlled device is advanced said bolt will be projected.

2. In a device of the character described, a dead-bolt, a roll-back coöperating therewith, said roll-back having a step-by-step action, two independent devices for moving said roll-back independently, and means whereby said bolt will remain projected until both roll-back-actuating devices are retracted.

3. In a device of the character described, a dead-bolt, a pivoted roll-back coöperating therewith, three arms on said roll-back, one of said arms being shorter than the others, and spindle-controlled devices arranged to coöperate with each of said arms to move said roll-back step by step.

4. In a device of the character described, a dead-bolt, a pivoted roll-back coöperating therewith, three arms on said roll-back, one of said arms being shorter than the others, and spindle-controlled devices arranged to coöperate with each of said arms to advance and retract said roll-back step by step.

5. In a lock, a dead-bolt, two independent manually-controlled operating devices manually accessible from opposite sides of the lock, and means intermediate said manually-controlled devices and said bolt whereby when either of said manually-controlled devices is advanced said bolt will be projected.

6. In a lock, a dead-bolt, two independent manually-controlled operating devices manually accessible from opposite sides of the lock, and means intermediate said manually-controlled devices and said bolt whereby when either of said manually-controlled devices is advanced said bolt will be projected, and when both of said manually-controlled devices are retracted said bolt will be retracted.

7. In a lock, a dead-bolt, a roll-back coöperating therewith, said roll-back having three positions of rest, means for frictionally holding said roll-back in any one of said three positions of rest, and means coöperating with said roll-back and accessible from opposite sides of the door to move said roll-back into any one of said three positions.

8. In a device of the character described, a dead-bolt, a roll-back pivotally mounted and coöperating therewith, three arms thereon, the middle arm being shorter than the end arms, two independent operating devices accessible from opposite sides of the lock, said operating devices arranged to coöperate independently and at different times with said roll-back to impart to the latter a step-by-step movement forward or back.

9. In a device of the character described, a dead-bolt, a roll-back pivotally mounted and coöperating therewith, two independent operating devices accessible from opposite sides of the door, said operating devices being arranged to coöperate independently and at different times with said roll-back to impart to the latter a step-by-step movement forward or back, the first step forward and the last step back only moving said bolt.

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Witnesses:
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