No. 867,175. PATENTED SEPT. 24, 1907.

H. G. VOIGHT.

LOCK INDICATOR.

APPLICATION FILED MAR. 22, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

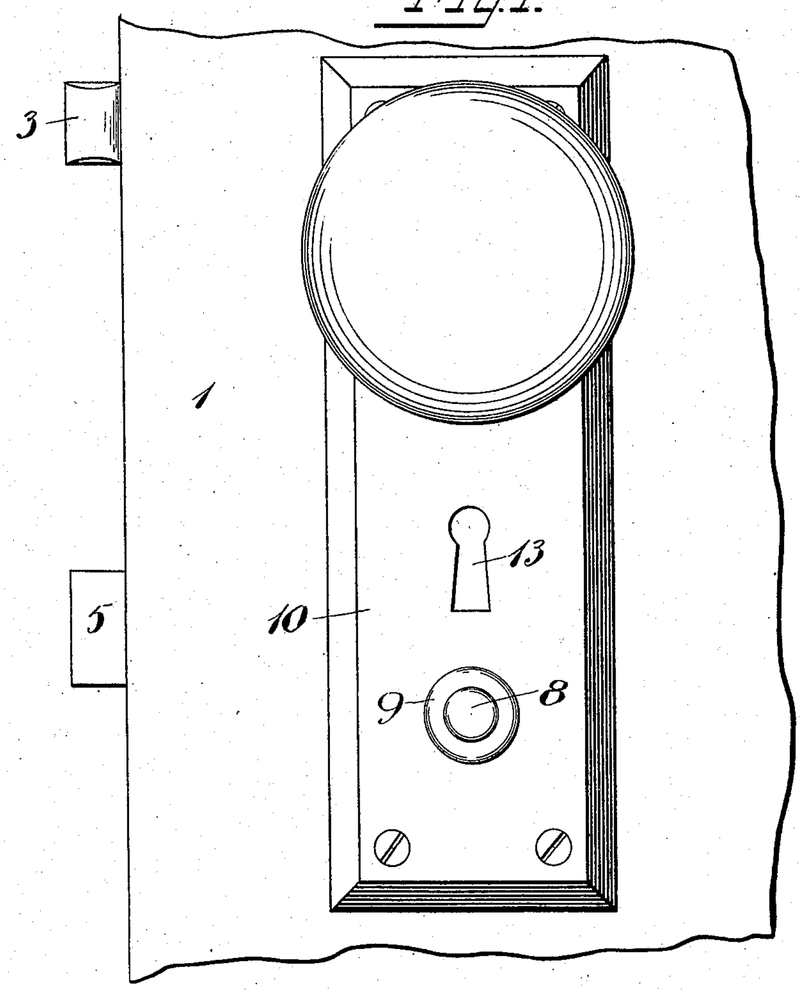


Fig. 4.

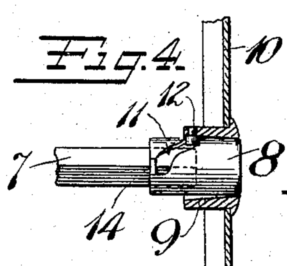


Fig. 6.

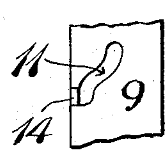
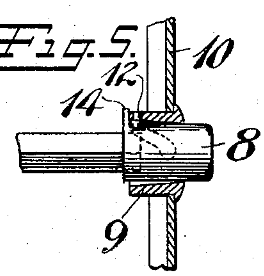


Fig. 5.



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2 SHEETS—SHEET 2.

Fig. 2.

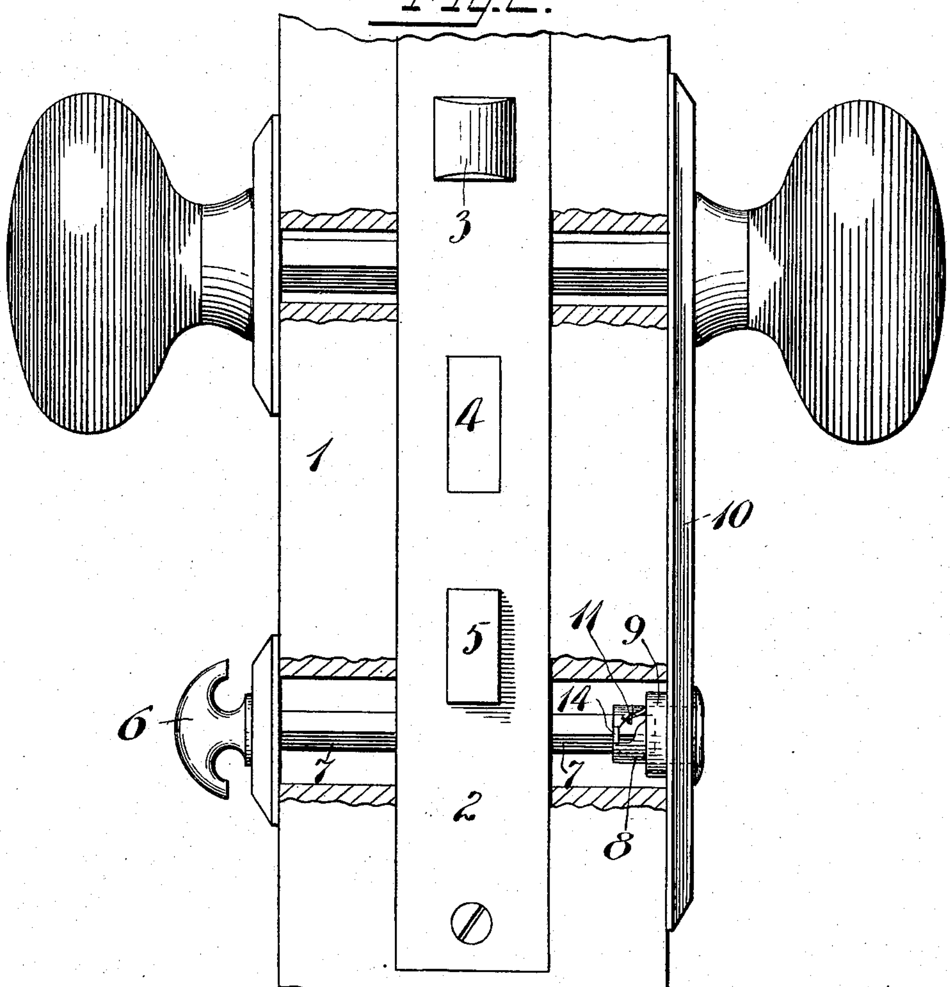


Fig. 3.

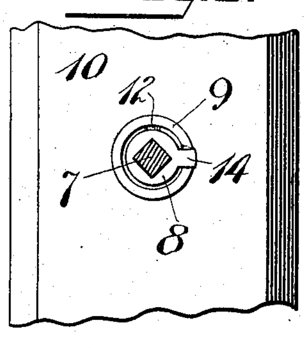
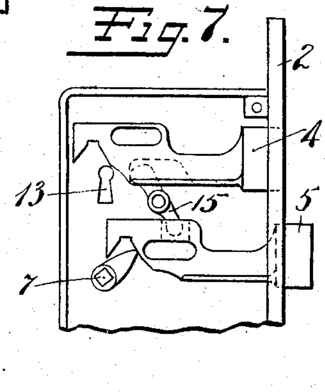


Fig. 7.



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LOCK-INDICATOR.

No. 867,175. Specification of Letters Patent. Patented Sept. 24, 1907.

Application filed March 22, 1907. Serial No. 363,825.

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

My invention relates to improvements in indicators for locks.

The invention is of particular utility in connection with locks for corridor doors. It frequently happens that corridors are dark, in fact so dark that the ordinary visual indicators cannot be readily employed. To that end it is my purpose to provide an indicator that appeals to the sense of touch.

This indicator has a positive movement, and when in one position indicates that the door has not been locked from the inside, while in another position it indicates that the door has been locked from the inside and acts as a warning against unnecessary intrusion.

In the accompanying drawings Figure 1 is a side elevation of a portion of a corridor door with my invention applied thereto. Fig. 2 is a front elevation of the edge of a door equipped with my indicator, said view being partly in section. Fig. 3 is a fragmentary view of the inside of the outside finishing plate bearing the indicator. Figs. 4 and 5 are detail views showing the indicator in different positions. Fig. 6 represents a development of a cam slot. Fig. 7 is an interior view of the lock, reduced.

1 represents a door.

2 represents the face plate of a mortise lock of the usual hotel corridor type.

3 is the latch bolt.

4 is a lock-bolt arranged to be operated by a key insertible from the outside of the door.

5 is a dead bolt arranged to be operated by any suitable means from the inside of the door, for example, the usual thumb-turn 6.

7 is the thumb-turn spindle, the same projecting into the lock to make engagement with bolt 5. This spindle, in the form shown, projects entirely through the lock case and makes operative engagement with the indicator at the outer side.

8 is the indicator, which preferably comprises a button-like device which is capable of being positively moved in and out to either of two indicating positions, which respectively indicate to one desiring information that the bolt 5 is projected or retracted. This indicator 8 is mounted in a suitable guide 9, which if desired may be formed in or attached to the usual escutcheon plate 10. This guide is preferably a thimble-like device and its inner end extends back of the escutcheon plate, as best seen in Figs. 2, 4 and 5. The inner end of the indicator extends to the rear of the guide 9 and has an irregular opening to receive the end of the spindle 7.

11 is a cam-groove formed in the side of the indicator. 12 is a pin carried by the guide 9 and projecting into said cam groove. This pin and groove form what I term a spiral connection between the actuating element and the indicator.

From the foregoing it will be seen that when the door has been locked from the inside, the bolt 5 will be projected, as shown in Figs. 1 and 2. In rotating the spindle 7 to project this bolt, the indicator 8 is also rotated, and since the same is slidable upon the end of the spindle, rotation in a direction to project the bolt 5 will cause said indicator to be retracted (see Figs. 1 and 2). This retraction of the indicator is due to the pin and cam-groove connection previously described. Any one approaching the door from the outside may now learn by feeling for the indicator and by observing its position, that the door has been locked from the inside. It is preferred to have the indicating position as shown in the drawings, to wit, when the indicator is in, (Fig. 4) it indicates that the door has been locked from the inside; when out, (Fig. 5) it indicates that the door has not been locked from the inside, and that if locked at all, such locking has been accomplished by means of bolt 4 turned by a key inserted through the usual outside key-hole 13.

Another advantage of having the indicating position the one in which the indicator is retracted so as to be substantially flush with the escutcheon, resides in the fact that it will foil any attempt upon the part of a possible intruder to operate the lock by turning the outer end of the indicator. It is preferable to have the curves at the extreme ends of the cam slot flattened out, as shown in Fig. 6, so that any effort to push in the indicator will not tend to impart, through the medium of the cam and spiral groove, a rotary movement to the spindle 7. While it is not preferred, nevertheless the indicating position might be reversed. There is decided advantage in employing the positively acting indicator, because it eliminates multiplicity of parts and avoids the use of springs and the like, which are liable to cause undue friction and binding. The invention also permits of a self-adjustment to doors of different thicknesses, it being merely necessary to have the inner end of the indicator of sufficient length to receive the free end of the spindle 7, it being immaterial how far into the rear of said indicator said spindle projects.

14 is a stop of conventional form, attached to the indicator, to prevent its being projected entirely out.

It is obvious that the form of the indicator proper, as well as the support therefor, is immaterial; in fact, the

guide case might be located entirely outside of the door proper and might be of any desired diameter or shape.

The corridor door lock illustrated is of that well known type in which the advancing of the bolt 4 by the insertion of a key from the outside will cause the retraction of the bolt 5, but never the advance of the latter. The result is, the holder of a master key, (for example, a hotel attendant), has it within his or her power to enter a number of rooms, even though the door has been locked from the inside. This would be accomplished by first advancing the upper bolt 4, thereby retracting the lower bolt 5. Thus the holder of the master key can retract the upper bolt and enter the room. Much time of the attendant is saved and much annoyance spared the occupant of a room, by the use of these indicators, for the holder of such a key may instantly learn whether the door has been locked from the inside.

While I have shown a connection between the inside controlled bolt and the indicator in the form of a continuation of the thumb-turn spindle, obviously this is not essential, although preferable, since it results in many economies. It is also preferable to have the inner wall of the guide 9 (when in the form of a thimble, as shown) tapered or flared, so as to permit the indicator to have a sufficient oscillatory movement to prevent binding or cramping in the event the lock has been carelessly applied and the indicator has not been properly alined with its operating device.

In Fig. 7 I have shown a lock of the usual hotel corridor type, with the two bolts and with a pivoted walking beam connection 15 between them. The lower end of the latter projects into a notch in the tail of bolt 5, while the upper end projects into a notch in the tail of bolt 4. One of these notches, for example the upper one, is of greater length than the other, so that when the bolt 4 is retracted it will not project bolt 5, should the latter be retracted. This is a well known construction, but is illustrated because this invention has particular value when applied to a lock of this type, and because it affords a basis for some of the claims which call for the combination of an indicator with such a lock.

What I claim is:

1. In a lock, a bolt, means for operating said bolt from the inner side of the door to which the lock is applied, a reciprocating indicating device for the outside of said door, said indicating device comprising an exposed movable member and means for positively moving said indicating device into and holding the same in two different indicating positions.

2. In a lock, a bolt, means for operating said bolt from the inner side of the door to which the lock is applied, an indicating device for the outside of said door, said indicating device comprising an exposed axially movable member, and means for positively moving said indicating device into and holding the same in two different indicating positions said indicator being retracted when the bolt is projected.

3. In a lock, a bolt, means for operating said bolt from the inner side of the door to which the lock is applied, an indicating device for the outside of said door, said indicating device comprising an exposed longitudinally movable member, and means for positively moving said indicating device into two different indicating positions, the movement of said operating means in both directions being dependent with the movement of the said bolt.

4. In a lock, a bolt, means for operating the same from opposite sides of the door to which the lock is applied, an indicator for the outer side of the lock, said indicator comprising an exposed movable device, and means to positively move said indicator to two different indicating positions when the bolt is operated from the inside and to only one indicating position when said bolt is operated from the outside.

5. In combination, a lock having a bolt, means for actuating the same, an indicator comprising an axially movable externally located device, means coöperatively connecting the bolt and indicator to impart a positive movement to the indicator in both directions and arranged to hold the latter positively in two different positions.

6. In combination, a lock having a bolt, means for actuating the same, an indicator comprising an axially movable externally located device, means coöperatively connecting the bolt and indicator to impart a positive movement to the indicator in both directions, said means including a spiral connection between the indicator and an adjacent part.

7. In combination, a lock case, a bolt, a spindle for operating said bolt, said spindle extending entirely through said case, an indicator comprising an externally located exposed device movable in and out, a connection between said indicator and spindle, and a spiral connection between said indicator and an adjacent part whereby, when said spindle is rotated in either direction, the indicator will be given a positive movement, in or out, to correspond with the direction of rotation of said spindle.

8. In an indicating device for locks, the combination of an externally located exposed device, with means for positively moving the same in and out, said means bearing a dependent relation to the bolt of the lock, said indicator standing in while the bolt is projected and out when the bolt is retracted.

9. An indicating device for door locks comprising a reciprocating finger-piece, a guide therefor, a rotatable spindle engaging said indicator at the rear, means to prevent the independent rotation of said indicator relatively to one of said parts, and a spiral or cam connection between said indicator and the other part.

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