(No Model.)

2 Sheets—Sheet 1.

A. M. COAN.

LOCK.

No. 530,396. Patented Dec. 4, 1894.

Fig. 1.

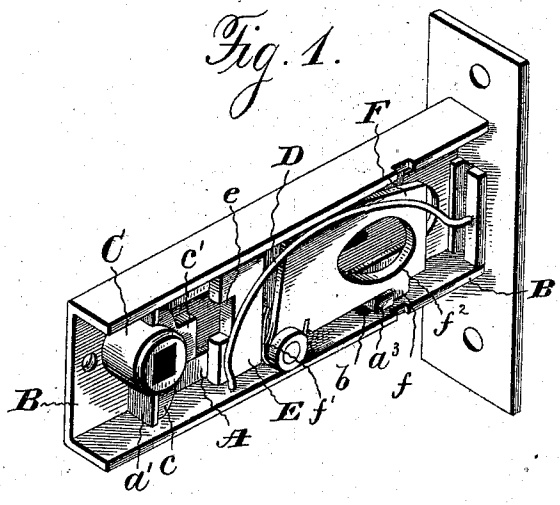
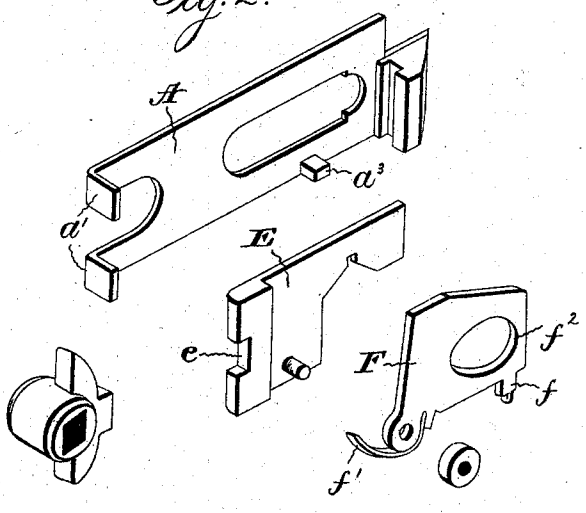


Fig. 2.



Witnesses:
Jas. E. Hutchinson
Henry C. Hazard.

Inventor.
Asa M. Coan, by
Prindle and Russell, his attys

(No Model.) 2 Sheets—Sheet 2.

A. M. COAN.

LOCK.

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Fig. 3.

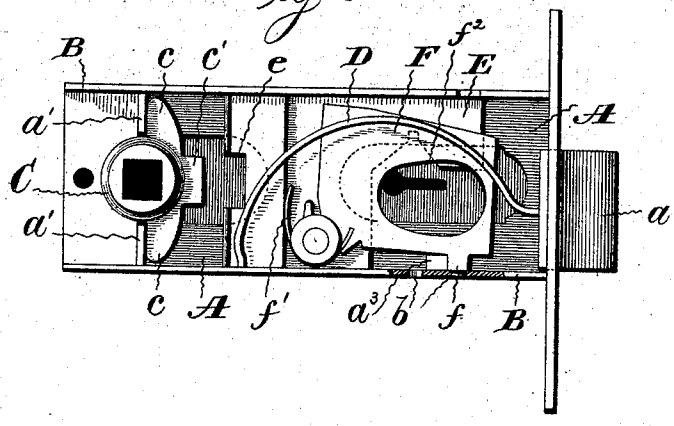


Fig. 4.

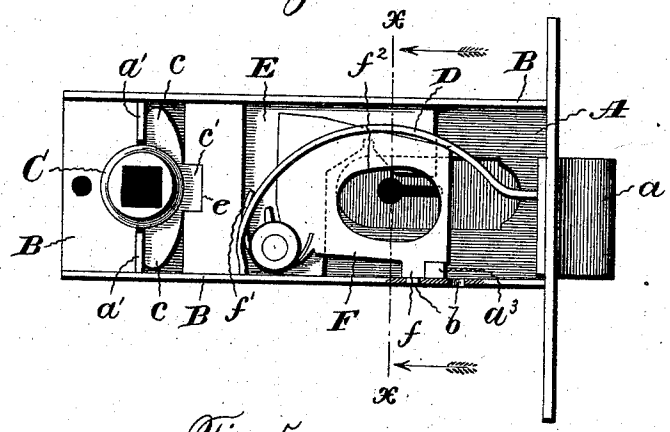
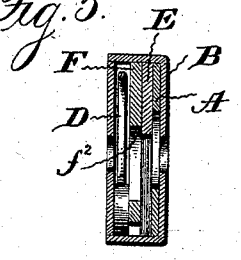


Fig. 5.



Witnesses:
Jas. E. Hutchinson.
Henry C. Hazard.

Inventor.
Asa M. Coan, by
Prindle and Russell, his Attys

UNITED STATES PATENT OFFICE.

ASA M. COAN, OF ALGONA, IOWA.

LOCK.

SPECIFICATION forming part of Letters Patent No. 530,396, dated December 4, 1894.

Application filed June 18, 1894. Serial No. 514,946. (No model.)

To all whom it may concern:

Be it known that I, ASA M. COAN, a citizen of the United States, residing at Algona, in the county of Kossuth, and in the State of Iowa, have invented certain new and useful Improvements in Locks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my lock, with a portion of the casing removed; Fig. 2, a perspective view of the parts thereof, removed from the casing and separated from each other. Figs. 3 and 4 are elevations with the casing side removed, and showing respectively the latch bolt free to be thrown by the knob, and locked against such movement; and Fig. 5, a vertical transverse section on line *x*—*x*, of Fig. 4.

Letters of like name and kind refer to like parts in the several figures.

The object of my invention is to provide a mortise-lock for doors that will be of few parts, and so compactly arranged that a small mortise will be required in the door and the latter therefore not unduly weakened by being cut into, and yet a lock possessing all necessary strength and safety, and to this end, said invention consists in the lock and in the parts thereof constructed substantially as and for the purpose hereinafter specified.

My invention relates to the class of locks in which the dead bolt thrown by a key is dispensed with and in lieu thereof, means provided whereby the knob-actuated latch may be prevented from being thrown by the use of the knob, and in the carrying of my invention into practice, I employ a sliding latch A having a beveled head *a* of usual shape, and a shank that consists of a thin, flat plate, and snugly fits and is guided in its reciprocations by a casing B. The inner end of the shank is bifurcated or forked to accommodate a knob-spindle sleeve C which is journaled at its ends in the sides of the casing and has the usual oppositely extending lugs *c* and *c* to engage lateral projections *a'* and *a'* upon the inner end of the latch A and thus, when not prevented, move the latter inward against the normal, outward tendency thereof imparted by a spring D. Such spring consists simply of a bowed or arc-shaped piece of wire, that at one end engages a notch in the inner end of the latch head *a* and at its other end engages an opening in the bottom side of the casing B. Alongside the latch shank is a sliding plate E that at its top and bottom edges engages and is guided by the upper and lower sides of the casing B. At its inner end, said plate is thickened as shown, and is provided with a notch *e* that at the inner limit of motion of said plate is adapted to engage a lug or projection *c'* upon the sleeve C and thus hold the latter from being rotated by the knob spindle, and, in consequence, the latch withdrawn, while when the plate is at the opposite limit of its motion, said notch is removed from the path of the lug and the knob can be freely rotated and the latch thrown thereby.

The plate E is locked at each limit of its motion by means of a tumbler F that is pivoted to and is carried by said plate, and has a downwardly projecting lug or stump *f* which has a reduced portion or teat to enter and engage either of two openings *b* and *b* in the lower side of the casing B. Said tumbler F tends normally to swing downward under pressure of a spring *f'* that is attached at one end to the tumbler, and bears at its free end against a projection formed by the enlarged portion of the plate E.

To supplement the locking of the knob against rotation, the latch is also prevented from being moved inward by providing upon the same a lateral projection a^3 that, when the plate E and tumbler F are in position for the notch *e* to engage the lug *c'*, will engage with the stump *f* of the tumbler.

The tumbler is rocked to release the plate, and the latter is reciprocated to lock and unlock the knob-spindle sleeve C, by means of a key that may be inserted through a suitable hole and caused by its rotation to engage with the upper side of a cam-shaped opening f^2 in the tumbler to first lift the latter and then with a notch *e'* in the plate to slide it.

The parts of my lock are so few, and they are so compactly arranged, that in ordinary cases, a mortise for the reception of the lock

can be made by boring three holes paralle with each other, with a half inch bit.

While I have designed my lock especially for doors, I of course consider myself entitled to such other uses of it as may be practicable.

Having thus described my invention, what I claim is—

1. In a lock the combination of a latch, the means for moving the same, a sliding plate, a tumbler carried by said plate, and a stop on the latch adapted for engagement by the tumbler to hold the latch against movement, substantially as and for the purpose specified.

2. In a lock, the combination of a latch, the rotary piece for moving the same, a sliding plate for locking said piece against rotation, a tumbler carried by said plate and a stop to engage said tumbler to lock the plate against movement, substantially as and for the purpose set forth.

3. In a lock, the combination of a latch, the rotary piece for moving the same, a sliding plate for locking said piece, a tumbler to lock such plate at its limits of motion, and a stop on the latch adapted for engagement by the tumbler to hold the latch against movement, substantially as and for the purpose described.

4. In a lock, the combination of the sliding latch, the rotary sleeve to move the same, a lug on said sleeve, a sliding plate having a notch to engage such lug, a tumbler pivoted to said plate, and a lug on the latch to engage the tumbler, substantially as and for the purpose specified.

5. In a lock, the combination of a casing, a sliding latch whose shank engages and is guided by the upper and lower sides thereof, a rotary sleeve to move the latch, a sliding plate to lock said sleeve against rotation, also engaging and guided by the upper and lower sides of the casing, and a tumbler pivoted to such plate, substantially as and for the purpose shown.

In testimony that I claim the foregoing I have hereunto set my hand this 2d day of June, 1894.

ASA M. COAN.

Witnesses:
LEMUEL L. FOSTER,
G. E. BOVEE.