

(No Model.)

2 Sheets—Sheet 1.

J. MAYNARD.

COMBINED LATCH AND LOCK.

No. 393,379.

Patented Nov. 27, 1888.

Fig. 1.

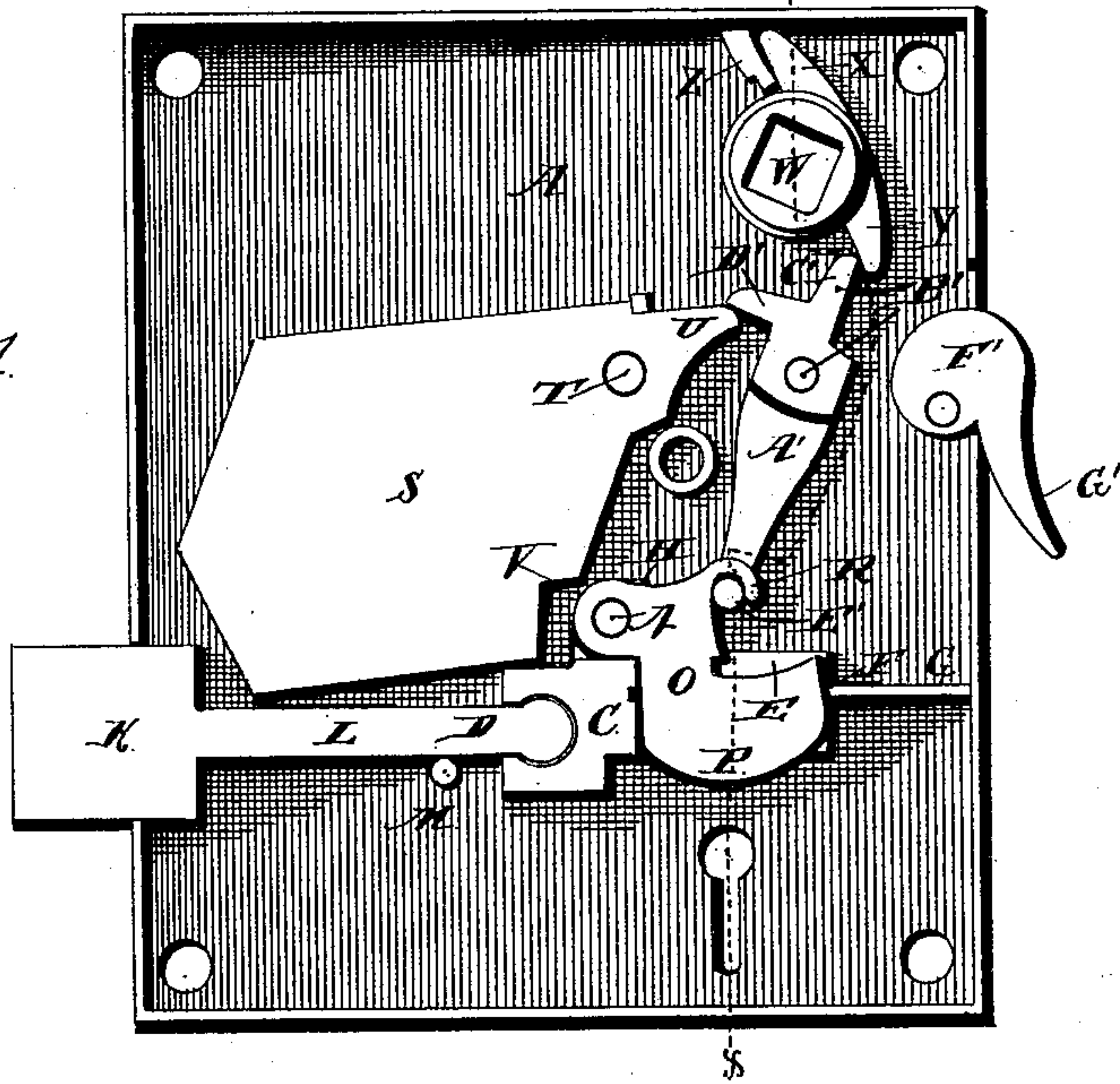
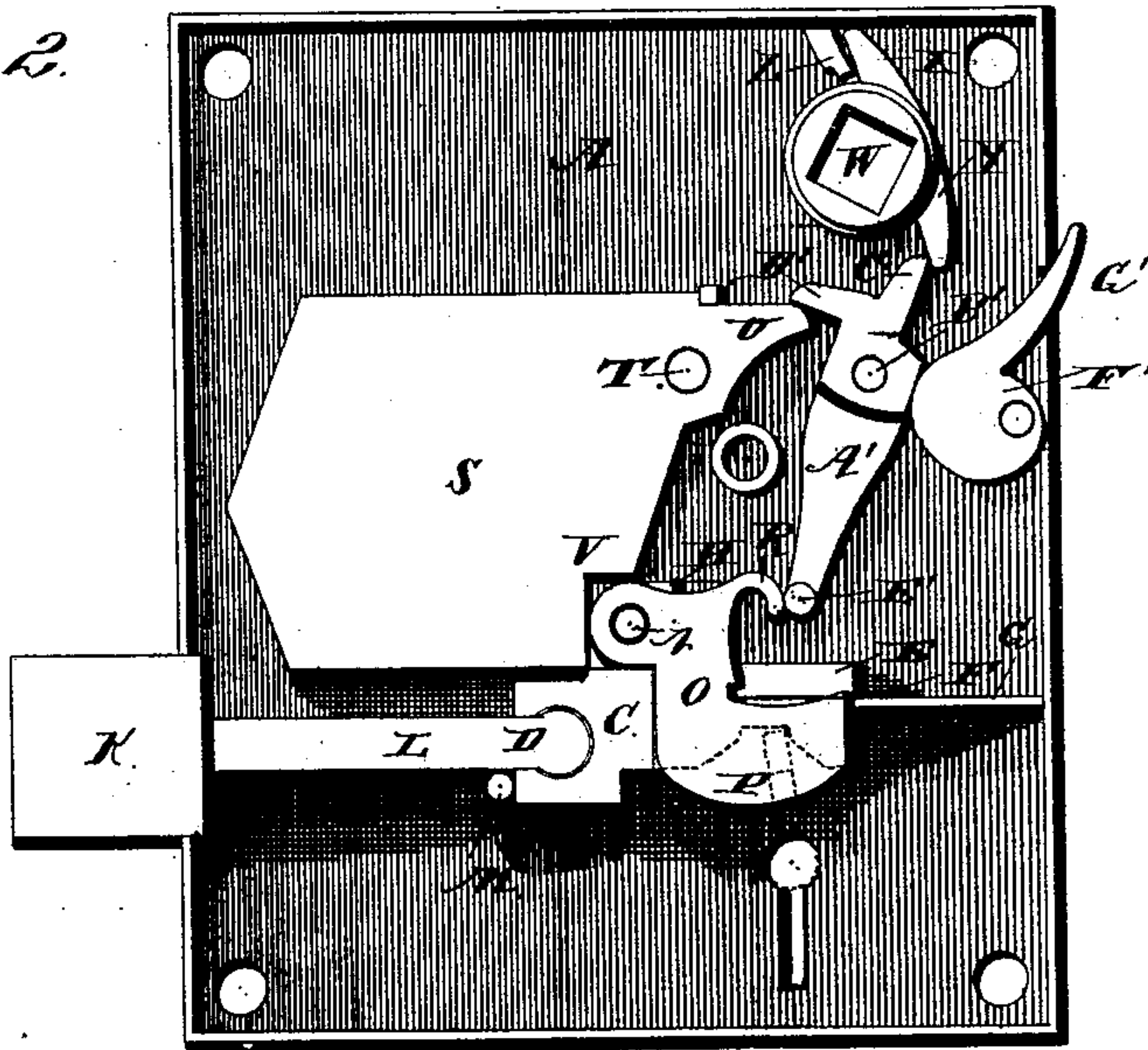


Fig. 2.



Witnesses.

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Fig. 3.

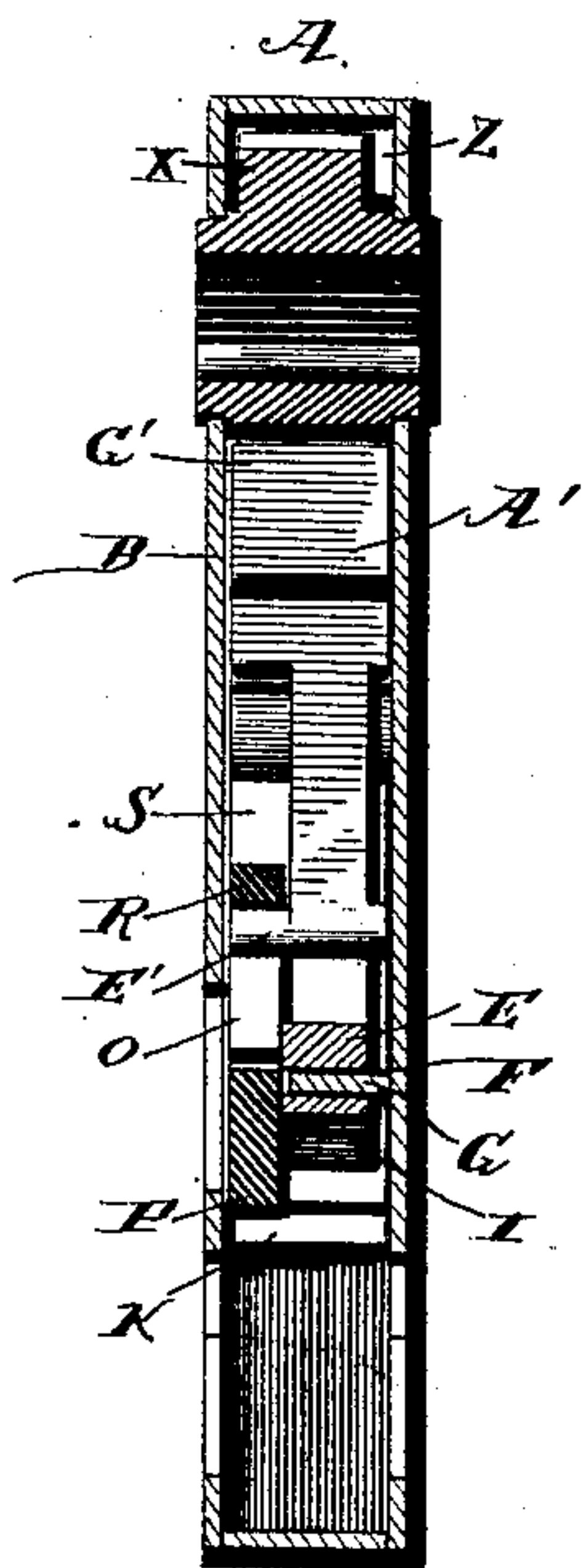


Fig. 4.

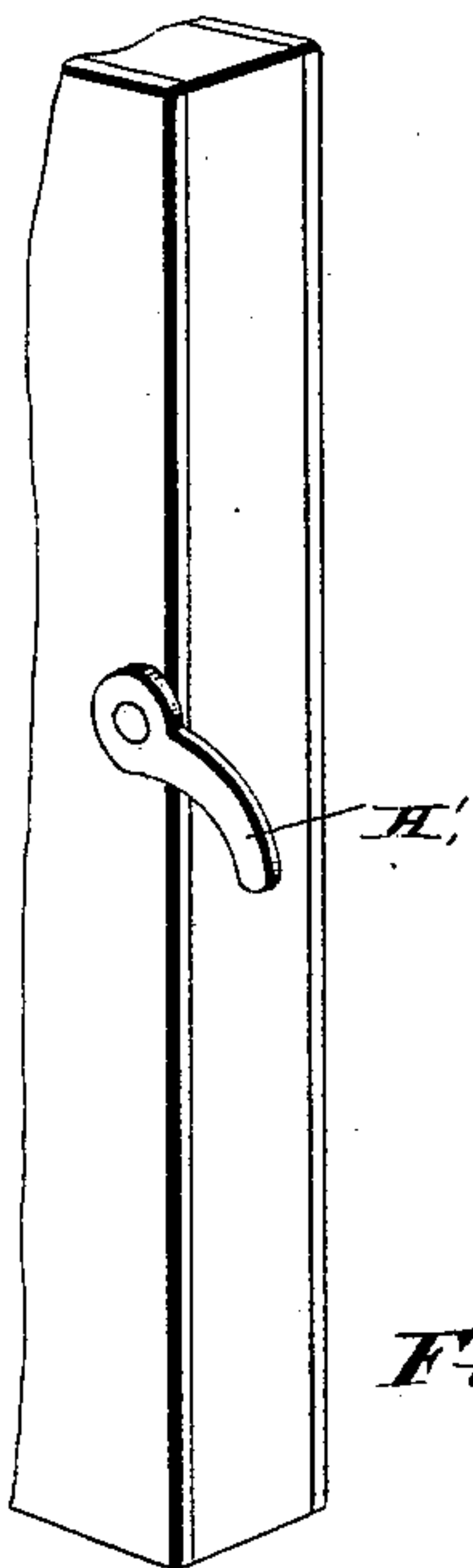
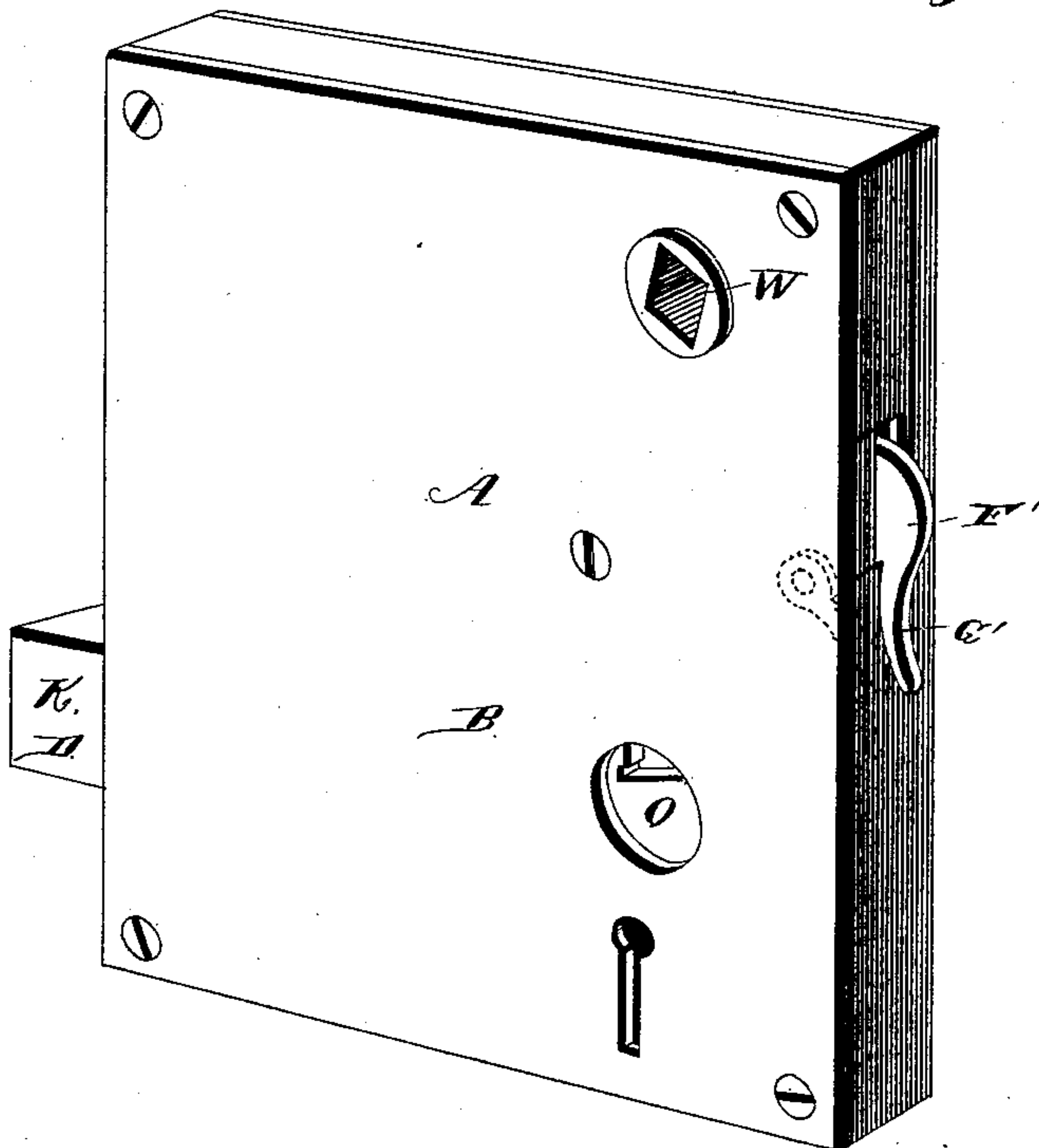
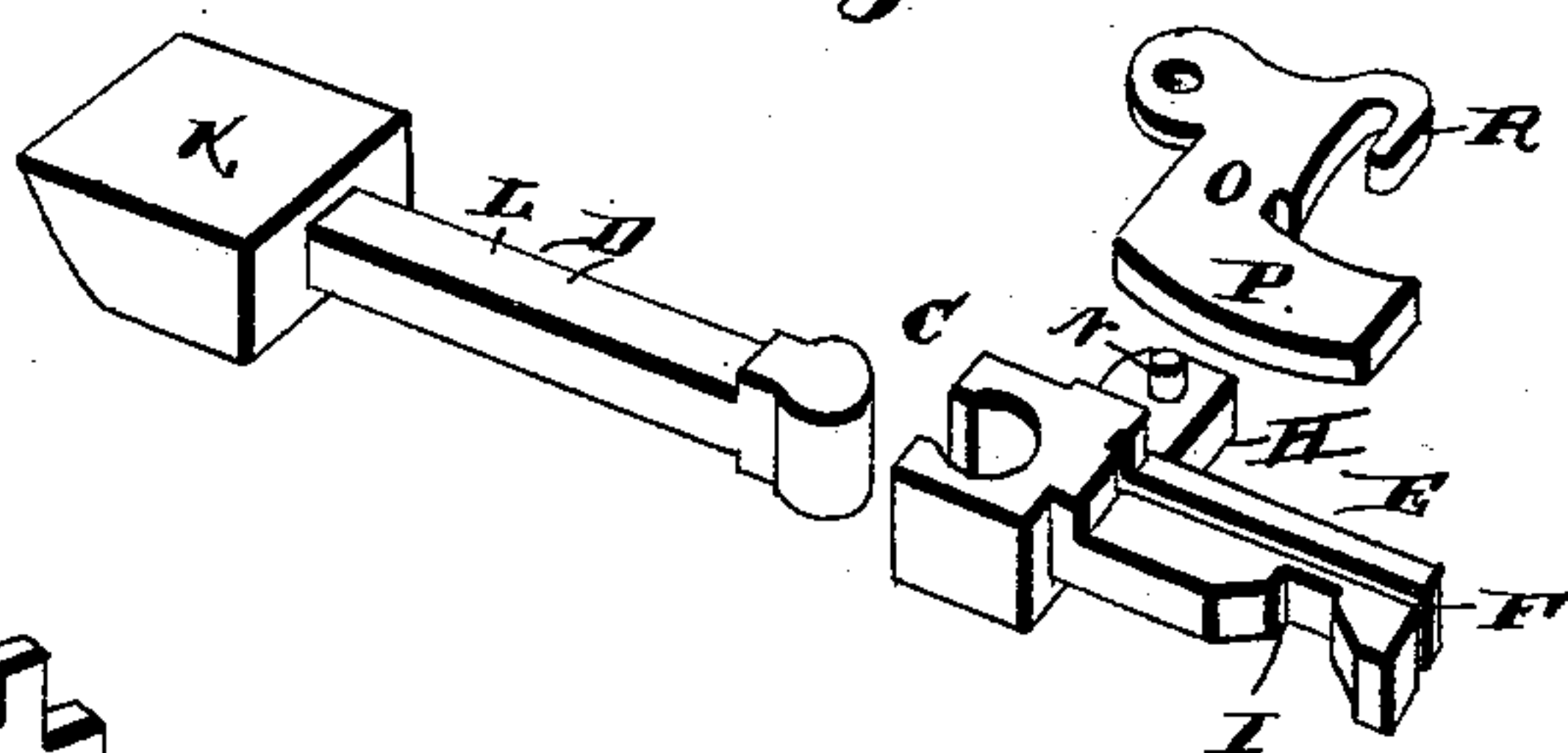


Fig. 5.

Fig. 7.



Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN MAYNARD, OF BOWMANVILLE, ONTARIO, CANADA.

COMBINED LATCH AND LOCK.

SPECIFICATION forming part of Letters Patent No. 393,379, dated November 27, 1888.

Application filed December 1, 1887. Serial No. 256,667. (No model.)

To all whom it may concern:

Be it known that I, JOHN MAYNARD, a citizen of the Dominion of Canada, residing at Bowmanville, in the county of Durham and Province of Ontario, Canada, have invented a new and useful Improvement in a Combined Latch and Lock, of which the following is a specification.

My invention relates to an improvement in combined door latches and locks; and it consists in the peculiar combination and arrangement of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is an elevation of my invention when arranged to form a door-latch, one side of the case being removed so as to disclose the interior mechanism. Fig. 2 is a similar view of the same when the bolt is locked. Fig. 3 is a vertical sectional view taken on the line *x x* of Fig. 1. Fig. 4 is a perspective view of a combined lock and latch embodying my improvements, the case being entire. Fig. 5 is a detached perspective view of the key for opening the lock. Fig. 6 is a detail perspective view of the combined bolt and latch and the tumbler. Fig. 7 is a detail view to show the modified form of locking cam.

A represents the lock-case, which is rectangular in form and is made of any suitable material, and is provided with the removable side B.

C represents the combined bolt and latch, which comprises the two sections D E. The section E is arranged in the interior of the lock-case, and is provided with a longitudinal slot, F, that is guided on a flange, G, arranged horizontally in the lock-case. On the upper side of the said section E is a shoulder, H, and on the lower side of the said section is a recess, I, adapted to be engaged by a key, such as shown, Fig. 5. The section D has a head, K, that projects through an opening in the front side of the case, and is beveled or rounded on one side in the usual manner, and has an inwardly-extending stem or arm, L, the inner end of which is pivotally jointed to the section E. A stud, M, is arranged in the lock-case and bears under the stem or arm L, the function of the said stud being to retain the said

arm or stem in a horizontal position at all times. From the shoulder H of the section E projects a stud, N.

O represents a tumbler, which is pivoted on the stud N, bears against a recess in one side of the section E, has a curved lower edge, P, which depends below the said section E, and is provided in its rear upper corner with a hook, R.

S represents a gravity-detent, which is pivoted near its upper rear corner on a stud, T, in the case A, is provided at its upper corner with an arm, U, and at its lower rear corner with a recess, V, adapted to receive the shoulder H of the latch and bolt.

W represents the knob sleeve or collar, which is journaled in the rear upper corner of the case, and is provided with oppositely-extending ears X and Y. A stump, Z, is made in the lock-case to engage the ear X.

A' represents a lever-arm, which is fulcrumed at a suitable distance from its upper end on a pin, B', arranged at a suitable distance below the sleeve W. The said lever-arm A' has at its upper end a prong, C', which engages the ear Y of the knob-sleeve, and is provided with a forwardly-extending arm or prong, D', which engages the arm U of the gravity-detent. The lower end of the lever-arm A' is provided with a stud, E', which is adapted to be engaged by the hook R of the tumbler.

F' represents a locking-cam, which is journaled in the rear side of the lock-case at a suitable distance from the upper edge thereof, and is provided with an arm, G', which projects through an opening in the rear side of the lock-case.

The operation of my device is as follows: When the hook R of the tumbler engages the stud E' of the lever-arm A', the said lever-arm is connected to the bolt and latch, and the outer end of the latter is prevented from projecting farther beyond the front edge of the case than to engage the catch (not shown) secured to the door-jamb. In order to open the door, the knob is turned, thereby causing the knob sleeve or collar W to rotate, and the ear Y thereof, by pressing forward on the upper prong of the lever-arm A', to draw rearward on the tumbler, and thereby withdraw the

latch. As the latch is withdrawn, the arm D' of the lever-arm A' presses downward on the arm U of the gravity-detent, and thereby raises the free end of the latter, and when the knob is released the said gravity-detent, as it reassumes its normal position, causes the lever-arm A' to move the latch forward and turns the knob sleeve or collar until the ear X thereof engages the stump Z, as shown in Fig. 1. In order to lock the door, a key of suitable construction—such as shown in Fig. 5—is inserted in the key-hole of the case, and is turned therein. The web of the key first engages the curved lower edge, P, of the tumbler, and thereby turns the same on its pivot to cause its hook R to disengage the stud E' of the lever-arm, and the web of the key then engages the notch or recess in the lower side of the section E of the latch and bolt and moves the same forward, and thereby forces the head K farther into the catch than before. As the latch-bolt completes its outward movement, the hook R of the tumbler slides past the stud E' of the lever-arm and drops in front of the said stud, as shown in Fig. 2, and in this position the latch is moved forward a sufficient distance to effectually lock the door, and on turning the knob the lever-arm A', being disconnected from the tumbler, will swing idly rearward and simply raise the free end of the gravity-detent without withdrawing the latch-bolt, consequently requiring the use of the key to open the door.

If it be desired to lock the door from the inside, so that the lock cannot be operated by a key, this may be done by turning the cam F' so as to cause the same to bear against the rear side of the lever-arm, which will prevent the lever-arm from moving and therefore prevent the knobs from being turned, and also prevent the latch-bolt from being withdrawn by a key.

When the lock is used as a mortise-lock, one of the trunnions of the cam F' is extended beyond one side of the lock-case and provided with an arm, H', by means of which the cam may be operated, the arm G' of the said cam being in this instance dispensed with. (See Fig. 7.) A lock thus constructed is extremely cheap and simple, operates without the use of

springs, is very strong and durable, and is not likely to get out of order.

Having thus described my invention, I claim—

1. The combination, in a combined latch and lock, of the bolt, the tumbler pivoted thereto and having the hook R, the gravity-detent S, normally engaging the bolt and having the arm U, the knob sleeve or collar, and the lever-arm A', the latter having the arms engaged by the knob sleeve or collar and the arm U, and provided further with a stud, E', adapted to be engaged with or disengaged from the hook R of the tumbler, substantially as described.

2. The combination of the bolt, the tumbler pivoted thereto, the knob-sleeve above the bolt, the lever-arm arranged between said sleeve and bolt and engaged at its upper end by the sleeve and at its lower end by the tumbler, the detent engaging said lever-arm and the bolt, and the cam bearing on said lever-arm, as set forth.

3. The combination with the case having the key-hole, the latch-bolt above said hole and recessed on its under side, the knob-sleeve, the lever actuated by said sleeve, and the tumbler pivoted on the bolt and adapted to engage said lever and extending down on one side of the recess in the bolt, as and for the purposes set forth.

4. The combination, with the bolt, of the lever A', engaging the same and provided with the prongs C' D' at its upper end, the knob-sleeve acting on the prong C', and the gravity-detent having the arm U engaging the prong D', as set forth.

5. The improved bolt herein described, comprising the sections D E, jointed together at their adjacent ends, the section E having a shoulder, H, and a stud thereon, and the tumbler pivoted on the stud and depending past the side of the section E, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN MAYNARD.

Witnesses:

J. N. GALBRAITH,
IRA BRITTAIN.