(Model.)

# L. VAN ALSTYNE.

## COMBINED LOCK AND LATCH.

No. 327,624. Patented Oct. 6 1885.

Fig. 1.

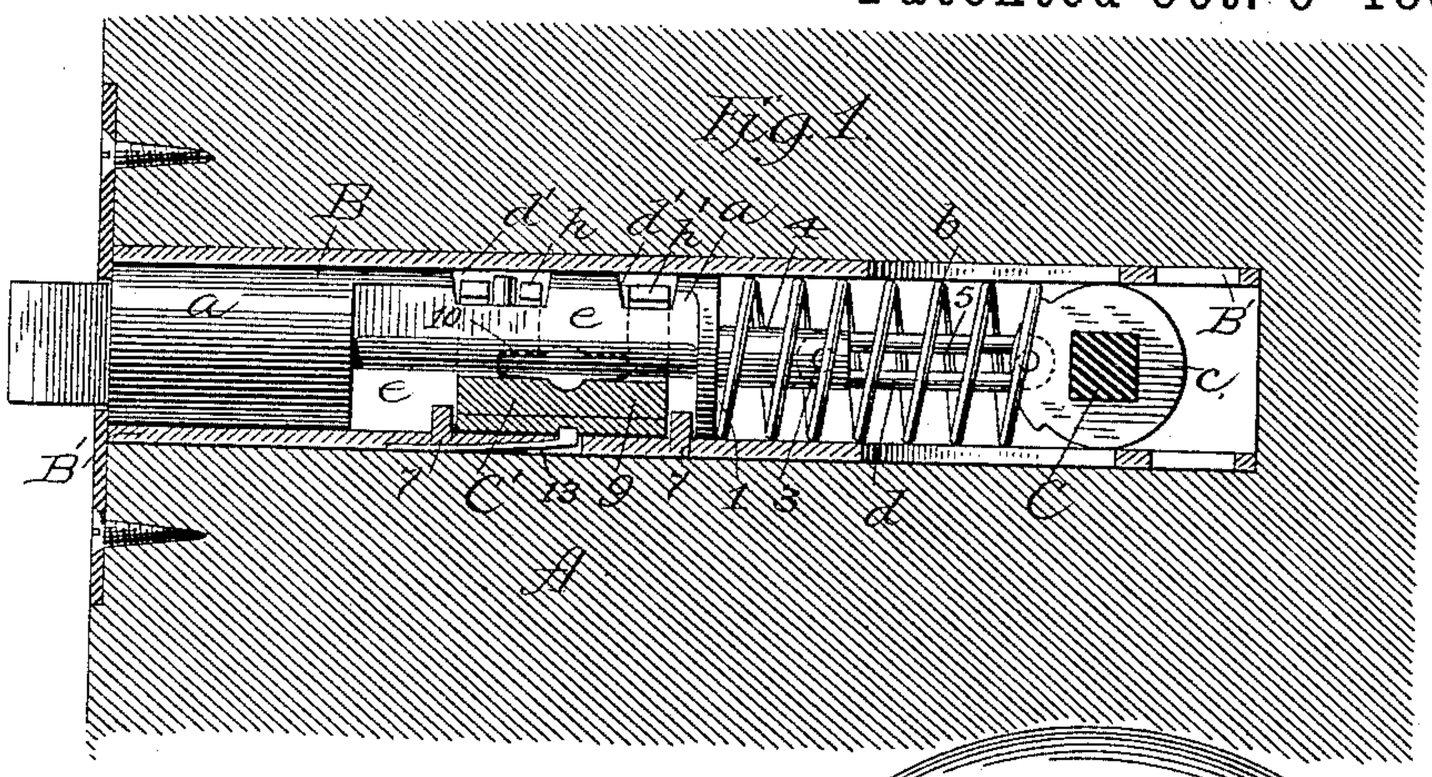



Fig. 2.

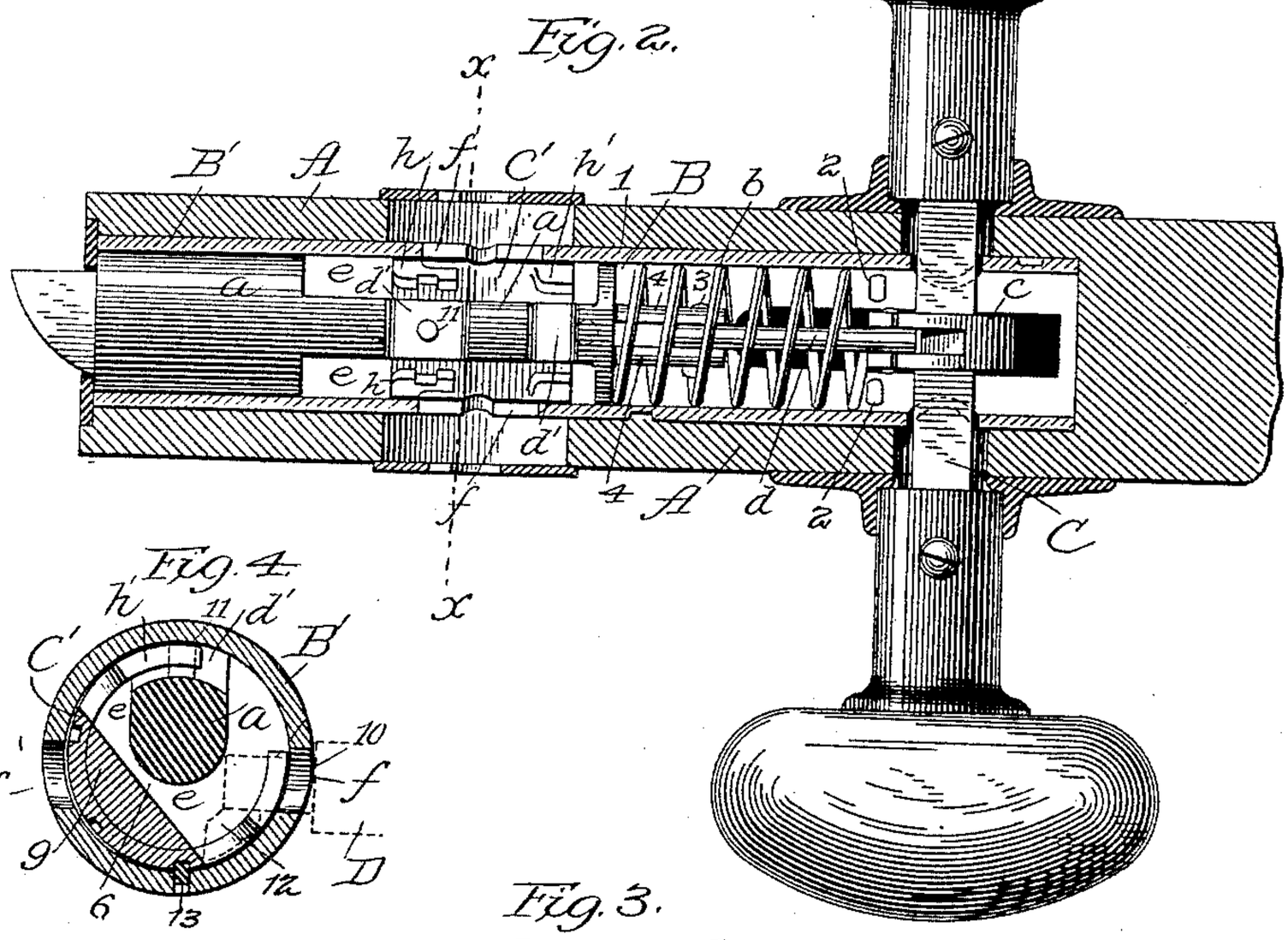



Fig. 4.




Fig. 3.

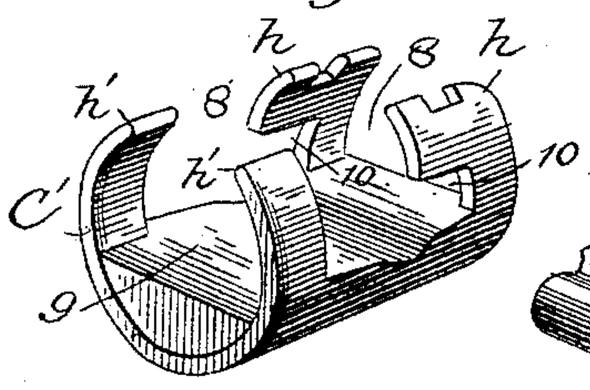
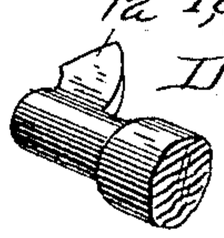



Fig. 5.

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# UNITED STATES PATENT OFFICE.

LAWRENCE VAN ALSTYNE, OF SHARON, CONNECTICUT.

## COMBINED LOCK AND LATCH.

SPECIFICATION forming part of Letters Patent No. 327,624, dated October 6, 1885.

Application filed February 6, 1885. Serial No. 155,127. (Model.)

*To all whom it may concern:*

Be it known that I, LAWRENCE VAN ALSTYNE, of Sharon, in the county of Litchfield and State of Connecticut, have invented a new and useful Improvement in Combined Locks and Latches; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improvement in a combined lock and latch designed for use on doors, gates, and in like situations.

The object of my invention is to simplify the construction and cheapen the manufacture of the lock by reducing the number of parts used, while still preserving its durability and effectiveness in working.

My object is, further, to make the lock in a compact and convenient form, so that its application to the door or gate may be accomplished with little expenditure of time or labor, and with little mortising or cutting away of the door.

Another object of my invention is to provide a lock having a locking device or devices for both the inner and outer sides of the door, which, when operated upon either side to lock the bolt in place, cannot be reached from the opposite side, as the key-hole upon that is then closed, and all communication through it is shut off.

Subordinate to these, my main objects, are numerous incidental advantages arising from my peculiar construction and arrangement, all of which will be described hereinafter.

My invention consists, first, in novel and simple devices by which I am enabled to make one bolt serve the double purpose of a latch and a locking-bolt.

Secondly, my invention consists in a spring latch-bolt connected to the knob-spindle, to be operated thereby in the usual manner, and having upon either side a device adapted to be operated by the key from either side to press against or engage with suitable shoulders or a pin on the bolt to lock the same in place, said devices being so constructed and arranged with relation to the key-hole that when the key is operated upon either side, and the bolt locked in place, no communication can be had through the key-hole from the opposite side, thus rendering the unlocking of the door possible only from the side upon which it is locked, and preventing the possibility of the key being pushed from the lock.

Further, my invention consists in the various details of construction and arrangement by which I am enabled to carry out successfully my objects.

In the accompanying drawings, Figure 1 represents a central vertical section taken longitudinally through the casing and a portion of the door, some of the parts being shown in side elevation. Fig. 2 is a section through the lock-casing, taken longitudinally and horizontally, some of the parts being shown in plan. Fig. 3 is a perspective view of the locking-piece detached. Fig. 4 shows a transverse section through the bolt, locking-piece, and casing on line *x x* of Fig. 2, the bolt being shown as locked. Fig. 5 shows in perspective a portion of the key adapted to this form of lock.

In these drawings the door is represented at A and the lock at B. Within the casing B′ the bolt *a* plays loosely back and forth. This bolt is shaped upon the exposed end like an ordinary latch-bolt, having one beveled and one straight side. At the inner end is formed a shoulder, 1, between which and the pins 2 2 in the casing is placed a coiled spring, *b*, designed to act as in latch-bolts ordinarily used. The knob-spindle is shown at C, extending through the door and casing of the lock, and having a cam or hub at its center, as at *c*. A link, *d*, forms the connection between the cam or hub and the bolt, its forward end being held by a pin, 3, passing through ears 4 4 on the bolt, and through a slot, 5, in the link, the slot being of sufficient length to allow the bolt to move inward against the pressure of the spring when the door is closed. As the pin 3 passes through the forward part of the slot in the connecting-link, the bolt may be drawn inward by turning the knob and operating the cam or hub, this action compressing the spring *b*, which, when the knob is released, reacts and forces the bolt outward.

The devices for locking the bolt in place are now to be described.

The bolt is cut away, as shown at *e*, on its

sides and bottom to make room for this mechanism, and the upper side is notched, as at *d' d'*, to form shoulders, for the purpose hereinafter described. Within the space formed by the bolt being cut away is placed the locking-piece *c'*, which, as shown, is formed from a piece of metal a little more than semicircular in cross-section, extending around underneath the remaining portion of the bolt at 6, and reaching up either side thereof a little distance above the bottoms of the notches *d' d'*, formed in the bolt.

Pins 7 7, projecting from the casing at either end of the locking-piece, serve to keep it in proper position and prevent any longitudinal movement of the same.

The key-hole in the casing is shown at *f*, being an elongated opening with a central semicircular portion.

Upon either side of the bolt the locking-piece is cut away centrally from its upper edge down to a point even with the lower edge of the key-hole, the portions *h h'* at either end left uncut forming tangs or tongues in proper position to register with the notches in the upper side of the bolt, and of proper size to fit snugly into the said notches when the piece is rotated.

Between the spaces 8 8 of the locking-piece is left intact a portion, 9, which extends from the lower edge of the key-hole upon one side to the lower edge of the one upon the opposite side. The lower edges of the spaces 8 8 are cut, preferably, on a slight curve, and at 10 in the broader tangs *h* notches are cut, which, as shown, form continuations of the spaces 8, said notches being adapted in size and shape to receive a suitable projection on the key. Notches are also formed in the upper edges of these tangs, adapted to engage with a pin, 11, in the cut-away part *d* of the bolt.

The pins 7 7, above referred to, projecting from the casing, serve also to limit the longitudinal movement of the bolt, the cut-away portion of the bolt to the front and rear of these pins being sufficiently large, however, to allow the spring to keep the bolt-head entirely exposed, or to allow it to be drawn completely within the casing when the knob is turned.

The key adapted to this form of lock is shown at D, Fig. 5. Supposing the door closed and the bolt in position, to lock it in place the key is inserted through the hole, with the projection 12 engaging with the notch in the tang *h*. The key is then turned so that the projection on it will move downward. This action rotates or moves circumferentially the locking-piece, bringing the tangs upon the opposite side into engagement with the notches *d d* of the bolt and the notch in said tang into engagement with the pin 11 on the bolt. As soon as this movement commences the solid portion 9 of the locking-piece begins its upward movement to close the key-hole upon the opposite side, and when the tangs are in position in the notches of the bolt the key-hole will then be entirely closed, thus shutting off all communication to the locking mechanism from that side, and rendering the insertion of a key or other instrument impossible.

To furnish additional security against the possible displacement of the locking-piece, and to prevent its being picked, a spring-plate is placed in the casing at 13, having upon its end a stud adapted to enter indentations in the solid portion of the locking-piece, whereby it is held in a locked or unlocked position, but not, however, to such an extent as will resist the pressure from the key.

The manner of combining in one bolt the operation of two, as used heretofore, enables me to make the lock in an elongated and, preferably, cylindrical form of small diameter, so that it may be accurately fitted in place by boring a hole in the edge of the door.

The length of the lock is immaterial to its perfect working, and the knob may therefore be set at any desired distance from the door-edge to avoid injuring or skinning the hand.

The lock may be fitted with equal facility to either left or right hand doors and without any alteration in construction, it being only necessary to invert the lock and apply it in this position.

Having described my invention, what I claim is—

1. In a lock, a bolt adapted to have longitudinal movement, a locking-piece for said bolt reaching up upon either side thereof, and having notches for the reception of the key from either side of the door, whereby the locking-piece may be rotated or moved circumferentially to bring it into engagement with the bolt, all substantially as described, and for the purpose set forth.

2. In a lock, a bolt adapted to have longitudinal movement, a locking-piece for the same adapted to be operated from either side of the door and moved so as to close the key-hole upon the other side, and to engage with the bolt to lock it in place, substantially as described.

3. In combination, the notched bolt *a*, a locking-piece consisting of a piece of metal nearly semicircular in cross-section, means for holding the locking-piece against movement longitudinally, tangs on said piece registering with the notches *d d* in the bolt, and notches in the piece for the reception of the key, all substantially as described.

4. In a lock, and in combination, a bolt having notches *d d*, the locking-piece partially surrounding the same, and having pairs of tangs *h h'*, notches 10 10 for the key, and an intact portion, 9, whereby when the locking-piece is operated upon one side of the door to lock the bolt in place the said intact portion will move across the key-hole upon the oppo-

site side and close the same, all substantially as described.

5. In combination with a bolt for a lock, a locking-piece nearly semicircular in cross-section and adapted to be moved circumferentially, a series of indentations in the piece, and a spring-catch, 13, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LAWRENCE VAN ALSTYNE.

Witnesses:
ALONZO A. BATES,
GEORGE M. WALTON.