(Model.) 2 Sheets—Sheet 1.

W. D. DOREMUS.

COMBINED LATCH AND LOCK.

No. 370,325. Patented Sept. 20, 1887.

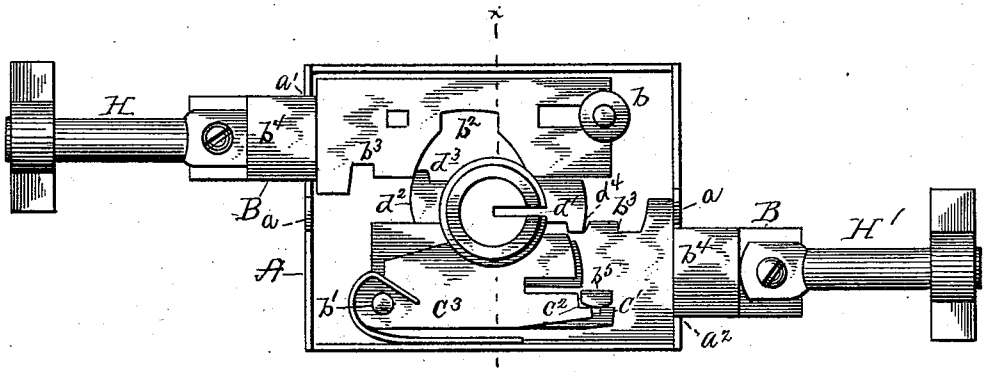


Fig. 1.

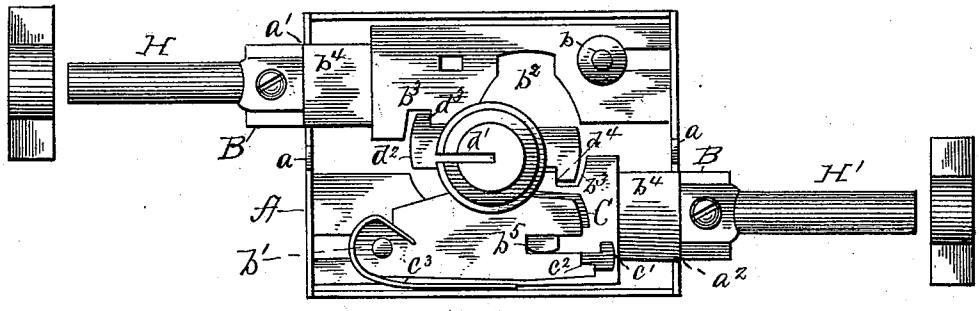


Fig. 2.

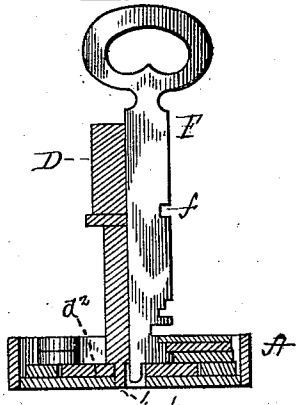


Fig. 3.

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(Model.) 2 Sheets—Sheet 2.

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Fig. 4.

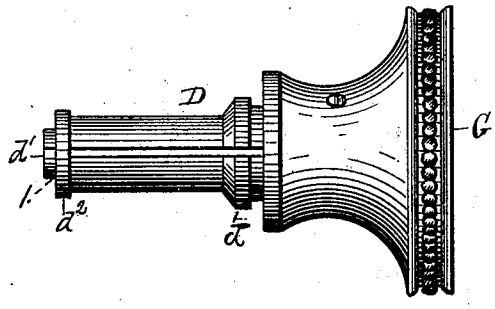


Fig. 5.

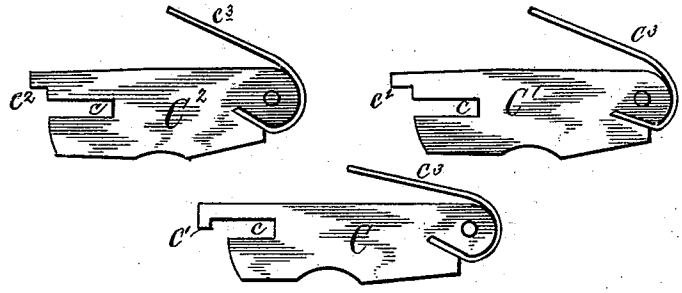
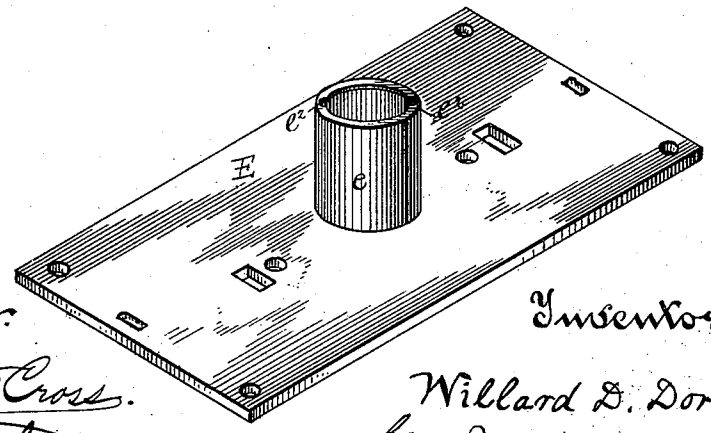


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLARD D. DOREMUS, OF WASHINGTON, DISTRICT OF COLUMBIA.

COMBINED LATCH AND LOCK.

SPECIFICATION forming part of Letters Patent No. 370,325, dated September 20, 1887.

Application filed February 28, 1887. Serial No. 229,185. (Model.)

To all whom it may concern:

Be it known that I, WILLARD D. DOREMUS, a citizen of the United States of America, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Combined Latches and Locks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention has relation to improvements in combined latches and locks, and the object is, first, to provide an improved two-bolt lock, the bolts of which are shot in opposite directions and held locked by the tumblers of a single bolt; second, to provide an improved two-bolt latch having bolts moving in opposite directions and adapted to be reciprocated by the knob; and my invention consists in the novel construction and arrangement of the parts, as hereinafter will be fully described, and specifically pointed out in the claims made hereto.

I attain the purposes of my invention by the construction and association of the elements shown in the accompanying drawings, wherein—

Figure 1 is a view of the device in elevation, with the cover removed, and showing the bolts in a locked position. Fig. 2 is a similar view showing the bolts in an unlocked position and capable of being reciprocated by the rotation of the knob-spindle or stem. Fig. 3 is a transverse section on the line *x x* of Fig. 1. Fig. 4 is a view of the knob and spindle. Fig. 5 is a detailed view of the tumblers, and Fig. 6 is a view of the cover with stationary barrel.

In the drawings similar parts are identified by the same letters of reference.

The letter A designates the casing, formed with studs *a* on the end pieces, to pass through slots in the cover and hold it in adjusted position, and having slots a' a^2 for the passage of the bolts.

The letters B designate the bolts, held in position by the slots in the end pieces of the casing and by pins *b b'*, fixed in the casing and setting within slots in the ends of the bolt, substantially as shown. Each bolt is cut away, as shown at b^2, to afford seats for the ends of the cross-head of the knob-spindle to turn in and thrust the bolts, and they also have notches b^3, in which the side projections on the cross-head are seated when the bolts are unlocked, the purpose being to prevent the lower bolt from slipping forward or into a locked position when the bolts are arranged vertically. At b^4 the bolts are made thicker than in their other parts to fill the slots in the casing, and the one carrying the tumblers has a lug or stump, b^5, fixed thereon, which lies within the slots of the several tumblers when the lock is in a normal position, and against which the ends of the locking-tumblers engage when the lock is in a locked position, the stump also contacting with the lug on the bottom tumbler to limit the movements of the lock when operated by the knob, so that said stump b^5 shall not be shot far enough ahead to bring the notch of the locking-tumblers in operation.

The letter C designates the bottom tumbler, formed with a slot, *c*, which receives the stump b^5, and the upper extension of the tumbler is formed with a lug, *c'*. This tumbler acts to limit the movements of the bolt when turned by the knob, since, being pressed down by its spring, the lug *c'* stops the movement of the bolt outward unless the tumbler is lifted above the stump by the key.

The letters C' and C^2 designate the middle and top tumblers, respectively, which constitute the locking-tumblers. They are formed with a slot, as *c*, corresponding to the slot in the bottom tumbler, to set over the stump of the bolt, and the upper extensions of these tumblers are formed with a notch, c^2, the purpose of which is to lock the bolt, and each tumbler is cut out on the under side to suit a notch in the key. Each of the tumblers is provided with a spring, c^3, those on the locking-tumblers serving to throw them under the stump b^5 of the bolt and that of the other tumbler acting to return it to its normal position when the

bolts are unlocked. The respective positions of the tumblers are shown in Figs. 1 and 2 of the drawings.

The letter D designates the knob-spindle, having its upper part larger than the lower part and terminating in an annular shoulder, *d*, the radius of which is of the width of the key. The lower end of the spindle terminates in a pivot, *l*, which sets in a hole in the casing, and said spindle is slotted for its entire length, as at *d'*, forming the keyway. On the end of the spindle is formed a cross-head, d^2, which has side lugs, d^3 d^4, to set in the notches b^3 in the bolts. The bolts are reciprocated by this cross-head, and when the side lugs, d^3 d^4, are seated in the notches of the bolts they are held, as heretofore stated, from sliding back.

The letter E designates the cover, provided with a stationary barrel, *e*, the outer end of which is turned in, forming an annular flange having radial notches e^2 for the key.

The letter F designates the key, which consists of a metal plate notched at its lower end to suit the arrangement of the tumblers, and having a middle notch, *f*, to take in the flange of the stationary barrel.

The knob G is cored to fit the upper end of the spindle, and is secured thereto by a screw or pin. It is grooved to take the edge of the key.

To each of the bolts is secured a locking-bar, H H', which are carried through guiding-sleeves to the keeper.

The parts are assembled in operative aggroupment by arranging the bolts in the casing, then adjusting the spindle and cross-head in the lock, then putting in the tumblers with the tumbler C under the locking-tumblers, and then putting on the cover. The bolts are reciprocated by the cross-head on the spindle, and when used as a latch the movement of the bolts is limited by the stump b^5 contacting with the lug *c'* of the tumbler C. When it is desired to lock the bolts, the key is inserted and turned with the spindle until the tumbler C is depressed to permit the stump to pass out of the slot and assume the position seen in Fig. 1, when the key is withdrawn, and the springs on the locking-tumblers then press them inward until the notches c^2 rest under or behind the stump. The rotation of the cross-head in this movement has also carried forward the other bolt, and when the key is withdrawn is in the position seen in Fig. 1 of the drawings, with its end against the edge of the cut-away part of the bolt. To unlock the bolts, the key is inserted and turned with the spindle until the locking-tumblers are thrust out of engagement with the stump, and thus the slots of the tumblers brought in position to again receive the stump, when the bolts are withdrawn by continuing the rotation of the spindle until the tumbler C assumes the position seen in Fig. 2, when the key is withdrawn and the device is in condition to be used as a latch.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the casing formed with bolt-slots a' a^2, of the bolts B, arranged within said casing to project through said slots, and formed with cut-away parts b^2 and notches b^3, one of said bolts having a stump, b^5, formed thereon, the knob formed with a spindle provided with a cross-head, d^2, to rotate within the cut-away parts of the bolts and move them in opposite directions, and having lugs d^3 d^4 to engage the said notches b^3 in the bolts and hold them in normal position, and the tumbler C, having slots *c*, adapted to engage the stump b^5 on the bolt, substantially as described, and for the purpose stated.

2. The combination, with the casing formed with bolt-slots and provided with a stationary barrel, *e*, having an annular flange provided with opposite notches, of the bolts arranged in the said slots and formed with cut-away parts b^2 and notches b^3, one of said bolts having a stump, b^5, formed thereon, the knob formed with a spindle having a key slot and provided with a cross-head to move the bolts in opposite directions, and having lugs d^3 d^4 to engage the notches b^3 in the bolts, the tumbler C, the locking-tumblers C' C^2, having notches c^2 to engage the stump b^5 on the bolt, and a key, F, to operate within the key-slot of the spindle, all substantially as described, and for the purpose stated.

In testimony whereof I affix my signature in presence of two witnesses.

WILLARD D. DOREMUS.

Witnesses:

W. B. WILLIAMSON,

CHAS. E. DÜMAR.