(No Model.)

E. R. FERRY.

COMBINED LATCH AND LOCK.

No. 347,100. Patented Aug. 10, 1886.

Fig. 1.

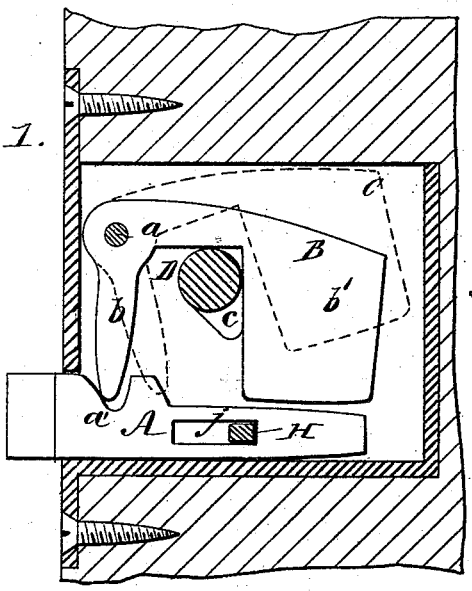

Fig. 3.

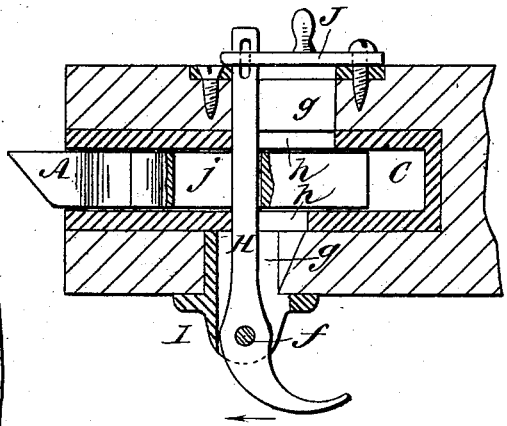

Fig. 2.

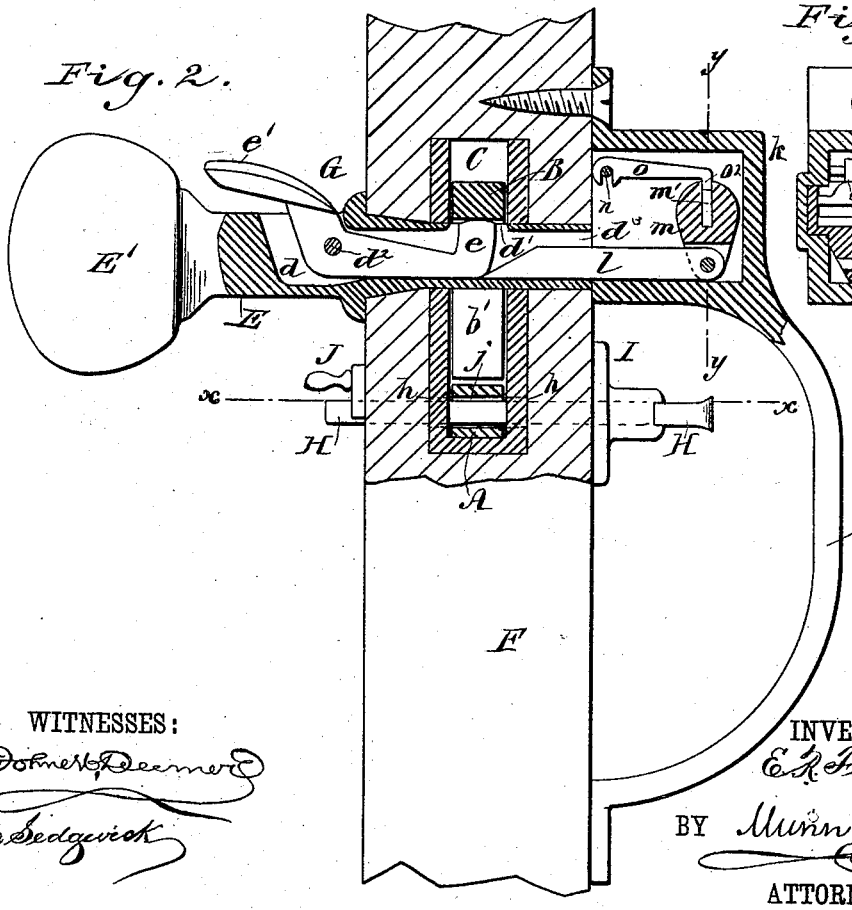

Fig. 4

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EDWIN R. FERRY, OF NEW HAVEN, CONNECTICUT.

COMBINED LATCH AND LOCK.

SPECIFICATION forming part of Letters Patent No. 347,100, dated August 10, 1886.

Application filed November 13, 1885. Serial No. 182,717. (No model.)

To all whom it may concern:

Be it known that I, EDWIN R. FERRY, of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Combined Latch and Lock, of which the following is a full, clear, and exact description.

This invention consists in a combined latch and lock constructed and arranged so as to be operated from either side of a door, as will be hereinafter described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 shows in sectional elevation the simplest form of my new and improved lock applied to a door with a knob-spindle to operate it. Fig. 2 is a sectional elevation showing the lock applied to an outside door, with means for operating it. Fig. 3 is a sectional plan view on the line *x x* of Fig. 2, and Fig. 4 is a detailed sectional elevation taken on the line *y y* of Fig. 2.

A represents the bolt, and B the tumbler. These are placed in a lock case or cavity, C. The tumbler B is pivoted above the bolt A upon the pin *a*, and is connected with the bolt by a projection or arm, *b*, that enters a recess, *a'*, in the bolt, or stands between two studs formed on the bolt, so that when the tumbler B is raised by a key-spindle, D, or other means to the position shown in dotted lines in Fig. 1 it will withdraw the bolt A. The tumbler B is counterweighted by an enlargement or weight, *b'*, so that when the spindle-key or other means used for lifting the tumbler is released the tumbler will drop by gravity to its original position—that shown in full lines in Fig. 1—and cause arm *b* to throw out the bolt A.

The spindle D, used in the form of lock shown in Fig. 1, is a plain spindle having a lug or cam, *c*, formed upon it, which acts in the space between the arm *b* and weight *b'*, so that when the spindle is turned the lug or cam *c* will lift the tumbler with the result above described.

In the form of lock shown in Fig. 2 I use a stationary spindle, E, having a cavity, *d*, and a side opening, *d'*, made in line with the cavity of the case C. This spindle I use upon the inside of the door F, and I form it with a knob, E', for opening and closing the door. In the cavity *d* of the spindle E is pivoted upon pin d^2 the thumb piece or lever G, the inner end, *e*, of which is upturned and terminates in or in line with the opening *d'* in the spindle E. The outer end, *e'*, of the lever G terminates outside of and above the spindle E, so that it may be easily pressed down with the thumb, for causing the inner end, *e*, of lever G to lift the tumbler B on its pivot and withdraw the bolt A. When the outer end of the lever G is depressed, the inner end thereof passes up through the opening *d'*, that connects the cavity *d* of the spindle E with the case C, and as the tumbler B spans the spindle over the cavity *d'* the inner end of the lever G strikes it, and lifts the tumbler and withdraws the bolt. When pressure is removed from the outer end of the lever G, the tumbler will drop of its own weight to its original position and force the bolt A outward again.

For operating the bolt A and tumbler B from the outside of the door F without a key, I provide the door with the lever H, which is pivoted upon the pin *f* in the support or bracket I, and passes through slots *g g* in the door and slots *h h* in the lock-case and the slot *j* in the bolt A, as shown clearly in Figs. 2 and 3, so that by pressing the outer hooked end of the lever H in the direction of the arrow the lever will swing in the slots and withdraw the bolt. The inward movement of the bolt will act upon the tumbler B and turn it on its pivot, elevating its weighted end, which, when the lever H is released, will return the bolt and the lever to their original positions.

Upon the inside of the door F, I pivot the locking device or button J, which is adapted to engage with the inner end of the lever H for locking it forward, so that the bolt A cannot be operated from the outside by the lever H. When the lever H is thus locked the bolt A may be operated by the lever G, or by a key from the outside, as next described.

The handle K, secured upon the outside, is in this instance formed with a chamber, *k*, that incloses the outer end of the hollow spindle E. In the chamber *k* is placed the secondary key *l*, which is beveled at its inner end, and serves when forced inward in the hollow spindle E

to pass under and lift the inner end of the lever G, and thus cause end *e* of lever G to lift the tumbler B and withdraw the bolt A. The key *l* may be used as the only and as a separate detached key, if desired, in which case the chamber *k* would be dispensed with, and in its place would be formed on the handle K a flat plate having a key-hole formed in it to coincide with the opening *d*' in the outer end of the spindle E. The key *l*, when used as a secondary key, is pivoted to the lower edge or side of the barrel *m*, which is journaled at its ends in the side pieces of the chamber *k*. The key *l* is attached to the barrel *m* below the center, so that when the barrel is turned the key will be moved longitudinally. The barrel *m* may be turned by a pocket-key, L, passed into the longitudinal slot *m*', made in the barrel, and for locking the barrel *m* when the key L is removed, and so that a complicated key will be required for opening the door, I pivot in the chamber *k* on the rod *n* the two side dogs, *o o*, and the central dog, *o*', each being provided with downwardly-projecting lips *o*", that are adapted to drop in to the slot *m*', as shown in Fig. 2, and thus prevent the barrel *m* from being turned except by a key that, when inserted, will lift the dogs *o o*' out of the slot *m*'.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A combined latch and lock constructed, arranged, and operating substantially as herein described and shown, consisting of a suitable case, C, tumbler B, bolt A, having a horizontal slot, *j*, and spindle E, in combination with the lever H and locking device J, as and for the purpose set forth.

2. In a combined latch and lock constructed, arranged, and operating substantially as herein described and shown, a suitable case, C, hollow spindle E, tumbler B, and latch-bolt A, in combination with the lever G, to operate the latch-bolt A from the inside of the door, and the key *l*, to operate the lever G to unlock the door from the outside by an independent key, L, as set forth.

3. A combined latch and lock constructed, arranged, and operating substantially as herein set forth and shown, consisting of a suitable case, C, spindle E, tumbler B, latch-bolt A, and lever G, in combination with the handle K and mechanism therein for unlocking the latch-bolt A from the outside of the door with a detachable key, as described.

4. As a new article of manufacture, the handle K, formed with the chamber *k* at one end to receive lock mechanism, substantially as described.

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Witnesses:
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