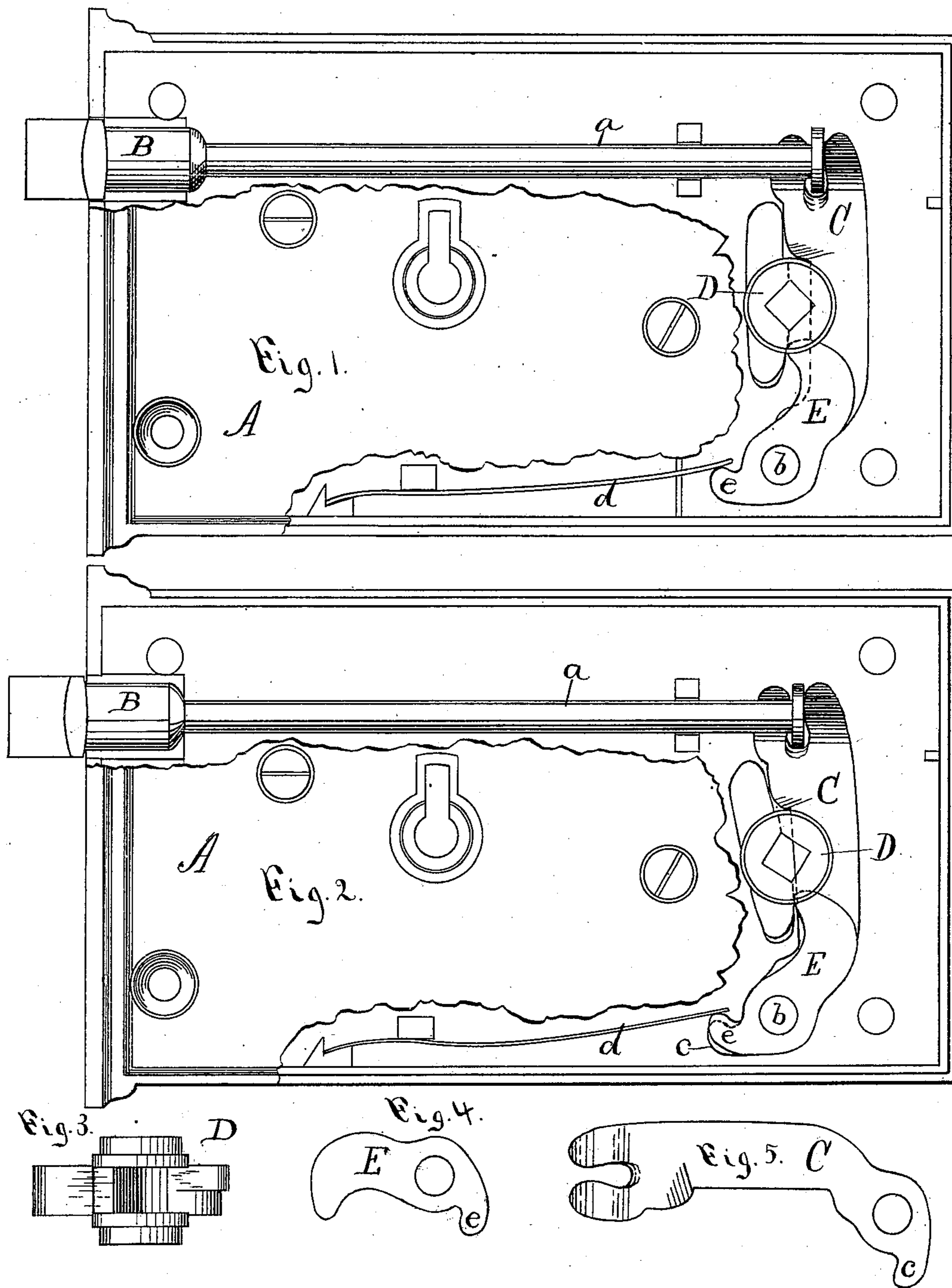


W. E. SPARKS.
Reversible Latch.

No. 201,958.

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Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM E. SPARKS, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO
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IMPROVEMENT IN REVERSIBLE LATCHES.

Specification forming part of Letters Patent No. **201,958**, dated April 2, 1878; application filed
March 9, 1878.

To all whom it may concern:

Be it known that I, WILLIAM E. SPARKS, of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Reversible Latches, of which the following is a specification:

Reversible latches in great variety are old, in which may be found slotted hubs and a lever or slide, one part of which plays in the slot in the hub when the spindle is removed, in such manner as to allow the latch-bolt to be pulled out and reversed, an example of which may be seen in my prior patent of December 25, 1877, No. 198,704. It is also old to operate the latch-bolt by a hub having one short arm and one long arm acting upon a lever at one side of the hub.

My invention consists in the combination of a slotted hub with the lever upon which the hub-arms act, said lever playing in the slot of the hub to make a "pull out reverse;" also, in the combination therewith of a spring-actuated lever, as hereinafter described.

In the accompanying drawing, Figure 1 is a front elevation of a reversible latch which embodies my invention, the same being represented with the front plate partially broken away. Fig. 2 is a front elevation of the same with the parts in a different position; and Figs. 3, 4, and 5 are detached views of parts thereof.

A designates the case for holding both a lock mechanism and a latch mechanism. B designates the latch-bolt, having the ordinary head and round and headed spindle *a*. C designates the lever upon which the arms of the hub act, one end of said lever being forked or slotted to receive the head of the spindle *a*, so that the latch is swiveled therein. This lever is hung on a stud, *b*, in the case A, and is provided with a tail-piece, *c*, acted upon by the spring *d*. The hub D has two arms formed on it—one long and one short—the latter working on the lever C nearest its center of motion, and the former the farthest therefrom, as in ordinary lever-latches. This hub is slotted on the side nearest the lever, the slot extending into the usual square hole for the knob-spindle for about half its width, as indicated

by broken lines extending from the corners of the square hole outward in Figs. 1 and 2. The lever C, instead of bearing upon both arms of the hub, as in ordinary lever-latches, when the bolt is in the position shown in Fig. 1, only comes in contact with the long arm, while the short arm must be moved quite a little distance before it engages the lever. When the latch-bolt is protruded to the extent shown in Fig. 1, the front edge of the lever C just reaches the corner of the square hole in the hub, as shown in Fig. 2, so that when the knob-spindle is inserted the head of the latch-bolt cannot be pulled out of the case; but when the knob-spindle is removed the latch-bolt may be extended out of the case to reverse it, because the edge of the lever and short arm were not previously in contact, as before described, and thereby the hub is allowed to make the necessary movement to let the head of the latch-bolt forward, the edge of the lever C entering the square hole of the hub, as shown in Fig. 2. The short arm and edge of the lever are, however, so located that when the arm overtakes the lever it will draw the latch-bolt wholly into the case by the time the hub has made (after leaving the position shown in Fig. 1) the same part of a revolution that it makes in drawing back the bolt through the long arm of the hub.

In order to prevent the hub from having a partial rotation without some resistance, and also to prevent the spring from protruding the latch-bolt into the position shown in Fig. 2 when the knob-spindle is not within the hub, I employ a supplementary lever, E, having a tail-piece, *e*, of substantially the same length and shape as the tail-piece *c*, and acted upon by the spring *d*. This lever E is hung on the same stud, *b*, with the lever C, and the end nearest the hub presses upon the short arm of the hub, while the long arm is pressed upon by the lever C. This always throws the bolt to the point shown in Fig. 1, and leaves it there. If the bolt is pulled forward, as shown in Fig. 2, then the long arm is forced forward with the lever C, and the short arm swings backward, carrying the lever E, thereby compressing the spring *d*, which spring will restore the parts to their former position. Whenever the

latch-bolt is forced inward by the long arm of the hub, the spring *d* acts upon the tail-piece *c* of the lever C to resist the turning of the hub, and to restore it to its former position when released. The spring *d* bears against the tail-piece *e* of the lever E, so as to offer resistance to the turning of the hub with its short arm toward the lever before it reaches the same, and restores both levers to their former position after they have been forced back by said arm, whereby the slack or lost motion of the hub, which is necessary in order to pull forward the lever for reversing, is not felt by a person operating the latch-bolt by means of the spindle-knob.

I claim as my invention—

1. In a reversible latch, the hub D, having one long and one short arm, and slotted as

described, in combination with the lever C, having the latch-bolt swiveled thereto, and hung so as to engage the arms of said hub, but at a distance therefrom which will allow the necessary forward movement for the reversal of the bolt, substantially as described, and for the purpose specified.

2. In a reversible latch, the combination of the slotted hub D, oscillating lever C, with the latch-bolt swiveled thereto, the supplementary lever E, and the spring *d*, all operating together substantially as described, and for the purpose specified.

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Witnesses:

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