

A. WIMMER.  
Latch.

No. 221,261.

Patented Nov. 4, 1879.

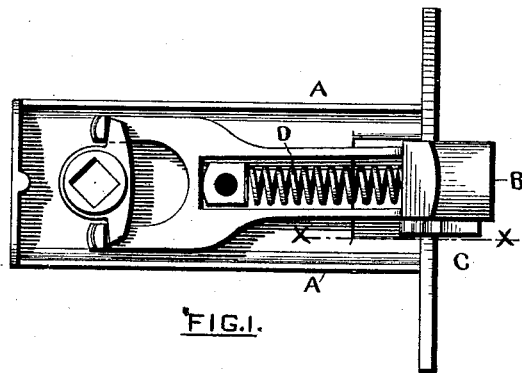
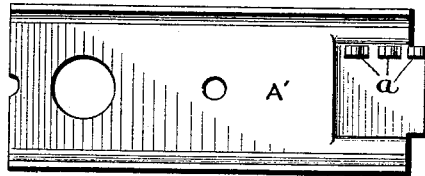


FIG. 1.

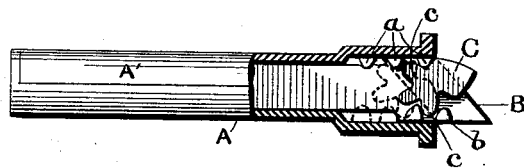


FIG. 2.

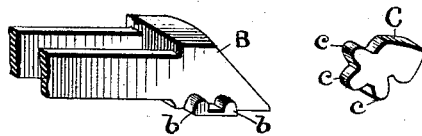


FIG. 3.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

ALEXANDER WIMMER, OF ST. LOUIS, MISSOURI, ASSIGNOR TO RUSSELL & ERWIN MANUFACTURING COMPANY, OF NEW BRITAIN, CONNECTICUT.

## IMPROVEMENT IN LATCHES.

Specification forming part of Letters Patent No. **221,261**, dated November 4, 1879; application filed June 28, 1879.

*To all whom it may concern:*

Be it known that I, ALEXANDER WIMMER, of the city and county of St. Louis, and State of Missouri, have invented a new and useful Improvement in Latches; and I do hereby declare that the following specification, taken in connection with the accompanying drawings, forming a part of the same, is a full, clear, and exact description thereof.

The invention hereinafter described relates to the construction of latches for doors, and to that class known as "anti-friction latches," wherein a lever, which is pivoted to the bolt and projects beyond the face of the latch, is employed to move the bolt inward as the door is closing; and my improvement consists in the novel construction and combination of the projecting lever, the bolt, and the latch-case, as hereinafter explained.

Referring to the drawings, Figure 1 represents a latch embodying my improvement, with the cap-plate removed, and also a view of the under side of said cap-plate. Fig. 2 shows the latch in partial side elevation and partial section on line *x x*, and Fig. 3 represents a portion of the bolt and the lever in perspective.

A denotes the latch-case, and A' the cap-plate of the same, which is secured in position by a screw.

B denotes the bolt, and C the lever projecting beyond the face of the latch.

As shown in Figs. 1 and 2, the cap-plate A' is supplied with a number of teeth, *a*, which constitute a portion of a rack-gear; and, as shown at Figs. 2 and 3, the bolt B is provided on one side with teeth *b*, which form part of a rack-gear.

As shown in all the figures, the rear portion of the lever C has teeth *c*, which form a segment of a gear, and the front or salient portion of the lever is of the usual wedge shape.

A spring, as at D, Fig. 1, secures the proper projection of the latch-bolt beyond the face of the latch, except when said bolt is retracted by the turning of the knob-spindle or by the action of the lever C.

For the purpose of performing its office, this lever C is combined with the bolt and case by placing its toothed segment *c* in mesh with

the rack of *b* on the bolt, and also in mesh with the rack *a* on the cap-plate. The lever then assumes a position relatively to the latch-case and bolt, as shown in Fig. 2; and, as shown at Fig. 1, it is laterally confined in a plane between the side of the bolt B and a wall of the mortise in the face-plate, in which plane it vibrates when the door is opening or closing.

The lever operates the bolt in the following manner: As the door is closing the salient face of the lever comes in contact with the striker-plate on the door-jamb, and one of the teeth *c*, having a fulcrum on the teeth *a*, the tooth *c*, which engages the teeth *b*, retracts the bolt until the door is fully closed, when the spring D projects the bolt into the mortise in the striker-plate.

When the door is being opened the turning of the knob-spindle retracts the bolt into the latch-case, which movement vibrates the lever C to a position to allow the door to be swung, the spring D returning the bolt and lever to their original positions when the knob is released.

Pivoted striking-levers with toothed segments have heretofore been employed in combination with a rack on the latch-bolt. By having the racks on the case and latch-bolt as herein shown, I can employ a non-pivoted striking-lever, which, instead of rocking upon a fixed axis or pivot, has a variable fulcrum, contributing to greater ease of action and durability.

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

The combination, with a latch-case provided with a section of a rack-gear, and a bolt provided with a section of a rack-gear, of a lever, C, having a salient portion, which projects beyond the face of the latch, and a toothed segment, which engages the racks on the case and bolt, respectively, substantially as and for the purpose set forth.

ALEXANDER WIMMER.

Witnesses:

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