H. R. UNDERHILL.

Latch.

No. 220,318. Patented Oct. 7, 1879.

Fig. 1.

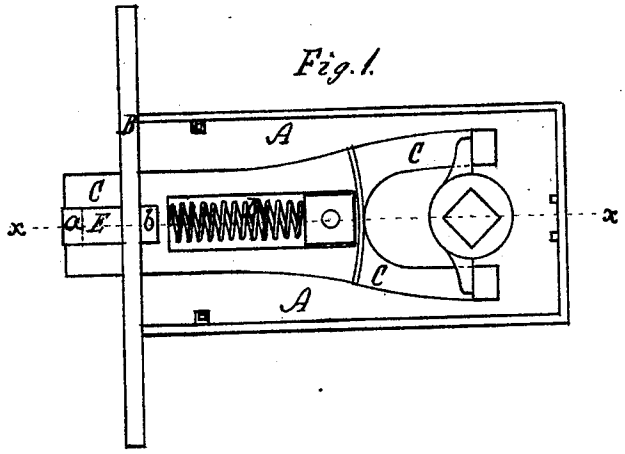


Fig. 2.

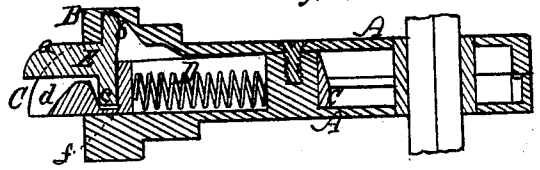
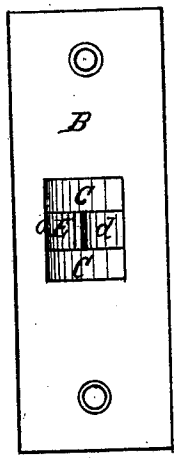


Fig. 3.



WITNESSES

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INVENTOR

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UNITED STATES PATENT OFFICE

HAZEN R. UNDERHILL, OF DERRY, NEW HAMPSHIRE.

IMPROVEMENT IN LATCHES.

Specification forming part of Letters Patent No. **220,318**, dated October 7, 1879; application filed March 31, 1879.

To all whom it may concern:

Be it known that I, HAZEN R. UNDERHILL, of Derry, in the county of Rockingham and State of New Hampshire, have invented an Improved Door-Catch; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a rear side view of a knob door-latch provided with my improved catch, the back half of the case being removed to show the interior construction; Fig. 2, a longitudinal section of the same in a plane indicated by the line *x x*, Fig. 1; Fig. 3, a face view of the same.

Like letters designate corresponding parts in all of the figures.

In the drawings, A represents the mortise-case of the door-latch; B, the face-plate thereof; C, the sliding catch-bolt, and D the spring which throws out the bolt after being retracted by the knob and its operative adjuncts.

My invention consists in an auxiliary catch-lever of peculiar construction and arrangement, applied to the catch-bolt so as to throw it back without subjecting it to wear upon its inclined face, and to cause very little pressure and friction against the case, substantially as hereinafter specified.

This auxiliary catch-lever E, which forms the subject-matter of my invention, in combination with the catch-bolt and case, is substantially of the form shown in Fig. 2. In general outline it has a T shape, the three projections *a b c* thereof having the respective functions and operating thus: The main part or body *a* projects through the latch-plate B, and is the part which first strikes the guard-plate of the door-jamb, it being beveled or sloped off, so as to ride easily over the said guard-plate. The projecting end of the catch-bolt C is notched or slotted at *d* to receive the lever, being cut away sufficiently to allow all the movement necessary for the auxiliary lever.

The right-angled projection *b* reaches behind the inner surface of the face-plate B of the latch, and bears against the same at its extremity to furnish a fulcrum on which the lever is to turn without requiring any pivot or shaft for the purpose. It is kept in contact with the plate at all times by the spring D, which throws out the catch-bolt. The opposite right-angled projection *c* lies in a notch or cavity, *f*, in the catch-bolt, the inner surface of which is abrupt, and against which the said projection *c* of the auxiliary lever bears to force the catch-bolt inward in the act of shutting the door. The direction in which this bearing pressure of the lever acts on the catch-bolt is directly inward, and consequently little or no tendency is exerted thereby to press the catch-bolt laterally and produce friction. Therefore the action of pressing back the catch-bolt is free and comparatively easy. The projection *c*, being free, has no effect to restrain the free movement of the catch-bolt at all.

I am aware that various devices have been employed to operate intermediately between the guard-plate and catch-bolt of a door-latch for a similar purpose; but, besides their want of any superiority of action and the additional friction which their modes of attachment and operation make necessary, mine has the additional advantage of extreme simplicity and cheapness, there being little expense except the mere casting of the piece, and no requirement of pivots or other connecting parts, it being simply laid in position in putting the parts of the door-latch together.

The lever may be made of brass, steel, or other suitable and desired material.

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

The T-shaped lever E, arranged in relation to the latch-bolt without the use of a pivot, and having a beveled projection, *a*, working in a slot of the bolt C, a fulcrum-projection, *b*, bearing behind the face-plate B, and a projection, *c*, catching in a notch of the bolt, in combination with the said bolt, substantially as and for the purpose herein specified.

The foregoing specification signed by me this 14th day of February, 1879.

HAZEN R. UNDERHILL.

Witnesses:

EDWARD H. UNDERHILL,

J. C. ROLLINS.