R. B. RUGGLES.

Latch.

No. 202,474. Patented April 16, 1878.

Fig: 1.

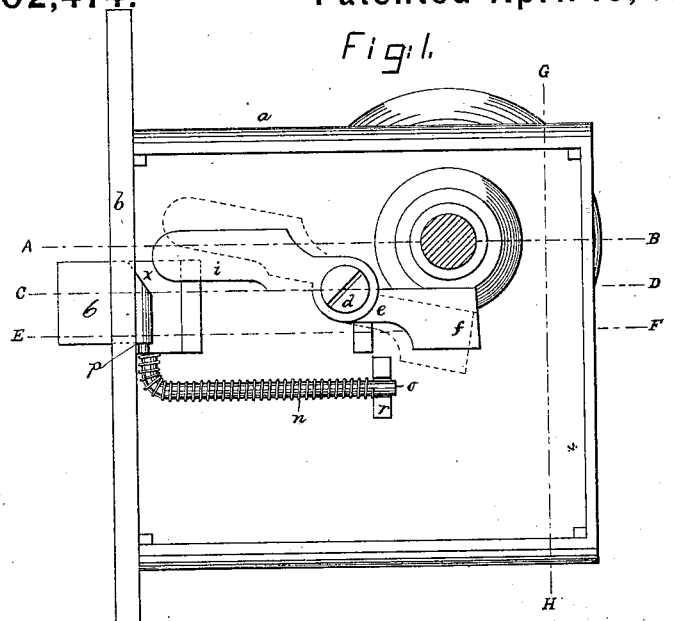


Fig: 5.

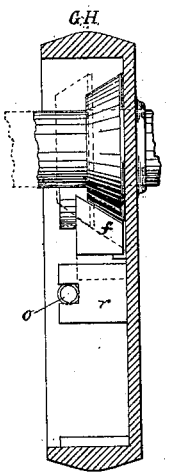


Fig: 2.

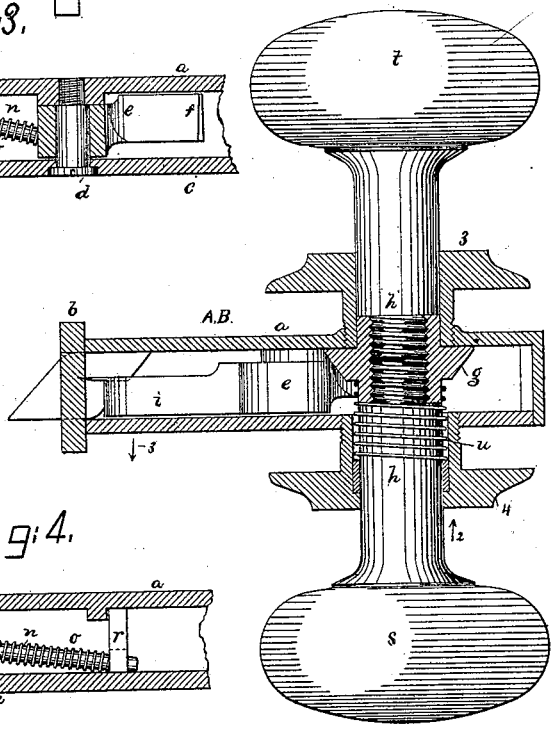


Fig: 3.

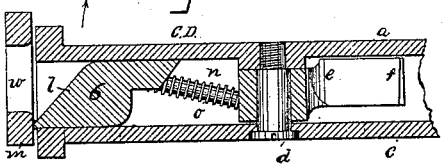
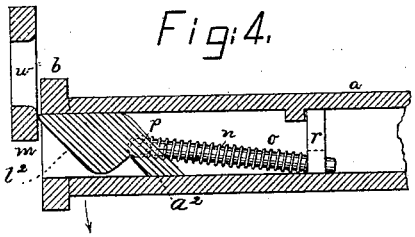


Fig: 4.



Witnesses.

C. C. Perkins.

W. J. Pratt.

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by Cross by Gregory Attys

UNITED STATES PATENT OFFICE.

ROBERT B. RUGGLES, OF WINDSOR, CONNECTICUT.

IMPROVEMENT IN LATCHES.

Specification forming part of Letters Patent No. **202,474**, dated April 16, 1878; application filed November 13, 1877.

To all whom it may concern:

Be it known that I, ROBERT B. RUGGLES, of Windsor, in the county of Hartford and State of Connecticut, have invented an Improvement in Latches for Doors, of which the following is a specification:

This invention relates to improvements in a latch composed of a catch pivoted upon the outer end of a rod guided only at its inner end, a lever pivoted upon the latch-case, a sliding and rotatable knob, and a cam operated by it to operate all as hereinafter set forth and claimed.

The turning motion of the pivoted catch is controlled by a lever operated through a spindle-cam carried by the knob-spindle, it being capable of being moved longitudinally.

Figure 1 represents one form of my invention as embodied in a mortise-latch, one side of the latch-case being removed. Fig. 2 is a section on the line A B, Fig. 1; Fig. 3, a section on the line C D, the catch being moved longitudinally backward; Fig. 4, a section on the line E F, the pivoted catch having been turned as it was moved longitudinally backward; and Fig. 5 is a section on line G H.

The case *a* of the lock and the face-plate *b* may be of any suitable shape and size. The cap-plate *c* is held to the case by a screw, *d*, which also serves as the fulcrum for the lever *e*, having one end, *f*, thereof inclined or beveled, to be acted upon by the inclined or beveled face of the spindle-cam *g*, connected with or under the control of the spindle *h* or knob-shank, and so guided that the spindle, as it is moved longitudinally, will move with it the cam and swing the lever on its fulcrum *d*. The forward end *i* of the lever *e* is also adapted to co-operate with the rear portion *x* of the catch 6, so that when the end *i* of the lever bears against such rear portion of the catch, and its face $l\,l^2$ is acted upon by the jamb-plate *m*, the catch will move back longitudinally, the spring *n* on the rod *o*, to which the catch is pivoted at *p*, then yielding as the rod *o* moves back through the guide *r*. The catch 6 has its two striking-faces $l\,l^2$ of substantially the same inclination, and the catch is so pivoted to the free end of the rod *o*, guided only at its rear end, (shown at Fig. 4,) as to permit the catch to turn freely in either direction, the free end of the rod, or that end which forms the pivot for the catch, moving toward either of the faces of the latch-case. When sliding backward, as in Fig. 4, the beveled end a^2 of the latch bears against the latch-case. The lever *e*, operated by the cam *g* on the knob-spindle, is pivoted upon a screw fixed in the latch-case, and has only a motion of vibration at its axis.

The normal condition of the parts are as in full lines, Figs. 1 and 2, and when the door is being closed the face *l* of the catch will meet the jamb-plate and force the catch to move longitudinally, as an ordinary catch.

The spindles or shanks of each knob *s t* have a screw-thread, as shown in Fig. 2, which screws into the cam *g*, so that the cam and knobs become as one member. The knobs and the cam are free to rotate in the roses 3 4 in either direction, any number of rotations, without affecting the lever or catch.

The spring *u* forces the knob-spindle in the direction of the arrow Q, next to it, and the spindle and knobs are thereby so held as to permit of longitudinal motion, or through the latch-case.

In Fig. 2 let it be supposed that the door to which the latch is attached swings open in the direction of the arrow 3; that the door is closed, and that the catch is in the hole *w* in the jamb-plate. Now, to open the door from the side provided with the knob *s* requires a pull to swing the door in that direction, and a person seizing such knob and pulling upon it will move the spindle toward him and cause the inclined side of the cam *g* to act upon and turn the lever *e*, so that it will move away from the rear portion of the pivoted catch, permitting it to turn on its pivot, as shown in Fig. 4, and at the same time move longitudinally.

If the door were to be opened from the side provided with knob *t*, a push would be required. A person pushing on the knob *t* would so move the knob-spindle and cam as to release the catch in the same way. It will therefore be noticed, as the door is closed, that the catch operates as usual with other catches; but when the door is opened by a push or a pull of the knob, the catch is released from the control of the lever and is permitted to turn on its pivot.

The invention is applicable to rim as well as mortise latches.

The roses are provided with threaded sleeves, to screw directly into the latch-case after passing through the door.

The knobs may be made longitudinally movable with relation to their screw-threaded spindles in any usual way, to provide for doors of different thickness.

I claim—

1. The combination, with the catch pivoted upon the free end of the rod *o* and spring to throw it outward, of a lever pivoted to the latch-case to hold or release the catch, to guide it in a right line or permit it to turn, substantially as described.

2. The catch 6 and the guide-rod *o*, guided as described, and the vibrating lever *e*, pivoted to the latch-case, in combination with the cam *g*, to operate the lever, all substantially as described.

3. The guide-rod *o*, guided only at its rear end, and spring to advance or throw out the catch, in combination with the catch 6, pivoted to the outer end of the rod, the catch being provided with inclined faces $l\ l^2$, and a rear portion, $x\ a^2$, to operate substantially as and for the purpose set forth.

4. The knobs *t h s h*, provided with screw-threaded ends, and the cam-hub *g*, screw-threaded to receive such threaded ends, in combination with the lever *e*, pivoted upon the latch-case.

5. The latch-case, the catch 6 screwed therein, and the spring *u*, in combination with the longitudinally movable and rotatable knob, having a divided shank, and the cam *g*, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT B. RUGGLES.

Witnesses:
C. C. CLOSSEN,
GEO. D. SHELTON.