(No Model.)

J. DOUD.

LATCH.

No. 365,675. Patented June 28, 1887.

Fig. 1.

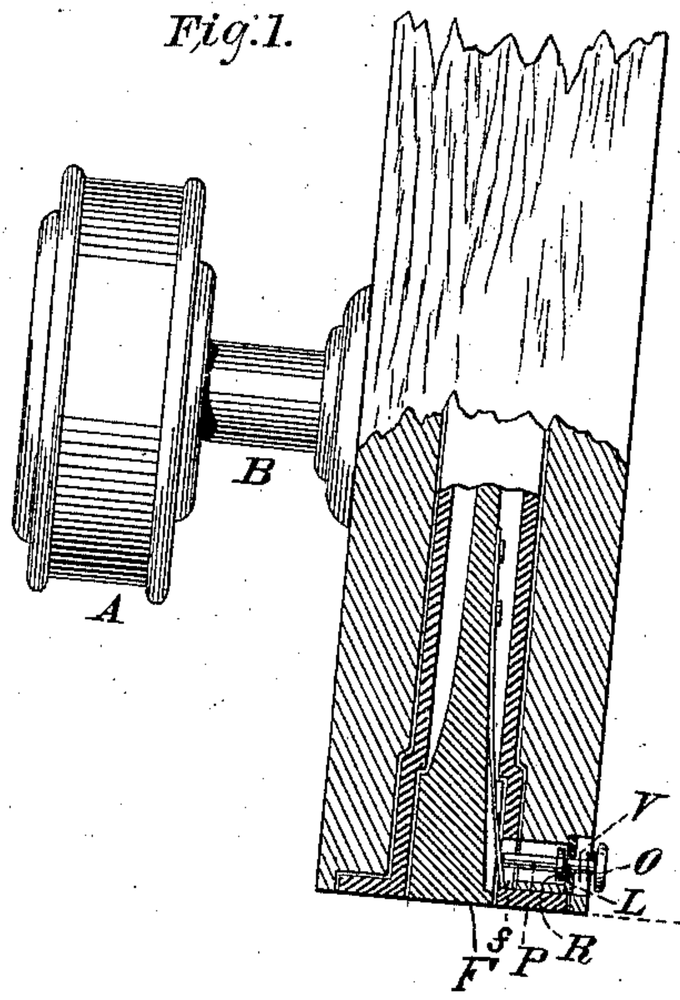


Fig. 2.

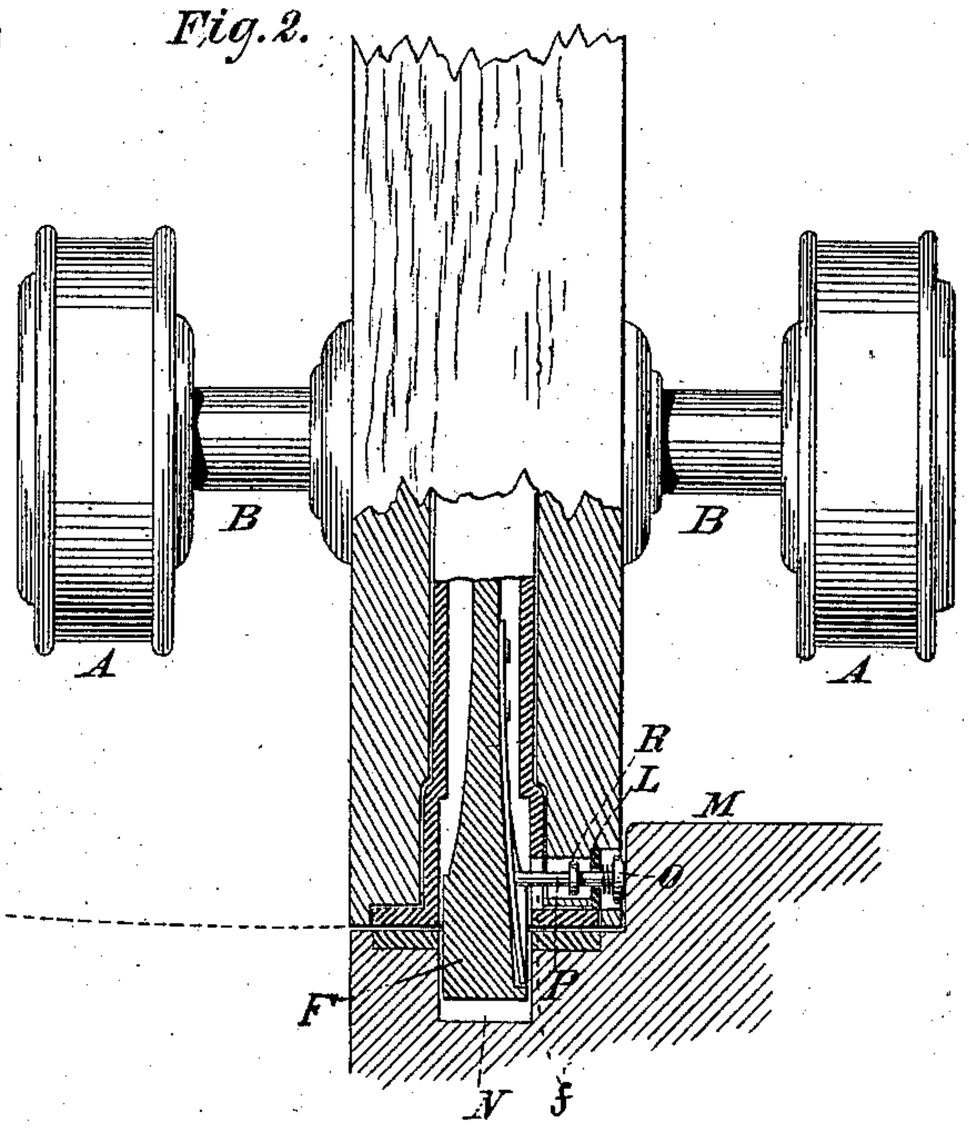
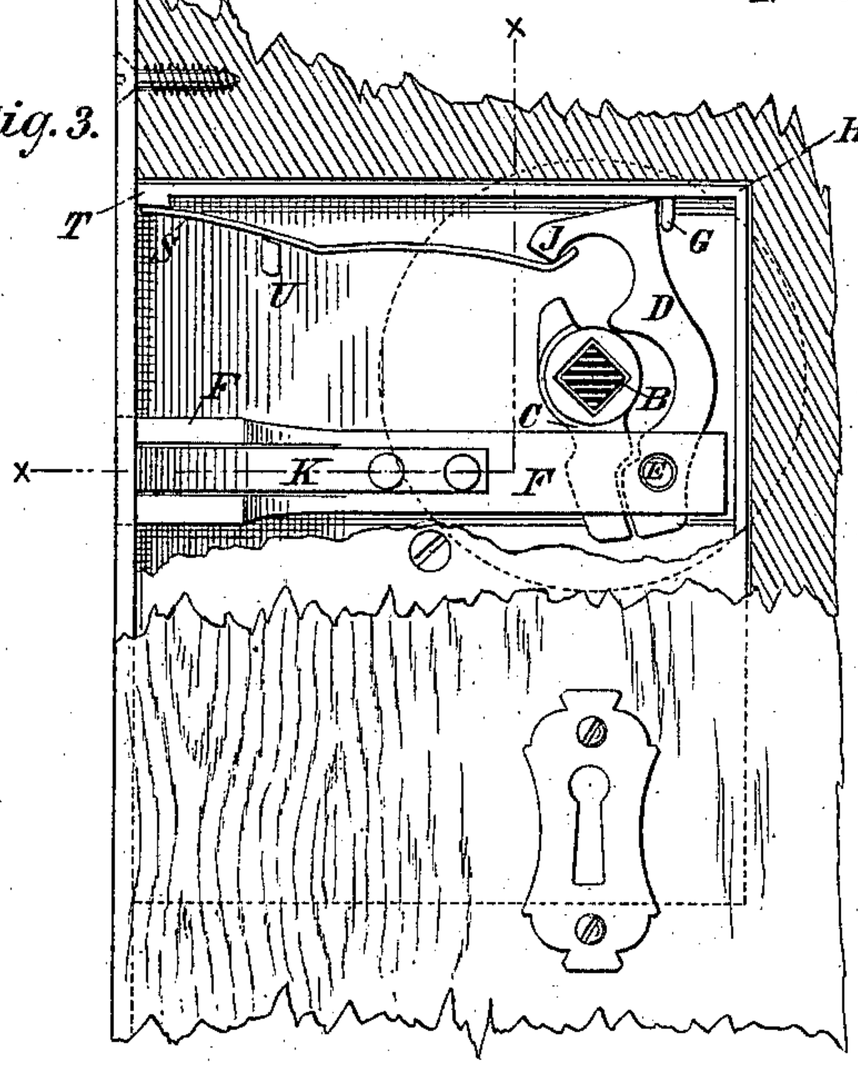


Fig. 3.



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LATCH.

SPECIFICATION forming part of Letters Patent No. 365,675, dated June 28, 1887.

Application filed April 8, 1887. Serial No. 234,178. (No model.)

To all whom it may concern:

Be it known that I, JAMES DOUD, a citizen of the United States, residing at Mackinac Island, in the county of Mackinac and State of Michigan, have invented certain new and useful Improvements in Latches, of which the following is a specification.

My invention relates to a latch for doors which is adapted to be operated by the percussion between the door and the door-frame, and it is so arranged that the bolt will remain entirely within the latch-case until the door has come in contact with the door-frame, when said bolt will suddenly shoot out and enter the keeper.

The object of my invention is to provide a useful door-latch and one that will not get out of order very readily—a drawback which obtains in the present door-latch having the bolt with the beveled end.

To this end my invention consists in forming the bolt which is operated by the door-knob with a square end and attaching to said bolt a longitudinally-arranged spring which is adapted to catch and retain the bolt after it has been withdrawn from the keeper by the knob, and to retain it inside the latch-case until the said spring has been pressed against, which pressure will release the bolt, and through the medium of another spring it will shoot out and enter the keeper in the door-frame. The spring arranged upon the bolt is controlled by a pin having a button at its outer end, which button, when pressed against by the door-frame, will liberate the said spring and cause the bolt to fly out, as above stated.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a transverse section of a door provided with one of my latches. This figure (drawn upon the line X X, Fig. 3) represents an open door, the bolt being drawn back and being held by its retaining-spring. Fig. 2 represents the door in a closed position, the bolt having entered the keeper in the door-frame. Fig. 3 is a vertical section of my improved latch.

In the drawings, A represents the knob of an ordinary door-latch, and B the shaft of the knob. The shaft B is provided with an arm, C, which extends downwardly and bears against the tumbler D, which latter is pivoted at E to a bolt, F. The tumbler D at its upper end bears against the lug or shoulder G in the upper part of the latch-casing H. A spring, S, which is held between the shoulder T and a lug, U, serves to control the movement of the tumbler D and bears against the under side of a projection, J, of the said tumbler. The bolt F is provided with a catch-spring, K, which, by engagement with one side of a hole, *f*, in the latch-case, which constitutes a shouldered stop, is adapted to retain the bolt inside of the latch-case when said bolt has been drawn in to open the door. This is illustrated in Fig. 1, where the door is open and the bolt is drawn back and retained inside the latch-case.

At P is shown a pin having a button, O, at its outer end and a collar, R, about midway of its length, to prevent it from falling out or passing beyond a flange, L, of the latch-case, located at this point for the purpose of retaining the pin. A small spring, V, is arranged between the flange L and button O, to keep the pin P normally away from the catch-spring K, and thus prevent unnecessary friction. The pin P may be made in two parts, one fitting over the other like a sleeve, so as to adapt the latch to doors of different thicknesses.

The method of operation is as follows: When the knob A is turned, the shaft B will carry the arm C with it, thus drawing the bolt F into the latch-case through the medium of the tumbler D and the pivot-pin E. When the bolt is wholly within the latch-case, the catch-spring K will slip behind the shoulder on the frame of the case, as shown in Fig. 1, thus retaining the bolt within the case. The door may then be opened and the bolt will remain within said case, as shown in Fig. 1. When, however, the door is closed, the button O will come in contact with the frame M, which action will cause the pin P to press against the catch-spring K, thus releasing it. As soon as it is released the bolt F will fly out by reason of the spring S operating through the tumbler D. The bolt F will then occupy the keeper N in the frame of the door.

By the construction such as I have shown and described it will be seen that I have produced a latch that is not easy to get out of order; and I also avoid any liability on the part of the bolt from coming in contact with

the frame of the door, and thus preventing the door being closed.

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

1. In a latch, the combination, with the latch-case, the knob and its shaft, the bolt, and suitable connection between the shaft and bolt, whereby the latter may be retracted, of a spring attached longitudinally at one end to the bolt and adapted to engage with a shoulder on the latch-case, and a spring-retracted pin independent of the aforesaid bolt-spring, adapted to engage with the latter and release the bolt when the door is closed, substantially as set forth.

2. In a latch, the combination, with the latch-case provided with a shoulder, the knob and its shaft, the bolt, and suitable connection between the shaft and bolt, whereby the latter may be retracted, of a spring attached longitudinally at one end to the bolt and adapted to engage with the shoulder of the latch-case, a pin provided with a button and adapted to engage with the said spring, a spring between said button and a flange on the latch-case, and a collar on the pin for preventing the withdrawal of the latter, substantially as set forth.

JAMES DOUD.

Witnesses:
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