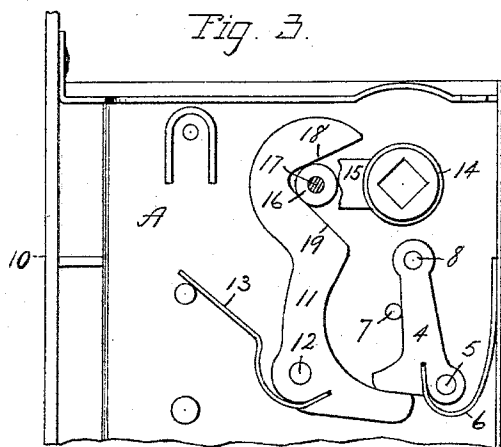
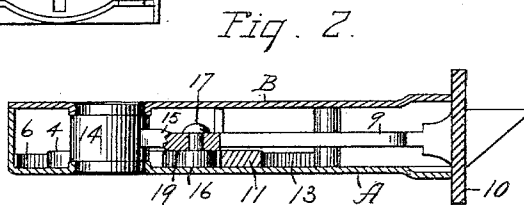
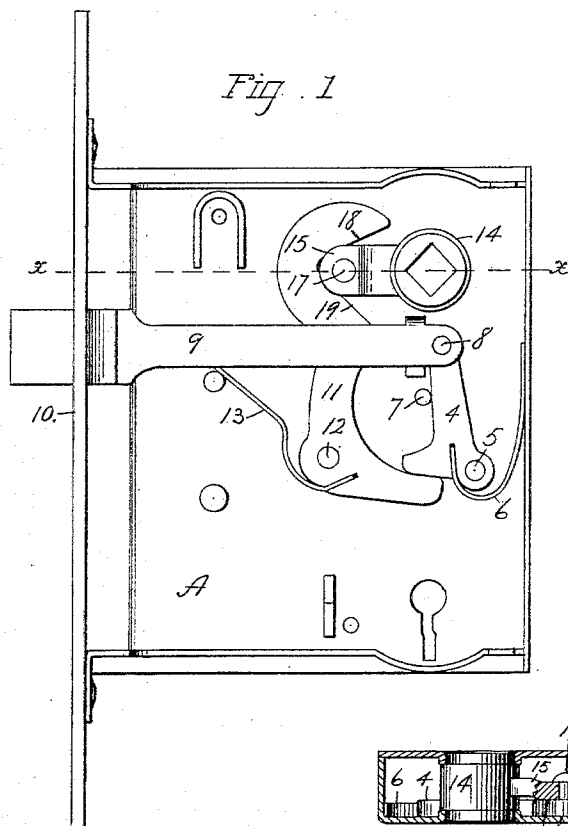


(No Model.)

H. G. VOIGHT.
LATCH.

No. 602,886.

Patented Apr. 26, 1898.



Witnesses

G. W. Steiner
P. J. Ryan

Inventor

Henry G. Voight
By *James Shepard*
Atty.

UNITED STATES PATENT OFFICE.

HENRY G. VOIGHT, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE
RUSSELL & ERWIN MANUFACTURING COMPANY, OF SAME PLACE.

LATCH.

SPECIFICATION forming part of Letters Patent No. 602,886, dated April 26, 1898.

Application filed December 18, 1897. Serial No. 662,372. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. VOIGHT, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Latches, of which the following is a specification.

My invention relates to improvements in latches; and the main object of my improvement is to make a one-armed latch-hub act upon the latch-lever with substantially the same ease when the knob-spindle is turned in either direction.

In the accompanying drawings, Figure 1 is a front elevation of my latch with the cap-plate removed, the parts of the lock for which the case was designed being omitted. Fig. 2 is a sectional view, partly in elevation, of my latch on the line *xx* of Fig. 1; and Fig. 3 is a front view of parts of my latch with the arm of the hub broken off and the axle of its roller-pin in section.

A designates the latch-case, and B its cap-plate. The case may be of any suitable construction. As shown, it is made as the case of a combined latch and lock; but the lock portion thereof is not essential to my invention. The case is provided with a short latch-lever 4, pivoted at 5 and provided with a light spring 6 to hold said lever in its normal position with its longer arm against the stop 7, as shown. Said longer arm near its end is provided with a pin or pivot 8, upon which the inner end of the latch-bolt 9 is pivoted, while the outer beveled end of said latch-bolt extends through the face-plate 10 in the ordinary manner.

By the side of the shorter latch-lever 4 there is another and longer latch-lever 11, acting in connection with the lever 4 and pivoted to the case at 12. It is also provided with a spring 13 and a short and long arm, the longer arm having a V-shaped recess on the edge that faces the latch-bolt hub 14, while its shorter arm bears upon the shorter arm of the shorter latch-lever 4. The hub 14 is mounted to turn in suitable bearings in the case and is provided with only one wing or arm 15. This arm carries a rounded projection 16, 50 Figs. 2 and 3, preferably in the form of a

roller pivoted on the pin 17, which projection 16 bears against the longer arm of the longer latch-lever at its V-shaped recess. The side 18 of this V-shaped recess nearest the outer end of the lever 11 stands at a more abrupt angle to the path of the projection 16 than does the other side 19 of said V-shaped recess, whereby with a certain amount of resistance against the movement of the lever 11 said lever will be moved with substantially the same ease when the latch-hub is turned to force it against either side 18 or 19 of the V-shaped recess. It should be noted that when the wing of the latch-bolt hub acts upon that side 18 which has the longer leverage the angle is such (everything else being equal) that it furnishes the greatest resistance to the movement of the latch-hub, and when it acts on the side 19, which has the shorter leverage, the angle is such (everything else being equal) that it furnishes the least resistance to the movement of the latch-hub. By the combination of the different angles and longer and shorter leverages the power necessary to move the latch-bolt through the hub is or may be equalized, so that the knob can be turned either way with substantially the same ease.

It will be seen that turning the latch-hub in either direction will move the long arm of the longer latch-lever away from the hub and against the force of its spring, while the short arm of said lever 11 acts against the short arm of the lever 4 to draw the latch-bolt 9 inwardly. Upon releasing the hub the springs 6 and 13 return the parts to their normal position. When the latch-bolt is forced inwardly by pressure on its outer end, as when closing the door, the lever 4 alone is moved and its spring alone returns the said lever and latch-bolt to their normal position, whereby a light spring can be employed for the lever 4, and the spring 13 and lever 11 maintain their hold on the wing of the latch-bolt hub when the latch-bolt is being thus moved.

It is apparent that in carrying out my invention some changes from the construction herein shown and described may be made, and I would therefore have it understood that I do not limit myself to the exact form shown, but hold myself at liberty to make such

changes and alterations as fairly fall within the spirit and scope of my invention.

I claim as my invention—

1. The combination of the latch-bolt with
5 the shorter lever 4 to which said latch-bolt is pivoted, a spring for said lever, the longer lever 11 acting on the lever 4 and having a V-shaped recess, a spring for said lever, and the latch-hub having a projection for engaging the V-shaped portion of the said lever 11,
10 substantially as described.

2. In a latch, the combination of the hub

provided with a wing and operating projection, with the spring-lever 11 for moving the latch-bolt through the said hub, said lever 15 having a V-shaped recess with its two sides inclined at different angles for being engaged by the said operating projection, substantially as described.

HENRY G. VOIGHT.

Witnesses:

T. S. BISHOP,

M. S. WIARD.