J. A. BROOK.
Reversible-Latch.

No. 197,594. **Patented Nov. 27, 1877.**

fig. 1

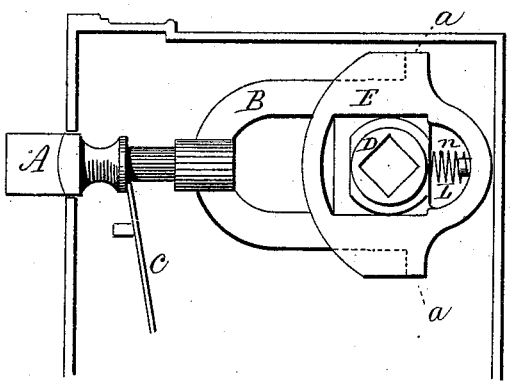


fig. 2

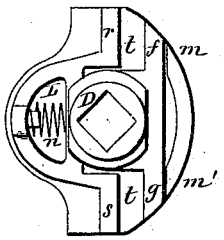


fig. 5

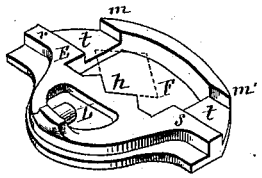


fig. 6

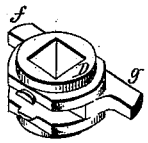


fig. 3

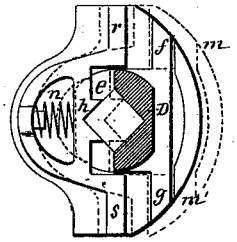
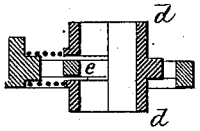


fig. 4



Witnesses.
J. H. Chumway
H. A. Ketson

John A. Brook
Inventor
By Atty.
Wm. E. Earle

UNITED STATES PATENT OFFICE.

JOHN A. BROOK, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO MALLORY, WHEELER & CO., OF SAME PLACE.

IMPROVEMENT IN REVERSIBLE LATCHES.

Specification forming part of Letters Patent No. **197,594**, dated November 27, 1877; application filed October 26, 1877.

To all whom it may concern:

Be it known that I, JOHN A. BROOK, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Reversible Latches; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, front view of the mechanism of the latch; Figs. 2, 3, 4, 5, and 6, detached views.

This invention relates to an improvement in that class of knob-latches in which the latch is made reversible by drawing the nose of the latch from the case, and turning it either to the right or left, as the case may be, and then allowing it to fall back into its seat in the face-plate, and practically to that subdivision in which the hub remains stationary while the latch and the yoke or follower move forward and back in the operation of reversing; and is an improvement on the lock for which Letters Patent of the United States were granted to Wm. E. Sparks, dated October 19, 1869, reissued August 14, 1877, and improvements on the same granted to Wm. H. Andrews, dated March 25, 1873, and anything shown in the said two patents is hereby recognized. In the lock of Sparks's the power of the spindle was applied to the follower by means of a stud or projection extending into one side of the hub. In Andrews's the connection was made by parallel surfaces on the hub engaging corresponding parallel surfaces on the follower.

The object of this invention is to construct the hub and follower so that the power may be applied through the hub to the follower at a point more distant from the center of motion than in that of the said patents; and the invention consists in the construction, as hereinafter described, and more particularly recited in the claim.

The latch-bolt A is arranged through the face-plate, and swiveled to the yoke B in the usual manner, the yoke provided with the usual lugs *a*, with which the operative mechanism engages to draw the bolt. The latch-bolt is also provided with the usual spring C, the tendency of which is to force the latch forward when it is freed from the power which drew it into the case.

The hub D is shown in perspective in Fig. 6. It is constructed with a shoulder, *d*, at each end, to fit into and between the two plates of the cases, in the usual manner for knob-spindle hubs. On the rear a recess, *e*, is made substantially like the recess in the said Sparks's and Andrews's patents, and on the forward side of the hub an arm, *f*, extends upward, and a corresponding arm, *g*, downward. The opening through the hub D is of the usual form to receive the knob-spindle, so that the power for turning the knob is applied directly to the hub.

The follower E is shown in perspective, Fig. 5. It is constructed with a central opening, F, sufficient to introduce the body of the hub. The rear side of this opening is constructed with a projection, *h*, corresponding to the recess *e* in the hub, and so that when set over the follower the projection *h* may pass into the recess *e* in the hub, as seen in Fig. 3, and so that the projection may be drawn into the spindle-opening in the hub, as seen in Fig. 3, and substantially as the projection is in the two beforementioned patents. Hence when the projection is thus drawn into the hub, the spindle cannot be inserted; but when pressed backward sufficiently the spindle will pass the projection, and in that condition prevent the follower being drawn forward.

In case the spindle-seat is diagonal to the projection, as shown in the drawing, the projection should be notched corresponding to the angle in the spindle-seat; but if the flat side be presented, the projection will have a corresponding flat side.

In rear of the hub a recess, L, is made in the follower, and into this recess a spiral or other suitable spring, *n*, is introduced, corresponding to the spring in the said Andrews's patent, the office of which is to hold the follower back, so as to draw the projection *h* away from the spindle-seat, but yet allow the follower to be drawn forward as occasion may require, and more particularly hereinafter mentioned. Forward of the hub the follower is constructed with shoulders *m m'*, corresponding, respect-

ively, to the arms *f g* of the hub, and so that in the normal condition of the parts the shoulders *m m'* rest upon the arms *f g*. Hence when the power of the knob is applied through the spindle to turn the hub, the arms *f g* of the hub act, respectively, directly upon the said shoulders *m m'*, and turn the follower accordingly. On the follower an arm or shoulder, *r*, is formed above, and a corresponding shoulder, *s*, below, which act upon the lugs of the yoke in the usual manner; but a sufficient space, *t*, is left between said shoulders *r* and *s* and the arms *f g* of the hub to allow the follower to be moved forward, as before described, and seen in broken lines, Fig. 3.

By this construction the power is applied to the follower at a point distant from the center of motion substantially equal to the point where the arms of the follower bear upon the yoke, and consequently a less strain is brought upon the working-points between the follower and hub than when those working-points are nearer the center of motion, as in the beforementioned patents.

I claim—

The combination, in a knob-latch, of a yoke, with a latch-bolt swiveled thereto, a hub, supported in the case independent of the other parts of mechanism, constructed with longitudinal spindle-seat, with a transverse opening into said spindle-seat, and a vertical arm, extending upward and downward from said hub, and a follower constructed to engage the said yoke and hub, with a portion thereof in such relative position to the opening in said spindle-seat that when the spindle is in its seat it will hold the follower, and when the said spindle is removed it will allow the follower to be drawn outward, and with shoulders to engage the said arms on the hub, substantially as and for the purpose described.

JNO. A. BROOK.

Witnesses:
J. H. SHUMWAY,
H. A. KITSON.