J. Alrichs

Spring Door Latch.

N° 4060 Patented May 24. 1845.

Fig.5.

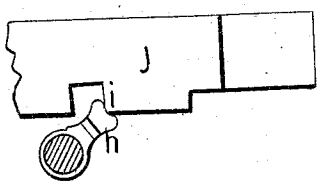
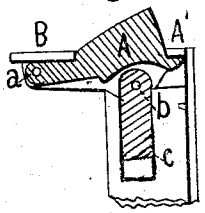


Fig.2.



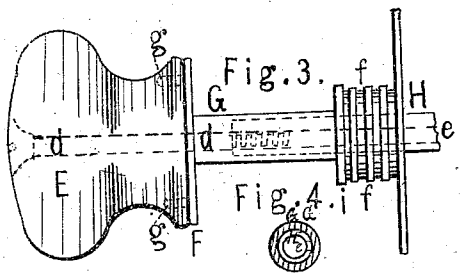
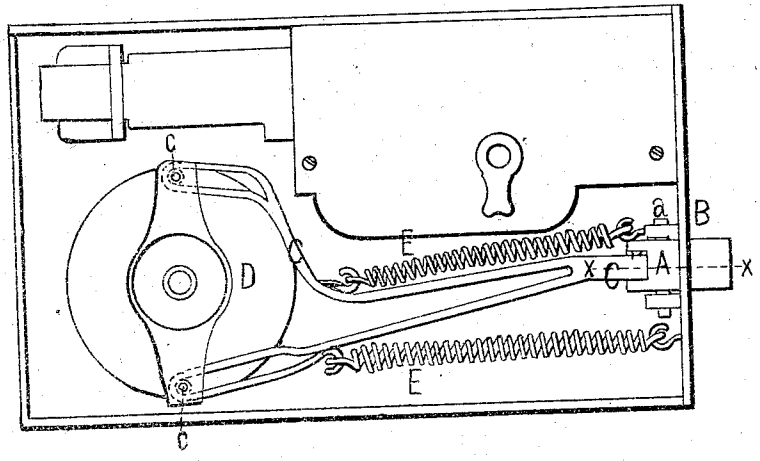


Fig.3.

Fig.4.

Fig.1.



UNITED STATES PATENT OFFICE.

JACOB ALRICHS, OF WILMINGTON, DELAWARE.

DOOR-LATCH.

Specification of Letters Patent No. 4,060, dated May 24, 1845.

To all whom it may concern:

Be it known that I, JACOB ALRICHS, of Wilmington, in the county of Newcastle and State of Delaware, have invented certain new and useful Improvements in the Manner of Constructing Spring Door Locks and Latches; and I do hereby declare that the following is a full and exact description thereof.

Instead of a sliding bolt, made in the ordinary form of the spring bolt of locks and latches, I make that part which constitutes the outer end of such a bolt, and which catches into the plate of the door post, in a separate piece, and this I hang, by means of a joint pin, to the outer end plate of the box of the lock, in a manner which will be clearly understood by reference to the accompanying drawings, in which—

Figure 1 is a view of the interior of the lock or spring latch; and Fig. 2 a section through the spring catch taken in the line *x*—*x* of Fig. 1.

A is the piece that forms the spring catch which is hung by a joint pin *a* to the plate B, which is that of the outer end of the box of the lock. The part A′ of the spring catch, which bears against the hole or mortise in the plate attached to the door post is not made straight, as usual, but is formed in the segment of a curve, the center of which is the pin *a*.

C C is a stirrup which is connected at its outer end to the catch A by a joint pin *b* and at its inner end embraces the pins *c c* that rise from the plate D, which is attached to and turned by the shank of the knobbed handle.

E E are spiral springs made fast at one end to the fore part of the box of the lock and at the other to the stirrup C C; the effect of which will be to draw the stirrup forward and thereby to project the catch. Under this arrangement the friction is much less than that which exists in the ordinary spring bolt and the action of the catch is more direct and easy.

I have, also, made a new and useful improvement in the manner of adapting the knobs by which the shank is turned to the thickness of the door. This arrangement I have shown in Fig. 3. In this figure E is one of the knobs which is represented as resting on a circular plate of metal F which is made fast to a tube G that is capable of sliding up and down on the shank or shaft H. This shank is also hollow for a considerable length or is drilled out so as to receive a long screw *d d* that passes into it through the center of the knob, which it holds in place and may be applied to doors of various thicknesses. The shank H has a slot *e* along it extending to its outer end to receive a feather on the inside of the tubular piece G, so that the two shall be thereby made to turn together. This allows of the elongation of the shank to any required extent. Washers of leather *f f* or of other material may be placed on the shank H according to the thickness of the door.

I is a plate of metal against which the end of the tube G bears and this plate, like the tube, slides back and forth on the shank; Fig. 4 is a cross section of the shank and tube; the dotted lines *g*—*g* represent two pins rising from the plate F that enter two holes drilled in the knob E to cause the two to turn together. Under this arrangement it will be seen that the most perfect adjustment of the distance of the knob from the lock, so as to adapt it to the thickness of the door, may be readily made.

When I use a lock bolt I sometimes make two key-holes, one of which is not opposite to the other, thereby preventing the introduction of an instrument from without by which the key can be turned when left in the lock on the inside of the door; and with a lock of this description I have also so formed the front edge of the bit of the key as to cause it to prevent the forcing back of the lock bolt by any power applied to it from without. The form that I give to the bit of the key and the manner in which it is thereby made to hold the bolt firmly after the door has been locked, are shown in Fig. 5; J is a part of the bolt with the key left in the position to prevent its being retracted. On the fore edge of the bit of the key I make a depression or hollow as shown at *h* and when the key is left in the position represented the point *i* of the notch in which the bit acts on the bolt will rest against said depression and thus prevent the forcing back of the bolt.

Having thus fully described the nature of

my improvements in the spring latches and locks, what I claim therein as new and desire to secure by Letters Patent, is—

The manner herein described of arranging and combining the piece which forms the spring catch A with the box of the lock and with the stirrup by which it is forced forward, the said catch being attached to the box and to the stirrup by means of joint pins so that its operation shall be substantially the same with that herein set forth.

JACOB ALRICHS.

Witnesses:
THOS. P. JONES,
EDWIN L. BRUNDAGE.