R. Kinsley,
Door Latch,
No. 4,402 Patented Mar. 7, 1846.

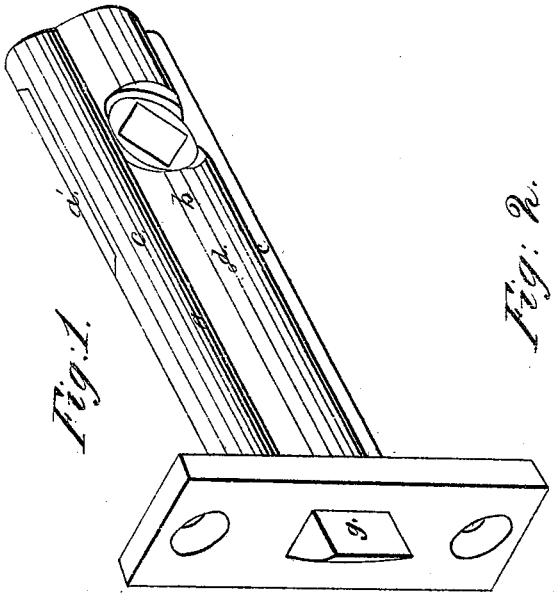

Fig. 1.

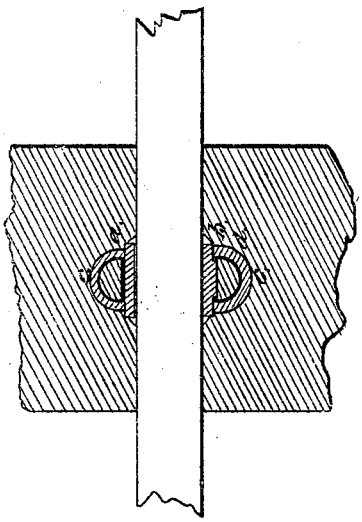

Fig. 2.

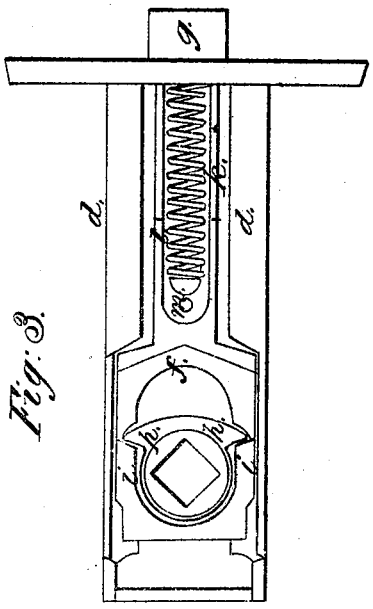

Fig. 3.

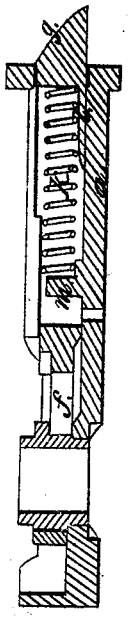

Fig. 4.

UNITED STATES PATENT OFFICE.

RHODOLPHUS KINSLEY, OF SPRINGFIELD, MASSACHUSETTS.

MORTISE-LATCH FOR DOORS.

Specification of Letters Patent No. 4,402, dated March 7, 1846.

To all whom it may concern:

Be it known that I, RHODOLPHUS KINSLEY, of Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Mortise Door-Latches, and that the following is a full, clear, and exact description of the principle or character thereof which distinguishes them from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of the latch; Fig. 2, a cross section of the same let into the mortise in the door; Fig. 3, a view of the latch with the cap of the case removed, and Fig. 4, a longitudinal section in the plane of the axis of the tumbler.

The same letters indicate like parts in all the figures.

In making mortise latches much difficulty has been experienced in giving a form to the case to suit thin doors, and at the same time adapted to the reception and working of the mechanism, and the fitting of a mortise made entirely by boring to avoid the labor of mortising with a chisel. This end has been sought by substituting the cylindrical for the square form; but to adapt this to the reception of a properly formed tumbler requires too great a diameter to suit a medium thickness or thin doors. But by one of my improvements I attain this desideratum by forming the cross section of the case of three circles, one in the middle, to form the thickness of the case, and two small ones, one on each side of and bisecting the middle one to form the width of the case, so that a hole formed by boring one large hole and two small ones will receive the latch case, the diameter of the large one being sufficient to give to the axle of the tumbler the required length, and the two small ones giving sufficient width for the working of the levers of the tumbler and the wings of the latch bolt on which the tumbler acts to operate it.

My second improvement consists in so locating the helical spring, which protrudes the bolt within a recess therein as to have one portion of it rest on a flanch connecting the two sides of the bolt, and the other end on a shoulder of the stud against which the permanent end of the spring rests, by means of which arrangement much of the friction, and consequent wear of the spring against the case is avoided.

In the accompanying drawings (*a*) represents the case the form of which is composed, as above stated of three circles (*b*), the center one to form the thickness, and (*c*, *c*), the two side ones of smaller diameter, and forming, with the middle one, the width of the case, the centers of the two small ones being on or near the circumference of the large one, and the centers of all of them in the same plane. The part (*a'*), which forms the cap, being made separate from and connected with the rest by a single screw (*d*). The journals of the tumbler (*e*) are fitted to and turn in appropriate boxes made in the case and cap, as clearly indicated in the drawings; and the body of the tumbler lies in an elongated hole (*f*) in the rear end of the bolt (*g*), the sides thereof sliding in the recesses of the case made within the two small circles. The wings (*h h*) project from the body of the tumbler on a line tangential to a circle of less diameter than the body thereof, so as to avoid the tendency to push out the bolt when acting against the shoulders (*i*, *i*) of the latch bolt to draw it back. The helical spring that protracts the bolt lies in a recess (*k*) in the body thereof, one end resting against the forward end of the recess and resting on the flanch or plate (*l*), connecting the two sides of the bolt, and against a stud pin (*m*) attached to a bolt provided with a shoulder on which the other end of the helical spring rests, so that during the play of the bolt, the spring instead of making friction throughout its length rests only on the flanch or plate (*l*) which moving with it avoids much of the friction and wear.

From the foregoing description and examination of the drawings it will be perceived that when the case is let into the door the whole strain on the wood of the door is along the surface of the small circles and near to their junction with the large one, thus leaving a much greater thickness and strength of wood than if the strain was along the surface of the large diameter, and that therefore the wood of the door will retain much more strength than if the latch were round or square, for in the former, to attain the required room for the working parts, the entire diameter of the case would necessarily be equal to the diameter of the three circles united in mine, and in the lat-

ter, (the square) the thickness of the whole case would be equal to the diameter of the large circle, so that the strain would of course come on the wood at the corners of the mortise, where there would of course be less thickness than on each side of the small circles in mine, besides the inconvenience of making the mortise with a chisel, instead of by boring simply.

What I claim as my invention and desire to secure by Letters Patent, is—

1. The form of the case of mortise latches by the union of three circles one large in the middle and a small one on each side, the three intersecting each other substantially as herein described to leave greater strength in the wood of the door on each side as specified, and to admit of fitting into the door by boring simply.

2. I also claim locating the helical spring in a recess in the body of the latch bolt in combination with the mode of preventing friction and wear by sustaining one end on a flanch or plate of the bolt and a shoulder on the standard, as herein fully explained.

RHODOLPHUS KINSLEY.

Witnesses:
A. P. BROWNE,
J. J. GREENOUGH.