

R. S. Foster,

Night Latch.

No. 99,076.

Patented Jan. 25, 1870.

Fig. 1.

Fig. 2.

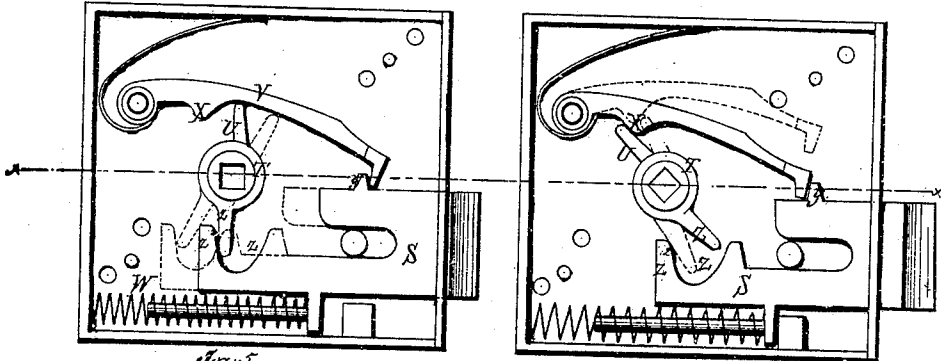


Fig. 3.

Fig. 4.

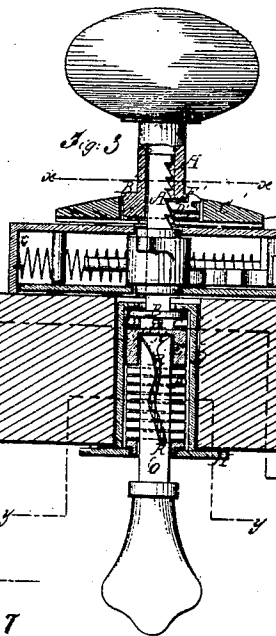
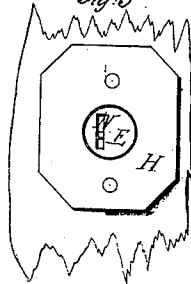


Fig. 5.



Fig. 6.

Fig. 7.

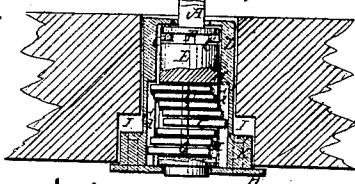
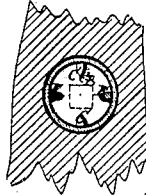


Fig. 8.

Fig. 9.



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RANDOLPH S. FOSTER, OF MADISON, NEW JERSEY.

Letters Patent No. 99,076, dated January 25, 1870.

IMPROVEMENT IN NIGHT-LATCHES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, RANDOLPH S. FOSTER, of Madison, in the county of Morris, and State of New Jersey, have invented a new and improved Spindle-Lock; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

The invention relates to spindle-locks, and consists in the arrangement of certain parts, which will be more particularly specified hereinafter.

Figure 1 represents an elevation of an ordinary lock-case, to the knob-spindle of which my improved lock is arranged to be applied, showing the arrangement of the bolt and guard when the bolt is worked as a spring-latch.

Figure 2 represents a similar view when the bolt is shot beyond the tumbler, for locking.

Figure 3 represents a horizontal section of the same, taken on the line *α α*, with the key inserted, and the lock unlocked.

Figure 4 represents a section on the line *xx* of fig. 3.

Figure 5 represents the appearance of the lock on the outside of the door.

Figure 6 represents a section on the line *yy* of fig. 3.

Figure 7 represents a vertical section of the lock through fig. 3, shown the locked condition.

Figures 8 and 9 represent different views on the section *zz* of fig. 3.

Similar letters of reference indicate corresponding parts.

The knob-spindle A is made only of sufficient length to enter a short distance beyond the inside of the door into and opening through the same, and is provided, at the end, with a disk B, having two stud-projections, C, on its face, near the periphery, and at opposite sides of the axis.

This opening through the door is made large enough to secure a hollow cylinder, D, capable of receiving the disk B of the shank down against the bottom, which is flush, or nearly so, with the inside of the door, and has a central opening, for the shank to pass through, and large enough to allow it to turn freely.

This hollow cylinder D receives the lock-cylinder E, which is of the same diameter as the disk B, and has two corresponding stud-projections, F, on the end, coming in contact with the said disk.

The cylinder D is provided with two longitudinal grooves, G, in the interior wall, opposite each other. It is also provided with a face-plate, H, which is detachably connected to it by screws I passing outwardly through lugs K, in a way to hold the plates H, so that they cannot be detached at the outside of the door, and without first removing the cylinder D, which is

held in place by the action of the flange B against the bottom, the shank and flange being held by the connection with the knob on the inside of the latch or bolt-case L.

The cylinder E has a long slot, M, passing through its transverse axis, and extending from near the front end toward the other end something more than half the distance, but may be longer or shorter, as found best.

Alongside of this slot, and extending nearly to the opposite end, is a deep mortise, N, or key-hole, opening at the front end, and shaped to receive a broad flat key, O.

The transverse slot M contains as many small rectangular bars, P, as it will hold, and allow them to slide freely each way. These short bars hold the cylinder E in a locked position, by sliding out of the slot M at either side into the grooves G of the cylinder D, when they stand or are supported by the cylinder E in a position to coincide with the grooves G. They are provided with projections, Q, on the same side that the key-hole is, and arranged at different distances from the ends, in an order to correspond with a curved slot, R, in the key, so that the key, being shoved into the hole to the bottom, and taking all the projections into the slot, which is widened at the outer end, for insuring their entrance, will draw all the bars into the slot from each side, so that none will project, to engage in the grooves, and prevent the turning of the cylinder.

The withdrawal of the key forces some of these bars out again on both sides into the grooves, and locks the cylinder. The cylinder E is, therefore, unlocked by thrusting the key into the hole, and locked by drawing it out, and the key cannot be drawn out without locking it; for, if the bars P do not coincide with the grooves, so as to be forced into them, the key cannot be withdrawn.

The cylinder E is held in its seat in the case D by the plate H, which bears against a shoulder turned down upon the outer ends of the said cylinder E.

By turning the key, after being thrust in the key-hole, the proper action is imparted to the shank A, through the studs C and F and the disk B, to throw the bolt S.

The connection between the cylinder E and the disk B, through the medium of the stud-projections C and F, is such, that while the said cylinder remains locked, the knob-spindle A has freedom to be moved on the inside, for shooting or retracting the bolt, and the amount which the said spindle may be turned may be varied, according to the relative arrangement of the stud-projections of the disk and the cylinders. For instance, the disk and the cylinder E having each two studs, one can be turned nearly half a revolution be-

fore the other will have to turn by the contact of the studs on the turning part coming in contact with the studs of the other.

Now, the studs of the cylinder E being held in any given position when the said cylinder is locked, say in a horizontal line cutting the axis, the knob-shank may be inserted in the tumbler T, so that the studs of its disk will strike those of the cylinder, and prevent the turning of the tappet U of the tumbler far enough to the left to raise the guard V, to permit the spring W to throw the bolt further than represented in fig. 1; or the shank may be so placed, with reference to the tumbler and the cylinder E, as to allow the said tappet to pass to the left, under the projection X, far enough to raise the guard V above the stud y, and allow the spring to throw the bolt fully forward, and the guard to fall behind the stud y.

The notch Z in the bolt, for the tappet Z¹ of the tumbler, is so shaped, that when the bolt is fully or partly shot, the said tappet Z¹ will have room to swing back against the projection Z², for retracting the bolt.

The knob-shank A', which receives in its socket the spindle A, is provided with a flange, B', which fits snugly in a large recess in the rose C', and a radial

hole is made in this flange B', for a spring-catch, D', which is constantly forced inward by a spring, E', and engages the ratchet-notches of the spindle A. This spring E' is arranged in a groove in the face of the flange B', and bears in a notch in the outer end of the catch.

The said catch has a shoulder, F', under which the thumb-nail or a knife-blade may be inserted, to withdraw it when required.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

1. A knob-spindle, A, provided with a disk, B, on the inner end, having projection c c thereon, and arranged within the locking-cylinder, as shown and described, and for the purpose specified.

2. The arrangement, as set forth, of the tumbler-lock, bolt, and spindle, so that the bolt may be actuated to a full or partial movement, in the manner described.

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Witnesses:

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