

(No Model.)

H. O. HOOPER.  
LATCH AND LOCK COMBINED.

No. 420,600.

Patented Feb. 4, 1890.

Fig. 1.

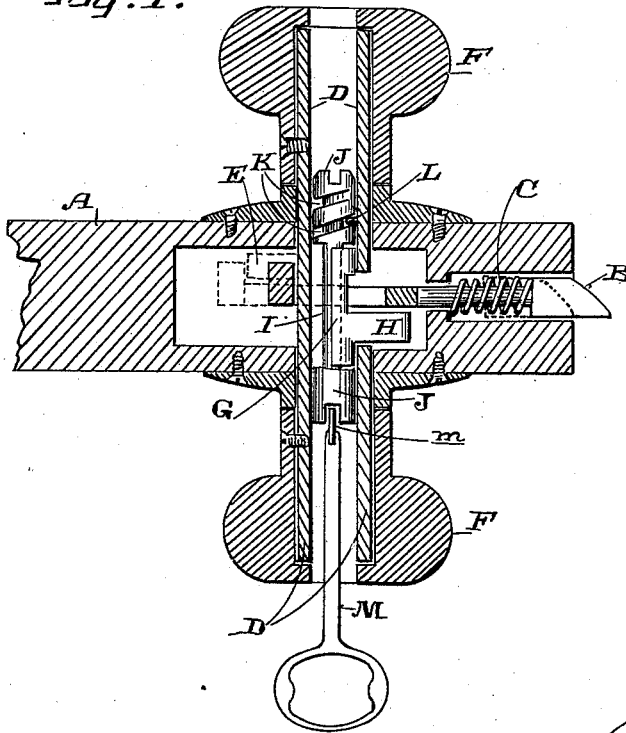


Fig. 2.

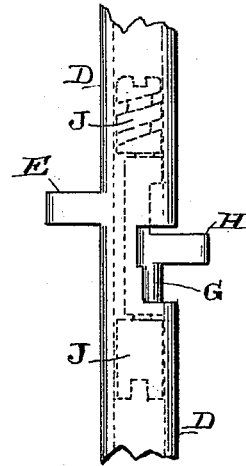
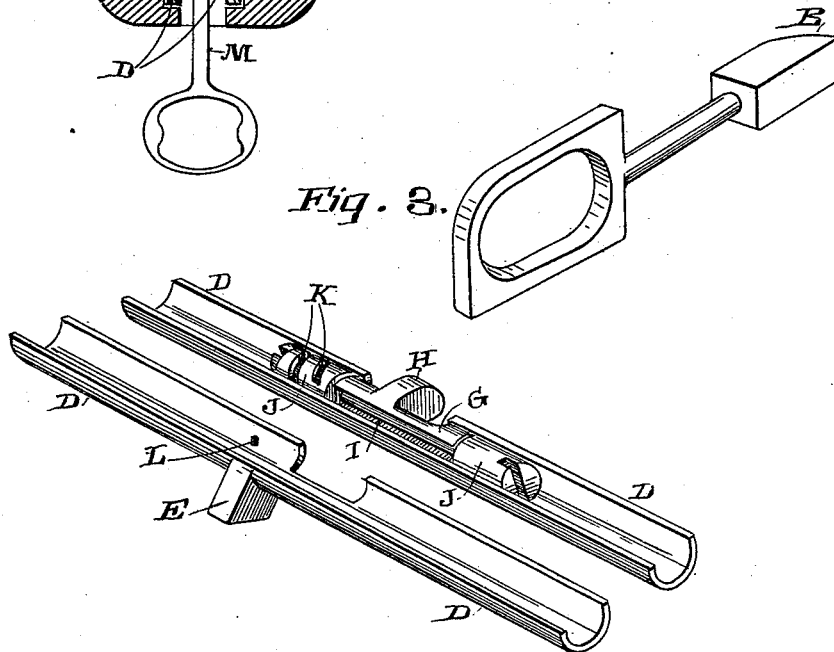


Fig. 3.



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# UNITED STATES PATENT OFFICE.

HENRY OTIS HOOPER, OF EUREKA, CALIFORNIA.

## LATCH AND LOCK COMBINED.

SPECIFICATION forming part of Letters Patent No. 420,600, dated February 4, 1890.

Application filed May 23, 1889. Serial No. 311,863. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY OTIS HOOPER, of Eureka, Humboldt county, State of California, have invented an Improvement in Door-  
5 Locks; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in door locks and latches.

10 It consists of certain details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a horizontal section taken in  
15 the plane of the axis of the spindle. Fig. 2 is a detail showing a portion of the hollow spindle with the sleeve therein. Fig. 3 is a view of the operative parts detached.

My invention is especially designed to com-  
20 bine a door lock and latch in one article. It consists of a hollow spindle to which the door-knobs are attached, said spindle having a projection upon one side which engages the latch-bolt, so as to withdraw it when the door is to  
25 be opened, and in combination therewith of a spirally-threaded shaft lying within the hollow spindle and engaging a point or projection within it, so that when the shaft is rotated it is caused to travel longitudinally  
30 within the spindle. This movement is effected by means of a key of any peculiar or desired construction, which is introduced into the end of the knob, and the shaft carries a slide which has a projection extending out through  
35 a slot in the side of the spindle, so as to lock the latch and prevent its being withdrawn when thus engaged.

A represents a portion of the door, mortised in the usual manner to receive the lock, of  
40 which B is the latch, forced forward to engage the catch in the door-post by means of the spring C. The rear end of the latch is enlarged and slotted to admit the hollow spindle D, which passes through it and has projecting from one side the lug E. Upon each  
45 end of the spindle are secured the knobs F in the usual manner, and when the knobs are turned the lug engages the side of the slotted opening in the rear of the latch-bolt, and thus  
50 withdraws it, so that the door may be opened. When the knob is released, the spring C will

again force the latch-bolt forward in readiness to catch the slot in the door-post when the door is closed.

In order to lock the latch-bolt, so that it  
55 cannot be withdrawn, I have shown a sleeve G of such diameter as to fit within the tubular spindle, and it has a lug H projecting through a slot at one side of the spindle, this slot being long enough to allow the lug to  
60 travel, so as to either lie within the opening at the rear of the latch-bolt, where it acts as a stop to prevent the latch from being withdrawn, or it may move entirely out of this opening, and thus allow the latch to be moved  
65 by the turning of the knobs, as before described. The movements of this sliding sleeve and locking-lug are accomplished as follows: Within the tubular spindle is a shaft I, the central portion of which is small enough  
70 to allow the sliding sleeve to inclose it while lying within the tubular spindle. The ends of this shaft are enlarged, as shown at J, to form heads, and the sleeve fits the shaft between these heads. One of these heads J has  
75 a spiral groove or thread cut in it, as shown at K, and this groove engages the fixed pin or projection L within the tubular spindle. It will be manifest that when the shaft is turned by any means this spiral thread and  
80 the fixed engaging lug or pin will advance it in either one direction or the other. When advanced in one direction, it draws the sleeve with its locking-lug, so that the latter engages the latch-bolt and prevents its being moved,  
85 and when turned in the other direction it carries the lug outside of the latch-bolt, allowing the whole to be freely turned by the knob. In order to operate this traveling shaft, the  
90 ends J are slotted in any desired manner, so as to receive the end *m* of the key M, this end being fitted to any peculiar shape or form of slot which may be made in the end of the shaft. Each of the door-knobs has a slot or  
95 opening in its end, into which the key may be introduced until it engages with the shaft.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a lock, of a reciprocating latch-bolt, a hollow spindle having  
100 knobs at the ends, and a lug which engages

and retracts the latch-bolt, in combination with a slide fitted within the hollow spindle, having the lug projecting through its side, and means comprising a spiral groove and  
5 fixed lug for moving said slide longitudinally within the spindle, so that its lug will engage and lock the latch-bolt or be disengaged therefrom, substantially as described.

2. In a lock, the reciprocating latch-bolt,  
10 the tubular spindle having knobs at either end, and a lug engaging the latch-bolt, so as to withdraw the same when the knobs are turned, a shaft having enlarged ends which fit within the tubular spindle, one of said  
15 ends being spirally channeled, and a lug within the tubular spindle which engages the spiral channel of the shaft, in combination with a sleeve fitted to the smaller intermediate  
20 portion of the shaft and having a lug projecting through a slot in the side of the tubular spindle, whereby the turning of the shaft within the spindle will advance the lug, so as to engage the latch-bolt and prevent its movement or disengage it, substantially as de-  
25 scribed.

3. The lock having the reciprocating latch-bolt, a tubular spindle with knobs upon either end, and a lug whereby the latch-bolt is reciprocated, a sleeve fitted within a tubular spindle, having a lug projecting through a  
30 slot in the side of the spindle, a shaft around the central portion of which said sleeve is fitted, the ends of said shaft being enlarged and having the spiral groove or channel  
35 formed upon one of them, a lug or projection within the tubular spindle, which is engaged by the said spiral channel, a slot or means of engagement formed in the ends of  
40 said shaft, and a key fitting corresponding openings in the end of the tubular shaft and knobs, substantially as described.

In witness whereof I have hereunto set my hand.

HENRY OTIS HOOPER.

Witnesses:

JOHN BRESMAN,  
N. BULLOCK.