

(Model.)

C. FELTON.
LATCH.

No. 431,843.

Patented July 8, 1890.

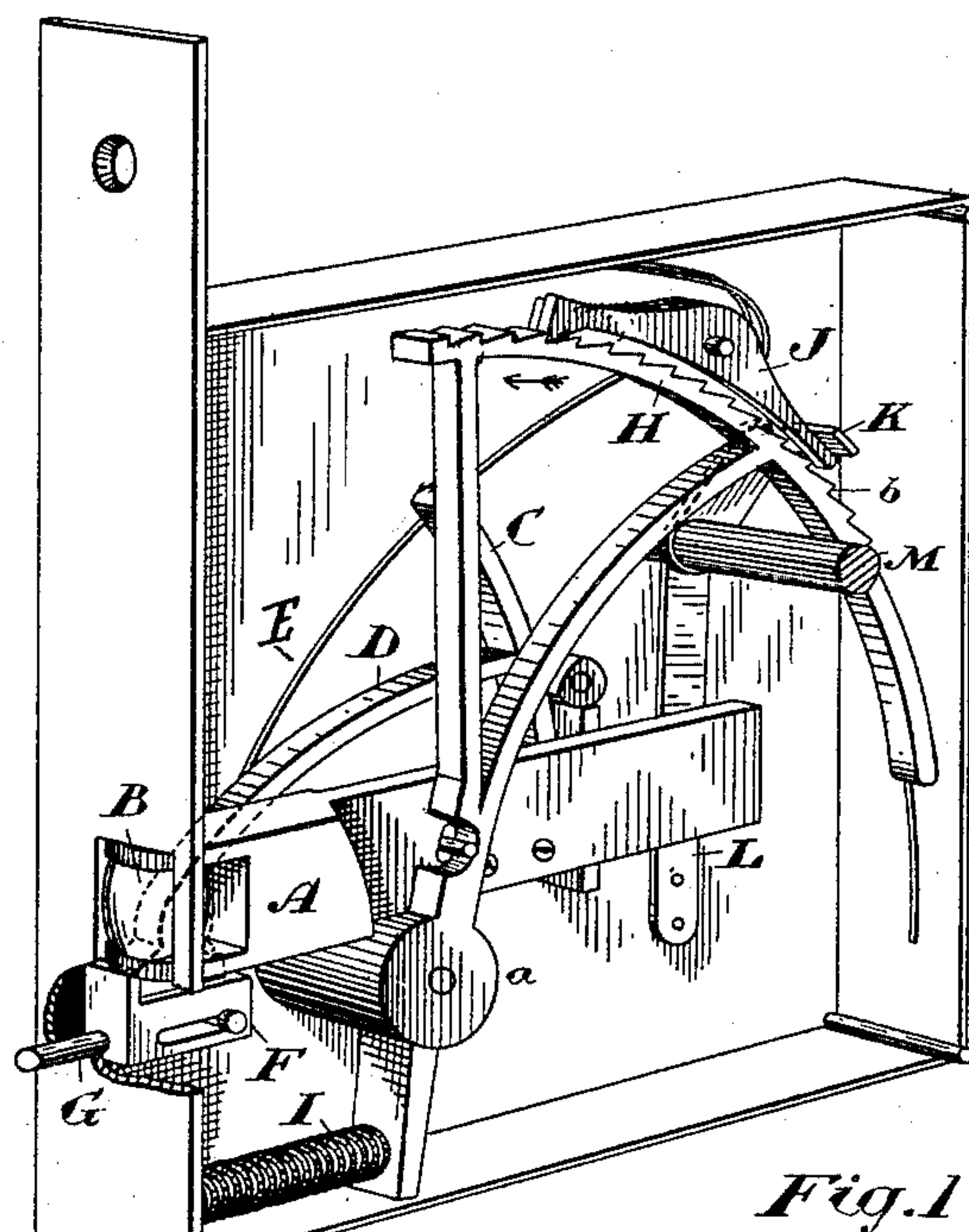


Fig.1

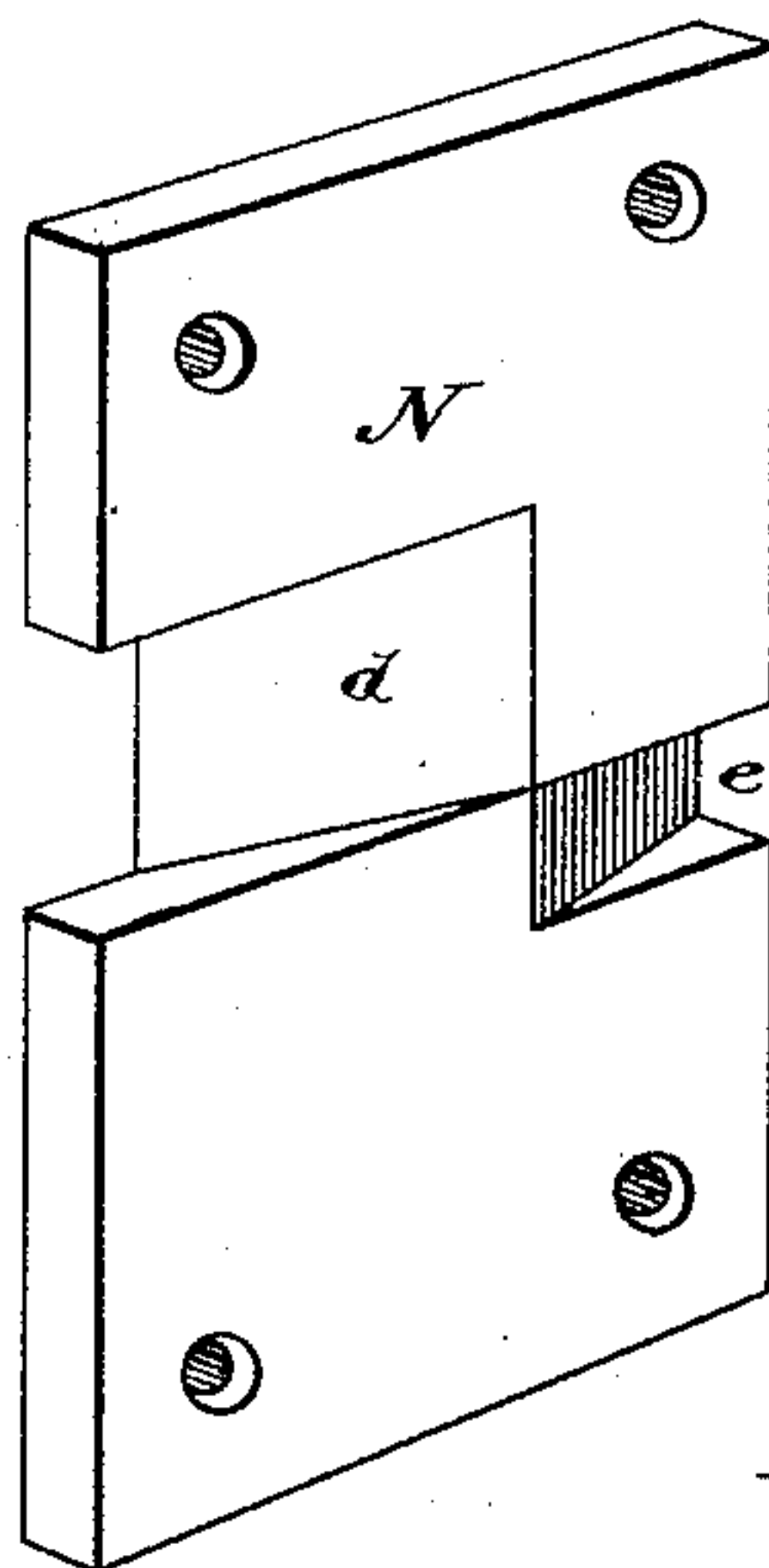


Fig. 2

Witnesses

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LATCH.

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To all whom it may concern:

Be it known that I, CLEMENT FELTON, locksmith, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have
5 invented a certain new and useful Improvement in Latch-Locks, of which the following is a specification.

The object of the invention is to design a latch-lock which will instantly and automatically lock itself upon being brought in contact with its catch, and which, when locked, will be practically impossible to open until pressure is exerted against the door-knob; and it consists, essentially, of a bolt having a friction-roller journaled on its end and arranged in connection with simple mechanism contained in the lock-case, which mechanism is designed to cause the bolt to project out of its case the instant the door is closed and the lock comes in contact with the catch, which has a beveled recess formed on its face to receive the projecting end of the bolt, which at this time is held so that it cannot be pushed back until the door-knob is pressed
25 upon.

Figure 1 is a view of my improved lock with one of the sides of the case removed to expose the interior construction of the mechanism. Fig. 2 is a perspective detail of the
30 catch used in connection with my lock.

In the drawings, A represents the bolt, which has a friction-roller B journaled on its end, as indicated. A curved finger C is fixed to and projects from the bolt A, and a curved
35 finger D is pivoted immediately below the bolt A, and is provided with a spring E, applied to it in such a manner as to hold the end of the curved finger D against the curved finger C. The heel of the curved finger D projects behind the block F, which is movably held in the lock-case and has a pin G connected to it, which projects through the face of the lock slightly on one side of the point where the bolt A projects through.
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H is a quadrant pivoted at *a* in the lock-case and actuated by a spring I in the direction indicated by arrow. The said quadrant is also connected by a pin and slotted hole to the bolt A. Ratchet-teeth *b* are formed on
50 the quadrant H, and a ratchet-pawl J, pivoted

in the lock-case, is arranged to engage with the ratchet-teeth *b*.

A pivoted bell-crank lever K is located as indicated, one of its arms projecting behind the tail of the ratchet-pawl J, while its other
55 arm projects over a spring-plate L, the tension of which is designed to hold the lever K clear of the tail of the ratchet-pawl J. A spindle M passes through and is shouldered upon the arm of the lever K, which rests on
60 the spring-plate L, through which the said spindle also passes. On either end of the spindle M an ordinary door-knob is fixed.

Having now described the mechanism involved in my invention, I shall proceed to
65 explain its operation, and to do this must first draw attention to the catch-plate N, which is secured to the face of the door-jamb, so that the wedge-shaped recess *d* made in it shall be opposite to the end of the bolt A and the
70 wedge-shaped recess *e* opposite to the pin G when the door is closed.

In the normal position of the lock the friction-roller B on the end of the bolt is substantially flush with the face of the lock, while the pin G projects beyond the said face. When the door is closed, the pin G comes in contact with the wedge-shaped recess *e*. As it ascends the said wedge is forced back, and, acting against the heel of the curved finger
80 D, raises the end of the said finger clear of the finger C, when by the action of the spring I the bolt A is immediately shot out, being simultaneously opposite to the wedge-shaped recess *d*, which, it will be observed, is slanted
85 in the opposite direction to the wedge-shaped recess *d*. The ratchet-pawl J drops into the ratchet-teeth *b*, formed in the quadrant H, and effectually locks the said quadrant, so that the bolt A cannot be pushed in until the
90 pawl J is raised clear of the ratchet-teeth. Consequently so long as the pawl remains in contact with the ratchet-teeth *b* the door cannot be pushed open, as the end of the bolt A cannot ascend the incline of the wedge *d*.
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From this description it will be seen that the moment the door closes it is instantly and automatically locked. In order to open the door, pressure is directed on the end of the spindle M, so as to compress the spring-plate
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L. The bell-crank lever K being simultaneously pushed down, its arm, which is behind the tail of the ratchet-pawl J, presses the said ratchet-pawl, causing it to tilt on its pivot and raise it out of contact with the ratchet-teeth *b*, thus releasing the bolt and permitting it to be pushed back to clear itself of the catch-plate N, and resetting the mechanism is the lock-case ready for the next operation.

What I claim as my invention is—

1. A bolt A, arranged longitudinally movable in a lock-case and having a curved finger C connected to it, in combination with the curved finger D, block F, and pin G, arranged substantially as and for the purpose specified.

2. A bolt A, arranged longitudinally movable in a lock-case and connected to the pivoted quadrant H, having ratchet-teeth *b* formed on it, in combination with the ratchet-pawl J, bell-crank lever K, and spring-plate L, substantially as and for the purpose specified.

3. A bolt A, with a friction-roller B journaled on its end and arranged longitudinally movable in a lock-case and connected to the pivoted quadrant H, having ratchet-teeth *b* formed on it, in combination with the ratchet-

pawl J, bell-crank lever K, spring-plate L, and longitudinally-movable spindle M, substantially as and for the purpose specified.

4. A bolt A, with a friction-roller B journaled on its end and arranged longitudinally movable in a lock-case and having a curved finger C connected to it and arranged to operate in conjunction with the curved finger D, block F, pin G, and spring E, in combination with the pivoted quadrant H, connected to the bolt A and actuated by the spring I, the ratchet-pawl J, engaging with the ratchet-teeth *b*, the bell-crank lever K, spring-plate L, and spindle M, arranged substantially as and for the purpose specified.

5. A bolt A, arranged longitudinally movable in a lock-case and having a curved finger C connected to it, in combination with the curved finger D, block F, pin G, and wedge-shaped recesses *d* and *e*, formed in the catch-plate N, substantially as and for the purpose specified.

Toronto, August 6, 1889.

CLEMENT FELTON.

In presence of—

CHARLES C. BALDWIN,
W. G. MCMILLAN.