G. J. MATSON, J. V. PHILLIPS & E. C. BARMORE.

DOOR-LATCH.

No. 185,769. Patented Dec. 26, 1876.

Fig. 1

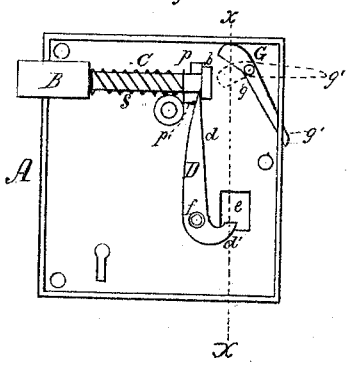


Fig. 2.

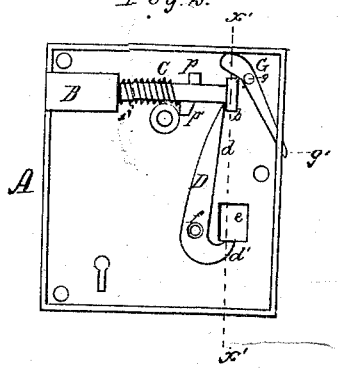


Fig. 3.

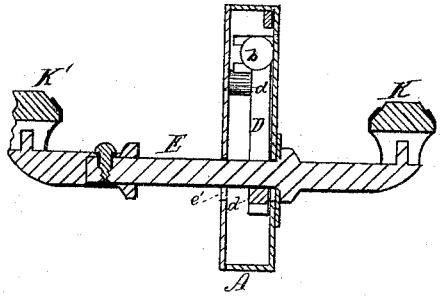
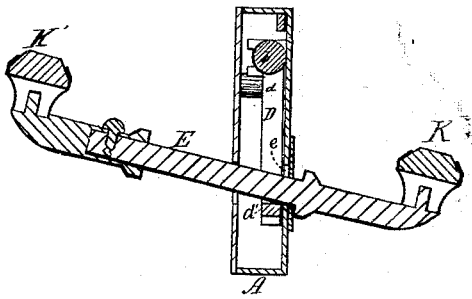


Fig. 4.



WITNESSES—

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UNITED STATES PATENT OFFICE.

GERMAN J. MATSON, JOHN V. PHILLIPS, AND EDWIN C. BARMORE, OF NEW BUFFALO, MICHIGAN.

IMPROVEMENT IN DOOR-LATCHES.

Specification forming part of Letters Patent No. **185,769**, dated December 26, 1876; application filed May 11, 1876.

To all whom it may concern:

Be it known that we, GERMAN J. MATSON, JOHN V. PHILLIPS, and EDWIN C. BARMORE, of New Buffalo, in the county of Berrien and State of Michigan, have invented certain new and useful Improvements in Door-Latches; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention consists in the arrangement, in a suitable casing, of a spring-bolt and intermediate lever in such manner that when either end or knob of lever or spindle passing transversely through said casing is depressed, the spring-bolt will be retracted; and its object is to provide a door-latch which is more easily operated than those commonly in use, by substituting a vertical action of the knobs for the ordinary twist or torsion.

In the drawing, Figures 1 and 2 are diagrams of the interior of our latch. Figs. 3 and 4 are sectional views taken on lines *x x*, Fig. 1, and *x' x'*, Fig. 2.

A is the casing. B is a spring-bolt, the stem C of which passes between two guide-pins, *p p'*, and terminates in a button, *b*. The spring *s* is coiled around said stem, and is confined between the shoulder formed by the inner end of bolt B and pins *p p'*, the lower, *p'*, of which is slightly nearer the front edge of the casing than is the upper one, *p*. D is a bent L-shaped lever, fulcrumed at *f*, its long arm, *d*, extending upward, and terminating between the lower guide-pin *p'* and button *b* of the bolt-stem, while its short arm, *d'*, is bent upward, and terminates directly under the knob-lever E, which passes through slots *e e'* in the walls of the casing A. The lever E, it will be seen, rests upon the flat end face of the short arm *d'*, and touches, or is close to, the upper edges of slots *e e'*, and when lever E is depressed, as shown in Fig. 4, the upper edge of the slot *e'* becomes its fulcrum, and the short arm *d'* of bent lever D is forced downward, throwing the long arm *d* into the position shown in Fig. 2, and causing the spring-bolt B to be retracted by means of said long arm *d* striking the button *b*.

When the pressure is removed from knob K the spring *s* shoots the bolt B, and causes the parts to resume the positions shown in Figs. 1 and 3. The knobs are on opposite sides of a door, and it will readily be seen that pressure upon either produces the same effect—viz., the retraction of bolt B from its catch—the upper edge of slot *e* or *e'* becoming the fulcrum of lever E, according to which knob K or K' is depressed.

G is a stop-lever, pivoted at *g*. When the tail *g'* is thrown up, as shown in dotted lines, Fig. 1, the bolt B cannot be retracted.

The force required to operate this latch being simply a downward pressure upon the knobs, it is much more convenient and easy of operation than are those having twist or torsion knobs. A child who can reach the knob can open the door as easily as an adult. The same pressure or force which depresses the knob tends to open the door. As there is no twisting to be done, persons having wet or soapy hands need not lose any time in stopping to dry them before opening a door, as they would be compelled to do before being able to gripe and turn the ordinary torsion-spindle knob.

We are aware that bent levers, straight levers, and springs have been used in various combinations in door-latches, and we make no broad claim to them, either separately or in combination, confining ourselves to the combination shown, in which a vibrating latch-lifting lever is used in the place of the customary torsion-spindle.

Having now fully described and explained the operation of our invention, we claim and desire to secure by Letters Patent—

The combination of spring-bolt B, bent lever D, and transverse knob-lever E, arranged to act upon the short arm *d'* of said bent lever by downward pressure upon the knob on either side of a door, substantially as described.

In testimony that we claim the foregoing as our own invention we affix our signatures in presence of two witnesses.

GERMAN J. MATSON.
JOHN V. PHILLIPS.
EDWIN C. BARMORE.

Witnesses:
CHAS. KRUGER,
CHRISTIAN PHILIPPS.