

G. F. JOYCE.
LATCHES FOR DOORS, &c.

No. 193,092.

Patented July 17, 1877.

Fig. 1

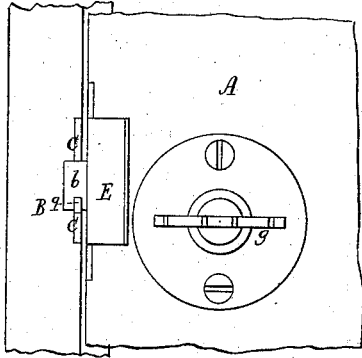


Fig. 3.

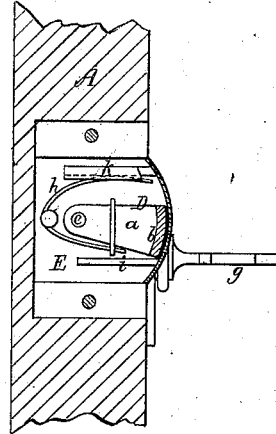


Fig. 4.

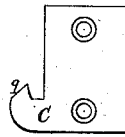


Fig. 2.

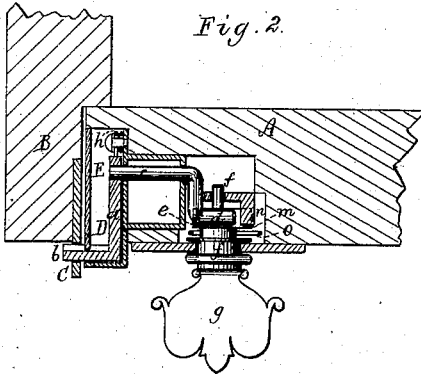
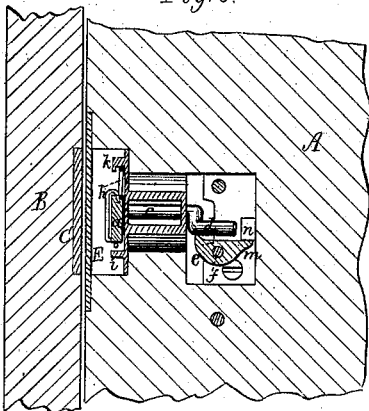


Fig. 5.



Witnesses
S. W. Piper
L. W. Miller

George F. Joyce.
by his attorney
R. H. Soley

UNITED STATES PATENT OFFICE.

GEORGE F. JOYCE, OF BROOKLINE, MASSACHUSETTS.

IMPROVEMENT IN LATCHES FOR DOORS, &c.

Specification forming part of Letters Patent No. 193,092, dated July 17, 1877; application filed April 24, 1877.

To all whom it may concern:

Be it known that I, GEORGE F. JOYCE, of Brookline, of the county of Norfolk and State of Massachusetts, have invented a new and useful Improvement in Latches for Doors, &c.; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, and Fig. 2 a horizontal section, of parts of a door and its frame with my improved latching device applied thereto. Fig. 3 is a vertical section of the latch. Fig. 4 is a side elevation of the catch therefor as applied to the door-frame.

When, in the application of a latch to a door, such latch has been arranged to play or move in a plane parallel to the side of the door, it, (the said latch,) while in the act of engaging with its catch, had to be pressed, and to move or slide against a supporting-surface, often with much friction.

With my invention, as represented, the latch, composed of a stud and pivotal arm, is arranged to move or turn in a plane parallel, or thereabout, to the edge of the door, and is pivoted to the door or a case fastened thereto, the catch for such latch being arranged in a vertical plane at right angles to the door-frame. From this it will be seen that, while in the act of being forced against the catch, and rising on such, the latch will not be forced against a bearing, but will turn on or with its pivot, the friction caused by the movement of the latch being at the pivot, and, consequently, very much less than would result with a latch arranged to move parallel to the side of the door.

In the drawings, A represents the door, or the part thereof to which the latch and its operative mechanism are applied, B being the next adjacent portion of the door-frame, or that to which the catch is affixed, such catch being shown at C, and formed in side view as exhibited in Fig. 4.

The latch D, composed of the pivotal arm *a* and the ear or stud *b*, formed and arranged as represented, is disposed within a case, E. The pivot *c* of the arm *a* projects from the

said arm at or near its inner end, takes a bearing in the said case, and is provided with a crank, *d*, to operate with a stud, *e*, projecting from the crank *f* of a knob, *g*, arranged as shown, particularly, in Fig. 5, which is a vertical section taken through the latch and the stud *e*.

The latch has a spring, *h*, applied to it to force it downward against a stop, *i*, arranged in the case, such case also being furnished with another stop, *k*, to limit the upward movement of the latch.

The wrist of the latch-crank simply rests on the operative stud *e*, and thereby the latch is left free to rise on the catch, except as against the pressure of the spring *h*.

In closing the door, the lower edge of the stud of the latch will be forced against the inclined surface *q* of the catch, whereby the latch will be caused to rise on the catch, and to engage with it through the pressure of the spring.

To the shank of the knob there is a stop, *m*, to bear against a stop, *n*, and thereby limit the rotary movement of the knob in one direction, the movement of the knob in the opposite way being limited by the stud *e* and the stop *n*. A spring, *o*, may be applied to the knob, to operate so as to turn it in a manner to keep the stops *m n* in contact.

On turning the knob in the right direction, the latch will be thrown up out of engagement with the catch.

I do not claim the latch made as shown in either of the Patents No. 61,604 or 156,345.

I claim as follows:

In combination with the pivotal arm *a*, latching projection *b*, shaft *c*, and crank *d*, arranged as set forth, the knob *g*, stud or cam *e*, and the stops *m* and *n*, all applied substantially in manner and for use with a door, and the catch-plate C, disposed with the door-frame, as represented.

GEORGE F. JOYCE.

Witnesses:

R. H. EDDY,
J. R. SNOW.