# J. M. Hopkins,

## Door Bolt.

No. 54,350. Patented May 1, 1866.

Fig: 1.

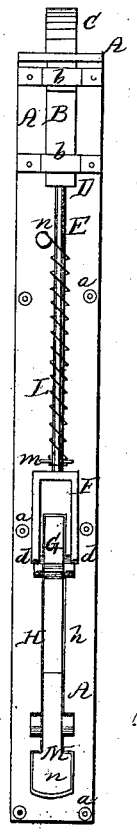


Fig: 2.

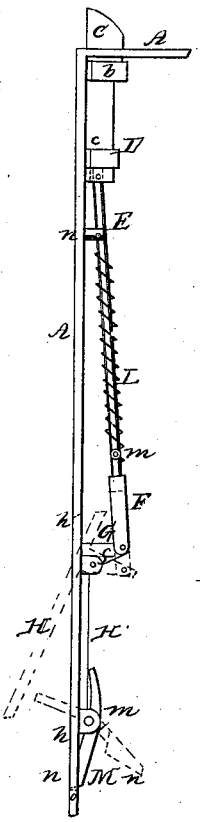


Fig: 3.

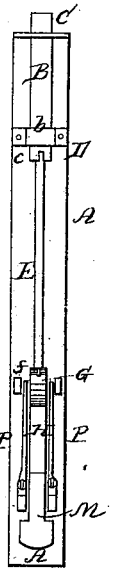


Fig: 4.

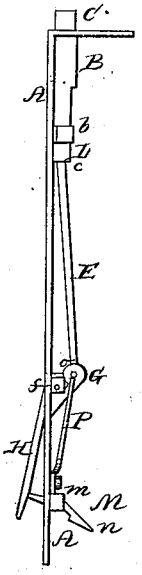


Fig: 5.

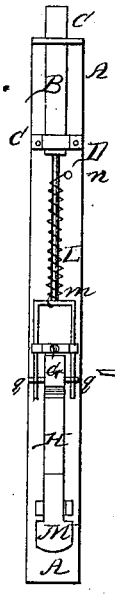
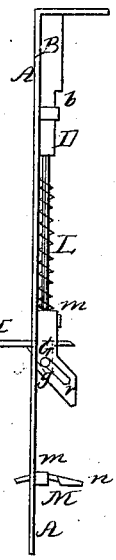


Fig: 6.



Witnesses:

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# UNITED STATES PATENT OFFICE.

J. M. HOPKINS, OF NEW YORK, N. Y.

## IMPROVEMENT IN FLUSH-BOLTS.

Specification forming part of Letters Patent No. **54,350**, dated May 1, 1866.

*To all whom it may concern:*

Be it known that I, J. M. HOPKINS, of city, county, and State of New York, have invented a new and useful Improvement in Flush-Bolts; 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 drawings, forming part of this specification.

The present invention relates to bolts such as are used upon doors for bolting or fastening them when closed, and particularly to that class of such bolts commonly known as "flush-bolts;" and it consists in a novel arrangement and connection of devices with the bolt whereby, when the bolt is to be withdrawn, or, in other words, the door is to be unbolted or unfastened, a leverage can be brought to bear upon the bolt sufficient to withdraw it at any time, the parts for operating the bolt being also so connected with it and so arranged with regard to each other that they can be all inclosed or set within and below the face of the door, flush, or nearly so, with the same, leaving a smooth and plain surface.

In accompanying plate of drawings my improvements are illustrated, Figure 1 being a view of the back side of the bolt and the operating parts connected therewith; Fig. 2, an edge view of the same; Figs. 3 and 4 and Figs. 5 and 6, respectively, similar views in each case to those shown in Figs. 1 and 2 of two modifications of the present invention.

A in the drawings represents a thin narrow plate of sheet-brass or other suitable metal of the requisite length, one end of which is bent at a right angle to it, this plate being provided at suitable points of its length with a series of apertures, *a a a*, through which screws are to be passed for fastening or securing it to a door, B, the bolt arranged upon the back side of the plate moving in and through clasps or guides *b b* thereof, its outer end, C, extending and projecting beyond the right-angular end of the said plates A, passing through a suitable-shaped aperture thereof.

To the inner end, D, of the bolt B, by a pivot-joint, *c*, is hung a connecting-rod, E, extending in the direction of the length of the plate A, the other end of which rod E terminates in a bifurcated or forked arm, F, joined together by a cross-bar, *d*, on which is hung the angular arm G of a lever-bar, H, turning upon a fulcrum-pin, *f*, of the back side of the plate A. This lever extends in the direction of the length of the plate A, and when the bolt projects beyond the end of the said plate, as shown in Figs. 1 and 2, it closely fits within a slot, *n*, of the plate H, made of the proper shape therefor, and is flush, or nearly so, with the face of such plate.

L is a spring coiled around the connecting-rod F, to a fixed stud or pin, M, of which it is secured at one end, and at its other to a fixed staple, *n*, on the back side of the plate A, by the action of which spring, when the bolt has been drawn in, as will be presently explained, it is immediately thrown out upon the release of the pressure or force exerted thereon.

From the above description of the manner in which the bolt is connected with the lever-bar H it is obvious that, if the said lever is swung out into the position shown by red lines in Fig. 2, the bolt will be drawn in in direct proportion to the distance through which it is so swung, it being intended to so hang such lever to the plate A that it can be swung sufficiently beyond or by its fulcrum or center that it can be there retained and thus hold the bolt drawn in or unbolted, the bolt being instantly thrown out by the action of the spring L, coiled around its connecting-rod, when such position of the lever H is changed.

In order to enable the lever H to be grasped with readiness by the hand when it is desired to withdraw the bolt or, in other words, to unbolt or unfasten the door to which a bolt arranged according to the present improvements is applied, I use a thumb-lever, M, hung upon a fulcrum, *m*, of the back side of the plate A, the inner end of which lever, when its thumb-piece or end *n*, fitting within a suitable-shaped opening, O, of the plate A, is pressed upon or pushed in, abutting against the said lever H and throwing it out of the plate-slot, in which it fits or lies, sufficiently to enable it to be readily and conveniently grasped by the hand, and thus through it producing a great leverage upon the bolt for withdrawing or unbolting it.

In Figs. 3 and 4 a modification of my improvements is represented, it consisting mainly in dispensing with the coiled spring shown in Figs. 1 and 2 about the connecting-rod E, and

using in lieu thereof two bent springs, P P, fixed at one end to the plate A, and at their other ends bearing upon the lugs *g g* upon each side of the angular lever-arm H, the operation of parts, however, being substantially the same, and therefore needing no further explanation.

In Figs. 5 and 6 another modification is shown, it consisting in this instance in the manner of connecting the operating-lever H with the bolt or its connecting or extension rod E by trunnion-pins *q' q'*, playing in similar slots I of the forked ends of the bolt-connecting rod, which slots are of such a shape that the play of the lever trunnion-pins *q' q'* in them, as the lever is swung in the proper direction therefor, will cause the bolt to be drawn in, it being held in such position by bringing the said pins into the portions S of the said slots. The operating-lever H of the bolt, in lieu of being connected with the bolt through a connecting-rod, as hereinabove explained, may be connected directly to the inner or tail end of the bolt, and the same movements of the bolt be secured, as is obvious.

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

The combination of the bolt B, lever H, thumb-lever M, and a coiled or other suitable spring with the connecting-rod E, when arranged together so as to operate substantially in the manner described, and for the purpose specified.

The above specification of my invention signed by me this 3d day of January, A. D. 1866.

J. M. HOPKINS.

Witnesses:

ALBERT W. BROWN,

M. M. LIVINGSTON.