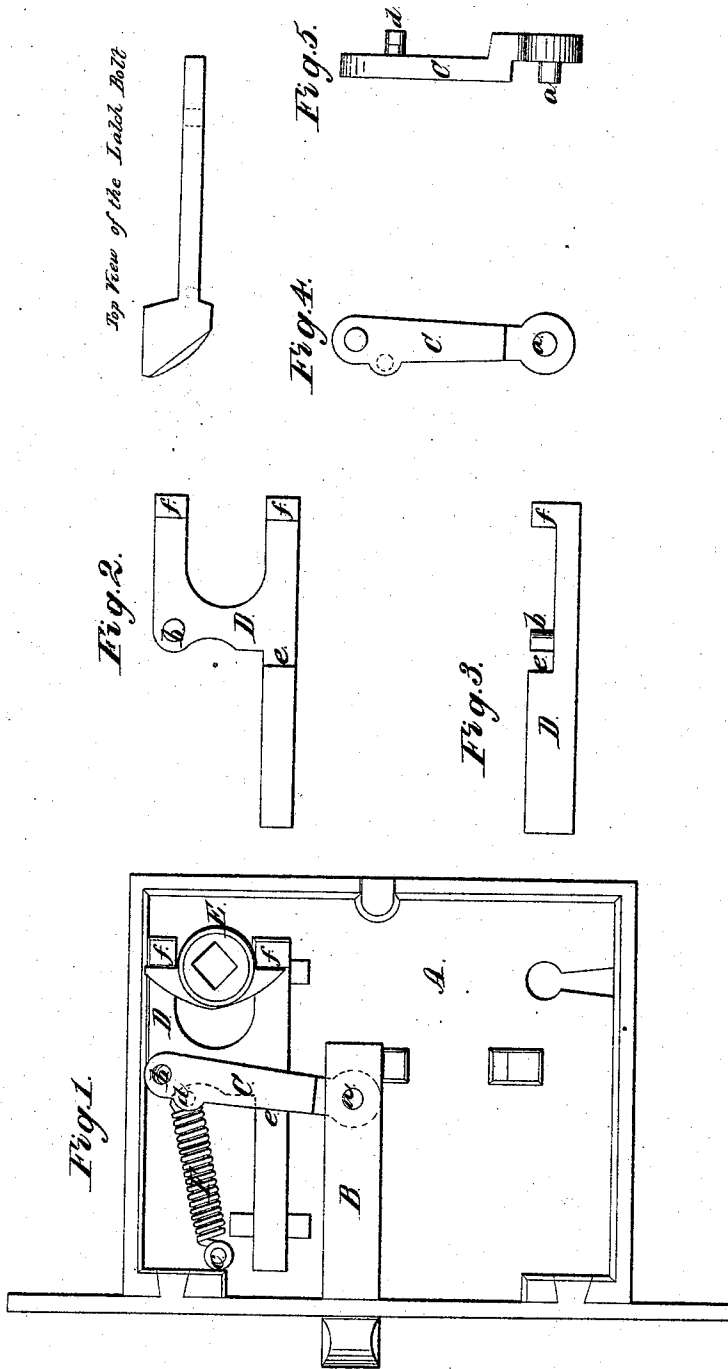


W. Hall,  
Latch.

N<sup>o</sup> 3308.

Patented Oct. 18, 1843.



# UNITED STATES PATENT OFFICE.

WILLIAM HALL, OF CHELSEA, MASSACHUSETTS.

## DOOR LOCK OR LATCH.

Specification of Letters Patent No. 3,308, dated October 18, 1843.

*To all whom it may concern:*

Be it known that I, WILLIAM HALL, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Door Locks or Latches, and that the following description and accompanying drawings taken in connection constitute a full and exact specification of the same.

Figure 1 of the drawings above mentioned, represents a view of the interior of a door lock containing my improved method of arranging the latch bolt. Fig. 2 is an elevation of the fork or Y piece or slide on which the tumbler acts, the same being exhibited as removed from the lock. Fig. 3 is a view of the lower side of the forked slide. Fig. 4 is a representation of the lever which is attached to the forked slide and latch bolt as will be hereinafter described and Fig. 5 is a side elevation of the said lever.

In the drawings A denotes the box or case of the lock constructed in the ordinary manner, and B is the latch bolt, which is suitably sustained in the case so as to slide to and fro within the same. The rear end of the latch bolt is jointed to the lower end of a lever C shaped as seen in Figs. 4 and 5; or in other words a cylindrical stud *a* inserted in the lever passes through a corresponding hole formed through the latch bolt. The lever C has its fulcrum at its upper end, or in other words, it turns upon a pin *b* inserted and fixed in and projecting from the upper part of the forked slide D of the tumbler E. One end of a helical spring F is attached to a stud *c* inserted in and projecting from the lock case in the position as seen in Fig. 1; the other end of the said spring being attached to the front side of the lever C at a point *d* just below its fulcrum or between the same and the lower end of the lever as seen in the drawings. The slide D is formed with a shoulder *e* (see Figs. 1, 2, 3) against which the helical spring draws the lever C when the front end of the latch bolt projects from the lock case as represented in Fig. 1. The tumbler E operates against the

projections *f, f*, of the forked slide D, in the usual manner. From the above it will be easily observed that a very slight force will cause the latch bolt to recede independent of the slide D and knobs of the tumbler; for this force acts upon the spring F with a leverage in proportion to the distance between the fulcrum and the point *d*, and that between the said point and the pin *a*. The whole power of the spring is brought into action upon the tumbler when the latch bolt is retracted by the hand applied to one of the knobs, for in this latter case the lever C is drawn against the shoulder *e* whenever the tumbler is turned. Consequently the same shoulder causes the latch bolt to recede when the forked slide D is moved backward. Therefore the great desideratum of an easy spring latch is gained together with all the power of spring requisite to the complete operation of the tumbler and knobs.

Having thus explained my invention I shall claim—

The mode above described of constructing the parts which operate the latch bolt and knobs or by which the said latch and knobs are actuated by means of a single spring set forth; viz, the combination with the latch bolt B and the slide or fork D (of the tumbler) of the lever C and spring F, the said lever turning on a fulcrum or pin *b* at its upper end and resting, when thrown forward, against a shoulder *e* of the fork or slide D of the tumbler and being jointed or otherwise properly connected to the latch bolt, and having the spring which throws it forward applied to it at a point between its fulcrum and the latch bolt; the whole being arranged and operating substantially as described.

In testimony that the above is a correct specification of my said invention I have hereto set my signature this twelfth day of September, A. D. 1843.

WM. HALL.

Witnesses:

R. H. EDDY,  
D. A. GRANGER.