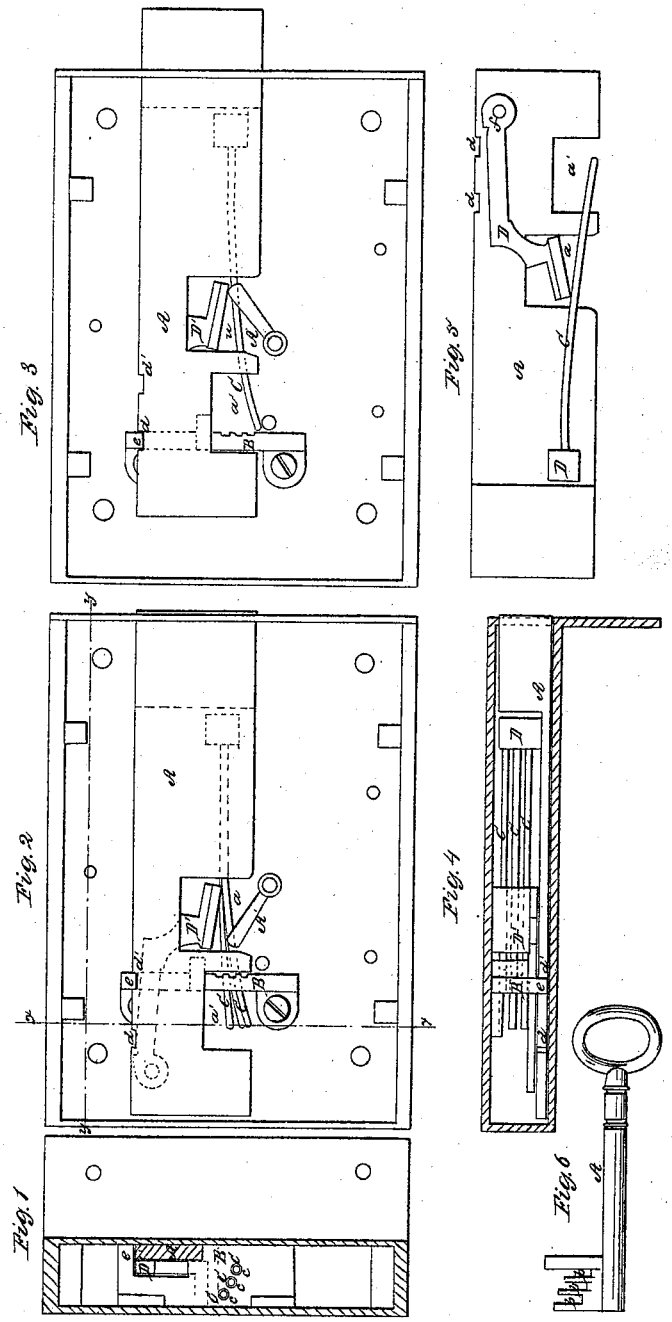
H. Allman,

Lock.

No. 52,372. Patented Jan. 30, 1866.



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UNITED STATES PATENT OFFICE.

HERBERT ALLMAN, OF LONDON, ENGLAND.

IMPROVEMENT IN LOCKS.

Specification forming part of Letters Patent No. **52,372**, dated January 30, 1866.

To all whom it may concern:

Be it known that I, HERBERT ALLMAN, of Bedford Row, in the county of Middlesex, England, have invented certain new and useful Improvements in the Construction of Locks; 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, in which—

Figure 1 is a transverse section of my invention, taken in the line *x x*, Fig. 2; Figs. 2 and 3, interior views of the same, the former showing the invention in an unlocked and the latter in a locked state. Fig. 4 is a horizontal section of Fig. 2, taken in the line *y y*; Fig. 5, a detached side view of the bolt of the lock with its parts attached. This view of the bolt is the side opposite to that shown in Figs. 2 and 3. Fig. 6 a detached view of the key of the lock.

Similar letters of reference indicate like parts.

The improvements in the within-described lock relate to the construction of the bolt or fastener, the key, and a part which I term a "fence-piece," and also certain parts which I term "struts."

A represents the bolt of the lock; B, the fence-piece, and C the struts. The bolt A may be arranged to slide in the usual way, the fence-piece B serving as a guide for its inner part, as shown clearly in Figs. 1, 2, and 3, and the bolt having two rectangular recesses, *a a'*, in its under side—one, *a*, serving as a gating, in which the bits of the key work in sliding the bolt, and the other, *a'*, serving, in connection with the fence-piece B, as stops to limit the movement of the bolt—as will be fully understood by referring to Figs. 2 and 3.

The fence-piece is firmly secured to the inner surface of one side of the lock-case, and to bolt A, at one side, there is secured a block or head D, to which the struts C are attached. These struts may be constructed of tempered steel wire, and they extend back toward the rear of the bolt, so as to be acted upon by the key A* when the latter is turned. Three of these struts are shown in the drawings, but a greater or less number may be used, as desired; and they extend back, so as to nearly touch the fence-piece when the bolt of the lock is shoved out or the lock is in a locked state, as shown in Fig. 3.

The fence-piece B has a series of holes, *c*, made in it at different points, in order to allow the inner ends of the struts C to pass through and admit of the bolt A being shoved back. Hence, in order to unlock the lock or shove back the bolt, the struts C are raised or adjusted in line with the hole *c*, in order that they may pass through the same, and this is done by the key, which is provided with slots or niches *h* of different depths corresponding to the distance the several struts are to be raised. (See Figs. 1 and 6.) In turning the key to unlock the lock or shove back the bolt the struts C are first raised or adjusted in line with the several holes *c*, a strut, C, being in each slot or niche *b*, and the key there acts upon the bolt and shoves it back wholly within the lock-case. This operation will be fully understood by referring to Figs. 2 and 3.

The upper edge of the bolt A has two notches, *d d'*, made in it, in one of which, *d*, a shoulder, *e*, on the fence-piece B, fits when the bolt is shoved out or the lock is in a locked state, as shown in Fig. 3, the shoulder *e* fitting in the other notch, *d'*, when the bolt is shoved back or the lock is in an unlocked state.

The recess in the fence-piece is made sufficiently long to admit of a certain degree of vertical play of the rear part of the bolt to enable the bolt to be freed from this shoulder when in either of the positions above named, and this liberation of the bolt is effected through the medium of a lever, D', attached to the bolt A, by a pivot, *f*, as shown in Fig. 5, said bolt being within the recess in the fence-piece and underneath the shoulder *e*, as shown clearly in Fig. 1. The lower end of this lever is acted upon by the key as the latter is turned to actuate the struts C, and by the time the latter are all adjusted in line with the holes *c* in the fence-piece B, the lever D' will have been actuated sufficiently to liberate the bolt A—that is to say, to throw it down free from the shoulder *e* of the fence-piece, so that the key may move the bolt.

The peculiar safety of this lock depends on the strut-pieces, as described, having their

loose ends capable of moving in any direction under the influence of a pick-lock, and the great difficulty of arranging the struts, unless by the means of the proper key. I make the key first, before the fence-post is pierced or drilled, and, placing it in the lock and in the position to arrange the struts for centering, the ends of the struts are forced against the surface of the fence-piece, which is waxed or otherwise prepared to receive their impression. The fence-piece is then removed and drilled in the marks of the struts. The face of the fence-piece may be serrated or ground, in order to render it difficult to adjust the struts in the holes *c* illegitimately.

I do not confine myself to any precise form of lock. The form of the block, shape, position, and length of struts, and the form of key may all be varied, and still the principle of construction retained. The struts may also be elastic or non-elastic. If non-elastic, they must be held at one end loosely by joints or an equivalent arrangement.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination of the struts C, fence-piece B, lever D, notches *d d'*, arranged relatively to each other, and with the bolt A, to operate in connection with a proper key, in the manner and for the purpose herein specified.

HERBERT ALLMAN.

Witnesses:
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