W. Hall,

Bank Lock.

No. 8,257. Patented July 29, 1851.

Fig. 3.

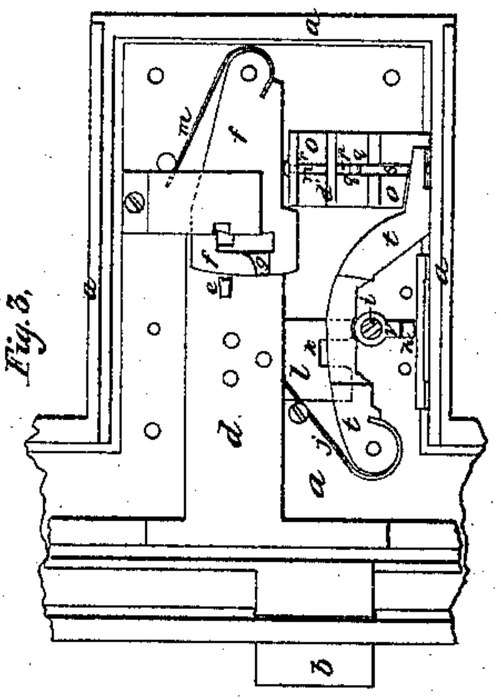


Fig. 5.

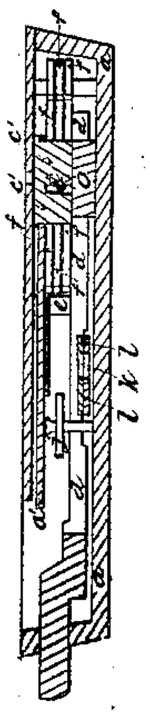


Fig. 4.

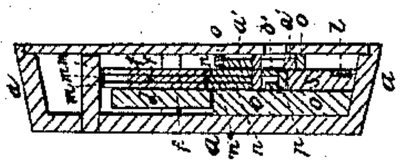


Fig. 2.

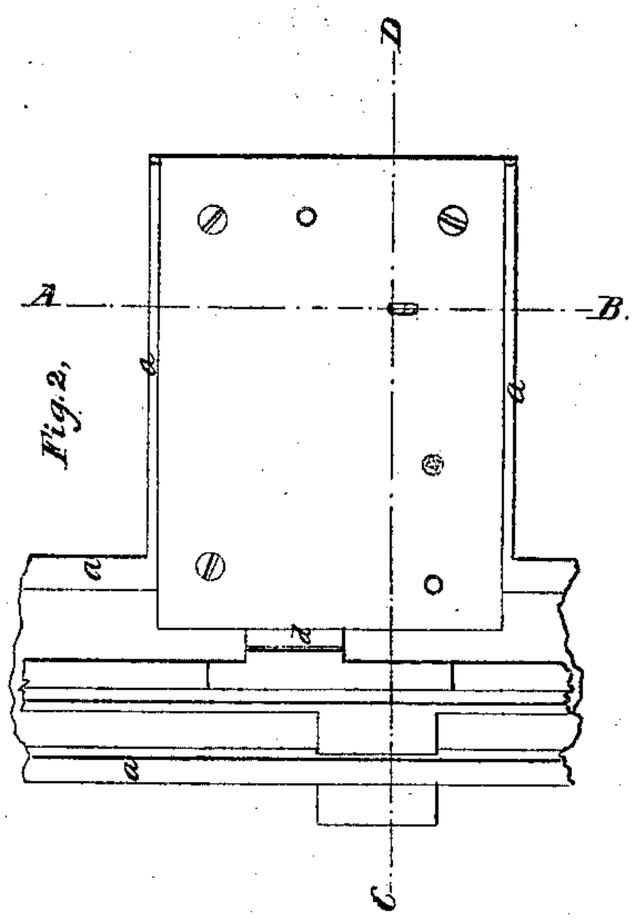
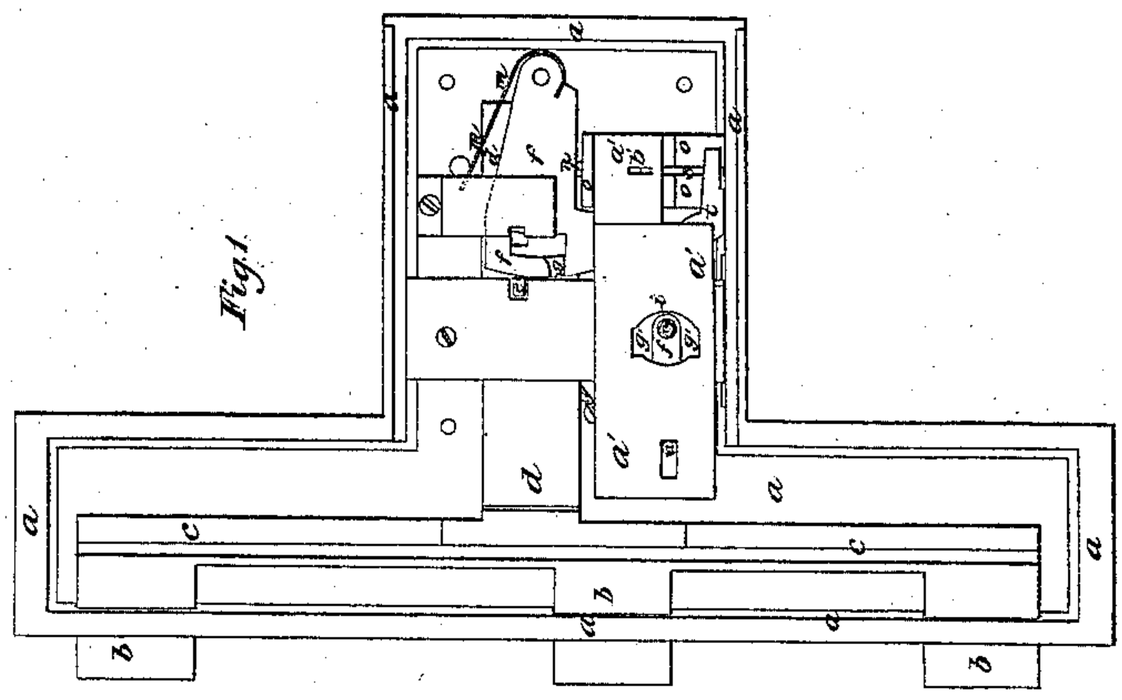


Fig. 1.



UNITED STATES PATENT OFFICE.

WM. HALL, OF BOSTON, MASSACHUSETTS.

POWDER-PROOF BANK-LOCK.

Specification of Letters Patent No. 8,257, dated July 29, 1851.

To all whom it may concern:

Be it known that I, WILLIAM HALL, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Locks for Bank-Vaults, Safes, &c., and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements by which my invention may be distinguished from others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

The figures of the accompanying plate of drawings, represent my improvements.

Figure 1 is a plan of a lock, combining my improvements, with the covering plate removed, so as to expose the operative parts to view. Fig. 2 is a detail view of the central part of the lock, with the aforesaid plate in its place. Fig. 3 is also a detail view of said part, with said plate removed, and also a sliding plate, hereinafter referred to detached. Fig. 4 is a sectional view taken in the plane of the line A B, Fig. 2, and Fig. 5 is a sectional view, taken in the plane of the line C D, Fig. 2.

The essential features of my improvements consist in providing a movable slide or follower, arranged in a continuation of the key hole recess, which moves after the key during the process of locking and unlocking, filling up the entire recess; so as to prevent any feeling of, or tampering with the tumblers, or the introducing and confining any powder in the key-hole, for blowing up the lock; also in providing a transverse slide, which traverses in a groove, formed at right angles to the recess formed for the key, for cutting off all communication with the tumblers, when the key-hole is open. Having these improvements, the lock does not differ substantially in its elementary principles, from that which is described in the schedule, annexed to the patent, granted to me on the first day of August, in the year 1848, for a "powder proof lock."

a a a, &c., in the several drawings, represent the casing of the lock. *b b b* are three bolts, attached to one vertical bar *c c*, from the center of, and at right angles to which extends backward the arm *d d*, the whole forming a bolt frame, as I shall term it. A stud *e*, is secured in same proper position on this arm *d d*, and engages with the several tumblers *f f f*, in the usual way, said tumblers having each a throat *g*, all of which throats have to be brought into apposition with each other, to permit the stud *e* to engage with, or be disengaged from said tumblers, in the process of locking and unlocking. The bolt frame is thrown forward and back, by means of the cam *h*, on part of the lower turning arbor *i*, Fig. 3, which cam engages with a notch *k*, in the piece *l*, depending from the underside of the arm *d d*, and the turning of said arbor, is effected by any proper kind of handle, having a square socket, applied to its top.

The tumblers *f f f*, are provided with springs *m m* arranged as shown in Figs. 1 and 3, and they are moved by the key operating on the sliding pins *n n*, which play in proper sockets, in the metallic block *o o*, and the heads of which bear against the undersides of said tumblers.

The key *p* is formed with such inequalities on the edge which moves the pins *n n*, as to bring the mouths of the tumblers into apposition with each other, as before explained. The recess for the insertion of the key, is formed by making a deep groove in the brass block *o o*, at *q q*. This recess is extended of the same depth, through the length *r r*, and in the extension of said recess, is inserted the follower *s*, which is of the same depth as the groove, and the upper edge of which abuts against the under edge of the key, and when the key moves, this follower moves with it, and fills up the recess, so as to prevent all tampering with the tumblers, and also the confining of any powder in the recess. This follower is connected to one end of the bent lever *t t*, which has a fulcrum at *u*, said end of said lever being fitted in a notch in said follower, as shown in Fig. 3. This lever is moved, so as to move said follower, and consequently, the key, by the surface of the cam *v*, on the arbor *i*, above the cam *h*, which cam *v* lifts said lever, whenever it is brought to bear against its underside; the spring *j* pressing it down again, whenever the pressure of said cam is removed.

It now only remains for me to describe the transverse slide for cutting off all communication with the pins *n n*, or tumblers, when the key-hole is open, and the key is in the lock.

a' a' is a sliding plate, which fits over the key recess in the block o o, and has a rectangular hole b', Fig. 4, through which the key is inserted in its place; on the underside of this plate, is the vertical plate c' c', Fig. 5, which fits into, and fills up the transverse groove d', formed in the block o o. The plate c' c' Fig. 5, has a slot e' in it, which permits the play, or sliding through of the key, at the proper time, but when the key-hole is open, and the key is in its place, the solid part of the plate c' c' obstructs the passage of the key, and cuts off all communication with the tumblers.

The plate a' a' is moved forward and back by means of the cam f', on the arbor i, which works in the eccentric shaped slot g' g' of said plate, in a manner which will be understood by inspection of Fig. 1.

In locks when the sliding plate a' a' is used, the key hole should pass through the lock, in order that if powder is inserted, it may blow out of the hole, without injuring the lock.

Having thus described my improvements in locks, I shall state my claims as follows:

What I claim as my invention, and desire to have secured to me by Letters Patent, is—

1. Moving the key-bit to the tumblers, by means of a follower, sliding between walls, as herein described; which follower acts in such a manner, as to close the space, into which powder might be introduced, where this is combined with a key hole cover, sliding as described, by which combination, I make a powder proof lock, with tumblers which cannot be reached by a pick, and whose slide cannot be blown off, so as to secure access to the tumblers.

2. I also claim the combination with the plate a' a', of the transverse sliding vertical slotted plate c' c', which jointly cut of all communication with the tumblers, in every position of the bolt.

WM. HALL.

Witnesses:

STEPHEN SMITH,

EZRA LINCOLN.