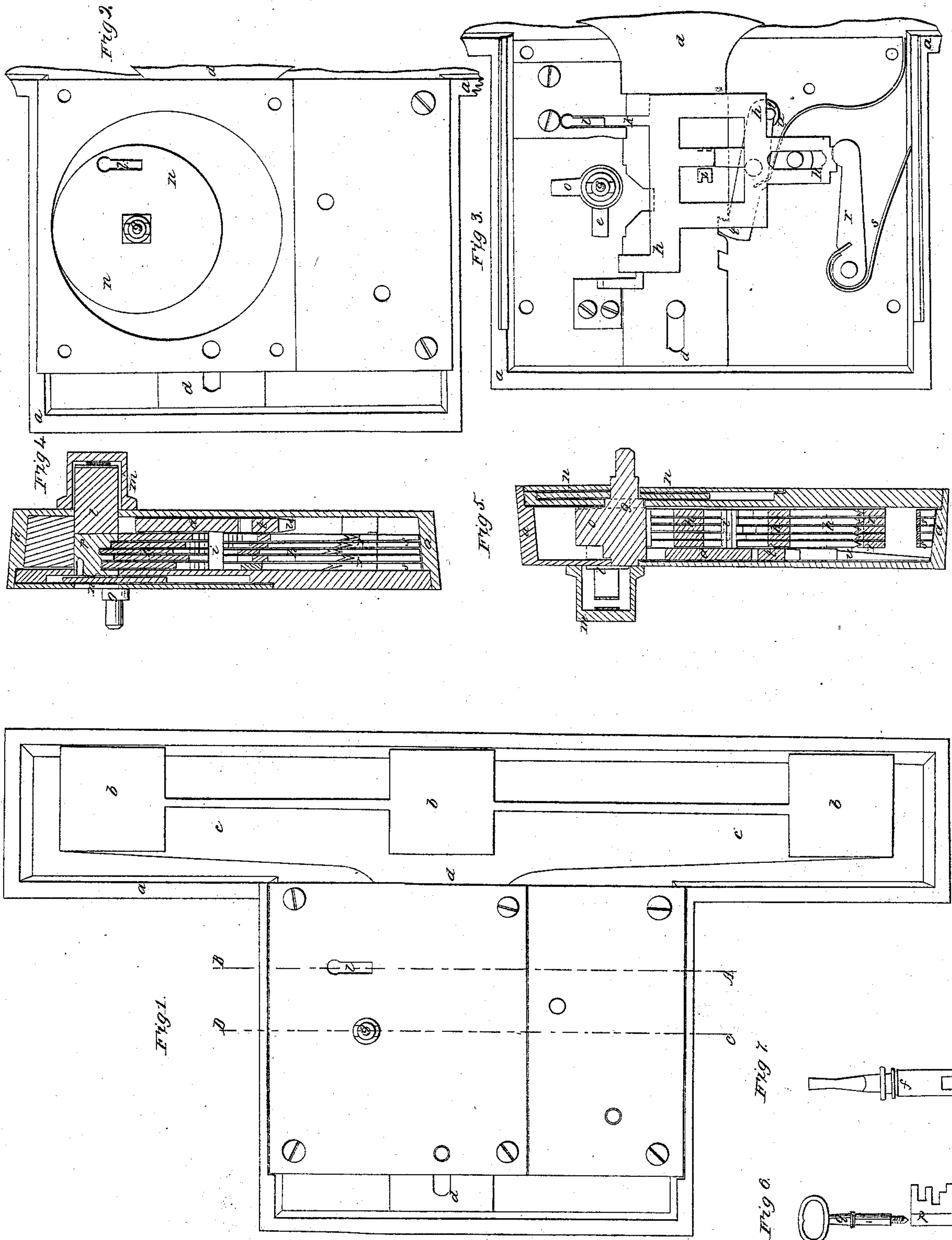


# A. Betteley, Lock.

N<sup>o</sup> 8,851.

Patented Apr. 6, 1852.





# UNITED STATES PATENT OFFICE.

ALBERT BETTELEY, OF BOSTON, MASSACHUSETTS.

## LOCK.

Specification of Letters Patent No. 8,851, dated April 6, 1852.

*To all whom it may concern:*

Be it known that I, ALBERT BETTELEY, 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 or top view of my improved lock. Fig. 2 is a top view of the same with the upper plate removed. Fig. 3 is a top view showing the tumblers, &c., with the bolt drawn back. Fig. 4 is a transverse vertical section taken in the plane of the line A B Fig. 1, with the key inserted. Fig. 5 is a similar section taken in the plane of the line C D, through the cam shaft which moves the bolt and Figs. 6 and 7 are detail views of the keys.

As most of these locks have hitherto been constructed, when the revolving plate (commonly used in these locks) was brought into position to insert the key, the tumblers could be moved in some degree by a pick and some idea of their form and position could be obtained so that a suitable instrument might possibly be constructed for opening the lock. In my improved lock it is impossible to "feel" the tumblers at any time, as when the key hole is exposed they are rigidly held by a cam attached to the shaft which moves the bolt, and as soon as this cam ceases to bear upon the tumblers the key hole is closed by the revolving plate. In other locks also the tumblers were lifted by the key and their position formed accordingly, but in nicely adjusted locks the key will soon become worn by continually lifting the tumblers into their place, so much so as to render frequent adjustment necessary. In my lock the tumblers form themselves upon the key by dropping upon the same, instead of the key's lifting or pushing the tumblers, an arrangement which effectually prevents any wear.

*a a a* in the drawings represents the framework of the lock which may be constructed in any desirable way.

*b, b, b* are three bolts attached to the arm *c c* which is attached to the right angular arm *d d* the whole forming a sliding bolt which is moved forward and back by the cam *e* which is turned by a square key or socket *f* applied to the shaft *g*.

*h h, &c.*, are the tumblers which when they are brought into the right position leave a space for the stud *i* of the bolt to pass through, so that the bolt can be moved in and out. The right angular projections *k, k, &c.*, of these tumblers bear against the movable follower *l* in the box *m* when the key is not inserted.

The revolving plate *n n* is so placed upon the shaft *g* as to bring its key hole into the right position for the key to be inserted at the same time that the cam *o* on the said shaft bears firmly against the tumblers, so as to hold them perfectly rigid and stationary. When the key hole of the revolving plate *n n* is brought into the right position, by the socket *f*, the key *p* is inserted and pressed down upon the movable follower *l* by the handle *q*, the tumblers being at this time firmly held by the cam *o*. As soon as this cam is relieved from the tumblers, by the turning of the shaft *g* by the socket *f*, the projections *k, k* of the tumblers are pressed by the retracting levers and springs *r, r, &c.*, *s s, &c.*, into the notches of the key, which key being of the proper shape, will allow the tumblers to form themselves into the right position for the stud to pass through, so that the bolt can be moved by the cam *e* on the shaft *g*, the notched lever *t t* relieving itself from the bolt when the tumblers drop by the pressure of the bent spring *u u*.

From the above description it will be seen that when the revolving plate is brought into the right position to insert the key, the tumblers cannot be moved as they are rigidly held by the cam *o* on the shaft *g*, and that as soon as this cam is turned and the pressure on the tumblers removed, the key hole will be closed by the revolving plate which turns with the said cam and shaft.

The tumblers, *h, h, &c.*, instead of being pressed upon the key can be made so as to drop thereon by their own weight, the retracting levers and springs being dispensed



with, and it will be evident that the combination of the tumblers can be varied, by altering the projections of the key accordingly, which projections can be made so as to be pushed in or out, as will readily be understood by locksmiths.

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. Holding the tumblers rigidly so that they cannot be moved when the key hole is exposed by means of a cam placed on the

same shaft with the cam which moves the bolt.

2. I claim so arranging the tumblers with the key, that the tumblers will form themselves into the right position so that the bolt can be withdrawn, by dropping by their own weight or being pressed by springs upon the key as herein above described.

ALBERT BETTELEY.

Witnesses:

JOSEPH GAVETT,  
LOWELL LINCOLN.