H. D. Richardson,

Piano Lock.

No. 48,209. Patented June 13, 1865.

Fig. 2

Fig. 1

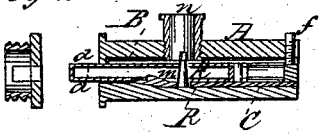


Fig. 4

Fig. 3

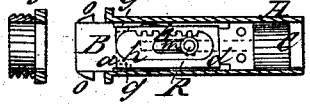


Fig. 5

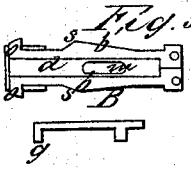


Fig. 6

Fig. 7

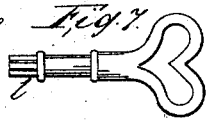
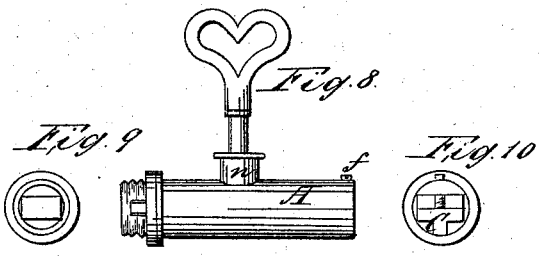


Fig. 8

Fig. 9

Fig. 10



Witnesses
Milton Bradley
J. P. Gardner

Inventor
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UNITED STATES PATENT OFFICE.

H. D. RICHARDSON, OF FLORENCE, MASSACHUSETTS.

IMPROVED LOCK.

Specification forming part of Letters Patent No. **48,209**, dated June 13, 1865.

To all whom it may concern:

Be it known that I, H. D. RICHARDSON, of Florence, Hampshire county, State of Massachusetts, have invented a new and Improved Lock; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

In the drawings, Figure 1 is a longitudinal perpendicular section through the lock, and Fig. 2 a similar section through the bolt-receiver; Fig. 3, a longitudinal horizontal section through the lock, and Fig. 4 a similar section through the bolt-receiver. Fig. 5 shows the internal arrangement of the bolt. Figs. 6 and 7 represent the key. Fig. 8 shows the lock, key, and receiver together. Figs. 9 and 10 are end views of the lock and receiver.

The object of my invention is to obtain a simple and compact lock, easily inserted, which can be used in any position, and at the same time, on account of the peculiar arrangement of the parts and form of key, not easily picked.

I will first describe the construction and operation and then state some of its advantages.

The bolt and other internal arrangements of the lock are contained in the case A, of cylindrical form, to admit of its being easily inserted, and consist of—

First. The bolt B. (Shown in section in Fig. 1, plan at Fig. 3, and an interior view at Fig. 5.) This bolt consists of a case, *a*, inside of which two springs, *b b*, are placed, having projections *o o* at the outer end, which catch into openings in each side of the bolt-receiver, and thus form what is called a "cabinet" lock.

Second. On this bolt the slide *d* runs, and as it is pushed back the projections *g g* strike against projections *s s* in the springs *b b*, before mentioned, and force them (the springs) in. In this slide a slot, *h*, is cut, having a rack, *k*, on one side of it. In this rack the pinion *l* on the end of the key fits, and as the key is turned the slide is run back.

Third. The spring C. This is secured at the rear end by the small screw *f* pressing down upon it. On the front end of this is a projection, which, when the bolt is drawn forward, springs into a slot, *m*, in its under side, and thus prevents its being unlocked until the spring is pressed down. On this spring is the stud R, over which the key passes when placed in the lock.

I will now describe the operation.

We will suppose the lock to be closed, as shown in Fig. 8. The key is inserted at *n*, and the pinion *l*, working in the rack *k*, moves the bolt back until the projections *o o* strike against the rear ends of the slots in the bolt-receiver, which stops the bolt. Now, as the key is turned the slide *d* is forced back, the projections *g g* strike against the projections *s s* in *b b*, as before mentioned, and force the springs in. As soon as these are in, the bolt is free to move back. In inserting the key, however, it must be pressed down sufficiently to force the spring-catch C out from the slot *m* in the bolt-case.

I will now state some of the advantages of this lock over others.

First. Its great simplicity and compactness. Being made of very few parts, as described, and contained in a small cylindrical case, it can be inserted in any place by simply boring, without the use of the chisel. In inserting, a hole is bored in the door or other place where it is to be inserted and the lock placed therein. A small hole is now bored in a direction at right angles to this and the escutcheon *n* inserted and screwed into the lock. The bolt-receiver is now inserted in the opposite side, in a hole similar to that which contains the lock, and it is ready for use.

Second. The combination of two kinds of locks by means of using the spring *b b*, as described. By this means I have a lock which may be used in any position, and may be, if necessary, changed from one place to another, thus often avoiding the expense of a new lock.

Third. It is not easily picked, for the key-hole is so small that an instrument for picking is not easily inserted, and the peculiar construction of the lock and form of key render it difficult, as it will be seen that two motions are necessary. The slide must be moved and the spring pushed down at the same time, making a very difficult operation. It will also be seen that the spring-catch C holds the bolt forward, so that it cannot be forced back by any instrument inserted for that purpose in front of the bolt, as is the case with most locks; and, also,

when used as a cabinet-lock, if at any time the bolt should be left out, the lid could be shut down upon it and the catches would spring over and catch on, thus forming a spring-lock.

Now, having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A lock, when constructed and arranged substantially in the manner described.

H. D. RICHARDSON.

Witnesses:
MILTON BRADLEY,
J. B. GARDINER.