W. C. Bussey,

Permutation Lock.

No. 76,300. Patented Apr. 7, 1868.

Fig. 3

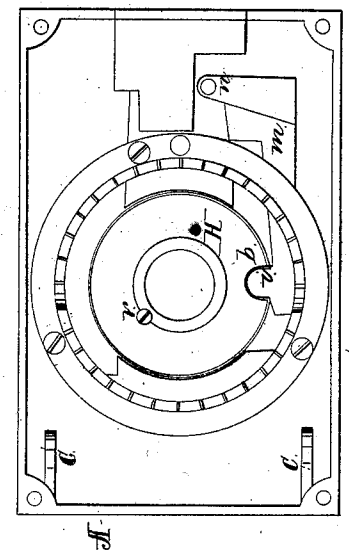


Fig. 4

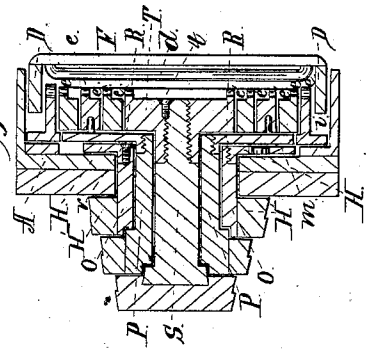


Fig. 2

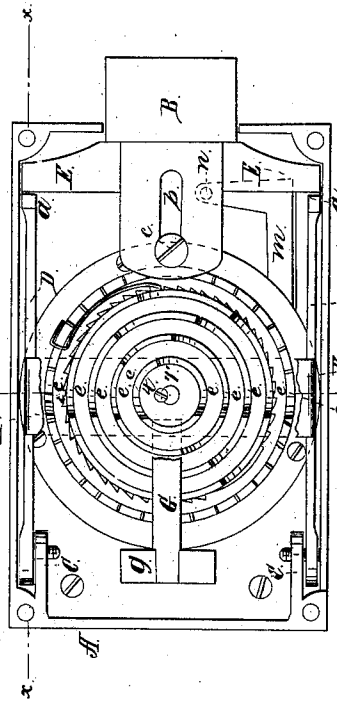
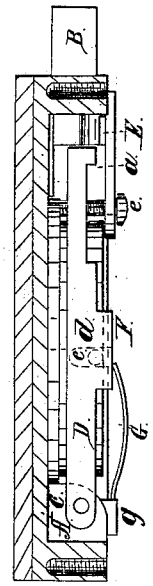


Fig. 5



Witnesses:
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United States Patent Office.

WILLIAM C. BUSSEY, OF SAN FRANCISCO, CALIFORNIA.

Letters Patent No. 76,300, *dated April* 7, 1868.

IMPROVEMENT IN COMBINATION-LOCK FOR DOORS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM C. BUSSEY, of San Francisco, county of San Francisco, State of California, have invented an Improved Combination-Lock; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to that class of locks in which a series of annular tumblers is used, and is an improvement upon a lock for which Letters Patent were granted to me, dated the 5th day of September, 1865.

This improvement relates to a novel method of securing the bolts when drawn either forward or back. Reference being had to the accompanying drawings—

Figure 1 is a back view with the plate removed.

Figure 2 is a side sectional elevation through *x x*.

Figure 3 is a view with the tumblers removed, showing the manner of operating the bolt; and

Figure 4 is an end sectional view through *y y*.

Similar letters in each of the figures indicate like parts.

A is the case of the lock, which may be firmly fastened to the inner side of the safe-door, the only projection upon the outside being the short frustum of a cone formed by the operating-knobs. In the present case, only one bolt B is used, and this bolt operates in a line with the centre of the tumblers. Upon the inside of the case, at C C, two lugs are formed, between which and the sides of the case the arms D D are pivoted, so as to swing out and in. At the opposite end these arms have lugs, *a a*, so arranged that when locked, the cross-bar E of the bolt comes in contact with them at any attempt to move it. A slot, *b*, working on the pin or screw *c*, guides the bolt in its movement.

Across the centre of the tumblers, and forming a part of the arms D D, is extended a stout, flat plate, F, having on its under surface a longitudinal projection or bar, *d*. This bar, when the door is locked, rests on the edges of some or all the tumblers, and by this means raises the bars D D, so that the lugs *a a* prevent the bolt B from moving.

At two points on the circumference of each of the tumblers, a deep groove, *e e*, is filed in such a position that a connecting line would pass a little to one side of the centre of revolution, this making it impossible to get the grooves all in a line by feeling. When they are in a line, as shown at fig. 1, the bar *d* drops into them, and thus allows the lugs *a a* to drop so low that the bolt can pass. A spring, G, in the post *g*, presses on the back of the plate F, and insures the prompt motion of the arms when the combination is correctly set.

A disk, H, is connected with the knobs H′ nearest the door, by which the bolt is moved. Fig. 3 shows this disk having a semicircular notch, *h*, in one side, in which the projection *i* fits. This projection is a part of the arm *m*, and this arm has a pin, *n*, which enters a hole in the bolt, and thus moves it.

In my former patent, the spindle and arbors were all put through from the inside, and secured by feather and groove to the knobs. This construction carries the objection, that if by blows on the knob, the inner plate of the lock may have been broken, the lock might be so damaged by continuous blows as to be disabled and rendered useless. To obviate this difficulty, the arbor *o* is put through the side of the safe, and screwed into the disk H until it is flush with its inner face, when a screw or key, *r*, is put into a hole between the two, thus holding it firmly in place, while the shoulder on the outside prevents its being driven in. The arbor P is fastened to the disk R in the same way; and lastly the spindle S screws into the smallest disk T, and is keyed at *t*, so that the whole is secure and strong.

Claim.

What I claim as new, and desire to secure by Letters Patent, are—

The bars D D and the lugs *a a*, for retaining the bolt, together with the plate F, bar *d*, and spring G, in combination with the grooved annular tumblers, the whole constructed and operating substantially as and for the purpose described.

In witness whereof, I have hereunto set my hand and seal.

W. C. BUSSEY. [L. S.]

Witnesses:

C. W. M. SMITH,

GEO. H. STRONG.