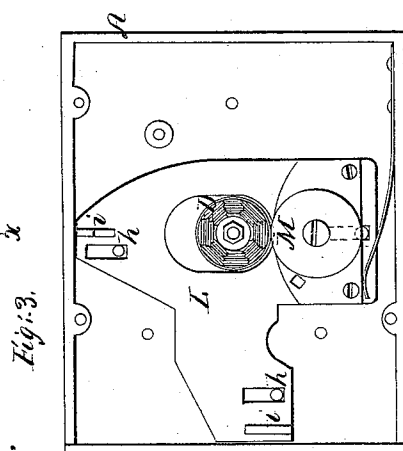
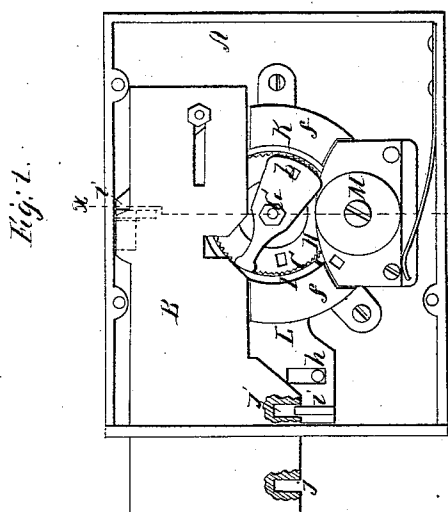
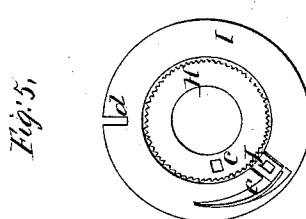
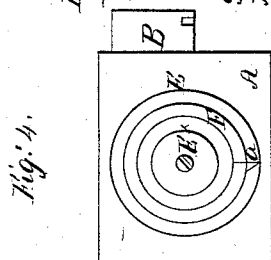
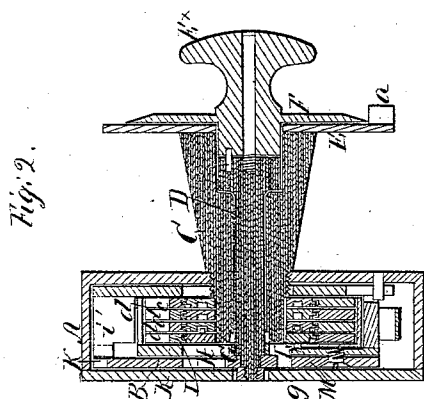


J. Corbett, Permutation Lock.

N^o 84,810.

Patented Feb. 5, 1867.



Witnesses:
Thos. Twich
J. A. Service

Inventor:
Joseph Corbett
Permutation Lock

UNITED STATES PATENT OFFICE.

JOSEPH CORBETT, OF SALT LAKE, UTAH TERRITORY.

IMPROVEMENT IN PERMUTATION-LOCKS.

Specification forming part of Letters Patent No. 61,810, dated February 5, 1867.

To all whom it may concern :

Be it known that I, JOSEPH CORBETT, of Salt Lake, in the county of Salt Lake and Territory of Utah, have invented a new and Improved Burglar-Proof Lock; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those 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 an internal view of my invention with all the parts arranged in working order; Fig. 2, a transverse section of the same, taken in the line *x x*, Fig. 1; Fig. 3, an internal view of the same, with all the working parts removed except the slide and bolt; Fig. 4, a diminished outer-face view of the knob-dial and fixed plate, over which the dial works; and Fig. 5, a detached view of two concentric annular tumblers pertaining to the invention.

Similar letters of reference indicate corresponding parts.

This invention relates to a new and improved burglar-proof lock of that class which is provided with annular rotating tumblers, combined and arranged in such a manner as to be capable of being adjusted to effect a great number of changes—that is, different manipulations of the knob in order to unlock the lock.

The invention consists, first, in a novel construction of the knob-arbor and shell which incloses the same, whereby access to the tumblers by drilling is avoided; second, in inclosing or partially inclosing the tumblers within a case, so that, in the event of an entrance being effected into the lock, access cannot be had to the tumblers; third, in the peculiar arrangement of the tumbler-case in the lock with the knob-arbor, whereby greater security is obtained than hitherto; fourth, in a combination and arrangement of a slide and checks with the bolt and tumblers.

A represents the case of the lock, which may be constructed in the usual or any proper manner, and B is the bolt, placed or arranged within the case in the ordinary or in any suitable way. C represents a shell, which projects from the outer side of the lock-case, and is of conical form. This shell is screwed into the outer side of the lock-case, and within it

the knob-arbor D is fitted, the latter having a knob, E^x, secured to its outer end. Both the shell C and arbor D are constructed of strips or plates of steel and iron or other metal, arranged or placed together alternately, properly secured by welding or otherwise, and then turned or otherwise finished in proper form, the steel plates tempered extremely hard, so as to resist the action of a drill. The iron or other metal strips or plates prevent the steel plates from breaking, for, being tempered hard, they are quite brittle. On the outer end of the shell C there is secured a circular plate, E, having a projection, *a*, extending from it at right angles, and to the inner part of the knob E there is secured a circular dial-plate, F, parallel with the plate E, as shown clearly in Fig. 2. The arbor D extends entirely through the shell C, projecting within the case A beyond the inner end of shell C, as shown in Fig. 2; and to the inner end of the arbor D there is attached a bit, G, (shown clearly in Fig. 1,) said bit having a pin, *b*, projecting from its inner side, which pin, when the arbor D is pulled outward, fits into a hole, *c*, in the tumbler H. (Shown in Figs. 1 and 5.) There are two tumblers, H I, shown in Fig. 5, the former, H, being placed within the latter, I, so that H may turn within I. (I would state that any number of pairs of tumblers may be used. Four pairs are shown in Fig. 2.) The outer tumblers have each a radial notch, *d*, cut in them, and the peripheries of the inner tumbler H of the outermost pair is notched to receive a notched slide, J, which is fitted in a groove in the outer side of the exterior tumbler I, a spring, *e*, bearing against the slide J to keep it in contact with H, so that the two tumblers will be connected, and prevented from turning one without the other. These series of tumblers are well known and in common use, and are generally termed "combination-locks;" but the notched slide J, with the toothed edge of the inner tumbler H and the spring *e*, constitutes a new and simple means for connecting the tumblers of each pair. These series of tumblers are inclosed within a chamber, K, secured to the front or outer plate of the lock-case, the bolt B being between the chamber K and the back plate of the lock, as shown clearly in Fig. 2. The chamber K is

provided with projections *f*, to serve as bearings for the back plate *g* of the lock-case. The chamber *K* may wholly or partially cover the tumblers; but it would be preferable to have the chamber extend entirely around them. *L* is a slide, which is fitted in the lock-case *A*, and works on proper stumps or guides *h*. This slide is bent, curved, or so formed as to lap over the chamber *K*, and it has a friction-roller, *M*, attached, for the bit *G* of the arbor *D* to work against and obviate friction. This slide works in contact with the inner surface of the front plate of the lock-case, and it has the projections *i i'* attached, one of which, *i*, fits in notches *j j'* in the bolt, and with the other, *i'*, a projection, *k*, on the bolt comes in contact. These projections *i i'* serve as checks for the bolt, and prevent the latter being moved unless they are, by the movement of the slide *L*, withdrawn from the notch *j* or *j'* and the projection *k* of the bolt, which is done by the action of one end of the bit *G* against the friction-roller *M*. This movement of the slide *L* also throws the projection *i'* into the notches *d* of the tumblers *I*, and the other end of the bit *G* slides the bolt. In order that the bit *G* may thus act against the slide *L* and bolt *B*, the arbor *D* is pressed inward, so that the bit may be in line with the friction-roller *M* and bolt *B*; and, in order to turn the tumblers so that the notches *d* of the tumblers *I* may all be brought in line with each other to receive the projection *i'*, the arbor *D* is pulled outward, so that the pin *b* may enter the hole *c* in the outermost tumbler *H*, and the outermost pair of tumblers *H I* are turned, motion being communicated to the inner pair by means of pins arranged as usual. The precise distance the tumblers are required to be turned in order to bring the notches *d* of the several tumblers *I* in line with each other and the projection *i'* on the slide *L*, the dial *F* is numbered, and the numbers are brought consecutively in line with the projection *a* of the fixed plate *E*. This

plate may be of any form, either a circle or part of a circle.

By this arrangement a very efficient and simple burglar-proof lock is obtained, and one in which the tumblers cannot be tampered with. The checks for the bolt being attached to the same slide, *L*, the bolt is liberated by a very simple means. The lock is also powder-proof, and, as the arbor *D* is pulled outward in order to move or turn the tumblers, a false register, if inserted between the plate *E* and dial *F* for the purpose of obtaining a knowledge of the tumblers, would be at once seen, and said register can be removed. The plate *E* may have a rim projecting from it to cover the edge of the dial; but in that case openings should be made in the rim to admit of the space between *E* and *F* being seen, in order to detect false registers.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Constructing the shell *C* and the arbor *D* of plates or pieces of steel and other metal, arranged alternately in position, welded together or otherwise secured, and the steel hardened by tempering, substantially as and for the purpose set forth.

2. Inclosing or partially inclosing the tumblers by means of a case or chamber, *K*, substantially as and for the purpose specified.

3. The tumbler case or chamber *K*, when used in combination with an arbor, *D*, arranged so as to be connected with the tumblers by pulling or drawing it outward from the lock-case, as and for the purpose specified.

4. The slide *L*, provided with the projections *i i'*, and arranged with the bolt *B* and tumblers *I*, substantially as and for the purpose specified.

JOSEPH CORBETT.

Witnesses:

WM. F. MCNAMARA,
ALEX. F. ROBERTS.