

(No Model.)

O. J. JONSSON.
PERMUTATION LOCK.

No. 581,226.

Patented Apr. 20, 1897.

Fig 1

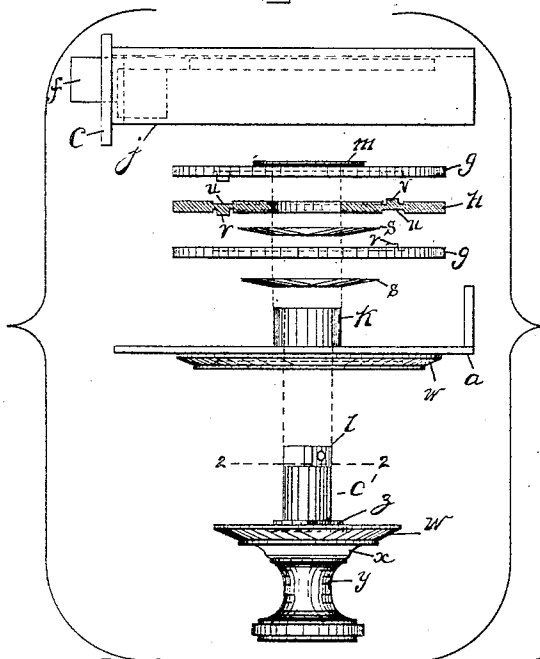


Fig 2

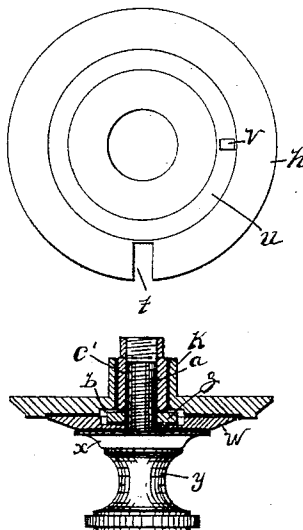


Fig 3

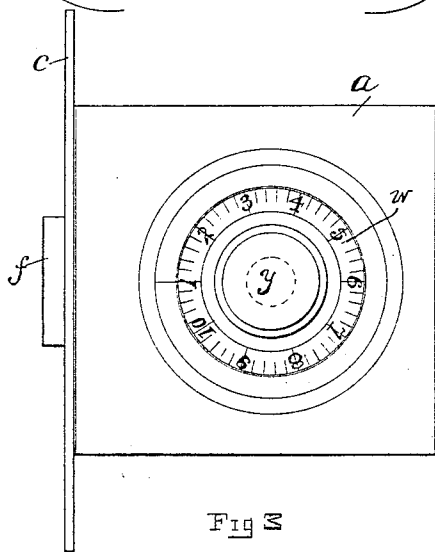
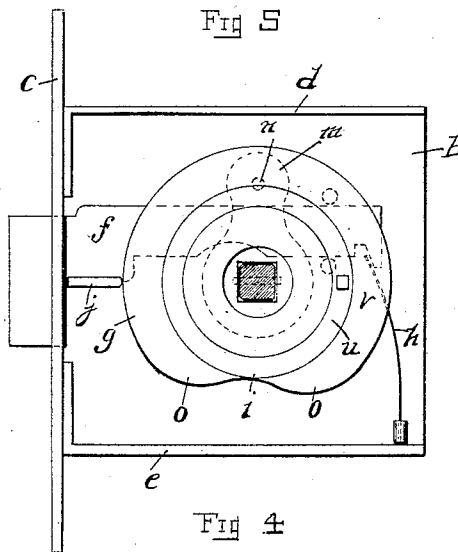


Fig 4



WITNESSES:

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OLOF J. JONSSON, OF ST. PAUL, NEBRASKA.

PERMUTATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 581,226, dated April 20, 1897.

Application filed October 9, 1896. Serial No. 608,391. (No model.)

To all whom it may concern:

Be it known that I, OLOF J. JONSSON, a citizen of the United States, and a resident of St. Paul, in the county of Howard and State of Nebraska, have invented certain new and useful Improvements in Permutation-Locks, of which the following is a specification.

The object of my invention is to provide for simpler construction of the lock and for widerange of changes of the combinations, as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is a top view of the lock in detached parts, one of which is shown in section. Fig. 2 is a face view of one of the locking-disks. Fig. 3 is a front elevation of the lock. Fig. 4 is a front elevation with the knob, front plate, and two of the locking-disks removed, the knob-spindle being represented in cross-section on line 2 2, Fig. 1. Fig. 5 is a longitudinal section of the knob-spindle and the dial and part of the front plate of the lock.

In this example of my invention I represent it as applied to a mortise-lock, in which *a* represents the front plate; *b*, the back plate; *c*, the face-plate, and *d* and *e* the top and bottom plates forming the case.

f is the bolt, *g* the disk for throwing the bolt, and *h* the retracting-spring. The disk *g* is mounted on the extremity of a tubular hub *k* of the front plate *a* and is connected to the extremity *l* of the knob-spindle by the arm *m*, keyed on said extremity and connected to the disk by pin *n*. Said disk has the cam-shaped notch *i* in its edge, against which the spur *j* of the bolt bears, which notch permits the retraction of the bolt by the spring when the notch coincides with the spur. Turning the disk *g* throws the bolt out for locking by the action of the cam-faces *o* on the spur *j*, one or the other, according to which way the disk is turned.

Two other locking-disks, as *p* and *q*, are employed, said disks being mounted on the tubular hub *k* in the order indicated in Fig. 1, with intermediate spring-washers *s* for friction devices to hold them in position. These disks have the usual angular notches *t* for reception of spring *j* to permit retraction of the bolt when set with the notches in the due relation with the spur.

The disks *p* and *q* are arranged to be turned in the usual successive order, the disk *g* being the prime mover, but instead of the usual slot in one disk for reception of the stud of the other to connect them for turning one by the other I provide grooves, as *u*, for the studs *v*, said grooves extending entirely around a circle, except the space occupied by a stud, so that each disk may make nearly an entire circuit in either direction before taking effect on the other, thus materially enlarging the range of adjustment for combinations and enabling operative combinations to be worked by either right or left hand initial movement.

When the disks are slotted for the studs, the slots must be materially shorter than an entire circuit in order that the connection of the inner and outer portions of the disks may be sufficient. It will be seen that in my plan the connection is continuous throughout the circuit.

The dial *w* is clamped against the collar *x* of the knob-spindle *y* by a nut *z*, which screws onto the threaded stem *a'* and occupies a space *b'*, formed by recesses in the confronting faces of the dial and the front plate *a*. A sleeve-nut *c'*, forming the journal of the knob-spindle and having the extremity on which the disk-turning arm *m* is carried, is screwed onto stem *a'* within tubular hub *k* and constitutes a check-nut to hold nut *z* and the dial *w* securely in position. These devices are also a means of changing the combinations through shifting the dial on the knob-spindle, which may be readily done by taking out the knob-spindle and manipulating the nuts. This makes a simple construction, and it will be seen that the arrangement for utilizing the disk *g* for throwing the bolt is also a material simplification in the construction of such locks.

I claim as my invention—

In a permutation-lock having a series of notched locking-disks on the axis of the knob-spindle to be severally set one by the other successively for unlocking the bolt, said disks mounted on the tubular hub of the front plate, the inner disk positively connected with the inner extremity of the knob-spindle, and the others connected with said inner disk by

the coacting studs in the sides, the dial clamped
on the screw-threaded stem of the knob-spindle
by the collar and nut, and the sleeve forming
the check-nut to secure the dial-clamping
5 nut, and also forming the knob-spindle journal,
and the shank extremity for connection
of the disk-turning arm substantially as described.

Signed at St. Paul, in the county of Howard and State of Nebraska, this 17th day of 10
July, A. D. 1896.

OLOF J. JONSSON.

Witnesses:

PAUL ANDERSON,
T. HERMANSON.