

L. E. MOLVIG.
PERMUTATION LOCK.
APPLICATION FILED MAY 1, 1912.

1,054,596.

Patented Feb. 25, 1918

Fig. 1.

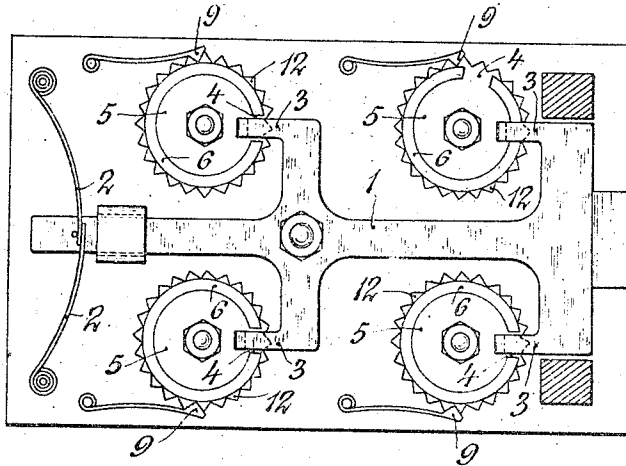


Fig. 2.

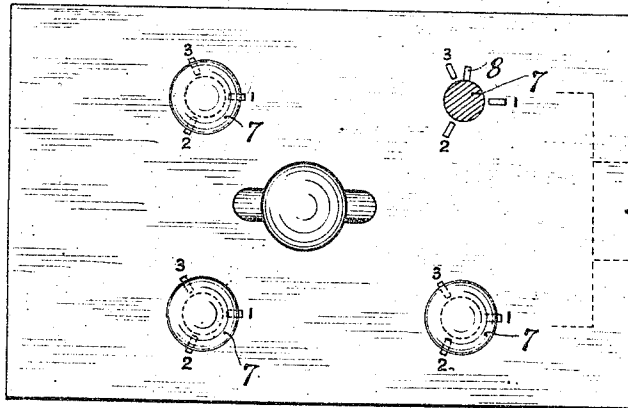
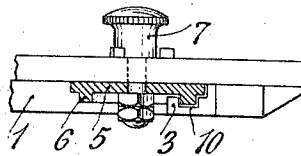


Fig. 3.



Witnesses.

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LUDVIG EMIL MOLVIG, OF FREDRIKSHALD, NORWAY.

PERMUTATION-LOCK.

1,054,596.

Specification of Letters Patent.

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Application filed May 1, 1912. Serial No 694,388.

To all whom it may concern:

Be it known that I, RUDVIG EMIL MOLVIG, timber merchant, citizen of Norway, and resident of Fredrikshald, Norway, have invented certain new and useful Improvements in Permutation-Locks, of which the following is a specification.

The present invention relates to permutation-locks of the kind, in which each of a plurality of independently adjustable locking-disks is provided with a peripheral notch into which project noses on the locking-bolt or a part locking the latter, so that the lock can be opened only when the several disks take up a definite rotative position relatively to each other.

The invention consists essentially in the peripheral notches of the locking-disks being cut out in a raised ring on the disk and a nose on the locking-bolt coacting therewith being so disposed that the same in the two positions of the bolt projects on one or the other side of the ring, for the purpose of enabling the disk to be rotated also when the bolt is pressed in and to be locked in both positions, whereby persons not concerned are prevented from finding out the key-number.

The invention is illustrated in the accompanying drawing in which:

Figure 1 shows the inner mechanism of the lock, the front plate being removed and the lock opened, but the uppermost disk to the right being rotated out of the opening or releasing position. Fig. 2 is a front view of the lock, one of the rotating knobs of the disks being shown in section. Fig. 3 is a detail view, in which the locking-disk is shown in section.

In well-known manner the locking-bolt —1— is slidably mounted in guides and a spring —2— tends to carry it into open position, when the disks are so adjusted that simultaneously all the rearwardly directed noses —3— of the bolt are opposite peripheral notches —4— in the respective locking disks —5—. Each notch —4— according to my invention is cut out of a raised rib or ring —6— of the disk, and in the nose is cut out a notch —10— (Fig. 3) corresponding to the cross section of the ring so that the rotation of the disk can be continued also, when the locking-bolt is being pressed in, *i. e.* when the lock is being opened, in which case the rib —6— travels in the notch

—10— and locks the bolt also in its open position.

The locking-disks —5— are outwardly provided with rotation-knobs —7—, at the underside of which is arranged a mark —8— not visible to persons not concerned. On the door-plate three correspondingly raised marks (1, 2, 3) are arranged, and each disk is provided with peripheral teeth 12, with which a spring pressed pawl 9 engages. The teeth are V-shape and the pawls are correspondingly shaped so that the disks may be turned in either direction. Where a disk is rotated, the pawl will click, and in addition the operator can feel the pawl being seated between the teeth. Thus as shown in the drawing, a pawl will click eight times between any two of the marks 1, 2, and 3. When it is desired to retract the locking bolt, the knobs 7, are rotated until the mark 8 on each registers with the predetermined mark on the casing, whereupon the notches in the flanges will be so located as to permit the projections 3 to be withdrawn. Because of the shape of the notches and the pawls the operator can hear the clicks, and as he is familiar with the combination it assists him in operating the lock. Obviously because of the disks being so that they may be turned in either direction it confuses one in opening the safe when not familiar with the combination, and yet the pawls will hold the disks in set position. The mark position is felt by the hand or the finger at the same time as the rotation is effected. Also the snaps may easily be felt. The whole operation is very simple, and the lock may be opened and locked in the light or in the dark during a few seconds.

My improved safety-lock may be used in safes, strong rooms, money boxes, usual doors, trunks, etc. Of course, the number of locking disks may not necessarily be four. Any number of disks suitable to the purpose may be used.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:—

In a lock, the combination of a casing, a bolt slidably mounted in the casing, said bolt comprising a central bar having extensions extending from each side of the bar, the end of each of the extensions having a projection which is parallel with the central

bar and formed on one edge with a groove, a plurality of disks rotatably mounted in the casing, each disk having a flange which is formed with a notch equal to the width of one of the projections on the extensions, the periphery of each disk having a series of substantially V shape depressions, springs having pawls to engage in the V shape depressions, the pawls and depressions permitting of the disks being turned in either direction but adapted to hold said disks temporarily in set position, a knob on each disk, a knob on the bolt to permit the latter

to be moved in one direction, and a spring to move the bolt in the opposite direction, the flanges of the disks serving to interlock through the notches in the projections on the bolt and prevent movement of the latter, and the grooves in the flanges serving to permit of the bolt being retracted.

Signed at Christiania Norway this 19th day of April A. D. 1912.

LUDVIG EMIL MOLVIG.

Witnesses:

AXEL LAHN,
MOGENS BUGGE.