(No Model.)

W. W. SCOTT.

PERMUTATION LOCK.

No. 261,632. Patented July 25, 1882.

Fig. 1.

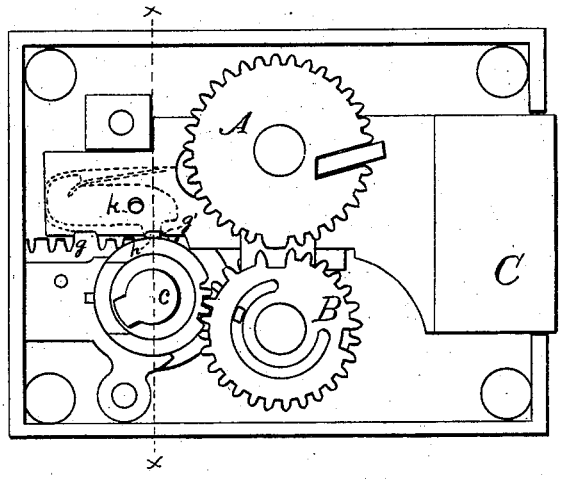


Fig. 2.

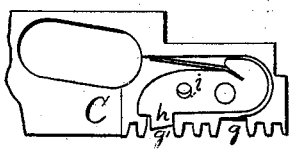


Fig. 3.

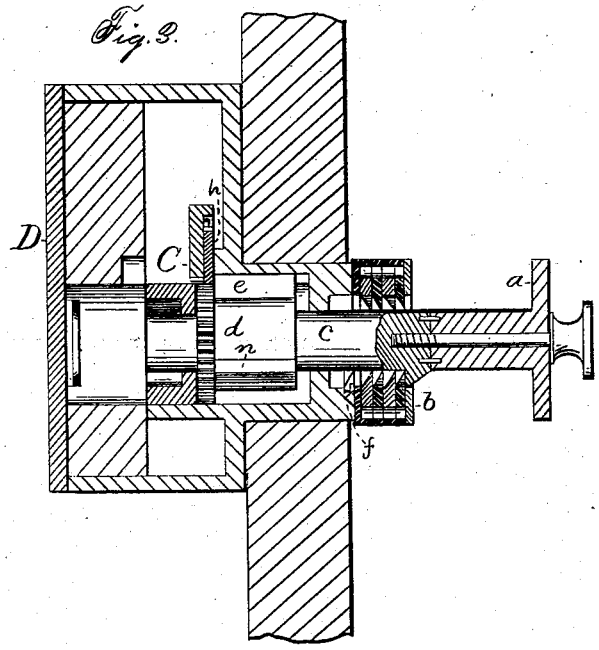
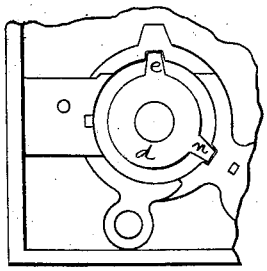


Fig. 4.



Witnesses.
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atty

UNITED STATES PATENT OFFICE.

WILLIAM W. SCOTT, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE KEMPSHALL MANUFACTURING COMPANY, OF SAME PLACE.

PERMUTATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 261,632, dated July 25, 1882.

Application filed May 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. SCOTT, of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Permutation-Locks, of which the following is a specification.

My invention relates to an improvement upon the well-known Isham lock, patented February 28, 1860, and since improved in various ways, examples of the improved form being shown in Letters Patent Nos. 90,682 and 90,683, granted to F. H. North June 1, 1870.

My improvement consists of combining the longitudinally-moving key-shaft, its follower, and the lock-bolt, having two notches, with means for obstructing the endwise movement of the follower and key-shaft during the ordinary manipulation of the lock for locking and unlocking, but which may be thrown out of the way and permit said endwise movement when desired for the purpose of taking off the key and changing the combination when the lock-bolt is drawn into its case.

In the accompanying drawings, Figure 1 is a rear elevation of the main portions of an Isham lock having my improvements, the same being represented with the cap-plate and an inside plate removed in order to better show the other parts. Fig. 2 is a front elevation of a part of the lock-bolt with my attachment secured thereto. Fig. 3 is a vertical section on line *x x* of Fig. 1, and Fig. 4 is an end view of the winged follower and a portion of the lock-case.

The knob *a*, key *b*, key-shaft *c*, follower *d*, having wing *e*, and all the other appurtenances of the key-shaft, and the gears A and B, are all of them like said parts of the Isham lock as manufactured, and so also is the lock-bolt C, with the exception of the attachment thereto, hereinafter described. In these old locks the key *b* is dovetailed to the hub *f*, and the key-shaft *c* passes through said key, so that it cannot be taken off except when the end of the key-shaft *c* (after the knob *a* is removed) is within the hub *f*. The follower *d* is so secured to the key-shaft as to necessarily move longitudinally with said shaft, but so that the key-shaft may revolve within the follower. The follower is prevented from rotating by means of wings or feathers *e n*, which rest in slots in the case. (See Fig. 4.) The bolt C is provided with two notches, *g g'*, of which *g* comes directly opposite and coincides with the wing *e* of the follower *d* when the bolt is thrown outward into position for locking, and *g'* does the same when the bolt is withdrawn into position for unlocking, as shown in Fig. 1. The key-shaft *c* cannot be moved endwise for taking off the key except when the lock-bolt has one of its notches coinciding with the wing *e*. The notch *g* is for the purpose of allowing the key-shaft to move endwise for taking off the key when the bolt is thrown outward, and the notch *g'* for allowing the same movement when the bolt is withdrawn, so that the key may be then taken off and the combination changed. For the purpose of changing the combination, the lock is provided with means for disengaging the gears A and B when the bolt is withdrawn, which means may be an inclined slot in the bolt, as shown in the Isham patent of 1860, or other suitable means may be employed. I make use of these old parts substantially as hereinbefore described.

In order to prevent one from accidentally taking off the key when the bolt is unlocked or withdrawn, I place a spring-actuated dog, *h*, Fig. 2, upon the side of the bolt and let it into the bolt, so as to be flush with that side. One arm or end of the dog sufficiently covers the slot *g'* to form an obstruction which prevents the follower and the key-shaft from being moved inward when the lock-bolt is withdrawn during the ordinary manipulation of the lock, so as to prevent one from accidentally, through carelessness or otherwise, taking off the key under the supposition that the bolt is thrown outward, when in fact it is not. In order to enable this dog or obstruction to be removed at will, so as to take off the key for the purpose of changing the combination, or for any other purpose when the bolt is unlocked, I make holes through the cap-plate D of the case, (which hole in the cap is accessible only from the inside of the door on which the lock is placed;) also through the bolt and dog in such positions that they are all in alignment when the bolt is withdrawn and the end

of the dog is lifted out of the way of the wing *e*. Consequently when the dog is depressed by its spring the hole *i* in the dog falls a little below the hole *k* in the bolt, as shown. By inserting a round and pointed instrument into said holes the dog can be lifted at will, and thereby is removed all obstruction to the endwise movement of the follower; but so soon as the instrument is withdrawn and the follower moved out of the notch *g'* said follower is obstructed as before.

Other forms of obstructions may be used to block the follower—as, for instance, a slide or a rotating button—all of which will readily suggest themselves to mechanics.

I do not claim an Isham or key-register lock in which the lock-bolt has one slot for the follower to pass through, as the same is mentioned in the Isham patent of February 28, 1860.

I claim as my invention—

The combination, substantially as hereinbefore set forth, of the lock-bolt having the notches *g g'*, the longitudinally-moving key-shaft carrying the follower, and the dog or its equivalent for obstructing the longitudinal movement of said follower through the slot *g'* during the ordinary manipulation of the lock, said dog being also adapted to be moved for permitting such movement when desired.

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Witnesses:

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