

S. H. McVITTY.
PERMUTATION LOCK.
APPLICATION FILED JAN. 14, 1905.

Fig. 1

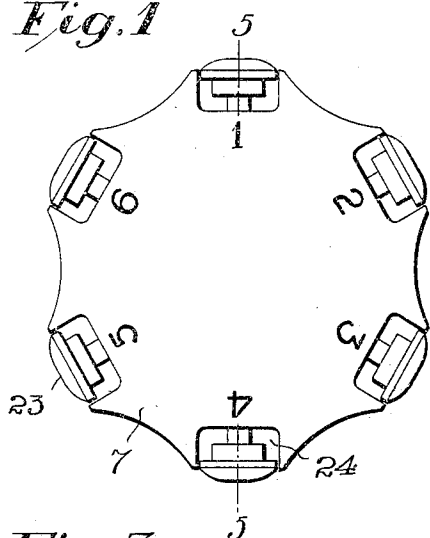


Fig. 2

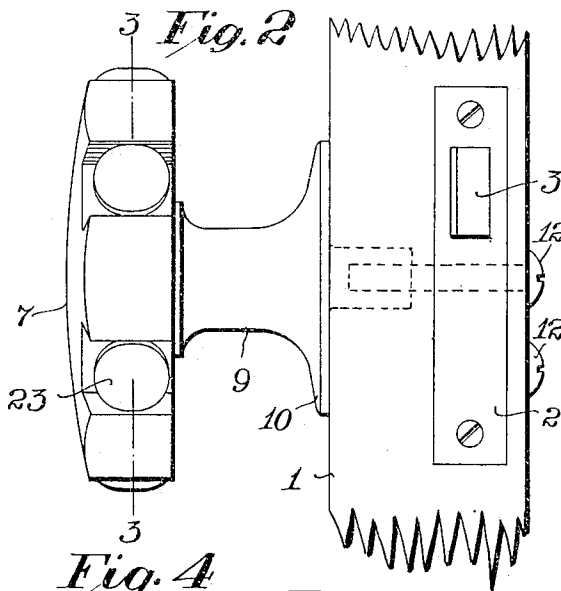


Fig. 3

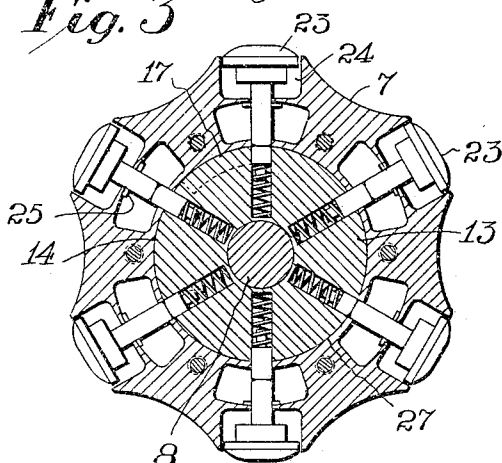


Fig. 4

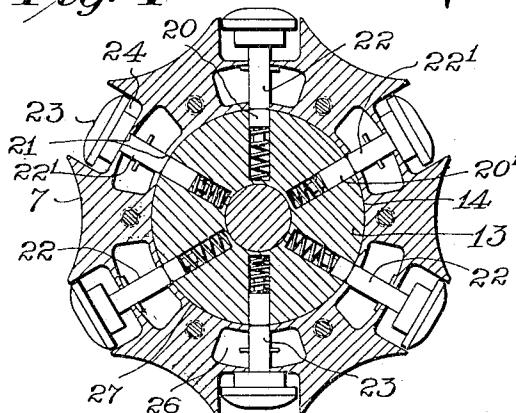


Fig. 5

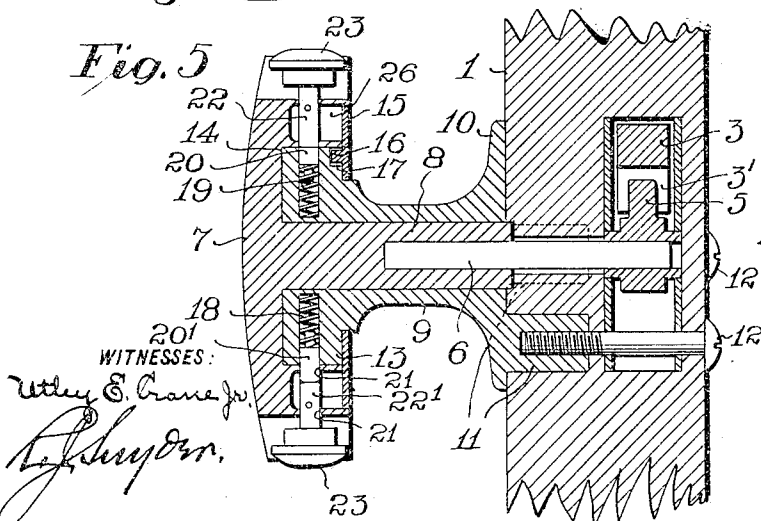
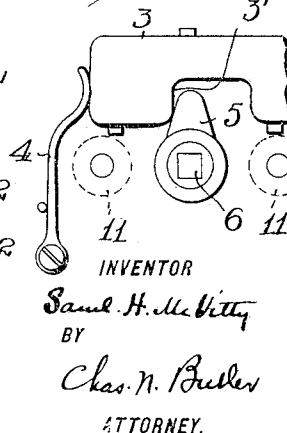


Fig. 6



WITNESSES:

Wm. E. Crane, Jr.
Chas. N. Butler

INVENTOR

Sam. H. McVitty
BY
Chas. N. Butler
ATTORNEY.

UNITED STATES PATENT OFFICE.

SAMUEL HERBERT McVITTY, OF BRYN MAWR, PENNSYLVANIA.

PERMUTATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 793,087, dated June 27, 1905.

Application filed January 14, 1905. Serial No. 240,986.

To all whom it may concern:

Be it known that I, SAMUEL HERBERT McVITTY, a citizen of the United States, residing at Bryn Mawr, in the county of Montgomery and State of Pennsylvania, have invented certain Improvements in Permutation-Locks, of which the following is a specification.

This invention relates more particularly to improvements in permutation-locks for controlling door-knobs by which latches, bolts, or the like, are operated. Its leading object is to provide a simplified and inexpensive construction that will not get out of order, is reliable in action, cannot be readily tampered with, and which is suitable for application to the doors of houses, closets, and lockers.

The nature and characteristic features of the improvements will more fully appear by reference to the following description and the accompanying drawings in illustration thereof, of which—

Figure 1 represents a front elevation of a door-knob having my invention applied thereto. Fig. 2 represents a side elevation of the same applied to a door. Fig. 3 represents a sectional view taken on the line 3 3 of Fig. 2, showing the mechanism locked. Fig. 4 represents a sectional view taken on the line 3 3 of Fig. 2, showing the mechanism unlocked. Fig. 5 represents a sectional view taken on the line 5 5 of Fig. 1, and Fig. 6 represents the connection of a bolt or latch with the parts directly engaging therewith to operate it.

Referring to the drawings, the door 1 may be provided with a usual form of lock 2, having a bolt 3 pressed outwardly to the engaging position by a spring 4 and withdrawn by turning backwardly the bit 5 against the bolt-shoulder 3', the bit being turned by a stem 6, which may be fixed thereto in any suitable manner.

The knob 7 has formed integrally therewith a cylindrical spindle 8, which is fixed to the stem 6 and journaled in the stationary sleeve-bearing 9, incasing the spindle. The bearing has the flange 10 thereon, which is engaged to the door as an escutcheon, and the studs 11, which set in the door to firmly secure the bearing, the studs being engaged by screws 12, which are inserted in the door from the

inner side and cannot, therefore, be tampered with when the door is closed. The bearing is provided further with the flanged hub 13, to which is fitted the socket 14, formed in the knob. A circular plate 15 is secured to the inner face of the knob and engages the inner face of the hub, the plate having a boss 16 thereon, which acts in a groove 17, formed in the hub to limit the rotation of the knob thereon. The hub is provided with the radial sockets 18, containing the coiled springs 19, which support the short tumblers 20 and the long tumblers 20', adapted to reciprocate in the sockets. The knob is provided with the radial sockets 21 for the long plungers 22 and the short plungers 22', having keys or buttons 23 thereon adapted to reciprocate in recesses 24 of the knob. The short plungers are adapted for registering with the long tumblers and the long plungers with the short tumblers, while the reciprocations thereof are limited by pins 25 set in the plungers and acting in the recesses 26 of the knob. In their normal positions the plungers are in alining contact with the tumblers. The respective bearing ends of the long plungers and short tumblers register with the cylindrical joint 27 between the hub and the knob, while the respective bearing ends of the short plungers and long tumblers lie within the knob, so that these tumblers engage the knob and hub together, so that the knob cannot be turned.

In operation when the keys of the short plungers (numbered "2," "4," and "6" in the present combination) are pressed in simultaneously, the keys of the plungers corresponding to the numbers "1," "3," and "5" being undisturbed, the joints between the short plungers and long tumblers are brought into registration with the joint between the knob and hub, the knob can be turned, the bolt withdrawn, and the door opened. If, however, all of the short plungers are not pressed in, when the tumbler corresponding to any one that remains in its normal position will continue to hold the knob, or if any one of the long plungers is pressed in it will engage the hub to hold the knob. The knob having been turned to withdraw the bolt, it is returned to its initial position to effect locking again.

It will be understood that the construction permits the tumblers and plungers to be shifted readily to change the combination and that any desired number of keys with their connections may be employed.

Having described my invention, I claim—

1. A permutation-lock comprising a stationary bearing having a hub thereon, a knob having a socket which receives and turns on said hub and a spindle which is received by and turns in said bearing, a set of tumblers connected with said hub and operating to hold said knob, and a set of plungers connected with said knob and acting in combination with said tumblers to disengage said knob, substantially as specified.

2. A permutation-lock comprising a stationary bearing, a knob having a spindle journaled in said bearing, a set of tumblers adapted to be reciprocated in sockets in said bearing, and a set of plungers adapted to be reciprocated in sockets in said knob and engage the sockets in said bearing, substantially as specified.

3. A permutation-lock comprising a stationary bearing, a knob having a spindle journaled in said bearing, a plurality of tumblers carried by said bearing, one or more of said tumblers normally engaging said knob, and a plurality of plungers carried by said knob, one or more of said plungers coacting with said tumblers to disengage the latter from said knob, substantially as specified.

4. A permutation-lock comprising a stationary bearing, a knob having a spindle journaled in said bearing, a plurality of sets of spring-pressed tumblers adapted to reciprocate in sockets in said bearing, and a plurality of sets of plungers adapted to reciprocate in sockets in said knob and press said tumblers into said sockets therefor, a set of said plungers being adapted for disengaging the engaging set of

said tumblers from said knob and a set of said plungers being adapted for engaging said bearing and holding said knob, substantially as specified.

5. A permutation-lock comprising a stationary sleeve-bearing having studs thereon for holding it, a knob having a spindle revoluble in said bearing, a set of spring-pressed tumblers adapted for reciprocating in said bearing and normally engaging said knob thereto and a set of plungers adapted for disengaging said tumblers from said knob, substantially as specified.

6. A permutation-lock comprising a stationary bearing having a hub thereon with radial sockets therein, tumblers supported by springs in said sockets, a knob revoluble on said hub and having radial sockets adapted for registration with the sockets in said hub, and plungers having limited movement in the sockets of said knob and adapted for pressing said tumblers inwardly against the action of their springs, substantially as specified.

7. A permutation-lock comprising a stationary bearing having a hub thereon with radial sockets therein, tumblers supported by springs in said sockets, a knob revoluble on said hub, said knob having a spindle revoluble in said bearing and radial sockets adapted for registration with the sockets in said hub, plungers movable in the sockets of said knob for pressing said tumblers inwardly against the action of said springs, and a bolt connected with said spindle, substantially as specified.

In testimony whereof I have hereunto set my hand, this 7th day of January, A. D. 1905, in the presence of the subscribing witnesses.

SAMUEL HERBERT MCVITTY.

Witnesses:

ED. F. WADDINGHAM,

WM. T. DINSMORE.