H. R. MITCHELL.

PERMUTATION LOCK.

APPLICATION FILED NOV. 17, 1910.

1,029,707. Patented June 18, 1912.

Fig. 1.

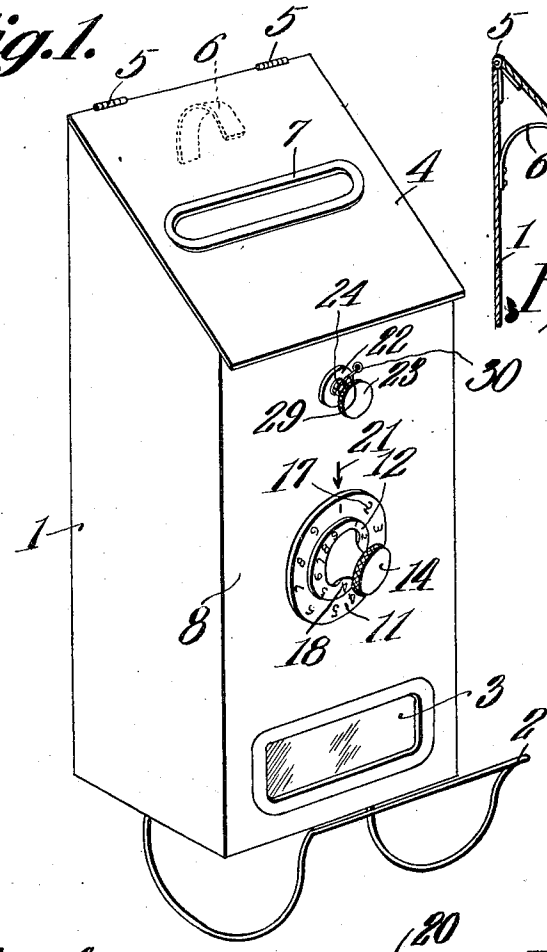


Fig. 2.

Fig. 3.

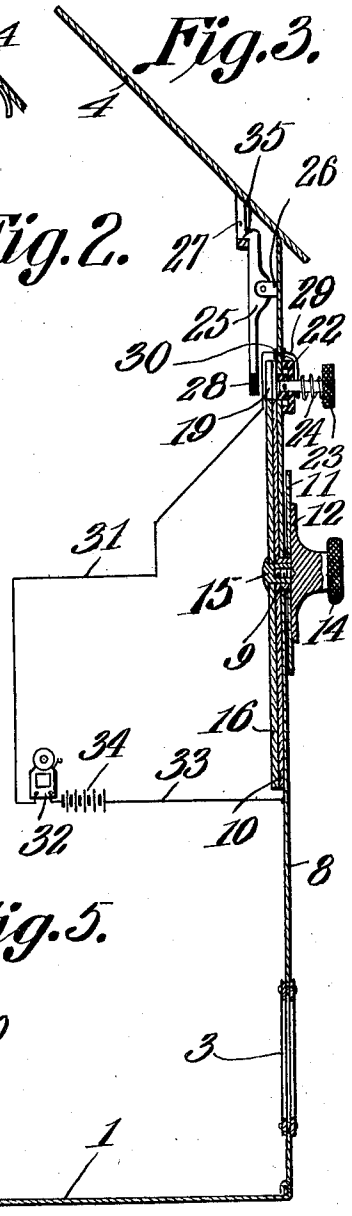


Fig. 4.

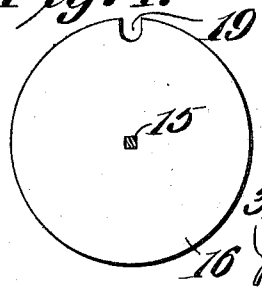


Fig. 5.

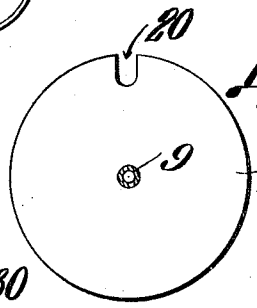
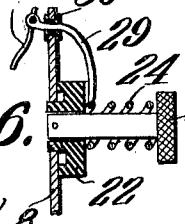


Fig. 6.



Witnesses

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PERMUTATION-LOCK.

1,029,707. Specification of Letters Patent. Patented June 18, 1912.

Application filed November 17, 1910. Serial No. 592,930.

To all whom it may concern:

Be it known that I, HARRY R. MITCHELL, a citizen of the United States, residing at North Yakima, in the county of Yakima and State of Washington, have invented a new and useful Permutation-Lock, of which the following is a specification.

The object of the present invention is, to provide a permutation lock so constructed that a pair of rotatable tumblers may be made effective as a means for preventing engagement between a manually operable push button and a lid-locking lever, both of which move in a plane at an angle to the plane of rotation of the tumblers.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings,—Figure 1 shows the invention in perspective; Fig. 2 is a fragmental vertical section of the box; Fig. 3 is a fragmental vertical section of the box, supplemental to Fig. 2; Fig. 4 is an elevation of one of the tumblers; Fig. 5 is an elevation of the other tumbler; and Fig. 6 is a sectional detail, enlarged from Fig. 3, and adapted to show one manner in which the releasing member may be made a terminal of the signal-operating circuit.

In the drawings, the box is denoted by the numeral 1, the box being provided upon its bottom with a package holder 2, and in its front wall with a transparent plate 3. The lid of box 1 is denoted by the numeral 4, this lid 4 being hinged, as shown at 5, to the box. The lid 4 is normally held open by means of a spring 6, one end of which is secured to the rear wall of the box 1, the free portion of the spring 6 bearing against the under face of the lid 4, so as to swing the lid 4 upwardly when the locking mechanism to be described hereinafter, is set free. In the lid 4 there is the usual slot 7 through which mail matter may be inserted into the box 1.

In the front wall 8 of the box 1, a collar 9 is rotatably mounted. The inner end of this collar 9 carries a tumbler 10, disposed within the box 1. The outer end of the collar 9 carries a dial 11 disposed on the outside of the box 1. Superposed upon the dial 11, is another dial 12, provided with a knob 14 whereby the dial may be rotated. This knob 14 is provided with a shaft 15 which extends through the collar 9, and is prolonged beyond the tumbler 10 which is secured to the inner end of the collar. To the inner end of this shaft 15, a tumbler 16 is secured. Characters, denoted generally by the numeral 17, are inscribed upon the outer face of the dial 11, while similar characters 18 are inscribed upon the outer face of the dial 12. In the periphery of the tumbler 16, is an opening 19. In the tumbler 10 there is an opening 20. When the tumblers 10 and 16 are rotated, these openings 19 and 20 may be alined, provided that a predetermined pair of the characters 17 and 18 be alined with an indicator mark 21 upon the forward face of the front wall 8 of the box 1.

The invention further includes a releasing member, in the present instance shown in the form of a push button 23, slidable in an insulating collar 22, secured to the front wall 8 of the box 1. This push button 23 is normally held in retracted position by means of a compression spring 24, located between the head of the push button 23 and the insulating collar 22. The push button 23 may be slid inwardly, through the alined openings 19 and 20 of the tumblers, to engage the insulated end 28 of a latch 25, pivoted upon a bracket 26, supported upon the front wall 8 of the box. The upper end of this latch 25 is hooked, to engage with the keeper 27, secured to the lower face of the lid 4. The upper edge of the latch 25 is rounded, as shown at 35, so when the lid 4 is swung downwardly into closed position, the keeper 27 will automatically engage with the hooked end of the latch 25. Obviously, the latch 25 and keeper 27 constitute a locking device for holding the lid 4 in closed position.

The manner of bringing the push button 23 into the electrical circuit whereby the signal is operated, may be varied. For instance, as clearly seen in Fig. 6, one end of the spring 24 which surrounds the push button 23 may, as shown at 29, be extended through an insulating collar 30 mounted in the forward wall 8 of the box. A conductor 31 may be united with the end 29 of the spring, this conductor 31 entering into an office or residence, and being connected with

a bell 32, which may be taken to be typical of any signal adapted to be operated electrically. Another conductor 33 leads from the bell 32 to the box 1, a battery 34 being interposed into the conductor 33, the battery being typical of any means for supplying electrical energy to the device.

The operation of the device is as follows: Referring to Fig. 3, wherein the lid 4 is shown in closed position, when it is desired to open the lid, the dials 11 and 12 are rotated, until a predetermined pair of the characters 17 and 18 are alined with the indicator mark 21. When these characters and the indicator mark 21 are alined, the openings 19 and 20 in the tumblers 16 and 10, respectively, will be alined with each other, and likewise alined with the push button 23. In such instance, the push button 23, when thrust inwardly, will pass through the openings 19 and 20, without touching the tumblers 16 and 10, the inner extremity of the push button 23 striking the insulated end 28 of the latch 25 and tilting the latch, until the hooked portion thereof is disengaged from the keeper 27. When the integrity between the latch 25 and the keeper is thus broken, the spring 6 will actuate the lid 4, so that the lid will fly open. Recalling that one terminal of the electrical circuit is the box 1 and the tumblers 10 and 16, the other terminal of the circuit being the push button 23, and recalling that the latch 25 is insulated as at 28, from the push button 23, it will be seen that when the box is opened legitimately, the bell 32 will not be operated. Supposing, however, that the lid 4 is in closed position, and that the tumblers 10 and 16 have been rotated so that the openings 20 and 19 are not in alinement, one or both of the openings 20 and 19 being likewise out of alinement with the path of movement of the push button 23. In such instance, should the push button 23 be thrust inwardly, the inner end of the push button will engage with one of the tumblers 10 or 16, closing the circuit, and operating the bell 32.

Having thus described the invention, what is claimed is:—

In a device of the class described, a box having a lid; dials mounted for independent rotation upon the box; tumblers connected with the dials and provided with openings adapted to be brought into registration by a rotation of the dials; a push button slidable in the box at an angle to the plane of rotation of the tumblers, and adapted to protrude through the openings in the tumblers, when the openings are alined; a lever fulcrumed upon the box, to swing at an angle to the plane of rotation of the tumblers, the lever engaging the lid to hold the lid closed, the lever being engageable by the push button, when the openings in the tumblers are alined, thereby to move the lever out of engagement with the lid.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HARRY R. MITCHELL.

Witnesses:
M. B. KINGSLEY,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."