L. L. KELLOGG.

COMBINATION PADLOCK.

APPLICATION FILED OCT. 31, 1908.

Patented Feb. 1, 1910.

947,994.

MODEL.

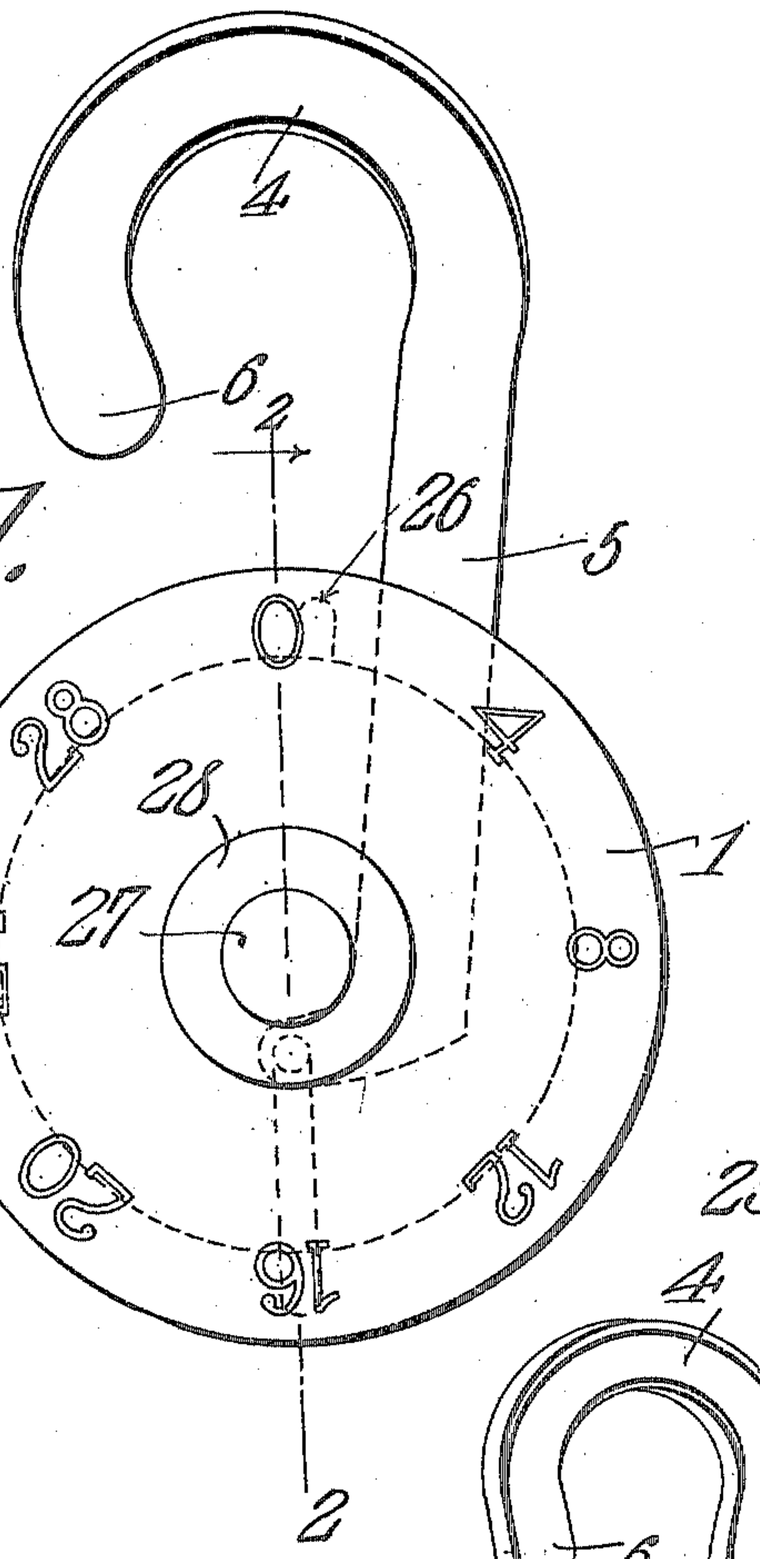

Fig. 1.

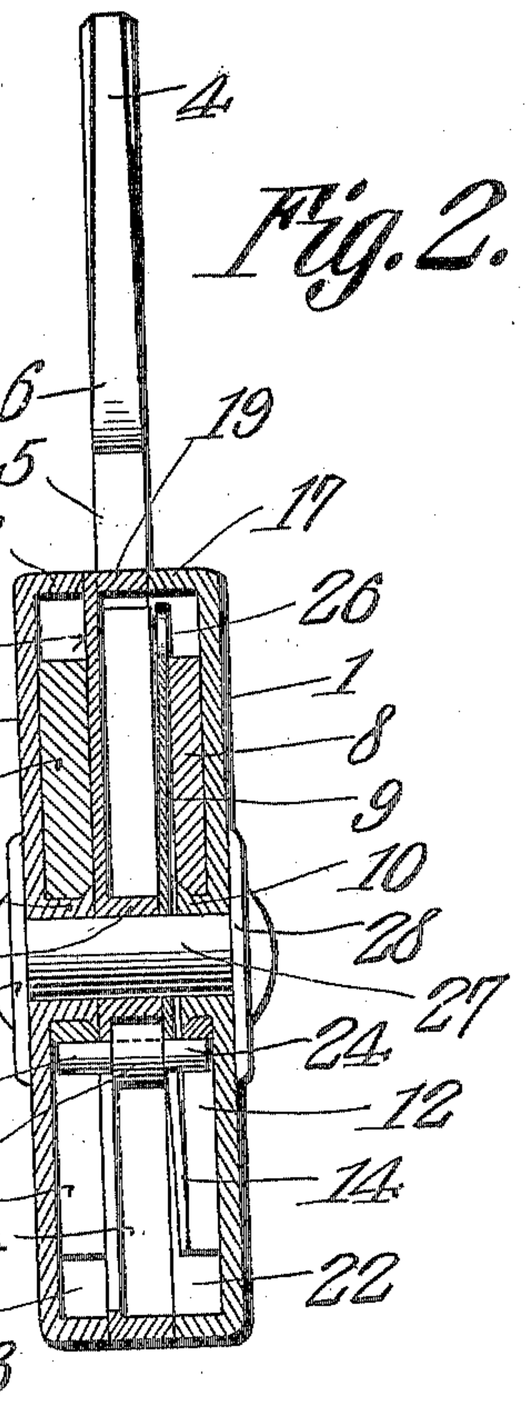

Fig. 2.

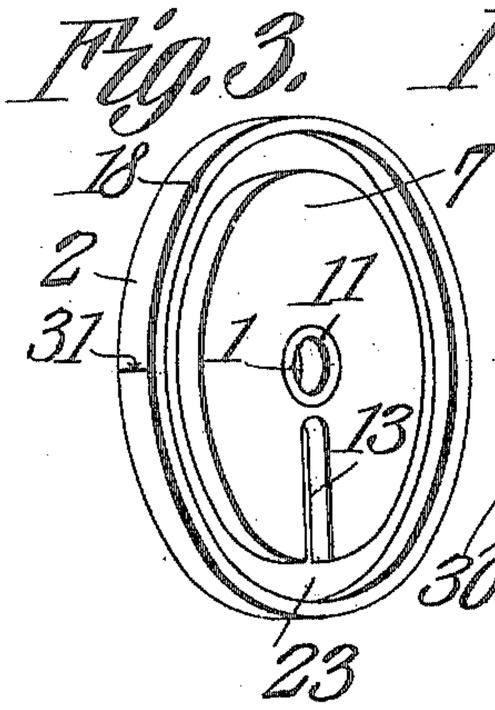

Fig. 3.

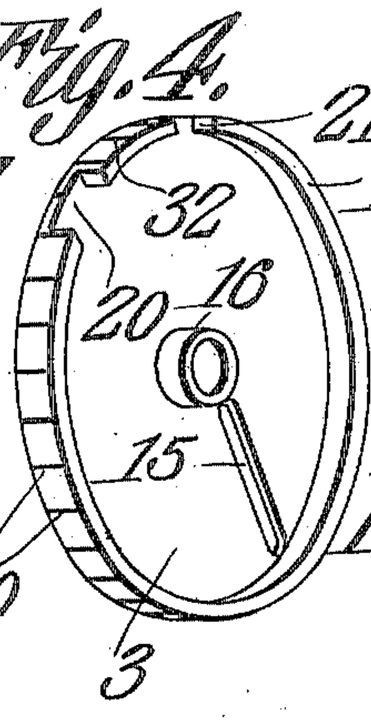

Fig. 4.

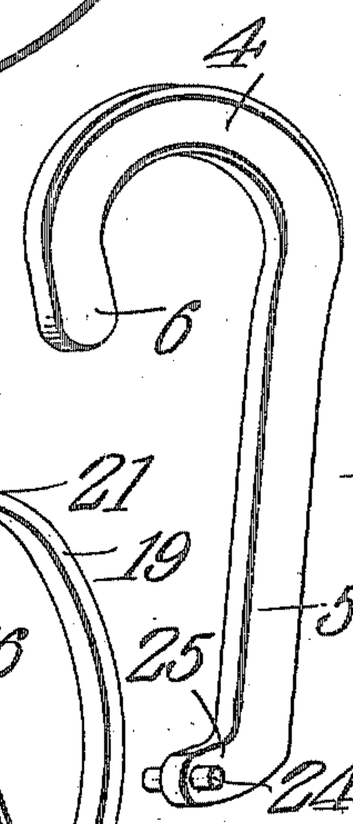

Fig. 5.

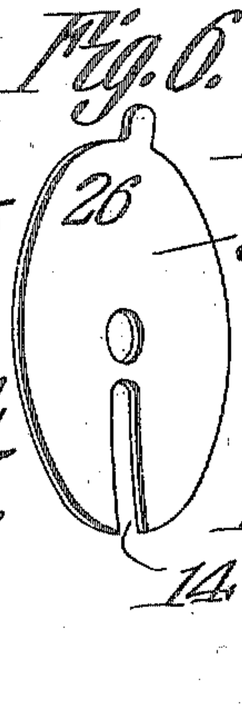

Fig. 6.

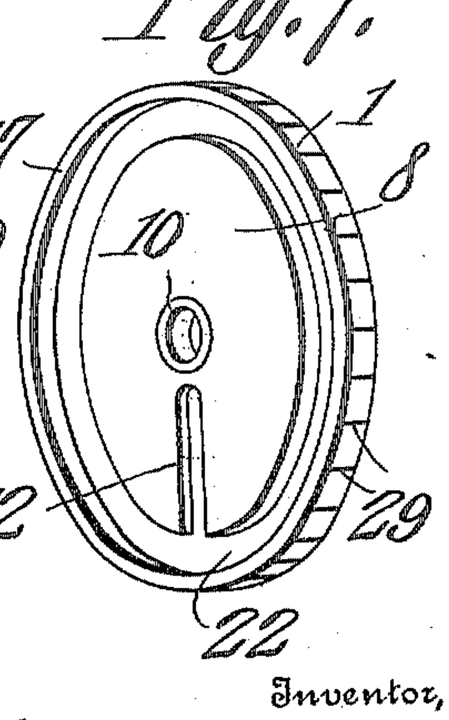

Fig. 7.

Witnesses:

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UNITED STATES PATENT OFFICE.

LUKE L. KELLOGG, OF FREDONIA, NEW YORK.

COMBINATION-PADLOCK.

947,994. Specification of Letters Patent. **Patented Feb. 1, 1910.**

Application filed October 31, 1908. Serial No. 460,468. (Model.)

To all whom it may concern:

Be it known that I, LUKE L. KELLOGG, a citizen of the United States, residing at Fredonia, in the county of Chautauqua and State of New York, have invented a new and useful Combination-Padlock, of which the following is a specification.

The object of the invention is to obviate the necessity of taking apart the lock when a change in the combination is desired, and also fully to conceal the tumblers at all times, thus to prevent any tampering with a view to securing the combination. Furthermore, to provide a padlock having the above characteristics, that shall be simple of construction, efficient and durable in use, and easy to manipulate when the combination is known, but otherwise practically proof against picking.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a permutation padlock, as will be hereinafter fully described and claimed.

In the accompanying drawings forming a part of this specification, and in which like characters of reference indicate corresponding parts, Figure 1 is a view in side elevation of a padlock constructed in accordance with the present invention, the shackle being shown as unlocked. Fig. 2 is a vertical transverse sectional view taken on the line 2—2 of Fig. 1, and looking in the direction of the arrow thereon. Figs. 3 to 7 inclusive are perspective detail views of different parts of the lock.

The lock embodies a front shell member 1, a back shell member 2, a shackle guide 3, a shackle 4, constructed with a long leg 5 and a short leg 6, two relatively fixed flat tumblers 7 and 8, and a loose dished tumbler 9. The tumblers 7 and 8 are secured to the shell members 1 and 2 by providing each of the latter with a hollow stud 10 and 11 respectively, that enter centrally disposed orifices provided in the tumblers, and have their ends upset flush with the latter, as clearly shown in Fig. 2. The bushing or upsetting of the studs will bind the two tumblers against the shell members with such tightness as to require considerable force to turn the members independently of the tumblers, and this will prevent any accidental change in the combination which might otherwise ensue. Each of the three tumblers is provided with an open-sided radial slot designated respectively 12, 13 and 14, and the shackle guide is provided with a closed-ended radial slot 15, designed to register with the three other slots when the tumblers are in position to release the shackle, as shown in Fig. 2, and with a centrally disposed hollow stud 16 against which the loose tumbler bears. The shell members and shackle-guide are cupped structures, and the rims 17 and 18 of the shell members project outward from their body portions a distance equal to the thickness of the tumblers 7 and 8, while the rim 19 of the shackle guide projects outward from its body portion a distance slightly greater than the thickness of the shackle, and is provided with two guides or recesses 20 and 21 in which freely work the legs of the shackle.

All three of the tumblers are of the same diameter, and their peripheries are spaced at such distance from the rims of the shell members and of the shackle-guide as to provide annular channels 22 and 23 to receive the tumbler-locking pin 24 of the shackle, which is carried by an angular extension 25 at the free end of the long leg thereof. The pin also serves to limit the rotation of the loose tumbler by co-action with a finger 26 projecting from the periphery thereof, for a purpose that will be described hereinafter.

The shell members, shackle guide, shackle and loose tumbler, are all held assembled by a spindle 27, the ends of which extend beyond the outer faces of the shell members and are upset and carry dished resilient washers 28 that bear against the members with sufficient force to prevent their turning too easily.

The front shell member is provided on its outer face with combination numerals ranged from zero or naught to twenty-eight in steps of four, and its rim 17 is provided with regularly spaced notches or indices 29 corresponding in number to, and co-acting with similar indices 30 on the shackle guide, while

the rim 18 of the back shell is provided with a single index 31 co-acting with the indices of the shackle guide and the front shell member.

To change the combination, say, for example, from 4—20—28 to 0—16—10, the shackle is moved to unlocked position, as shown in Figs. 1 and 2, and when thus shifted, all of the tumblers are positively locked or held against movement. The front shell member is now turned to bring naught opposite the index 32 between the guides 20 and 21 in the shackle guide rim, and this changes the combination of the front shell members to zero and 16, these two numbers being diametrically alined, and this selection in the arrangement of the numbers will always have to be observed, owing to the fact that the loose tumbler is moved only one-half a turn. The back shell member is now turned to bring the index 31 into alinement with the index on the front shell indicating 10, and this completes the setting of the combination. When the shackle is pushed in, and the shell members turned, the combination is broken.

To unlock, turn the front shell member twice to the left and stop at 16 opposite the index 32 on the rim of the shackle guide. This operation turns the loose tumbler and brings its finger 26 into engagement with the tumbler locking pin which holds it against further movement. The front shell member is now turned to the right one half a rotation to bring naught opposite the index 32, and finally the back shell member is turned to bring the index 31 opposite 10 on the front shell, and this will bring all of the tumbler slots into register, whereupon the shackle may be withdrawn.

By slightly dishing the tumbler 9 there will be sufficient frictional contact between it and the tumbler 8 to cause the latter to turn the former in the manner described.

What is claimed is:

1. A permutation padlock comprising cupped shell members, radially slotted frictionally restrained rotatable tumblers carried by the members and of less diameter than the same to provide annular channels with which the slots communicate, a shackle guide disposed between the members and provided with a radial slot, a radially slotted loose tumbler furnished with a peripheral finger in approximate alinement with its slot, a shackle mounted in the guide and provided with a tumbler-locking pin to engage all of the slots and the finger, and means for holding all of the parts assembled.

2. A permutation padlock comprising cupped shell members, radially slotted frictionally restrained rotatable tumblers carried by the shell members and of less diameter than the same to provide annular channels with which the slots communicate, a shackle guide disposed between the shell members and provided with a radial slot, a shackle mounted in the guide and arranged to engage all of the slots, and means for holding all of the parts assembled.

3. A permutation padlock comprising shell members, radially slotted rotatable tumblers, hollow studs frictionally uniting the shell members and the tumblers whereby the shell members may be rotated either with the tumblers or independently thereof, a radially slotted shackle guide located between the shell members, a shackle slidably mounted in the guide and arranged to engage the slot of the guide and to engage the slots of the tumblers to prevent rotation and to be held by said tumblers in locked position, and means for holding all of the parts assembled.

4. A permutation padlock comprising shell members, radially slotted rotatable tumblers, hollow studs frictionally uniting the shell members and the tumblers whereby the shell members may be rotated either with the tumblers or independently thereof, a radially slotted shackle guide located between the shell members, a shackle slidably mounted in the guide and arranged to engage the slot of the guide and to engage the slots of the tumblers to prevent rotation and to be held by said tumblers in locked position, and a spindle terminally mounted in the hollow studs.

5. A permutation pad-lock comprising shell members, radially slotted frictionally restrained rotatable tumblers carried by the shell members, a shackle guide disposed between the members and provided with a radial slot, a radially slotted loose tumbler having a peripheral finger in approximate alinement with its slot, a shackle mounted in the guide and arranged to engage all of the slots and the finger, and means for holding all of the parts assembled.

6. A permutation pad-lock comprising shell members, radially slotted rotatable tumblers, hollow studs frictionally uniting the tumblers with the shell members, a shackle guide disposed between the shell members and provided with a radial slot, a radially slotted loose tumbler provided with a peripheral finger in approximate alinement with its slot, a shackle mounted in the guide and arranged to engage all of the slots and the finger, and means for holding all of the parts assembled.

7. A permutation pad-lock comprising shell members, radially slotted rotatable tumblers, hollow studs frictionally uniting the tumblers with the shell members, a shackle guide disposed between the shell members and provided with a radial slot, a radially

slotted loose tumbler provided with a peripheral finger in approximate alinement with its slot, a shackle mounted in the guide and arranged to engage all of the slots and the finger, and a spindle terminally assembled with the studs.

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

LUKE L. KELLOGG.

Witnesses:
DOUGLAS C. ADAMS,
MARSHALL H. SHANNON.