

(No Model.)

2 Sheets—Sheet 1.

E. KAUFFELD.
COMBINATION PADLOCK.

No. 367,048.

Patented July 26, 1887.

FIG. 2.

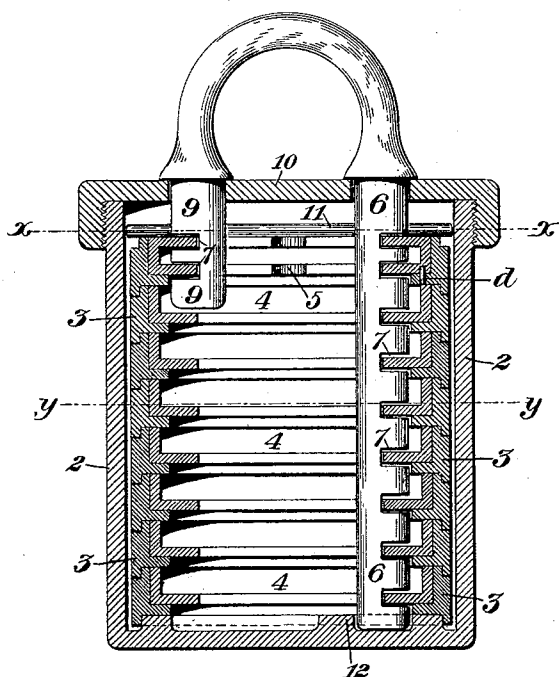


FIG. 1.

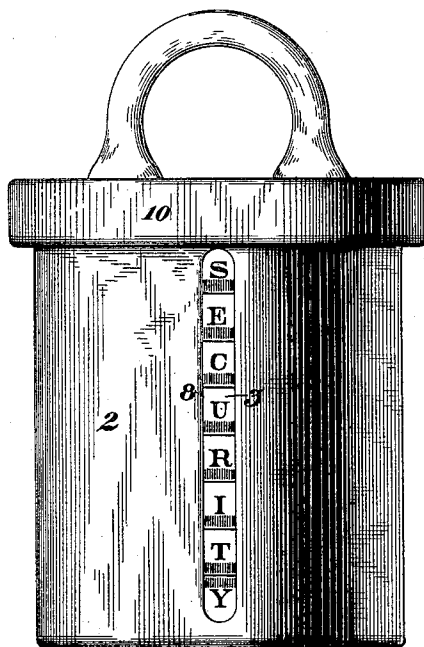


FIG. 3.

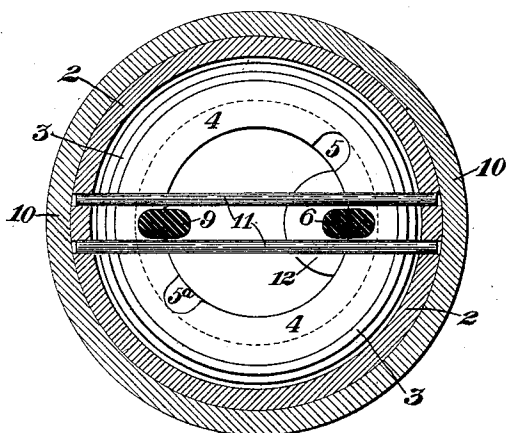
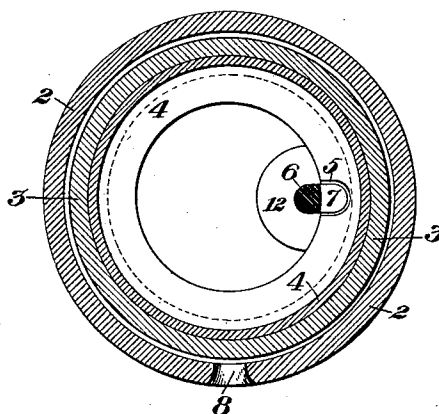


FIG. 4.



Witnesses

H. L. Gill.
W. P. Corwin

Inventor

Elias Kauffeld
by Baxwell & Kern
his Attorneys

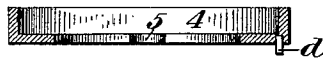
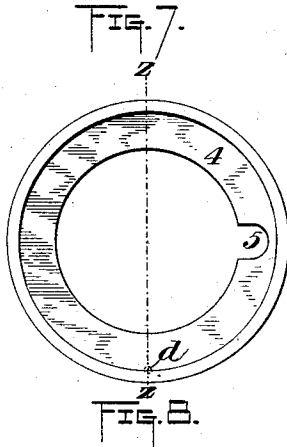
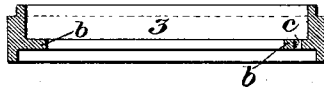
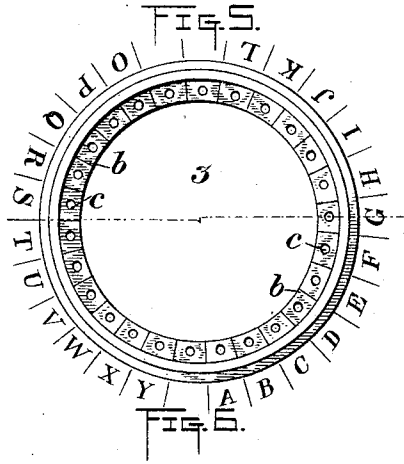
(No Model.)

2 Sheets—Sheet 2.

E. KAUFFELD.
COMBINATION PADLOCK.

No. 367,048.

Patented July 26, 1887.



Witnesses
H. L. Gill.
N. B. Corwin

Inventor
Elias Kauffeld
by Baxwell & Kern
his Attorneys

UNITED STATES PATENT OFFICE.

ELIAS KAUFFELD, OF PITTSBURG, PENNSYLVANIA.

COMBINATION-PADLOCK.

SPECIFICATION forming part of Letters Patent No. 367,048, dated July 26, 1887.

Application filed April 28, 1887. Serial No. 236,417. (No model.)

To all whom it may concern:

Be it known that I, ELIAS KAUFFELD, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Combination-Padlocks; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improvement in combination-padlocks, and is illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of the padlock. Fig. 2 is a vertical central section thereof. Fig. 3 is a horizontal cross section on the line $x x$ of Fig. 2. Fig. 4 is a horizontal cross-section on the line $y y$ of Fig. 2. Fig. 5 is a plan view of one of the outer rings, and Fig. 6 is a vertical cross-section of the same. Fig. 7 is a plan view of one of the inner rings, and Fig. 8 is a vertical cross-section of the same. Fig. 9 is a vertical cross-section of the top inner ring.

Like symbols of reference indicate like parts in each.

In the drawings, 2 represents the outer case of the lock, which consists of a cylindrical metal shell. Within this shell are a number of loose rings, 3, nesting upon each other and each having an inwardly-projecting flange, b . Seated on the flange b of these outer rings, 3, are inner rings, 4, preferably L-shaped in cross-section. Each inner ring, 4, has cut in its horizontal part a slot or notch, 5, which, when all are in line with each other, affords a continuous vertical hole or passage for one leg, 6, of the hasp of the padlock. This leg 6 has a number of notches or slots, 7, arranged to register in position with the horizontal portions of the inner ring, 4, when the hasp is set in the lock. The outer rings, 3, are graduated into a number of divisions, which are numbered or lettered, or both, in any suitable way—say according to the letters of the alphabet—and at the position of each letter the flange b of the ring is provided with a pin-hole, c , Fig. 5. At a line, say, ninety degrees from the position of the leg 6 of the hasp, the case 2 has a vertical slot, 8, which exposes the lettering on the outer sides of the rings 3 as the rings are turned around in the case to bring the letters opposite to the slot, and at the same arc of ninety degrees from the slot 5 each inner ring, 4, has a pin, d , made in its horizontal part. The shorter leg 9 of the hasp has in its side two

notches, 7, made to engage the horizontal flanges of the uppermost ring 4, which for this purpose is made of U form in cross section, 55 and has two of these flanges, though this is not necessary. The flanges of this top ring have slots 5, made diametrically opposite to the slots 5 of the same ring. The top of the case is covered by a screw-cap, 10, having two holes for 60 the passage of the legs 6 and 9 of the staple.

In the drawings I show the lock having eight of the inner rings, 4. This permits a combination composed of eight characters. Suppose it is desired to set the parts of the lock so that 65 the combination shall be represented by the word "security," the top ring of the inner series of rings, 4, is moved until its pin d registers with the pin-hole c at the mark S of that ring, and the pin is put through that hole to 70 confine the rings together. The second ring 4 is fixed to its seat-ring 3 by a pin, d , which passes through one of the holes c in the ring 3, which is at the mark E. So the third rings are pinned together at the mark C, the fourth 75 rings at U, the fifth rings at R, the sixth rings at I, the seventh rings at T, and the eighth rings at Y. Now, if all these rings so joined together be moved relatively to each other, so that these letters, forming the word "security," 80 shall be in the same vertical line—say in front of the slot 8—the slots 5 will also be in line with each other, because, as stated above, these slots are all equidistant from the pins d . When the slots 5 are thus in line, the staple 85 can be drawn out of the padlock-case and the padlock is said to be unlocked. If, however, the rings be turned within the case so that the letters named shall not be opposite the slot 8, the staple cannot be withdrawn, for the notches 7 of the leg 6 will engage the rings 4, and until 90 all the letters are again brought in their proper order before the slot 8 the slots 5 will not coincide and the staple cannot be withdrawn. The rings are thus turned by means 95 of a knife-blade or any other instrument inserted through the opening 8 in the case. The periphery of the outer rings, 3, extends below the flange b , forming a downward flange, and has in it an annular groove at the top, into 100 which the downward flange of the ring above fits snugly. No instrument can thus be inserted between the rings, nor can the position of the pin d , connecting the inner and outer

rings, be ascertained. It is this feature of the lock which distinguishes it from prior devices, and it is in this that my invention consists.

It is practically impossible that the lock should be opened by any one unfamiliar with the combination, because each ring is capable of as many different adjustments as there are characters on it, (twenty-six in the arrangement above described,) and these characters may be arranged to form a very large number of different combinations of eight letters each. Of course the number of characters on the rings may be varied, and the number of rings may be more or less than I have shown; but in all cases it is necessary to preserve the same principle of employing slotted rings having characters set or adapted to be set at determined distances from the slots equal to the distance between the opening S and the position of the hasp, so that when the proper characters are brought in front of the opening S all the slots in the rings shall register and afford an unobstructed passage of the leg of the staple.

Equivalent mechanism may be substituted in place of the pins *d* to adjustably confine the rings 3 and 4 together, and the form of the opening 8, whose function is to afford a mark for the desired characters of the combination, may also be changed.

In order to prevent unscrewing of the cap 10, I show two devices in the drawings, either or both of which may be employed. These consist of two rods, 11, which extend across the inside of the case 2, between which the legs of the staple pass, and a socket, 12, at the bottom of the case, into which the leg 6 fits. Either of these devices will prevent the turning of the staple, and consequently the turning of the screw-cap.

I claim—

In a padlock, the combination, with the case and a staple, of outer rotary L-shaped rings set in the case, having downwardly-extending flanges, corresponding grooves on their peripheries, and inwardly-extending flanges *b*, inner rotary L-shaped rings, 4, adapted to fit within the outer rotary rings and to rest on said flanges *b* thereof, and pins whereby the outer and inner rings are locked together, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 12th day of April, A. D. 1887.

ELIAS KAUFFELD.

Witnesses:

W. B. CORWIN,
THOMAS W. BAKEWELL.