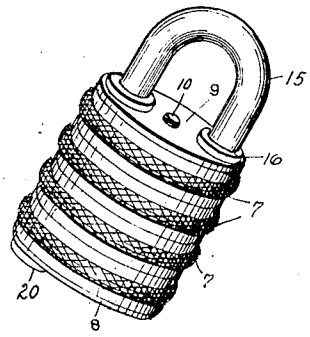
No. 892,941. PATENTED JULY 7, 1908.

J. J. DEAL.

COMBINATION PADLOCK.

APPLICATION FILED NOV. 6, 1907.

Fig. 1.



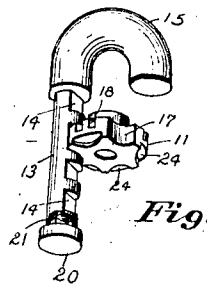


Fig. 2.

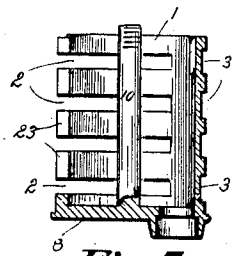


Fig. 3.

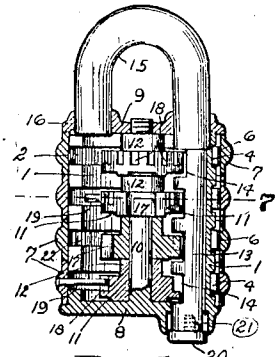


Fig. 4.

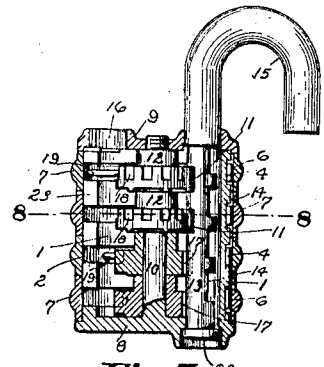


Fig. 5.

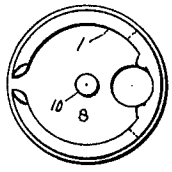


Fig. 6.

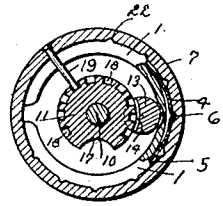


Fig. 7.

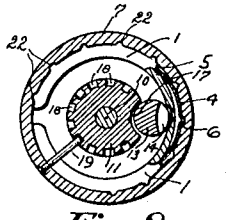
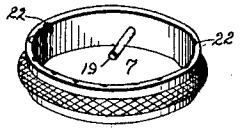


Fig. 8.

Fig. 9.



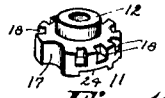


Fig. 10.

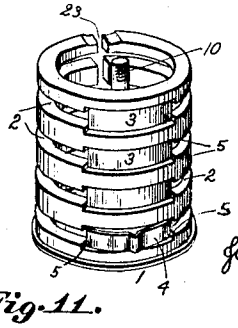


Fig. 11.

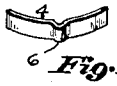


Fig. 12.

Witnesses

Harry C. Rastetter.

Sylvia Boron.

Inventor

Josiah J. Deal.

By F. W. Bond

Attorney

UNITED STATES PATENT OFFICE.

JOSIAH J. DEAL, OF CANTON, OHIO.

COMBINATION-PADLOCK.

No. 892,941. Specification of Letters Patent. Patented July 7, 1908.

Application filed November 6, 1907. Serial No. 400,958.

To all whom it may concern:

Be it known that I, JOSIAH J. DEAL, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Combination-Padlocks; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, making a part of this specification, and to the numerals and figures of reference marked thereon, in which—

Figure 1 is a perspective view of the lock showing the shackle in locked position. Fig. 2 is a view showing the shackle and one of the locking disks in relative position when the locking disk is held against rotation. Fig. 3 is a sectional view of the lock body or casing. Fig. 4 is a section showing the different parts properly arranged and the shackle locked. Fig. 5 is a section showing the different parts properly arranged and the shackle released. Fig. 6 is a top view of the lock body or casing. Fig. 7 is a section on line 7—7, Fig. 4. Fig. 8 is a transverse section on line 8—8, Fig. 5. Fig. 9 is a detached view of one of the computing rings. Fig. 10, is a detached view of one of the locking disks. Fig. 11 is a perspective view of the lock body or casing. Fig. 12 is a detached view of one of the springs.

The present invention has relation to combination pad locks and it consists in the novel arrangement hereinafter described and particularly pointed out in the claims.

Similar numerals of reference indicate corresponding parts in all the figures of the drawing.

In the accompanying drawing, 1 represents the lock body or what might be termed the inner casing, which body is substantially of the form shown in Fig. 11 and as shown it is provided with a series of slots 2 and recesses or chambers 3, said recesses being formed of a depth less than the thickness of the shell constituting the body of the lock, by which construction a sufficient amount of metal is provided to constitute an integral shell or body. Within the recesses or chambers 3 are located the springs 4, which springs are curved as illustrated in the drawings, and the ends of said springs come in contact with the shoulders 5, when said springs are depressed or forced toward the backs of the chambers 3. The springs are depressed by reason of the ribs 6 coming in contact with the inner peripheries of the various computing rings 7.

The rings 7 are placed upon the body 1 as best illustrated in Fig. 1 and are held in position by means of the end plates 8 and 9. The end plate 8 is preferably formed integral with the lock body or shell 1 and the opposite end plate 9 held against displacement by means of the rod or bar 10, said bar 10 being connected to the plate 9 in any convenient and well known manner and may be formed integral with the plate 8 if desired or may be made separate and attached. Upon the rod or bar 10 are located a series of locking disks 11, which locking disks are held in proper spaced relationship with reference to each other, by reason of the flanges 12. At one side of the locking disks 11 is located the shackle-bar 13, which shackle-bar is provided with the notches 14, which notches are spaced to correspond with the spaced locking disks 11, and when the shackle 15 is seated in the aperture 16 as illustrated in Fig. 4, the shackle and its integral bar will be held against movement at all times, except when all of the master notches 17 formed in the locking disks 11 are brought into alinement with the notches 14. The locking disks 11 are provided with a series of notches 18, which notches are for the purpose of engaging the inner ends of the various pins 19, which pins are secured to the computing rings 7, and when the rings are rotated the pins 19 will rotate the locking disks 11. The pins 19 secured to the rings 7 are located through the slots 2 and when the rings are rotated the given pin will come in contact with the end of the given slot 2, and the ring held against rotation in one direction, but free to move in the opposite direction until the given pin is engaged or brought into contact with the shoulder at the opposite end of the slot 2 or in other words the rings can move only a distance equal to the length of the slots 2. Each pin 19 may be set in a different notch or recess 18. In use the locking disks 11 are all brought into the position so as to bring the master notches 17 into alinement with reference to the bar 13, at which time the bar can be moved endwise and then turned, said bar being limited as to its endwise movement by reason of the head 20, which head strikes against the plate 8. In use said head should be detachably connected by means of the screw

21 so that the parts can be properly assembled. When it is desired to bring the disks 11 in position to lock the shackle and its integral bar against movement, the various rings 7 are rotated so as to hold the master notches 17 out of alinement with the shackle-bar 13, at which time there can be no end movement, owing to the fact that a portion of each locking disk will be seated in the notches 14.

For the purpose of producing a clicking movement so as to count the combination the notches 22 are provided, which notches are formed on the inner peripheries of the rings 7, and when said notches pass over the ribs 6 a clicking is produced. It will be understood that in order to commence the counting of a given combination the computing rings 7 will be moved into the proper position with reference to their particular combination, and in order to do this the pins 19 must be set against the ends of the slots 2.

For the purpose of providing a means for assembling the various computing rings 7 as illustrated in Fig. 1 the body or casing 1 is provided with the opening or what might be termed the passage ways 23, which passage way permits the pins to move with the computing ring during the time the parts are assembled. It will be understood that when it is desired to change the combination the various rings can be detached when the plate 9 is removed.

For the purpose of holding the locking disks against rotation each locking disk is provided with the recesses 24, into which recesses the lower walls of the notches 14 are set and before there can be any rotation of the locking disks 11 the walls of the notches 14 must be disengaged from the recesses 24, and in order to do this the body of the lock is lifted up when it is suspended or the outer end of the shackle abutted against some object, by which a slight end movement is given to the shackle-bar 13, after which the locking disk can be rotated.

Having fully described my invention what I claim as new and desire to secure by Letters Patent, is—

1. In a combination pad-lock, the combination of an inner casing, a series of rings rotatably mounted upon the casing, said casing provided with a series of chambers and slots, pins secured to the rings, locking disks provided with a series of notches and master notches, a shackle bar adapted to move endwise when released, said shackle bar provided with a series of notches, adapted to engage a portion of the peripheries of the locking disks and springs provided with ribs located in the chambers of the casing said ribs adapted to engage the recesses in the inner peripheries of the rings, substantially as and for the purpose specified.

2. In a combination pad-lock, the combination of a casing provided with a series of chambers and slots, a series of locking disks located within the casing, said locking disks spaced from each other and provided with a series of notches and a series of recesses, rings located upon the case and independently rotatable, said rings provided with pins located through the slots in the casing, said pins adapted to engage a predetermined notch of each of the series of locking disks, a shackle bar provided with notches adapted to receive a portion of the peripheries of the locking disks and the locking disks provided with master notches, springs located in the chambers formed in the casing, said springs provided with ribs, and the rings provided with notches adapted to engage the ribs of the springs, substantially as and for the purpose specified.

3. In a combination pad-lock, the combination of a casing provided with a series of slots and chambers and a longitudinal slot, a series of locking disks located within the case, said locking disks spaced from each other and provided with a series of notches, rings located upon the case and independently rotatable, said rings provided with pins, said pins adapted to engage a pre-determined notch of each of the series of lock disks, a shackle bar provided with notches adapted to receive a portion of the peripheries of the locking disks and said locking disks provided with master notches, springs located in the chambers formed in the casing, said springs provided with ribs and the rings provided with notches adapted to engage the ribs of the springs, substantially as and for the purpose specified.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

JOSIAH J. DEAL.

Witnesses:
J. A. JEFFERS,
F. W. BOND.