D. L. LAWSON.

COMBINATION PADLOCK.

APPLICATION FILED OCT. 31, 1910.

995,879. Patented June 20, 1911.

Fig. 1.

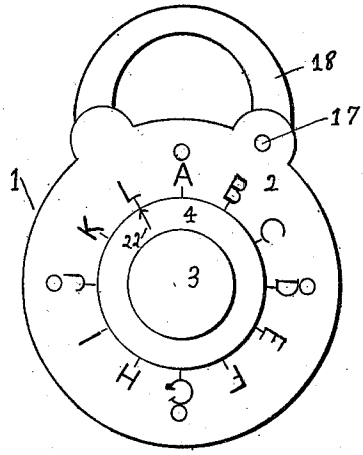


Fig. 2.

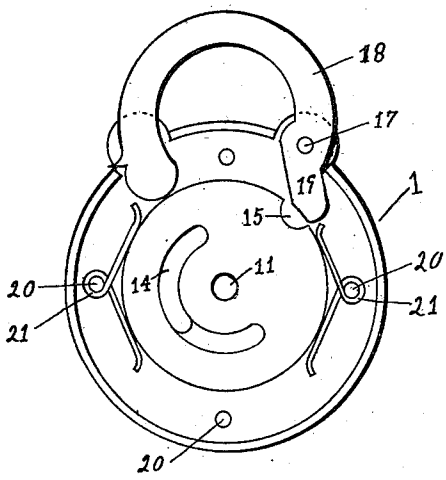


Fig. 4.

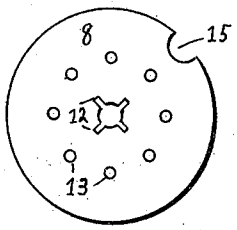


Fig. 3.

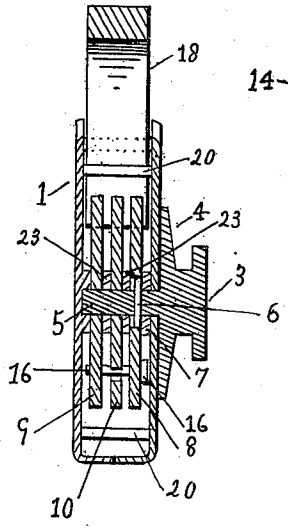


Fig. 5.

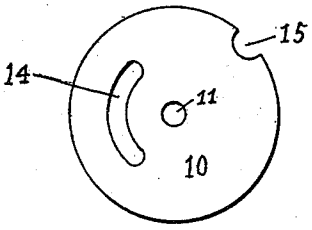
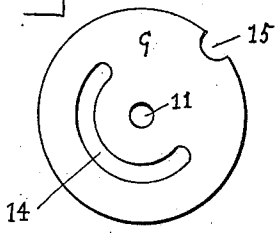


Fig. 6.



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COMBINATION-PADLOCK.

995,879. Specification of Letters Patent. Patented June 20, 1911.

Application filed October 31, 1910. Serial No. 589,842.

To all whom it may concern:

Be it known that I, DANIEL L. LAWSON, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Combination-Padlock, of which the following is a specification.

This invention relates to an improvement in combination padlocks.

The object of my invention is to produce a keyless padlock which may be easily and quickly operated by one who knows the combination, thus doing away with the necessity of a separate detachable key.

A further object is to produce a padlock involving a construction that is exceedingly simple, reliable in operation, that may be cheaply constructed, and that will be strong and durable.

A further object is to provide a construction in which the combination can be easily and quickly changed.

I accomplish these results by the novel construction illustrated and set forth in the accompanying drawings and specification, and more fully pointed out in the claims.

In the drawings Figure 1, is a front elevation. Fig. 2, is a front view, with a portion of the casing and the primary tumbler removed to show the construction. Fig. 3, is a vertical, transverse section, on an enlarged scale. Figs. 4, 5 and 6 are views of the tumblers.

Similar reference numerals designate like parts in the several views.

Referring to the drawings, 1 designates the casing, that may be of any desired construction, but is preferably formed in two sections, that may be drawn from sheet metal secured together by suitable means, such as rivets 20. A dial 2, consisting of an annular series of characters, is arranged on the face of the casing. The dial may be stamped direct on case. A knob 3, provided with a disk 4, is adapted to rotate on the face of the case 1, within the dial 2. The knob 3 is provided with a stem, or spindle, 5 adapted to extend through the casing, being held in position by means of a pin 6 positioned transversely through the stem, just within the casing. A washer 7 may be placed between the pin and the casing to prevent friction. A series of tumblers 8, 9, and 10, provided with central perforations 11, adapted to fit on the stem 5, are each provided with peripheral recesses 15. The primary, or driving tumbler 8 is provided with an annular series of perforations 13, arranged between the central perforation and the periphery; and with a series of radial slots 12 adapted to fit over the pin 6. The tumblers 9 and 10 are adapted to turn freely on the stem 5 and are each provided with an annular slot 14 that coincides with the perforations 13, in the tumbler 8, the slots in the different tumblers varying in length. A pin 16 is adapted to fit in the perforations 13, in the primary tumbler 8, and is long enough to extend through the slots 14 in the other tumblers, engaging with the ends thereof for the purpose of shifting them varying distances to bring the peripheral recesses 15 into alinement. Secured in the upper part of the casing, by a pivot 17, is a shackle 18 provided with an extension 19 adapted to bear on the periphery of the tumblers, when the shackle is in the closed position, and prevent the opening thereof until the recesses 15 are brought into alinement and registry with said extension. Springs 21, disposed around the rivets 20, bear on the periphery of the tumblers and serve as brake therefor. Washers 23 are placed between the tumblers to reduce friction.

The operation of the lock may now be understood. The lock being closed, the knob 3 is rotated, say to the right hand, as it rotates it carries with it the primary tumbler 8, by reason of the pin 6, in stem 5, engaging therewith, the pin 16 projecting through the primary tumbler 8 and the slots 14 in the other tumblers, engages first with the tumbler having the shortest slot and carries it along, then with the tumbler having the longer slot, when the tumblers have all been "picked up" and are rotating in unison with the knob, the knob is stopped with the pointer 22, on the disk 4, pointing to the character, on the dial, that indicates, to the operator, that the recess 15 in the tumbler having the longest slot is in registry with the extension 19, on the shackle 18. The knob is then turned in the opposite direction, the pin 16 coming in contact with the end of the short slot and carrying that tumbler along until the pointer 22 indicates that the recess of said tumbler is in registry with the extension 19. The knob is then reversed, and turned until the pointer 22 indicates that the recess on the primary tumbler is in registry with the extension 19. The re-

cesses now being in alinement and in registry with the extension 19 the shackle may be opened, the extension 19 entering the recesses. The entrance of the extension 19 into the recesses prevents any shifting of the tumblers while the lock is open. Closing the shackle and giving the knob a turn in either direction will throw the recesses out of alinement and the lock will be secured until the combination is again manipulated. The combination may be changed by shifting the tumbler 8 so as to fit different ones of the radial slots 12 over the pin 6, or by shifting the pin 16 in the holes 13.

It will be seen that I have provided a cheap, and efficient, padlock, doing away with the necessity, and annoyance, of having to provide several persons with a key, and the consequent liability of loss of keys.

Having thus described my invention, so that any one skilled in the art pertaining thereto may make and use the same I claim,—

1. A combination padlock, comprising a casing, a rotatable stem, a shackle, a transverse retaining pin through said stem, a tumbler adjustably positioned on said stem by means of radial slots adapted to fit over said pin, a plurality of tumblers loosely mounted on the stem, and frictional means supported by the casing and bearing on the tumblers.

2. In a padlock, a casing, a shackle, spaced tumblers mounted for rotation within the casing and provided with peripheral recesses adapted to register with each other, a stem for rotating one of said tumblers, said stem retained in place by a transverse pin therethrough, a tumbler provided with radial slots to engage said pin, a tumbler provided with a segmental slot and a pin carried by said first named tumbler and adapted to engage in said slot for rotating said tumbler thereby to aline the several recesses and permit the movement of the shackle.

3. In a padlock, a casing, a shackle provided with an extension, spaced tumblers mounted for rotation within the casing and provided with peripheral recesses adapted to aline with each other and receive said extension, a knob provided with a stem extending through said casing, and retained in place by a transverse pin in said stem, one of said tumblers provided with radial slots to engage said pin, others of said tumblers provided with segmental slots of varying length and a pin carried by said first named tumbler and adapted to engage in said segmental slots for rotating said tumblers, thereby to aline the several recesses and permit said extension to enter therein.

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