

J. JUNKUNG.

LOCK.

APPLICATION FILED MAY 25, 1909.

948,280.

Patented Feb. 1, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

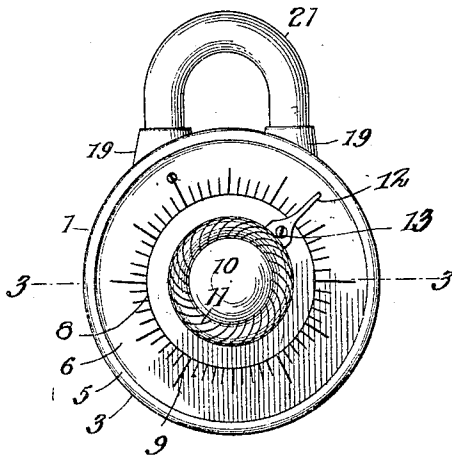


Fig. 2.

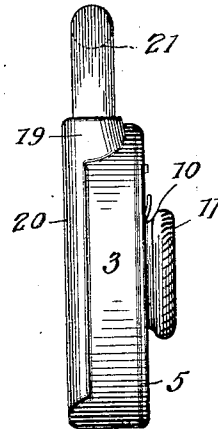


Fig. 3.

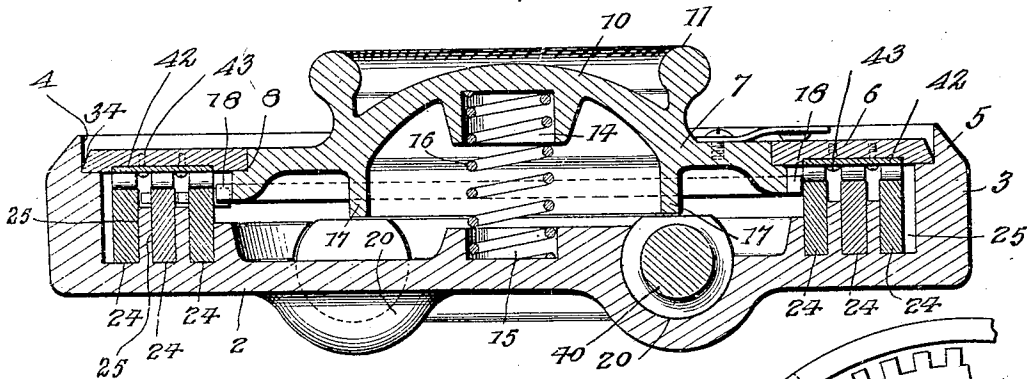


Fig. 7.

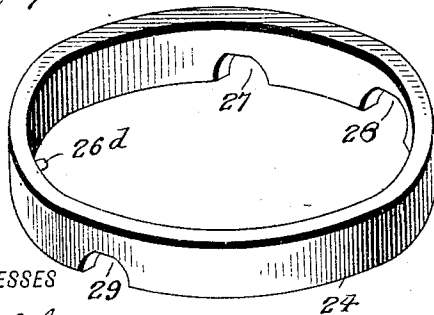
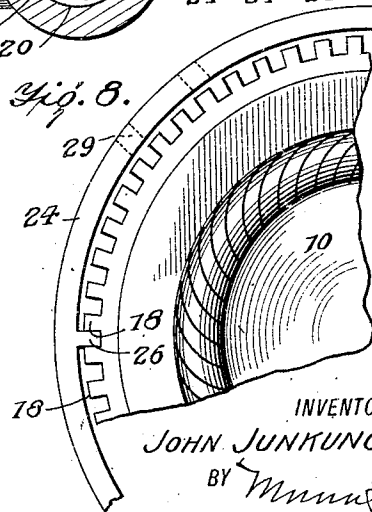


Fig. 8.



WITNESSES

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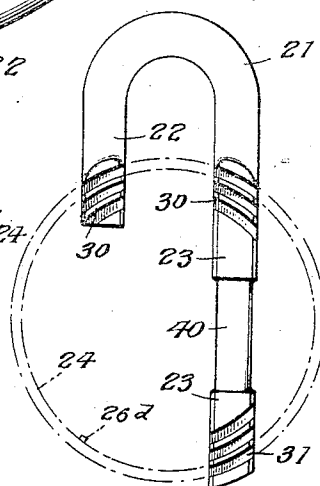
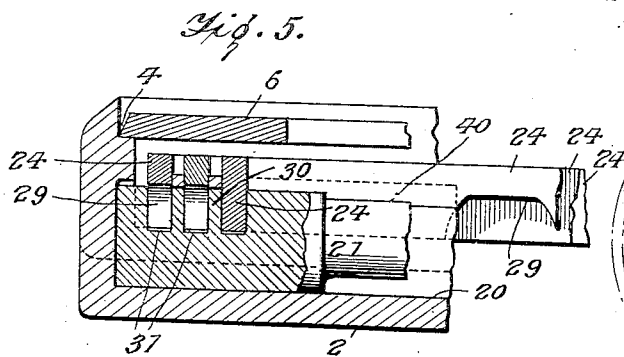
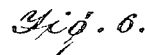
BY *Munn & Co.*

ATTORNEYS

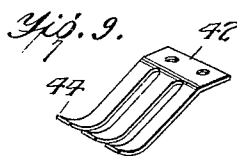
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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LOCK.

948,280.

Specification of Letters Patent.

Patented Feb. 1, 1910.

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To all whom it may concern:

Be it known that I, JOHN JUNKUNC, a citizen of the United States, residing at Pocatello, in the county of Bannock and State of Idaho, have made certain new and useful Improvements in Locks, of which the following is a specification.

My invention is an improvement in locks and consists in certain novel constructions and combinations of parts hereinafter described and claimed.

The object of the invention is to provide a combination padlock, of simple and cheap construction, which will be strong and durable, and not liable to get out of order easily, and in which the combination may be easily changed.

Referring to the drawings forming a part hereof, Figure 1 is a front view of the lock, Fig. 2 is a side view, Fig. 3 is an enlarged section, on the line 3—3 of Fig. 1. Fig. 4 is an enlarged plan view of the inside face of the case. Fig. 5 is a partial transverse section of the back. Fig. 6 is a front view of the locking bar. Fig. 7 is a perspective view of a locking ring. Fig. 8 is a detail view of a portion of the disk, and Fig. 9 is a perspective view of the spring plate.

The embodiment of the invention shown in the drawings consists of a substantially cylindrical casing, comprised of a front 1 and a back 2, the back being provided with an annular marginal flange 3, provided in its inner edge with a bezel 4, the outer edge being inclined as shown at 5.

The front is composed of a ring 6, and a disk 7, the edge of the disk being rabbeted as shown at 8, for receiving the inner edge of the ring, and the said inner edge is provided with graduations 9 for a purpose to be presently described.

The disk is provided with a central boss 10, and at the edge of the boss with an annular lateral flange, forming a handle 11 which is corrugated as shown, and a pointer 12 is secured to the disk by a screw 13, for co-operating with the graduations of the ring, and the outer edge of the ring rests in the bezel 4 before mentioned.

The under face of the boss is provided with an internally projecting recessed seat 14, and the back with a similar seat 15, and a coil spring 16 has its ends received in the seats. The under or inner face of the disk is also provided with an annular flange 17 concentric with the seat, and the edge of the

disk below the ring is provided with an annular series of radial teeth 18 for a purpose to be presently described.

The back 2 is provided on one side with spaced laterally projecting hubs or bosses 19, and with transverse parallel grooves 20 which register with the openings through the bosses, for receiving the ends 22 and 23 of the yoke shaped locking bar 21, one of said ends 22 being of greater length than the other, and extending entirely across the case as shown.

The inner face of the back 2 of the case is provided with a series of spaced concentric annular grooves 25, and in each of the grooves a locking ring 24 is movable. Each of the rings is provided with one or more radially extending pins, which pins are adapted to engage each other when the rings are turned.

The inner ring is provided with an internal pin 26 and an external pin 26^a, and the second ring is also provided with internal and external pins 26^b and 26^c respectively, while the outer ring is provided with an internal pin 26^d.

The rings are rectangular in cross section, and are arranged with their longest dimensions vertically so that the upper edges thereof extend above the grooves, and each ring is provided on its lower edge with a plurality of recesses 27—28 and 29, for a purpose to be presently described.

The arms 22 and 23 of the locking bar, are each provided with a series of grooves near their junction with the body portion, for engagement by the rings, and the arm 23 is provided at its free end with another series 31 for engagement by the rings, it being understood that the said arm extends entirely across the case and engages the rings at two points.

The recesses 27, 28 and 29 are so arranged with reference to the rings, that when the rings are brought into proper position, the recesses will register with the arms, and permit the locking bar to be withdrawn, while when not in such position, the engagement of the edges of the rings with the grooves locks the bar in place.

It will be observed, that the spring 16 retains the disk in the position shown in Fig. 3, with the rabbeted face of the edge of the disk in close engagement with the inner edge of the ring, and that when in such position, the pin 26 of the inner ring is in engage-

ment between two adjacent teeth of the annular series. When now the disk is turned by means of the handle 11, the inner ring revolves therewith, and when turned far enough to bring the pin 26^a into engagement with the pin 26^b of the second ring the said second ring also revolves. A similar movement of the third ring results, when the pin 26^c of the second engages the pin 26^d of the third. By moving the disk in accordance with a prearranged and known formula, the rings may be brought into such position that the recesses 27, 28, and 29, of each ring are in register with the arms of the locking bar, thus freeing the same and permitting it to be withdrawn. By depressing the disk against the resistance of the spring to disengage the lock from the pin 26, the disk may be turned to engage the pin between other teeth. The disk can however only be depressed when the locking bar is withdrawn, since when the bar is in place, the flange 17, by its engagement with the bar, prevents such movement.

By the above described arrangement, the combination may be changed, and should any one attempt to discover the combination by bringing the recesses into register, with the bar withdrawn, such attempt would be thwarted, since the combination would not answer after the disk was returned to its first position.

It will be understood that the proper placing of the rings to bring the recesses into register with the arms of the locking bar is indicated by the graduations on the ring, which graduations serve the purpose of a dial.

The above described lock, it will be evident from the description, is exceedingly strong against external violence, on account of its shape, is devoid of complicated mechanism, and may be cheaply constructed. Neither is it liable to get out of order easily, and the parts are easily replaced should they become broken.

The ring 6 which retains the parts in place, may be secured to the flange in any suitable manner, and as shown it is sprung into the bezel, the free edge of the ring being beveled as at 34 to permit this operation.

The long arm 23 of the locking bar 21 is turned as shown to form a reduced portion 40, and the upper and lower faces of the arm are flattened as at 41. This construction is for preventing the entire withdrawal of the locking bar from the case, the ends of the reduced portion engaging flange 17 to limit the movement of the bar.

A spring plate 42 is secured to the under face of the ring 6 by means of screws 43 at opposite sides thereof, and the plate is provided with fingers 44, corresponding in number to the number of the rings, and the fin-

gers engage the rings for retaining them in the grooves.

I claim:

1. A lock comprising a cylindrical case, consisting of a back provided with concentric spaced annular grooves on its inner face and with spaced parallel grooves intersecting the annular grooves and terminating in projecting bosses at the side of the back, said back having a marginal lateral flange provided in its inner edge with a bezel, a ring fitting in the bezel, and provided on the outer face of its inner edge with a dial, a disk having a rabbeted edge engaged by the inner edge of the ring for retaining the disk in place, a pointer on the disk for coöperating with the dial, said disk having a handle, a plurality of rings rotatable in the annular grooves, a U shaped locking bar whose arms are adapted to extend into the parallel grooves, said arms having transverse grooves registering with the annular grooves, said rings having recesses on their edges adapted to be brought into register to release the locking bar and having inter-engaging pins for the purpose set forth, said disk having an annular series of radial teeth beneath the inner edge of the ring and the inner locking ring a pin for engaging the teeth, and a spring arranged between the disk and the back for retaining the disk against the ring and with the annular series of teeth in position for engagement by the pin.

2. A lock comprising a substantially cylindrical casing, consisting of a back having a marginal lateral flange, a ring whose outer edge is connected with the free edge of the flange, a disk having the outer face of its edge rabbeted for receiving the inner edge of the ring, said back having on its inner face a plurality of concentric annular grooves, locking rings in the grooves and provided with inter-engaging pins, said disk having an annular series of radial teeth at the free edge thereof, and the innermost ring a pin for engaging the teeth, a spring supporting the disk, and a lock bar having an arm extending into the casing and provided with grooves registering with the annular grooves, said locking rings having recesses for registering with the arm when said rings are placed in proper position.

3. A lock comprising a casing, a series of concentric locking rings within the casing, and provided with inter-engaging pins for the purposes set forth, a locking bar having an arm extending into the casing and provided with grooves for engagement by the rings, said rings having recesses with which the arm registers when said rings are turned into certain positions, a disk provided on its peripheral surface with teeth, the innermost ring having a pin for engagement with the teeth, and a spring supporting the disk.

4. In a lock, a plurality of concentric inter-engaging locking rings, a disk within the innermost ring and provided with means for engaging the same, to move the rings, and a spring support for the disk, to permit the disk to be moved out of engagement with the rings.

5. In a lock provided with inter-engaging permutation rings, a disk for moving the rings, said disk having on its periphery an annular series of teeth, and the innermost ring a pin for engagement by the teeth, and a spring supporting the disk for the purpose specified.

6. In a lock provided with inter-engaging permutation rings, a disk for moving the rings said disk being provided with means

for engaging the adjacent ring, and a spring supporting the disk for the purpose specified.

7. In a lock of the class described, a substantially cylindrical case, comprising a back provided with a marginal lateral flange, having in its inner edge a bezel, a ring provided with a beveled edge for engaging the bezel, locking rings movable in the case, and a spring supported disk for moving the locking rings, said disk having a rabbeted outer edge for receiving the ring.

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Witnesses:

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THOS. K. GIBSON.