

J. JUNKUNC.

LOCK.

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1,042,447.

Fig. 1

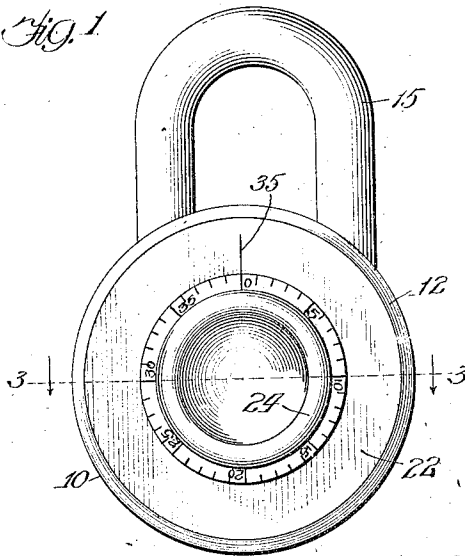


Fig. 6

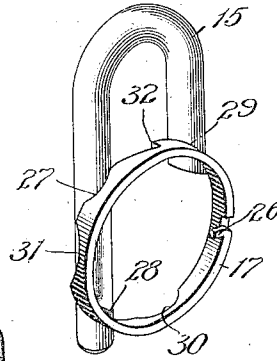


Fig. 4

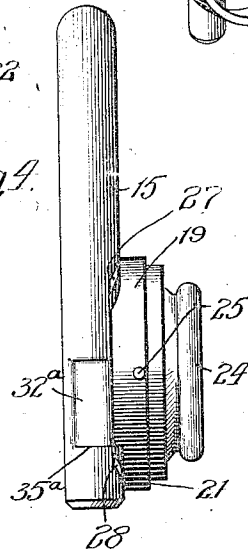


Fig. 5

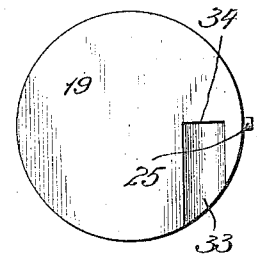
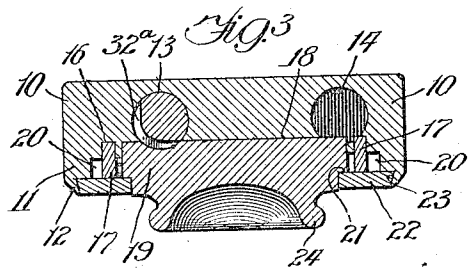
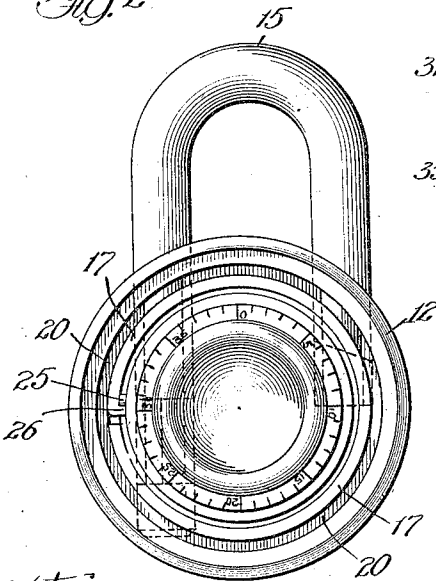


Fig. 2



Witnesses:

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LOCK.

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Specification of Letters Patent.

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To all whom it may concern.

Be it known that I, JOHN JUNKUNC, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Locks, of which the following is a specification.

My invention relates to locks and has particular reference to combination locks which may be used in padlocks, safes, and the like.

In Patent No. 948,280, issued to me on February 1, 1910, a form of combination lock was disclosed in which a plurality of concentric rings were used, each ring having on its periphery one or more recesses. When the various rings were brought into proper relation, the staple of the lock could be moved, but when the recesses in the ring were in other positions, the locking staple was engaged by the rings which passed through grooves in the staple which was thus held securely in position.

In the improved form of lock which forms the subject matter of my present invention, I employ only a single locking ring. The central disk which is rotated in working the combination, is provided with a pin on its periphery which is adapted to move the locking ring into the proper position. On rotating the disk in the opposite direction, the disk itself is moved so that a recess in its under surface will allow the movement of the locking staple which is otherwise held in position either by the locking ring or by the engagement of the edge of the disk with a shoulder formed by a suitable recess in the staple. The staple is also provided with a recess extending partially around its periphery, thus enabling it to be turned after one end has been freed from engagement with the lock itself.

It will be apparent that this construction is very simple and cheap, no springs or other complicating parts being used, while at the same time the lock is very durable on account of the substantial nature of its parts. These and other advantages of my invention will be more clearly understood by reference to the accompanying drawings in which:

Figure 1 is a front elevation of my im-

proved lock. Fig. 2 is a front elevation of the lock with the cover removed in order to show the relation of the different internal parts. Fig. 3 is a transverse section on the line 3—3 of Fig. 1. Fig. 4 is a side elevation of the staple and locking disk. Fig. 5 is a rear elevation of the locking disk. Fig. 6 is a perspective view of the locking staple and locking ring.

In the embodiment of my invention which is illustrated in the accompanying drawings, the main casing 10 of the lock is substantially cylindrical and is provided with a forwardly extending flange 11 which in turn has the beveled lip 12. Holes 13 and 14 are drilled in this casing for the accommodation of the locking member or staple 15. As most clearly shown in Fig. 3, an annular groove 16 is cut in the front face of the casing 10 and a locking ring 17 is adapted to be rotated in this groove. The central part of the casing 10 has a circular recess 18 in which the locking disk 19 is adapted to fit and within which the same may be rotated. An annular space 20 is left between the locking ring 17 and the flange 11 so that if this flange becomes distorted or is subjected to a blow, the effect will not reach the locking ring 17. The side of the locking disk 19 has a rabbet 21 which is engaged by the front face ring 22 which has the beveled edge 23 held in position by the lip 12 which is rolled over the face ring 22 after the same has been placed in position. The locking disk 19 has the knob 24 by means of which the disk may be readily rotated. On the side of the locking disk 19, is the pin 25 which is adapted to engage the inward projection 26 on the locking ring 17 and thereby move the same to any desired position.

The longer arm of the locking staple 15 has the grooves 27 and 28 which are engaged by the ring 17 which thus serves to prevent the staple from being pulled out. The shorter arm of the locking staple has the groove 29 for a similar purpose. In the locking ring 17 are the recesses 30 and 31 which, when the ring is rotated to a suitable position, will register with the longer arm of the locking staple 15; the locking ring 17 also has the recess 32 which registers

with the shorter arm of the locking staple 15 when the recesses 30 and 31 register with the longer arm thereof.

As most clearly shown in Figs. 3 and 4, where the locking disk 19 engages the front face of the longer arm of the locking staple 15, the latter is provided with a recess having a flat surface, which thus acts as an additional means for preventing the withdrawal of the staple 15 on account of the inner shoulder of this recess with the periphery of the locking disk 19. A recess 32^a is made continuous with the recess on the front of the longer arm of the locking staple 15, and extends rearwardly on the outer side of this arm. The object of recess 32^a will be explained hereafter.

As best shown in Fig. 5, the rear face of the locking disk 19 has a recess 33 which terminates in the shoulder 34 and the front face of the disk has a scale marked around its periphery, while on the front face ring 22 is the mark 35 by means of which the proper rotation of the locking disk 19 may be regulated.

Having thus described the construction of my improved lock, its operation may now be readily understood. Assuming that the locking staple 15 is in the position shown in the drawings, it may be released by first rotating the locking disk 19 in one direction until by means of engagement of the pin 25 with the projection 26, the locking ring 17 is moved to such position that the recesses 30 and 31 register with the longer arm of the locking staple 15 and the recess 32 registers with the shorter arm thereof. This result is, of course, accomplished by rotating the locking disk until the proper number on the scale registers with the mark 35 on the front face ring 22. The locking disk 19 is now rotated in the opposite direction, the pin 25 becoming disengaged from the projection 26 and leaving the locking ring 17 in the position in which it has just been moved. When the second number of the combination is opposite the mark 35, the recess 33 has its axis in the same plane as the axis of the longer arm of the staple 15, and the periphery of the locking disk now no longer serves to retain the staple 15 in its locked position, but allows the same to be moved outwardly until the shoulder, at the end of the recess at the front of the longer arm of the locking staple, engages the shoulder 34 at the end of recess 33. When this takes place, the shorter arm of the staple has already become disengaged from the main casing 10. The staple may now be turned through an angle of 90 degrees, the recess 32^a serving to allow such rotation, the portion of disk 19 between the shoulder 34 and the periphery of the disk 19 coming to occupy a position within this recess, the shoulder 35^a preventing further

outward movement of the locking staple. The lock, of course, may be locked by moving the staple into the position shown in the drawings and then rotating the locking disk 19.

It will be apparent that many changes could be made in the exact construction of the parts which I have described without departing from the spirit of my invention.

What I claim is:

1. In a lock, the combination of a locking member having a groove therein, a locking ring engaging said groove and thereby preventing release of the locking member, and a locking disk engaging a recess in the locking member and having means for rotating said locking ring, the locking ring being provided with a recess for allowing disengagement of the locking member therefrom and the disk being provided with a shouldered recess on its face for allowing a predetermined release of said locking member, rotation of said disk in opposite directions thereby serving to bring the recesses in the locking ring and the locking disk into register with the locking member and allowing the release of said member, substantially as described.

2. In a lock, the combination of a locking staple, a locking ring having a recess therein, said ring thereby allowing the release of said staple when moved to a predetermined position, and a locking disk engaging a recess in said locking staple, said disk being provided with a shouldered recess adapted to be brought into register with said locking staple and to permit its release for a predetermined distance, said locking staple having a lateral recess continuous with the recess engaged by said locking disk, thereby permitting rotation of the locking staple after it has been brought to release position, substantially as described.

3. In a lock, the combination of a casing, a locking staple operating in said casing, a locking ring carried by the casing and engaging both arms of the staple, said locking ring being provided with a plurality of recesses adapted to be brought into register with said arms, and a locking disk carried by said casing and having means for engaging said locking ring, said disk engaging a recess in said locking staple, and being provided with a shouldered recess adapted to be brought into register with one of said arms, which has a lateral recess continuous with the recess engaged by said disk, thereby permitting rotation of said locking staple after it is moved to its released position, substantially as described.

4. In a lock, the combination of a casing, a locking member operating in said casing, a locking ring carried by the casing and engaging said locking member, said locking ring being provided with a recess adapted

to be brought into register with said locking member, and a locking disk also engaging said locking member, said disk having a recess therein adapted to be brought into register with said locking member, said disk forming a portion of the face of said lock, substantially as described.

5. In a lock, the combination of a casing, a locking member operating in said casing, a locking ring carried by the casing and engaging a groove in said locking member, said locking ring being provided with a recess adapted to be brought into register with said locking member, and a locking disk engaging a recessed portion of said locking member, said disk having a recess therein adapted to be brought into register with said locking member and having means for rotating said locking ring, said locking disk forming a portion of the face of said lock, substantially as described.

6. In a lock, the combination of a casing,

a locking member operating within said casing, a locking ring carried by the casing and engaging said locking member, said locking ring being provided with a recess adapted to be brought into register with said locking member, and a locking disk carried by said casing and having means for engaging said locking ring, said disk engaging a recessed portion of said locking member and being provided with a shouldered recess adapted to be brought into register with said locking member, movement of said locking disk for predetermined distances in opposite directions thereby permitting withdrawal of said locking member for a predetermined distance, said locking disk forming a portion of the face of said lock, substantially as described.

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Witnesses:

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