Mar. 13, 1923. 1,448,707

D. PIDLYSKI

COMBINATION LOCK

Filed Jan. 12, 1922

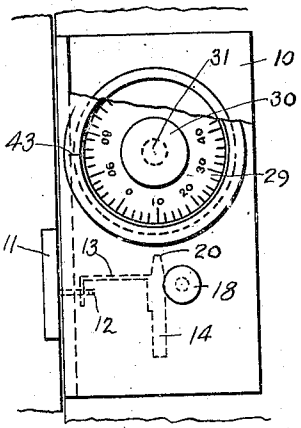


Fig. 1.

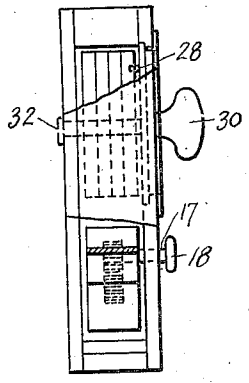


Fig. 2.

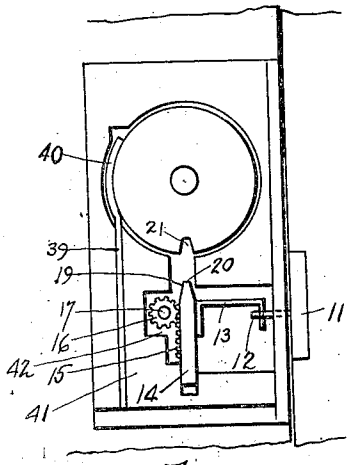


Fig. 3.

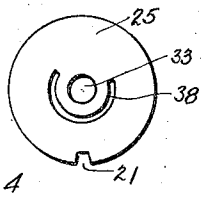


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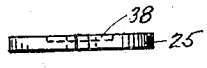


Fig. 5.

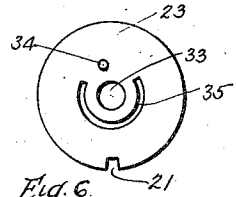


Fig. 6.

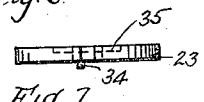


Fig. 7.

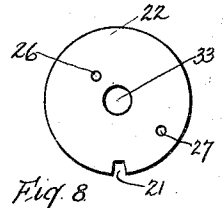


Fig. 8.

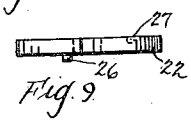


Fig. 9.

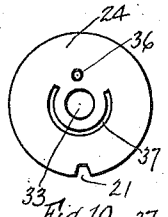


Fig. 10.

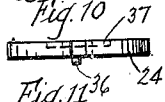


Fig. 11.



Fig. 12.

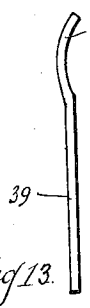


Fig. 13.

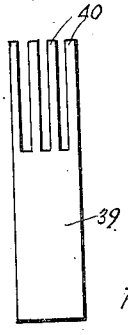


Fig. 14.

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BY
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Patented Mar. 13, 1923. 1,448,707

UNITED STATES PATENT OFFICE.

DMYTRO PIDLYSKI, OF AMSTERDAM, NEW YORK.

COMBINATION LOCK.

Application filed January 12, 1922. Serial No. 528,630.

To all whom it may concern:

Be it known that I, DMYTRO PIDLYSKI, a citizen of Ukrainia, residing at Amsterdam, county of Montgomery, and State of New York, have invented certain new and useful Improvements in Combination Locks, of which the following is a specification.

This invention relates to improvements in combination locks, particularly locks for trunks, boxes, etc., and it is the principal object of the invention to provide a lock of this character which is simple and inexpensive in its construction and of great durability.

A further object of the invention is the provision of a lock in which the proper setting of the combination allows a release of the latch from its keeper by the operation of an auxiliary knob.

A still further object of the invention is the provision of a lock in which the latch is operated by a rack and pinion which are controlled by the auxiliary knob.

Other objects and advantages of my invention will become more fully apparent as the description thereof proceeds and will then be specifically pointed out in the appended claim.

In the accompanying drawing forming a material part of my invention,

Figure 1 is a front view of a lock constructed according to the present invention, part of the cover plate being broken away.

Figure 2 is a side view of the same.

Figure 3 is an inner rear view of the lock.

Figures 4 to 11 show detail front end edge views of combination discs.

Figure 12 is a detail view of the keeper.

Figure 13 is an edge view of a leaf spring, and

Figure 14 is a front view thereof.

The lock comprises a casing 10 adapted to be secured in any desired suitable manner to a trunk or the like, to the cover or lid of which is secured a keeper 11 provided with an eye 12 for the reception of the bent end of a latch 13 secured to or made integrally with a bar 14 provided on one of its side faces with rack teeth 15 adapted to be engaged by the teeth of a pinion 16 on a spindle 17 extending through the front or cover plate of the casing 10 and carrying at its extreme outer end an auxiliary operating knob 18. At its upper end the bar 14 is bevelled as indicated at 19 to form a finger 20 adapted to engage the recesses 21 of discs 22, 23, 24 and 25 when they are in alignment upon the proper setting of the combination.

As shown the front disc 22 has a pin 26 in its face and a hole 27 adapted to be engaged by a pin 28 on the rear face of the dial disc 29 having on its front face the customary characters and adapted to be operated by a knob 30 at the front end of a spindle 31 extending transversely through the casing 10 and provided with a head 32 at the rear thereof. This spindle extends through the central openings 33 of the discs 22, 23, 24 and 25. The second disc 23 is provided with a pin 34, and a groove 35, the third disc 24 has a pin 36 and a groove 37 and the last or rear disc 25 has a groove 38. A leaf spring 39 having a plurality of fingers 40 is secured with its lower end to the edge of a block 41 provided with a recess 42 in which the pinion 17 is arranged.

The device operates in the following manner. The operator who is in possession of the combination, turns knob 30 to bring the correct number of the combination on the dial in line with the mark in which position the pin 28 on the rear of the dial will enter hole 27 of the disc 22 so that this disc will be compelled to participate in the revolution of the disc 22 with the dial. Then the knob is turned again to bring the second correct number of the combination in alignment with mark 43, when pin 26 of disc 22 will have reached the end of groove 35 in disc 23 so that this disc is compelled to participate in the further rotation of dial or disc 22. The continued rotation of the knob until the third number of the combination is brought in alignment with the mark 43 will couple disc 23 and 24 through the engagement of pin 34 with the groove 37 of disc 24 which is then coupled to discs 23, 22 and the dial disc and will participate in the rotation of the knob until pin 36 of disc 24 is engaging the end of groove 38 in disc 25 so that now all the discs are coupled with their recesses 21 in alignment adapted for reception of the finger 20 of bar 14 which can then be raised by the proper rotation of auxiliary knob 18 and the gear 16, the teeth of which are in engagement with the rack teeth 15 until the finger 20 engages the aligned recesses 21 while the latch 13 is raised and its locking finger is disengaged from the eye of the keeper so that the trunk or the like can be opened. It will be clear that knob 30 must be rotated in opposite di-

rections in order to properly set up the combination.

The closing of the lock is effected by turning the auxiliary knob 18 in the opposite direction to disengage finger 20 from the aligned slots 21 and then destroying the combination or alignment of the slots by simply turning the dial disc several times in one or the other direction.

The leaf spring 39 and its fingers are intended to hold the discs in their coupled positions and to offer a certain frictional resistance to the operation of the discs.

It will be clear that changes may be made in the general arrangement and in the construction of the minor details of my invention without deviating from the spirit and scope thereof.

What I claim as new and desire to secure by Letters Patent of the United States is—

In a lock of the class described, a plurality of recessed discs, a dial, a knob for operating said dial, means for coupling said discs and said dial, a leaf spring provided with upper fingers adapted to frictionally engage the outer edges of said discs, a latch adapted to engage with its rectanguraly bent end a keeper, a rack to which the other end of said latch is secured, a pinion in mesh with said rack, a finger on said rack adapted to engage the recesses of said discs when brought into alignment upon the proper operation of the combination, a combination knob for operating said dial disc to couple and uncouple said tumbler discs, and an auxiliary knob on the spindle of said pinion for operating said rack to disengage said latch from the keeper when the recesses of said discs are in alignment, said discs allowing a destruction of the combination by the operation of said knob after the engagement of said latch with its keeper.

In testimony whereof I have affixed my signature.

DMYTRO PIDLYSKI.