E. WEBB.

PERMUTATION LOCK.

APPLICATION FILED MAY 11, 1912.

1,050,883. Patented Jan. 21, 1913.

Fig. 1.

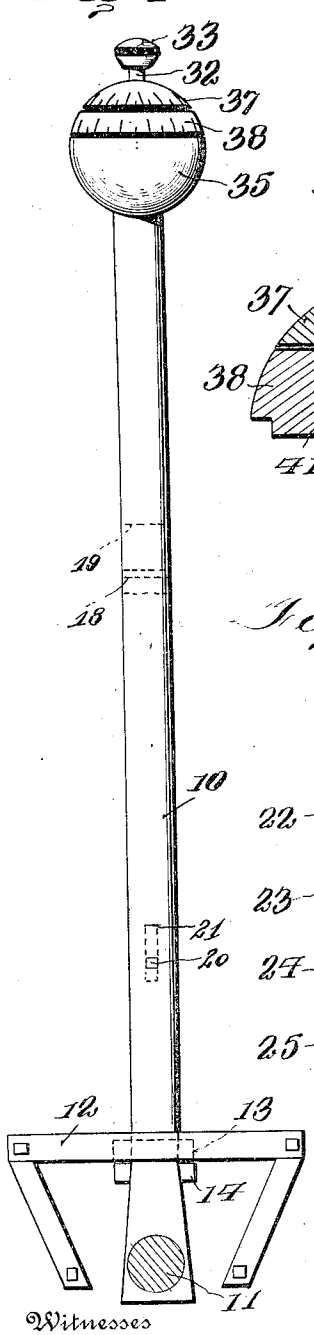

Fig. 3.

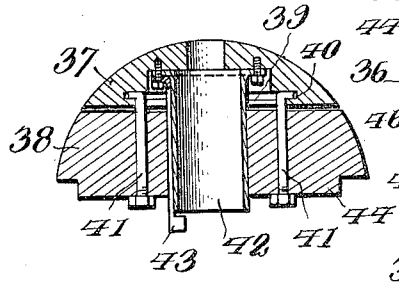

Fig. 2.

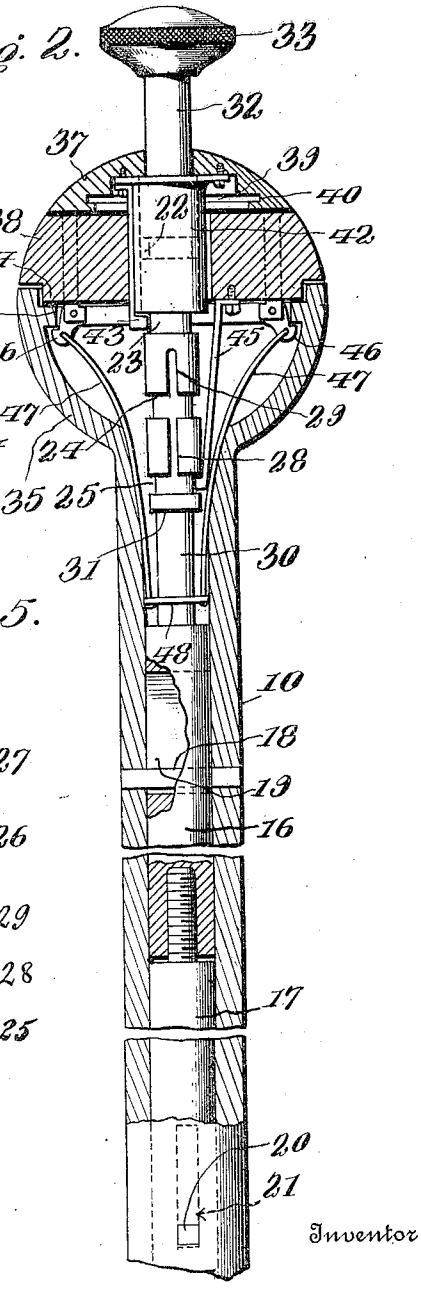

Fig. 4.

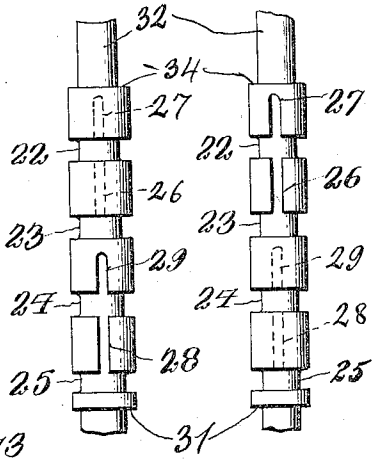

Fig. 5.

Witnesses

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PERMUTATION-LOCK.

1,050,883. Specification of Letters Patent. Patented Jan. 21, 1913.

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To all whom it may concern:

Be it known that I, ERNEST WEBB, a citizen of the United States, residing at Hotchkiss, in the county of Delta and State of Colorado, have invented certain new and useful Improvements in Permutation-Locks, of which the following is a specification.

The lock which is the subject of the present invention is designed more particularly for use in connection with the controlling levers of automobiles and other motor vehicles, for the purpose of locking said levers in order to prevent the car from being started by an unauthorized person, and the same consists in a novel combination and arrangement of parts to be hereinafter described and claimed.

In the accompanying drawing, Figure 1 is a side elevation of a controlling-lever provided with the improved lock. Fig. 2 is an enlarged vertical section of the upper end thereof. Fig. 3 is a vertical section of a part of the lock removed. Figs. 4 and 5 are elevations of the upper end of the opposite sides of the locking rod.

Referring specifically to the drawing, 10 denotes a controlling-lever for the clutch, emergency brake, change-speed gear, or any other mechanism of the car. This lever is mounted on a rock-shaft 11 which is connected to the mechanism to be controlled by the lever. The lower end of the lever swings in a frame 12 having recesses 13 in which is adapted to seat a latch pin 14 extending from the lever, whereby the latter is locked.

The lever 10 is tubular, and in the bore thereof is mounted a rod the lower end of which carries the pin 14, said pin extending through a transverse opening in the lever and projecting therefrom. The rod is in two sections, indicated at 16 and 17, respectively, said sections being detachably connected by means of a screw-joint. The lever 10 carries a transverse pin 18 working in a slot 19 in the section 16, and the lever also carries a pin 20 working in a slot 21 in the section 17.

The upper end of the upper rod section 16 has four circumferential grooves, 22, 23, 24, and 25, respectively. The grooves 22 and 23 are joined by a groove 26 extending in the direction of the length of the rod, and said groove 26 is continued for a short distance in that portion of the rod which is above the groove 22, as indicated at 27. A similar groove 28 joins the grooves 24 and 25, and said groove 28 also extends a short distance above the groove 24, as indicated at 29. Below the groove 25, the rod has a reduced portion 30 forming a shoulder 31, and above the groove 22 the rod terminates in a reduced portion 32 provided with a knob 33, and forming a shoulder 34.

The upper end of the lever 10 terminates in a cup-shaped enlargement 35 having an internal annular shoulder 36. Above the enlargement are located two rings 37 and 38 which encircle the rod section 16. These rings are shaped externally so as to form, in connection with the enlargement 35, a spherical knob at the upper end of the lever, the reduced portion 32 of the rod-section 16 extending therefrom.

The under side of the ring 37 has a recess 39 in the side wall of which is an annular groove 40 into which extend the hook-shaped ends of bolts 41 carried by the ring 38, whereby the two rings are locked together against separation but are left free to be rotated relative to one another about the rod section. To the inner end wall of the recess is fastened a depending tube 42 which encircles the rod-section, and said tube carries a catch 43 which normally seats in the groove 23.

The ring 38 seats on the upper end of the cup 35 and has a bottom portion 44 of reduced diameter which extends into the cup and seats on the flange 36, whereby the ring is properly centered on the rod section 16. The bottom of the reduced portion of the ring carries a catch 45 which normally seats in the groove 25. The ring also encircles the tube 42.

In order to hold the ring 38 in place on the cup 35, there are mounted pivoted catches 46 on the bottom of the reduced part 44, said catches extending beneath the flange 36, and as the flange is annular the ring may be rotated without becoming separated from the cup. To the catches 46 are connected flat springs 47 which are connected to a ring 48 encircling the reduced portion 30 of the rod section 16.

The outer surface of the rings 37 and 38 has suitable graduations by which the combination is set.

The lock operates as follows: The lever

is locked by seating the pin 14 in the recess 13, and in order to unlock the lever, the pin must be disengaged from the recess. The disengagement of the pin is effected by pushing the rod, which carries said pin, downward. Before this can be done, the rod must be unlocked which is accomplished by rotating the ring 37 until the catch 43 is in line with the groove 26, and also rotating the ring 38 until the catch 45 is in line with the groove 28. The rod can now be pushed downward in the direction of its length to disengage the pin 14, whereupon the lever is unlocked. The catches 43 and 45 pass along the grooves 26 and 28 when the rod is pushed down. In order to lock the pin 14, in release position, the rings are again turned so as to bring the catch 43 into the groove 22, and the catch 45 into the groove 24. The pins 18 and 20 prevent the rod from rotating. The rod is made in two separate sections so that the combination can be changed. To effect such change, the pin 18 is removed and the rod section 16 is unscrewed from the section 17, and removed with the rings 37 and 38. However, before this can be done, the catches 43 and 45 must be brought in line with the grooves 27 and 28, and the rod pushed down until the shoulder 31 strikes the ring 48, whereupon, through the springs 47, the catches 46 are disengaged. The pin 20 holds the rod-section 17 stationary while the section 16 is being unscrewed.

I claim:

1. The combination of a slidable rod and a support therefor, said rod having circumferential grooves and longitudinal grooves extending therefrom, rotatable rings encircling the rod, catches carried by the rings, said catches normally seating in the circumferential grooves, a connection between the rings to prevent separation thereof, a latch for locking one of the rings against separation from the support.

2. The combination of a slidable rod and a support therefor, said rod having circumferential grooves and longitudinal grooves extending therefrom, rotatable rings encircling the rod, catches carried by the rings, said catches normally seating in the circumferential grooves, one of said rings having a recess the side wall of which has an annular groove, hooks carried by the other ring and seating in the last-mentioned groove, and means for locking the other ring against separation from the support.

3. The combination of a slidable rod and a support therefor, said rod having circumferential grooves and longitudinal grooves extending therefrom, rotatable rings encircling the rod, catches carried by the rings, said catches normally seating in the circumferential grooves, one of said rings having a recess the side wall of which has an annular groove, hooks carried by the other ring and seating in the last-mentioned groove, means for locking the other ring against separation from the support, and means operated by the rod for releasing the last-mentioned ring.

4. The combination of a support having a hollow enlargement provided with an internal annular flange, a slidable rod carried by the support, said rod having circumferential grooves and longitudinal grooves extending therefrom, rotatable rings encircling the rod, catches carried by the ring and normally seating in the circumferential grooves, a connection between the rings to prevent separation thereof, one of the rings having a portion which extends into the enlargement of the support and seats on the flange thereof, and a catch carried by the last-mentioned ring and engageable with the flange.

5. The combination of a support having a hollow enlargement provided with an internal annular flange, a slidable rod carried by the support, said rod having circumferential grooves and longitudinal grooves extending therefrom, rotatable rings encircling the rod, catches carried by the ring and normally seating in the circumferential grooves, a connection between the rings to prevent separation thereof, one of the rings having a portion which extends into the enlargement of the support and seats on the flange thereof, a catch carried by the last-mentioned ring and engageable with the flange, and means operated by the rod for releasing the catch.

6. The combination of a support, a slidable rod carried by the support, said rod having a reduced portion forming a shoulder, the rod also having circumferential grooves and longitudinal grooves extending therefrom, rotatable rings encircling the rod, catches carried by the rings and normally seating in the circumferential grooves, a connection between the rings to prevent separation thereof, a latch for locking one of the rings against separation from the support, a ring encircling the reduced portion of the rod, and a connection between the last-mentioned ring and the latch.

7. The combination of a support, a slidable rod carried by the support, said rod comprising separable sections, means for holding the rod sections against rotation, permutation rings carried by the support and having means for locking the rod, and a means for preventing separation of the rings from the support.

8. The combination of a support, a slidable rod carried by the support, said rod comprising separable sections, means for holding the rod sections against rotation, permutation rings carried by the support and having means for locking the rod, a

means for preventing separation of the rings from the support, and means operated by the rod for releasing the rings.

9. The combination of a tubular support, a slidable rod mounted in the bore of the support, said rod comprising separable and slotted sections, projecting pins carried by the support and extending into the aforesaid slots of the rod-sections, permutation rings carried by the support and having means for locking the rod, and a means for preventing separation of the rings from the support.

In testimony whereof I affix my signature in presence of two witnesses.

ERNEST WEBB.

Witnesses:
C. B. FEELY,
W. C. SALE.