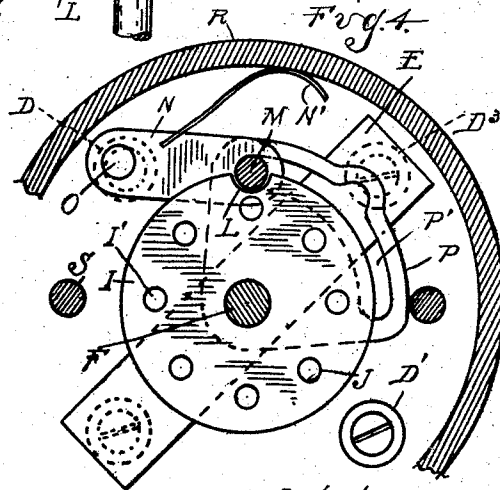
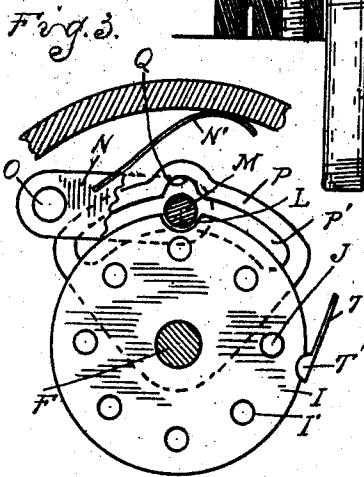
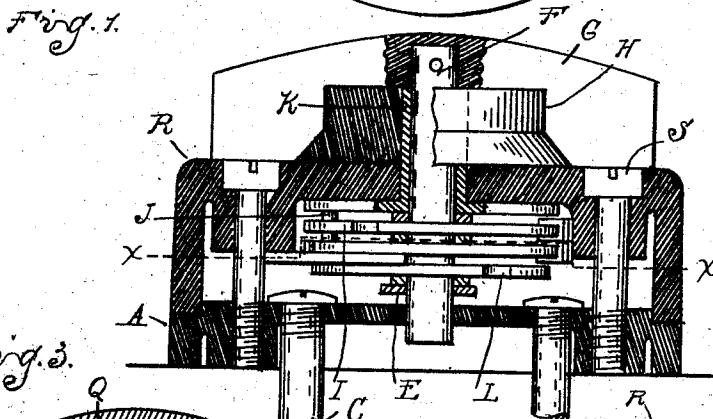
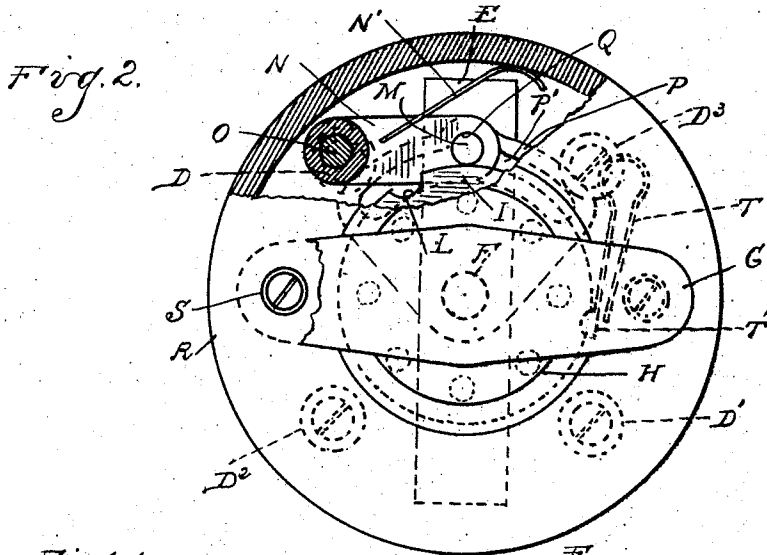


A. MEADOWS.
ELECTRIC CIRCUIT CONTROLLER.
APPLICATION FILED OCT. 31, 1910.

1,010,663.

Patented Dec. 5, 1911.



Witnesses
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UNITED STATES PATENT OFFICE.

ALBERT MEADOWS, OF DETROIT, MICHIGAN.

ELECTRIC-CIRCUIT CONTROLLER.

1,010,663.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed October 31, 1910. Serial No. 590,031.

To all whom it may concern:

Be it known that I, ALBERT MEADOWS, a subject of the King of Great Britain and Ireland, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Electric-Circuit Controllers, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to electric circuit controllers more particularly designed for use in connection with motor vehicles for controlling the ignition circuit of the motor.

It is the object of the invention to prevent the unauthorized use of the vehicle by rendering it impossible to close the ignition circuit, and to this end the invention consists in the peculiar construction of a circuit closing switch, and the means for locking the same in open position, further in the means for inclosing the switch and the electric connections thereof so as to render the same inaccessible in the locked position of parts, and further in the peculiar combination of the mechanical permutation lock with the electric switch, and in the peculiar construction, arrangement and combination of parts as hereinafter set forth.

In the drawings, Figure 1 is a central cross section through the controller; Fig. 2 is a sectional front elevation thereof; Fig. 3 is a section on line *x-x* Fig. 1; Fig. 4 is a view similar to Fig. 3, showing the parts in a different position.

Heretofore various circuit controlling devices have been applied to motor vehicles designed to prevent the unauthorized operation of the motor. These have however, usually proved ineffectual for various causes among which are, first, that the electrical connections are often exposed so as to permit the controller to be cut-out and a shunt circuit established; second, where the switch and its connections are inclosed it is possible to detach the casing and obtain access thereto. My improvement is designed to overcome these objections by a construction in which the switch, its locking mechanism,

and the electrical connections are completely inclosed and incapable of being dismounted in the locked position of parts.

In detail, A is a switch base preferably formed of insulating material and adapted to be mounted upon a suitable support such as the dash B of the vehicle by suitable means such as bolts C. Upon this base are the electric contacts and as shown these consist of pairs of contacts D D' and D² D³.

E is a switch plate for coupling the pairs of contacts alternatively,

F is an operating stem for the plate E, and G a handle secured to said stem. To prevent the operation of the handle G when the switch is opened, a mechanical permutation lock is provided. This preferably consists of a knob or rotary member H which is sleeved upon the stem F and is arranged to operate a series of permutations or tumblers I. These are formed of notched disks having a circular series of apertures I' therein in which stop pins J may be inserted in various positions. The first disk of the series is directly operated by engaging the sleeve K to which the knob H is attached, and the successive disks of the series are operated from the first disk through the engagement of the stop pins. The arrangement is such that by rotating the knob H alternately in opposite directions as is usual with locks of this character, the tumbler disks may be successively positioned with the notches L in the periphery thereof alined. M is the pin for engaging the notches L when in alinement, said pin being secured to a link N pivoted at its opposite end by the pin O to permit the pin M to move radially with respect to said disks.

P is a plate secured to the switch plate E and having a segmental slot P' therein with which the pin M is engaged, said slot being of sufficient length to permit adjustment of the blade to connect the pairs of contacts. The slot P' is arranged to be alined with the pin M only when the latter is in engagement with the notches L in the tumblers, but when these notches are not alined, the pin M is forced outward by the

disks. In this position said pin M engages a locking notch Q in the plate P which holds it from movement.

For housing the switch plate E and the parts of the permutation lock, a hollow casing R is mounted upon the base A, being preferably secured thereto by tap screws S. These screws are so arranged that when the pin M is in engagement with the notch Q the handle G will be held in alinement with the screws S or in a position to cover the heads thereof, thereby preventing detachment of the casing.

The base A, casing R, handle G and knob H are preferably all formed of insulating material, and as these parts form a complete housing for the electrical switch, and as the connections thereto pass through the base into the mounting B, it is obvious that it is impossible to form a shunt circuit cutting out the switch. It is also to be noted that the screws C which mount the base A upon the dash or other mounting, are sealed by the casing R and when the handle G covers the screws S there is no means of dismounting the switch or disassembling the parts thereof.

In operation, whenever the notches L of the disks are in alinement with each other and in registration with the pin M, the latter will be engaged therewith, being preferably automatically forced into engagement by the tension of the spring N' operating upon the link N. This will disengage the pin M from the notch Q and register it with the segmental slot P' permitting of adjustment in opposite directions to engage the switch plate E alternatively with the contacts D D' and D² D³. The handle G is preferably positioned at substantially right angles to the switch blade and serves as an indicator showing the position of adjustment of said blade. When the switch blade is adjusted into connection with either pair of contacts, the pin M will travel along the segmental slot P' and while thus traveling will be held in engagement with the notches in the tumblers I, compelling the latter and the knob H to remain stationary. Thus it will be impossible to throw the combination of the lock while the switch is closed with either pair of contacts, as the segmental slot P' prevents movement of the pin M out of engagement with the notches L.

To hold the disks or tumblers I from accidental movement, a friction shoe is preferably engaged with the periphery of each disk, and as shown, this consists of a spring T having ears T' embracing the disk, and yieldably pressed in contact with the periphery thereof.

What I claim as my invention is:

1. An electric circuit controller comprising a circuit closing switch, an operating handle therefor, a permutation lock for

holding said switch in open position, a casing inclosing said switch and lock, and securing means for said casing located to be covered by said handle in the locked position of parts.

2. An electric circuit controller comprising a switch base having contacts thereon, a switch blade adjustable in the coöperative relation of said contacts, a rotative stem for operating said blade, a handle for said stem, a permutation lock having an operating handle sleeved and rotatable upon said stem, a case for inclosing said lock, switch blade and contacts, and securing means for said casing covered by said handle in the locked position.

3. An electric circuit controller comprising a circuit closing switch, an operating handle therefor, a mechanical permutation lock for holding said switch from operation, a rotative knob for operating said permutation lock, and means operated by the adjustment of said switch in its unlocked position for holding said permutation lock from operation.

4. An electric circuit controller comprising a circuit closing switch, an operating handle therefor, a mechanical permutation lock for said switch, an operating knob therefor, a casing inclosing said switch and permutation lock, and means operated by the adjustment of said switch in unlocked position for locking said knob from movement.

5. An electric circuit controller, comprising a switch base, means engaging said base for securing the same to a mounting, an adjustable switch mounted on said base, an operating handle therefor, a lock for holding said switch from operation, a casing inclosing said switch and lock and covering the securing means for said base on its mounting, and securing means for said casing on said base located to be covered by the operating handle of said switch in the locked position of parts.

6. An electric circuit controller comprising a switch base, an adjustable switch mounted thereon, an operating handle for said switch, a permutation lock for holding said switch from operation, a casing for inclosing said switch and permutation lock, securing means for said casing located to be covered by said handle in the locked position of parts, said base, casing and handle being formed of insulating material.

7. An electric circuit controller, comprising a switch base, an adjustable switch mounted thereon, a handle for operating said switch, a permutation lock for said switch comprising a series of rotative disks concentrically arranged with respect to the axis of said switch and provided with coöperating stop pins, a rotative knob for operating said disks, a member for locking said switch

engageable with peripheral notches in said disks when in alined registration therewith to unlock the switch, and a casing inclosing said disks, switch and cooperating members
5 but exposing said handle and knob.

8. An electric circuit controller comprising a circuit closing switch, a lock for holding said switch in open position, a casing inclosing said switch and lock, securing
10 means for the casing, and means upon the

exterior of the casing covering said securing means in the locked position of the parts and exposing the securing means in the unlocked position.

In testimony whereof I affix my signature 15
in presence of two witnesses.

ALBERT MEADOWS.

Witnesses:

JAMES P. BARRY,

AUBREY V. PULLEYBLANK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."