

R. VARLEY.
CIRCUIT CONTROLLER FOR INDUCTION COILS.
APPLICATION FILED JAN. 20, 1904.

NO MODEL.

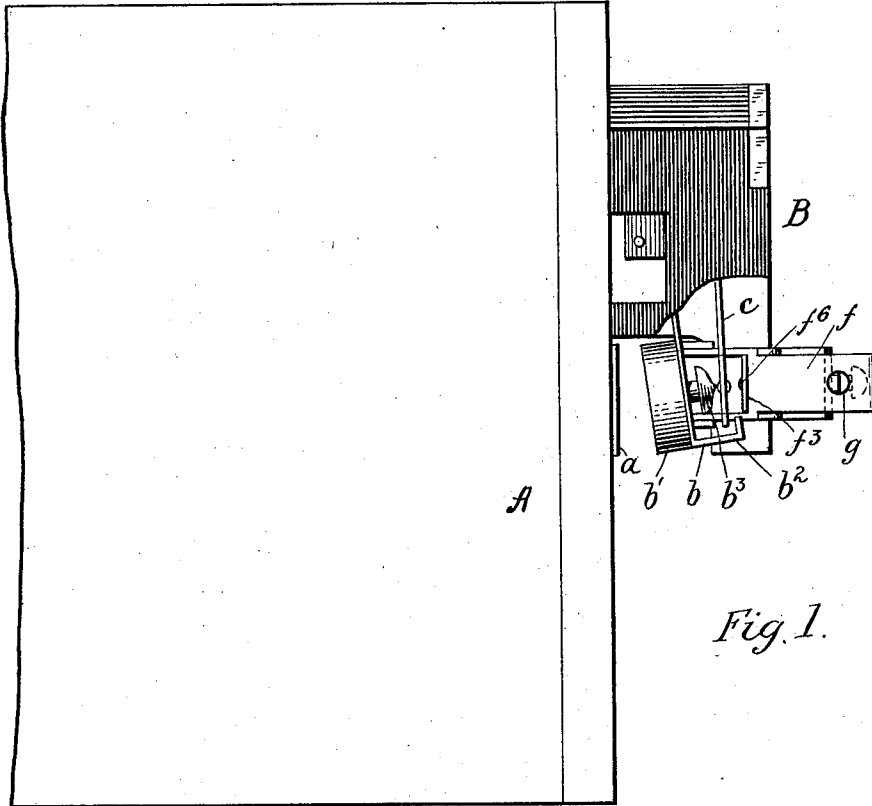


Fig. 1.

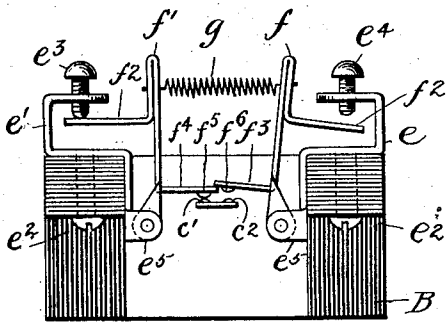


Fig. 3.

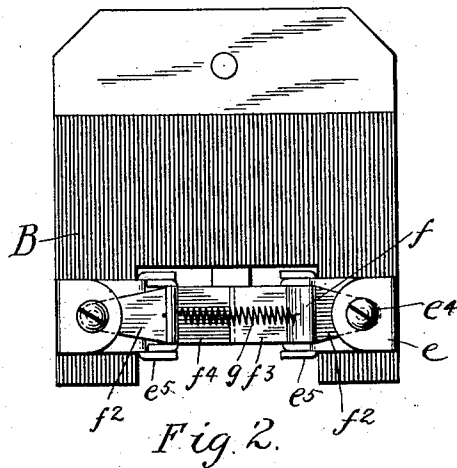


Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

RICHARD VARLEY, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO
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CIRCUIT-CONTROLLER FOR INDUCTION-COILS.

SPECIFICATION forming part of Letters Patent No. 757,792, dated April 19, 1904.

Application filed January 20, 1904. Serial No. 189,825. (No model.)

To all whom it may concern:

Be it known that I, RICHARD VARLEY, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Circuit-Controllers for Induction-Coils, of which the following is a full, clear, and exact description.

This invention relates to the contact devices for interrupting the primary circuit of induction-coils, having special reference to the vibratory contacts usually placed at the head of the coil; but the invention is adapted for use on vibrators generally, regardless of their particular location.

The object of the invention is to provide means whereby a fresh or clean pair of platinum contacts can be in an instant substituted for a pair that may have become oxidized or pitted so that their resistance is too high for effective work when the circuit is closed through them.

The invention consists, first, of the combination of an induction-coil and a plurality of pairs of contacts with means whereby one pair of contacts may be manually substituted for another when occasion arises; second, in the combination of a vibratory element carrying two contact-points and two shiftable contact-carriers corresponding, respectively, to the two contact-points on the vibratory element, and means for throwing either of the contact-carrying elements into operative position and simultaneously locking the other out of operative position, and, third, the invention consists of various other combinations and details of construction, all of which will be fully pointed out in the claims.

For a detailed description reference is made to the accompanying drawings, in which—

Figure 1 is a side elevation of one end of an induction-coil having a vibratory circuit-controller attached thereto, portions of the latter being broken away for the sake of clearness. Fig. 2 is a plan of the circuit-controlling devices, and Fig. 3 is an end elevation thereof.

The induction-coil is indicated by A, its magnetic core *a* projecting at one end to ac-

tuates the vibrator in the usual manner. In the present instance the vibratory circuit-controller is mounted in a frame B, and consists of a lever *b*, carrying an armature *b'*, and having a hook *b²* adapted to engage a circuit-controlling plate *c* on its forward stroke and to press against said plate on its back stroke by means of an interposed button *b³*. The plate *c* is an elongated flat plate pivoted at one end, the pivot not being shown, but being located in the frame B, and it has attached to it two platinum rivets or contacts *c'* and *c²*, respectively, placed side by side transversely of the plate. *e* and *e'* are two metallic bridges, secured to the frame B by means of the screws *e²* and carrying adjusting-screws *e³* and *e⁴*, respectively. These bridges have ears *e⁵* for the pivots, respectively, of two levers *f* and *f'*, which I call the "shifting contact-carrying levers or elements." These levers are connected together by a retractile spring *g*, which tends constantly to draw them together, and each lever has a tailpiece *f²*, reaching under the screws *e³* and *e⁴* to limit thereon. These levers also have extensions *f³* and *f⁴*, respectively, leading toward each other and long enough to slightly overlap. On the under side of each extension is a platinum rivet or contact *f⁵* and *f⁶*, respectively, the former being arranged directly above the contact *c'* and the latter directly above the contact *c²*, thus forming corresponding pairs of circuit-controlling contacts. The levers also have upwardly-extending finger-pieces, as shown, by which they may be manipulated.

In the position shown in Fig. 3 the contacts *c'* and *f⁵* are in active position, the circuit of the primary winding of the induction-coil being closed by the impingement of these two contacts. In the usual operation of the coil these two contacts will rapidly interrupt the primary circuit by the vibrations of the plate *c*, the lever *f'* being held in fixed position by the tension of spring *g* and the stop *e²*. When the contacts *c'* and *f⁵* become oxidized or defective, they can be at once thrown out of action and the fresh or clean contacts *c²* and *f⁶* substituted by tipping the upper end of

lever f' to the left until the extension f^4 releases the end of extension f^3 , whereupon lever f , under the strain of spring g , quickly moves to the left until the contact f^6 is carried down into engagement with the contact c^3 and the tailpiece f^2 limits against screw e^4 . Lever f' is then released and falls back under the tension of the spring against the upper side of the extension f^3 , where it is held out of operative position. The coil will now continue in operation without further delay. It will be understood that the plate c is one terminal of the circuit to be controlled, while either the lever f or f' is the other terminal.

15 It is obvious that two springs, one for each of the levers f and f' , may be substituted for the single spring described, but for the best and most uniform action the single spring is preferred.

20 With this provision a large part of the annoyance due to the handling of induction-coils, especially on automobiles, is prevented, and the time required to clean the contacts while on the road is saved.

25 Having described my invention, I claim—

1. The combination with an induction-coil, of a vibratory circuit-controller having a plurality of sets of contacts and means whereby any one set can be thrown into operative position and the other set or sets thrown out of operative position, substantially as described.

2. The combination of an induction-coil and a vibratory circuit-controller therefor, of a plurality of sets of contacts and means whereby one set can be manually substituted for another in operative position.

3. In a vibratory circuit-controller, the combination of a vibratory element, two contacts carried thereby and two shiftable contact-carrying levers corresponding respectively to the

contacts on the said element and means whereby either pair of corresponding contacts may be thrown into operative position at will.

4. The combination of a vibratory element, two contacts carried thereby, two pivoted levers each carrying a contact corresponding respectively with those on the vibratory element, means for holding one lever in operative position and means for holding the other out of operative position.

5. The combination of a vibratory element, two contacts carried thereby, two pivoted levers carrying contacts corresponding respectively with those on the said element, a spring connecting said levers and means whereby when one lever is in operative position, the other lever will be held out of operative position by the first lever.

6. The combination of a vibratory element carrying two contacts, a pivoted lever carrying a contact corresponding to one of those on the vibratory element, a spring tending to hold the lever in operative position and a limiting-stop determining the position of the lever.

7. The combination of a vibratory element, two contacts carried thereby, two pivoted levers having their extremities overlapping each other and carrying contacts corresponding respectively with those on the said element, a retractile spring engaging both levers and a stop for each lever whereby the relative position of the levers is determined.

In witness whereof I subscribe my signature in presence of two witnesses.

RICHARD VARLEY.

Witnesses:

ELIZABETH CROSWELL,
HARRIET HUGHES.