

R. VARLEY.
VIBRATOR FOR INDUCTION COILS.

APPLICATION FILED JAN. 20, 1904.

NO MODEL.

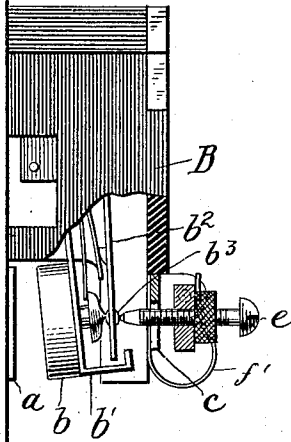
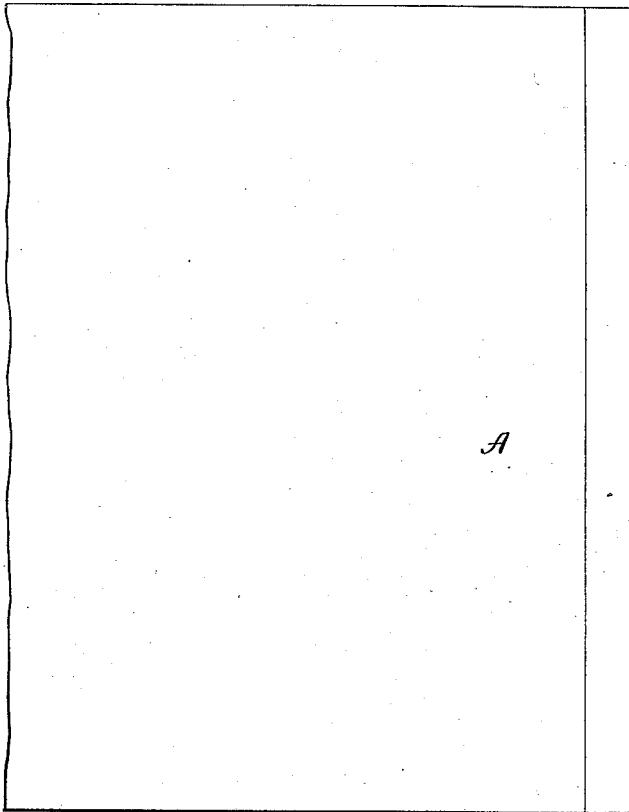


Fig. 1.

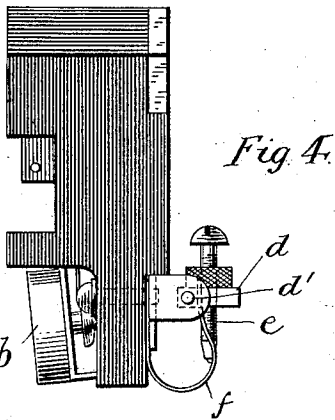


Fig. 4.

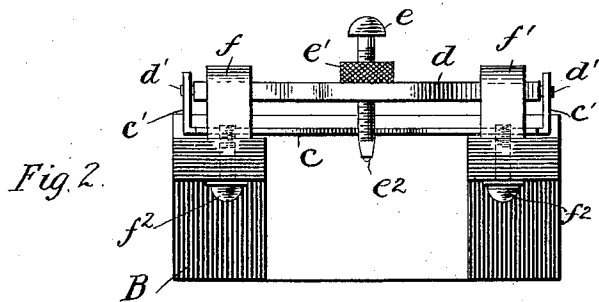


Fig. 2.

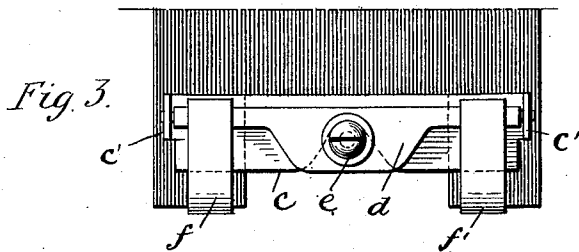


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

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

SPECIFICATION forming part of Letters Patent No. 757,527, dated April 19, 1904.

Application filed January 20, 1904. Serial No. 189,826. (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 Vibrators for Induction-Coils, of which the following is a full, clear, and exact description.

This invention relates to vibrating circuit-controllers for induction-coils, the object being to provide means for the ready inspection and cleaning, if necessary, of the platinum contacts usually provided between the vibrating armature or element and its fixed back-stop. The vibrating element is usually a flat spring carrying an armature or a rigid pivoted plate actuated by an armature, and to the back of this spring or plate a platinum contact is riveted, behind which an adjustable screw is fixed having at its extremity a corresponding platinum contact. Owing to the rapidity with which the circuit is interrupted between these contacts and the fact that a small arc is created at each interruption, the contacts in time become oxidized, pitted, or corroded to a sufficient extent to offer considerable resistance to the passage of current when they are together. It is therefore necessary at intervals to remove the oxidation and otherwise clean and polish the contacts. When the apparatus is used under circumstances where it is desirable to ascertain the condition of the contacts without loss of time—as, for instance, on an automobile—a ready means permitting of such examination is an advantage. These objects I have attained by the present invention, which consists, essentially, in mounting the contact-screw upon a hinged support, which permits of its being tipped to a position where the platinum at its extremity and that of the vibrator are exposed to view and also uncovered to such an extent that sandpaper or other means may be used without difficulty to clean both contacts.

The invention also includes a form of spring-latch for retaining the screw in either its normal or its tipped positions, so that no adjustment is necessary after a cleaning operation

beyond the mere tipping of the screw back to its normal position.

The construction will be described in detail with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of the end of an induction-coil to which a vibrating circuit-controller is attached, a portion of the frame of the latter being broken away. Fig. 2 is an end elevation of the vibrator-frame with the vibrating elements removed. Fig. 3 is a plan of the device shown in Fig. 2; and Fig. 4 is a side elevation of the vibrating frame, showing the contact-screw in its tipped position.

A indicates the induction-coil, the core a of which projects through the head to actuate the vibrator. The vibrator is contained in a frame B, secured to the head of the induction-coil, and may be of any approved form, the one shown consisting of an armature b , attached to a plate b' , which has a hooked end adapted to engage a plate b^2 , on which there is a platinum contact b^3 .

c is a metal bridge secured across the end of the frame B and having outwardly-turned ends c' , in which is pivoted a bar or bridge d by means of screws d' . The bridge d carries at its middle a contact-screw e , which is threaded through it and provided with the usual lock-nut e' and at its extremity with a platinum contact e^2 . This contact stands normally in engagement with the contact b^3 , and the circuit across them is interrupted by the vibration of the plate b^2 . The bridge d being pivoted as described can be rotated; but in order to prevent its accidental rotary movement under normal conditions I provide two loop-shaped springs f and f' , which are held in place by the screws f^2 and with their free ends bearing upon a flat surface of the bridge d . Thus when the screw is in the normal position (shown in Figs. 1, 2, and 3) it is firmly held for coöperation with the contact b^3 . It will be seen, however, that the bridge d can be rocked, and when so turned through an angle of ninety degrees the springs f and f' again bear upon flat surfaces of the bridge and will hold it in that position, this being

shown clearly in Fig. 4. In this abnormal position the extremity of the screw e is exposed for inspection, and the contact b^3 being uncovered by the removal of the screw is likewise exposed. Either or both contacts can now be cleaned, if necessary, and if not the bridge d can be returned to its original position for continued operation of the contacts. In tipping the screw from one position to another it will be seen that after half of the movement has been accomplished by hand the springs complete the motion and firmly hold the tilting part in either of its positions.

In operating automobiles many of the delays are due to the foul condition of the contacts of the vibrator. The present invention, therefore, will result in considerable saving of time, since it permits of the cleaning of the contacts without removing the vibrator from the coil. Furthermore, the fact as to whether the cause of trouble is at the contacts can be ascertained at once, and if not troubles can be sought for elsewhere in the machine without loss of time.

Having described my invention, I claim—

1. The combination of a pair of electrical contacts, one of which is a screw and a tipping bar carrying said screw, substantially as described.

2. Two contact-points having a normal relative movement into and out of contact with each other, in combination with means for swinging one contact out of the path of the other and into position for inspection.

3. In an induction-coil vibrator, the combination of a bridge-frame, a part of which is mounted on pivots, and a contact-screw carried by said frame.

4. In an induction-coil vibrator, the combination of a contact-screw, a supporting element therefor, said supporting element being pivoted to enable the screw to be removed from its working position.

5. An induction-coil vibrator, comprising a pivoted bar, a contact-screw carried thereby and a spring adapted to retain the bar in either of two positions.

6. An induction-coil vibrator, comprising a rocking bar having flat surfaces, a contact-screw carried thereby and a spring adapted to bear upon said flat surfaces respectively to retain the bar in either of two positions.

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

RICHARD VARLEY.

Witnesses:

ELIZABETH CROSWELL,
HARRIET HUGHES.