

R. WAGNER.
CIRCUIT INTERRUPTER FOR ELECTRIC IGNITION SYSTEMS.
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Fig. 1.

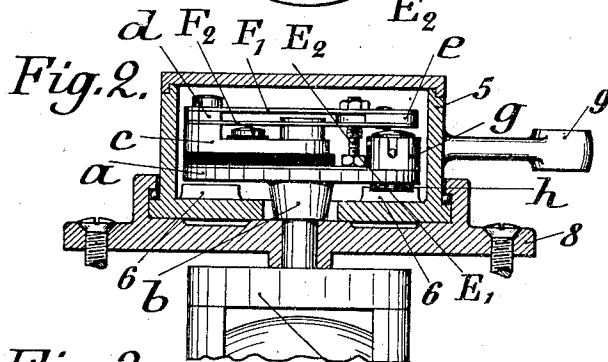
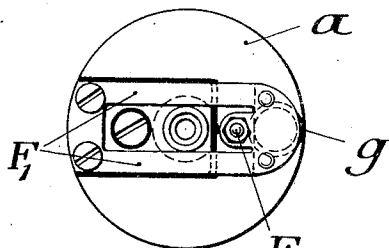


Fig. 3.

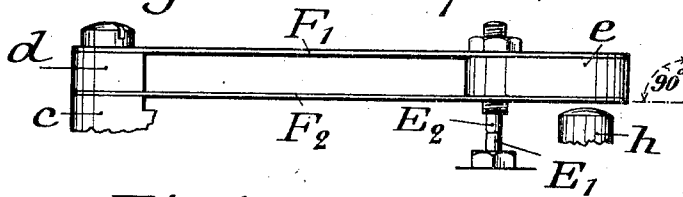
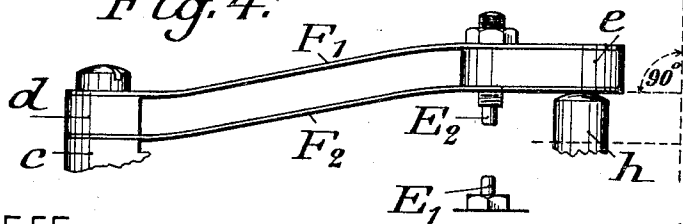


Fig. 4.



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CIRCUIT-INTERRUPTER FOR ELECTRIC IGNITION SYSTEMS.

1,065,567.

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To all whom it may concern:

Be it known that I, ROBERT WAGNER, a subject of the Emperor of Germany, residing at 16 Ludwig Pfaustrasse, Stuttgart, Germany, have invented certain new and useful Improvements in Circuit-Interrupters for Electric Ignition Systems; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to circuit interrupters for electric ignition systems for igniting the combustible gases in internal combustion engines, and more particularly to those interrupters well adapted for installation on the end of the armature shaft of magnetos and the like, so as to rotate therewith, wherein the coacting contact terminals are periodically separated.

Heretofore, the movable contact terminal has usually been mounted on a rigid rocking arm, against which a spring continually pressed so as to normally hold the coacting terminals in contact with each other, or else the movable contact terminal was mounted directly upon a spring, the deflection of which separated the contact terminals. In all cases, so far as I am aware, the movable contact terminal described substantially an arc in interrupting the circuit, so that all portions of the contacting surfaces did not become separated with equal rapidity and did not become separated from each other by the same distance. In consequence of such construction the ever present tendency for an arc to form at the place of interruption was increased.

The present invention is directed to a construction intended to avoid these difficulties. It accomplishes that purpose by providing means for guiding the movable contact terminal in such manner that the circuit breaking movement of the contact surface thereof is substantially a movement of parallel translation.

In the accompanying drawings, illustrating the preferred form of my invention applied to an interrupter wherein the movable contact terminal is moved substantially in the direction of the axis of rotation of the interrupter, Figure 1 is a plan view of the interrupter; Fig. 2 is a side view of the interrupter; Figs. 3 and 4 show the spring

structure and the contacting terminals on an enlarged scale, in closed and open positions respectively.

Upon the disk or support *a*, which is preferably provided with a boss *b* and which can be secured upon the shaft of a magneto armature 7 or other suitable rotating part, is screwed the stationary contact *E*₁. The plate *c* is fastened to and insulated from the support *a* in the manner shown. The spring plates *F*₁, *F*₂ are superposed and separated from each other at their free ends by the block *e* to which they are rigidly fastened. At their other ends they are spaced apart by the block *d* to form a parallelogram, and are anchored to the insulated plate *c* as shown. The movable contact terminal *E*₂ is fastened to the separating block *e* near the outer end of the spring structure.

The support *a* has an axial guide *g* with axially arranged slots, adapted to hold a cylindrical block *h* of fiber or the like. The block *h* projects below the bottom of the support *a* and is adapted to abut against the outer end of the spring structure when its lower projecting end periodically engages a stationary cam 6 or the like. In this way, the outer end of the spring structure and also the movable contact *E*₂ are periodically raised against the stress of the spring structure. Inasmuch as the superposed spring plates *F*₁, *F*₂ are rigidly fastened together at their ends, the contact surface of the movable terminal *E*₂ is moved in parallel translation near the place of interruption, in the manner indicated in Figs. 3 and 4.

The interrupter parts may be incased in a casing 5 which carries the actuating cams 6. In order to adjust the period of ignition relatively to the stroke of the engine, the casing 5 may be turned in its frame 8 by the adjusting lever 9, thereby adjusting the period at which the rotating block *h* is periodically moved by the actuating cams 6 to separate the co-acting contact terminals *E*₁, *E*₂.

The lower spring plate *F*₂ is placed entirely in tension as a result of the movement of the spring structure, so that it can, if desired, be weaker than the upper spring plate *F*₁.

Although I have particularly described my invention in connection with a circuit interrupter wherein the contact terminals are separated substantially in the direction of

the axis of rotation, it is to be understood that the invention is in no wise limited to such application, but on the contrary may be applied to various other types of mechanical interrupters.

Having thus described my invention what I claim is:

1. A circuit interrupter for electric ignition systems comprising a support, a contact terminal mounted on said support, a relatively movable co-acting contact terminal, mechanism for periodically separating said contact terminals, and guiding means maintaining the contact surface of the movable contact terminal parallel with the contact surface of the other contact terminal in the circuit interrupting movement.

2. An electric circuit interrupter comprising a support, a contact terminal mounted on said support, a relatively movable co-acting contact terminal, mechanism for periodically separating said contact terminals in substantially the direction of the axis of the support, and guiding means maintaining the contact surface of the movable contact terminal parallel with the contact surface of the other contact terminal in the circuit interrupting movement.

3. A circuit interrupter for electric ignition systems comprising a support, a contact terminal mounted on said support, a relatively movable co-acting contact terminal, mechanism for periodically separating said contact terminals, and guiding means comprising a plurality of superposed and separated members rigidly fastened together and to said support at one end, and rigidly fastened together and carrying the movable terminal near the other end, whereby the

contact surface of the movable terminal is guided in a circuit interrupting movement of substantially parallel translation.

4. A circuit interrupter for electric ignition systems, comprising a support, a contact terminal mounted on said support, a relatively movable co-acting contact terminal, mechanism for periodically separating said contact terminals, and guiding means comprising a plurality of parallel and separated spring plates rigidly fastened together and to said support at one end, and rigidly fastened together and carrying the movable terminal near the other end, whereby the contact surface of the movable terminal is guided in a circuit interrupting movement of substantially parallel translation.

5. A circuit interrupter for electric ignition systems comprising a rotatable support, a contact terminal mounted on said support, two parallel and separated spring plates rigidly fastened together and to the support at one end, and rigidly fastened together at their outer end, a co-acting contact terminal mounted on said spring plates between the ends thereof, and mechanism for periodically separating said contact terminals in substantially the direction of the axis of rotation including an axially movable member guided in said support and adapted to lift the outer end of said spring plate when it is axially actuated.

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

ROBERT WAGNER.

Witnesses:

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PAUL WOLFART.