A. KRAUSS.

CURRENT INTERRUPTER FOR USE IN ELECTRIC IGNITION DEVICES OF INTERNAL COMBUSTION MOTORS.

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1,320,871.

Patented Nov. 4, 1919.

Fig. 1.

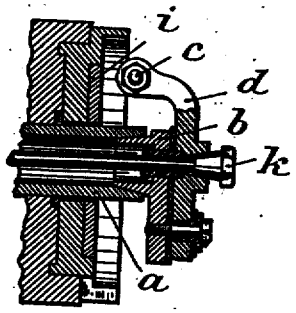


Fig. 2.

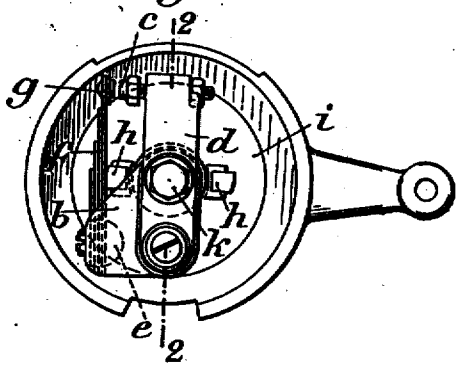


Fig. 3.

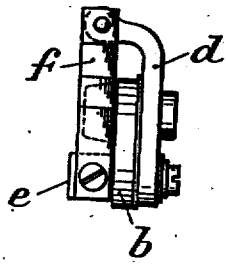


Fig. 4.

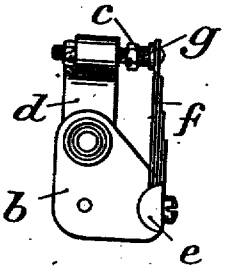
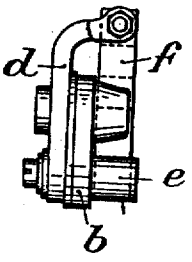


Fig. 5.



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CURRENT-INTERRUPTER FOR USE IN ELECTRIC IGNITION DEVICES OF INTERNAL-COMBUSTION MOTORS.

1,320,871. Specification of Letters Patent. Patented Nov. 4, 1919.

Application filed December 7, 1915. Serial No. 65,520.

To all whom it may concern:

Be it known that I, ADOLF KRAUSS, a subject of the German Emperor, residing at Cannstatt, 8 Brysstrasse, Germany, have invented certain new and useful Improvements in Current-Interrupters for Use in Electric Ignition Devices of Internal-Combustion Motors; 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.

My invention relates to current interrupters for use in electric ignition systems for internal combustion motors, and more especially to that type of interrupter, in which the movable contact piece is fastened to a support, preferably a spring support, adapted to be forced outward by suitably arranged cams, while the device is working, and to effect thereby the interruption of a circuit of a magneto or the like. In the preferred embodiment of the interrupter according to this invention, normally stationary cams are mounted on the cam ring, care being taken that they are arranged as closely as possible near the armature shaft with which the interrupter contacts rotate. This arrangement is favorable to lever interrupters because even at a high velocity there is no danger of the movable contact arm slinging, any such tendency being at once counteracted by the constructional arrangement of the leaf spring system consisting of a number of superposed leaf springs fixed at one end to the central piece of the interrupter while the contact itself is fastened to the outer end of the innermost spring. The new interrupter further offers the advantage of being easily reversible so as to run either way.

The preferred embodiment of the interrupter according to this invention is shown on the accompanying drawings, in which,

Figure 1 is a vertical section on the line 2—2 (Fig. 2); Fig. 2 is an elevation; Figs. 3, 4 and 5 are different side views.

a is the armature shaft, *b* is the central piece fixed to said shaft, *c* is the stationary contact, *d* is the arm carrying said contact and fixed to the central piece, strips of insulating material being inserted between said arm and said piece. The central piece *b* is provided with an arm *e* carrying a leaf spring system composed of a number of leaf springs and carrying the movable contact *g*. The spring leaves may be of equal or of different length. In the latter case the longest spring is located nearest to the stationary contact. In this manner the oscillations of the spring system are strongly damped and all unintentional interruptions of the current are thereby avoided. The cams *h* are mounted on the normally stationary cam ring *i* and as close as possible to the armature shaft, thus causing the spring support *f* carrying the movable contact *g* to be forced by the cams from within toward the exterior and the contacts to be separated thereby in the plane of rotation. The whole interrupter is fastened in place in a well known manner by a current-carrying interrupter screw *k*.

Owing to the combination of the leaf springs *f* and the cams *h* arranged on the cam ring, no damage by bending or breaking occurs, and there is no danger of the spring system carrying the movable contact slinging, due to centrifugal force, even at high speed of rotation.

Besides, the interrupter may be run both ways and its parts can be made at a very low price and can be assembled very easily.

Having thus described my invention, what I claim is:

1. In a current interrupter for electric ignition systems, a rotatable shaft, an arm fast with said shaft, an interrupter contact mounted on said arm, a resilient support connected substantially at one end for rotation with said shaft, a coöperative interrupter contact mounted on the resilient support substantially at the other end thereof, and a normally stationary cam coöperative with the support to periodically flex it and thereby alter the relative position of said contacts.

2. In a current interrupter for electric ignition systems, a rotatable shaft, a diametrically-disposed arm fast with said shaft, an interrupter contact mounted on said arm, a member fast with said shaft and terminat-

ing in an arm extending substantially parallel to the axis of rotation of the shaft, a deflectable support fastened substantially at one end to said terminating arm and being deflectable in the plane of rotation, a coöperative interrupter contact mounted on the deflectable support substantially at the other end thereof, and a normally stationary cam coöperative with the deflectable support.

3. In a current interrupter for electric ignition systems, a rotatable member, an interrupter contact fast with said member, a spring support composed of superposed flat stepped leaves fastened substantially at one end to said member, a coöperative interrupter contact mounted on the support substantially at the other end thereof, and a normally stationary cam coöperative with the support.

4. In a current interrupter for electric ignition systems, an interrupter contact, a spring support composed of stepped leaves with the longest leaf nearest the axis of rotation of the interrupter, a coöperative interrupter contact carried by said longest leaf near the outer end thereof, and a cam coöperative with the spring support.

5. In a current interrupter for electric ignition systems, a rotatable member, an interrupter contact fast with said member, a spring support composed of stepped leaves fastened near one end to said member with the longest leaf nearest the axis of rotation, a coöperative interrupter contact mounted near the other end of the longest leaf of the spring support, and a normally stationary cam coöperative with the spring support.

6. In a current interrupter for electric ignition systems, a rotatable shaft, a diametrically disposed arm fast with said shaft, an interrupter contact mounted on said arm, a spring support composed of superposed flat leaves connected substantially at one end to said shaft and extending in a direction substantially along the length of the arm, a coöperative interrupter contact mounted substantially at the other end of the spring support, and a normally stationary cam positioned between the axis of rotation and the spring support and being coöperative with a central part of the spring support to deflect the support in the plane of rotation, the distances from the axis of rotation to the ends of the support being substantially equal.

7. In a current interrupter for electric ignition systems, a rotatable shaft, a diametrically-disposed arm fast with said shaft, an interrupter contact mounted on said arm, a member fast with said shaft and terminating in an arm extending substantially parallel to the axis of rotation of the shaft, a spring support composed of stepped leaves fastened near one end to said terminating arm with the longest leaf nearest the axis of rotation of the shaft, a coöperative interrupter contact mounted substantially at the other end of the spring support, and a normally stationary cam positioned between the axis of rotation and the spring support and being coöperative with a central part of the spring support to deflect it in the plane of rotation.

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

ADOLF KRAUSS.

Witnesses:
PAUL WOLFAST,
ADOLF LEBHERT.