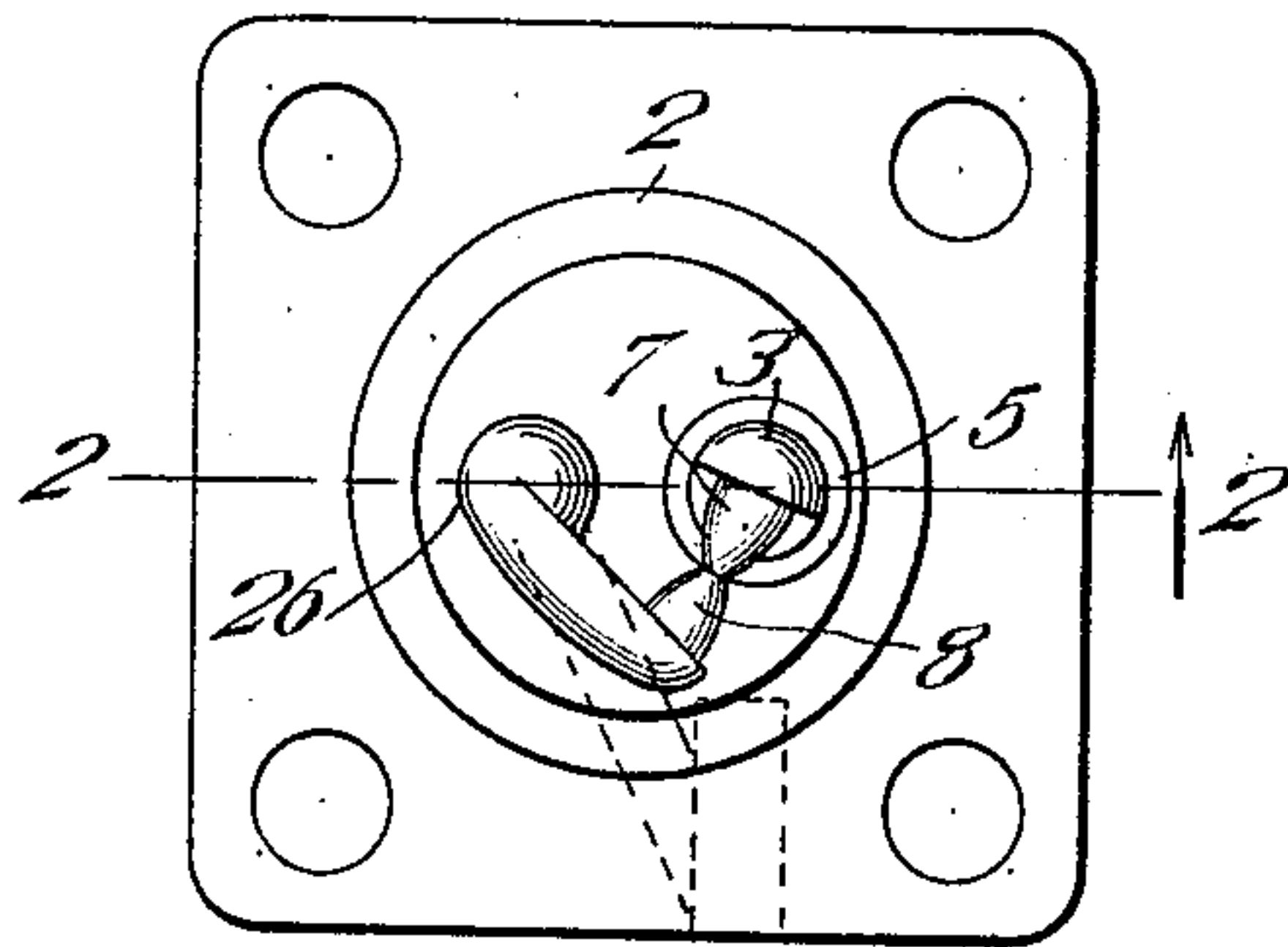


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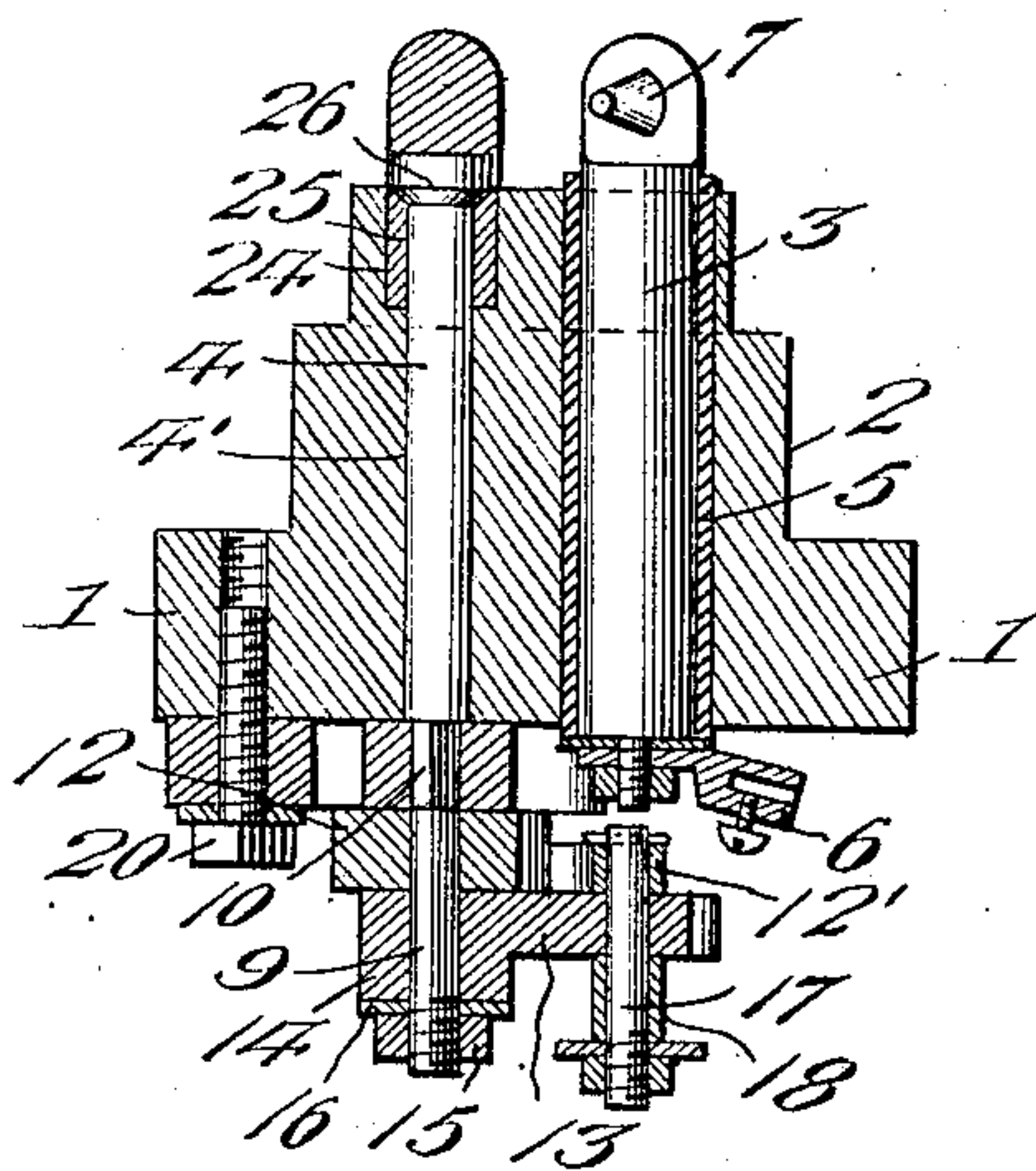
PATENTED MAY 28, 1907.

A. D. WILKINSON.  
ELECTRIC IGNITER.  
APPLICATION FILED OCT. 6, 1906.

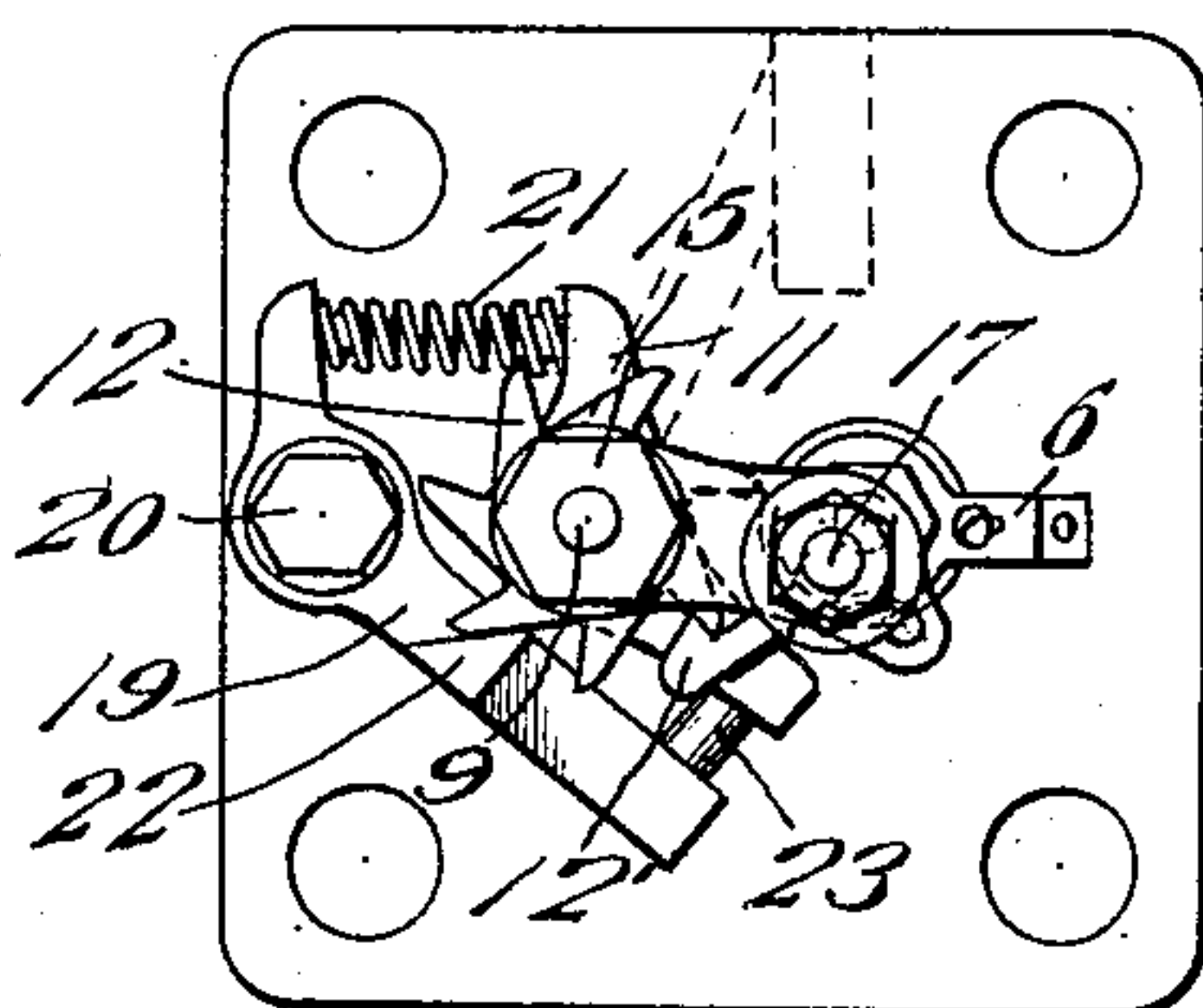
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Inventor

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# UNITED STATES PATENT OFFICE.

ANDREW D. WILKINSON, OF WELLSVILLE, OHIO.

## ELECTRIC IGNITER.

No. 855,269.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed October 8, 1906. Serial No. 337,715.

*To all whom it may concern:*

Be it known that I, ANDREW D. WILKINSON, a citizen of the United States, residing at Wellsville, in the county of Columbiana and State of Ohio, have invented new and useful Improvements in Electric Igniters, of which the following is a specification.

This invention relates to electric igniters or sparkers for gas engines, and particularly to igniters of that class employing stationary and oscillating conductors having contact points, with means for intermittently actuating the oscillating conductor to separate the points for the production of a spark. Ordinarily such conductors are mounted upon a supporting plate formed of cast metal, and in course of time the movement of the oscillating conductor produces sufficient wear upon the plate to permit such conductor to have play in its bearings resulting either in the rocking conductor getting out of line and causing imperfect contact or of its bearing with undue force on the plate and causing sufficient friction to prevent it from being actuated freely and sufficiently to separate the points for the production of the spark.

The object of the present invention is to provide a conducting bearing for the rocking conductor so arranged as to prevent undue play of such conductor and to maintain at all times a perfect contact between the contact points and a proper degree of movement of one relative to the other.

In the accompanying drawing,—Figure 1 is an inner elevational view of an igniter embodying my invention. Fig. 2 is a longitudinal section thereof on line 2—2 of Fig. 1. Fig. 3 is an outer elevational view of the igniter.

Referring to the drawings, 1 designates the supporting plate of the igniter, which is provided with a barrel 2 designed to extend through the side of the combustion chamber of the engine. This plate supports a stationary conductor 3 and a movable conductor 4. The conductor 3 comprises a stem extending longitudinally through an opening in the plate and barrel and insulated therefrom by an interposed insulating sleeve 5, a binding post 6 being applied to the outer end of said conductor for connection of the electric feed wire therewith.

The conductors are provided at their inner ends with contact points 7 and 8, and the conductor 4 extends longitudinally through

and is adapted to rock or oscillate in a bearing bore or opening 4' formed in the plate and barrel. Normally the contact points 7 and 8 lie in engagement, and the conductor 4 is periodically rocked or oscillated by suitable mechanism to separate the points and cause the production of the spark.

As shown, the conductor 4 comprises a rock shaft having a reduced stem or extension 9 provided with an inner angular portion 10, on which is mounted an angular or bell crank operating anvil or lever 11. A ratchet wheel 12 is revolvably mounted on the stem and is adapted to be engaged by a spring actuated pawl 12' carried by an oscillating arm 13 fixed to a sleeve 14 journaled on the stem and confined with the ratchet wheel thereon by a securing nut 15 and washer 16. The arm 13 carries a supporting pin 17 which extends therethrough, one end of which supports the pawl while the other end forms a wrist pin having a roller 18 thereon for engagement with a pitman connected with an eccentric or other actuating device operated by the engine.

A hammer 19 of bell crank form is journaled upon a supporting pin or screw 20, and interposed between one of the arms of this hammer and one of the arms of the anvil 11 is a coiled spring 21, which operates to hold the parts in normal position and return them to such position after operation. The other arm of the hammer carries a beveled-faced lug 22 adapted to be engaged by the teeth of the ratchet wheel, and has extending therefrom a pin 23 adapted to engage the other arm of the anvil, being normally held in contact therewith by the action of the spring 21.

When the arm 13 is operated by the action of the eccentric, the pawl 12' engages one of the teeth of the ratchet wheel, thus bringing one of the other teeth thereof into engagement with the lug 22, the tooth riding over the face of said lug and swinging the arm carrying the pin 23 rearwardly against the resistance of the spring 21. When the acting tooth of the ratchet wheel clears the lug the anvil is free and is returned to normal position by the spring 21, whereby the pin 23 is caused to strike the anvil 11 and to rock the shaft 4 to throw the contacts 7 and 8 out of engagement, the spring 21 cushioning the movement of the anvil and serving to instantaneously restore the same to normal position. As a result, the two contacts 7 and 8



will be separated for a brief period of time, thereby producing the spark.

It is found in practice that there is considerable wear between the inner end of the shaft 4 and the inner portion of the walls of its bearing bore 8, under which the shaft is permitted to have undue movement and to bind against such walls, whereby imperfect contact between the points 7 and 8 ensues, or the produced friction prevents the shaft from having the slight rocking movement necessary to insure a complete separation of the points. In order to obviate this difficulty I enlarge the inner end of the bearing bore 4 to form a recess or counter bore 24 and insert therein a bearing ring or bushing 25, preferably made of some good conducting metal, such as copper. The inner end of the shaft 4 is formed with a head 26 bearing against the outer end of the bushing, the contacting surfaces of the head and bushing being preferably beveled so as to adapt them to move easily in bearing contact. This bushing not only increases the conductivity of the parts but forms a bearing seat at a point where the shaft should be maintained in true position. It also sustains the wear usually falling upon the metal of the barrel, and, being better adapted for that purpose, retains the shaft more perfectly in position and provides a nearly anti-friction surface which adapts the shaft to turn easily and without binding. Hence the rocking conductor or shaft 4 is adapted to be rocked freely at all times by the actuating mechanism and is prevented from binding, so that a perfect separation of the contact points upon each rocking movement of each shaft is absolutely insured.

Having thus described the invention, what is claimed as new, is:—

1. An electric igniter comprising a support, a stationary conductor carried thereby, an oscillating conductor coöperating therewith, an angular anvil fixed to the oscillating conductor, a ratchet wheel journaled in said conductor, an angular hammer having a contact pin upon one arm thereof to engage one of the arms of the anvil, a spring interposed between and bearing on the opposite arms of the anvil and hammer, and an operating member journaled on said oscillating conductor and carrying a pawl to engage the ratchet wheel, the teeth of the pawl being adapted to engage and move the hammer.

2. An electric igniter comprising a support carrying a stationary conductor, an oscillating conductor coacting therewith, a bell crank anvil fixed to the oscillating conductor, a bell crank hanger journaled on the support and having one of its arms provided with a beveled-faced lug and a contact pin, the latter being adapted to engage one of the arms of the anvil, a spring interposed between and bearing on the opposite arms of the hammer and anvil, a ratchet wheel journaled on the oscillating conductor and adapted to coöperate with said lug, and an operating member pivoted to the anvil and having a pawl to engage the ratchet wheel.

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

ANDREW D. WILKINSON.

Witnesses:

MARY R. WILKINSON,  
S. H. HALE.