

R. JAKE.
SPARK PLUG.

APPLICATION FILED JUNE 9, 1909. RENEWED APR. 21, 1910.

961,136.

Patented June 14, 1910.

Fig. 1.

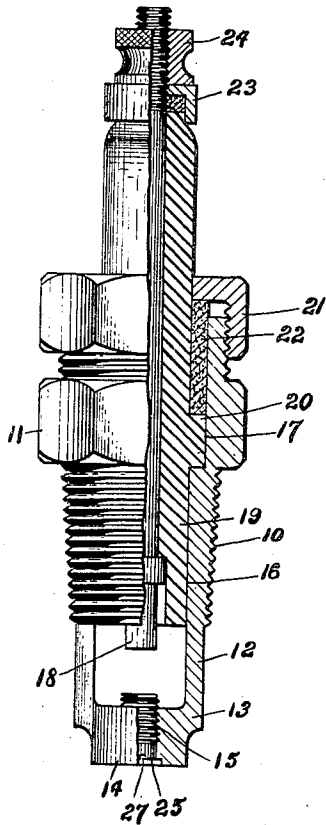
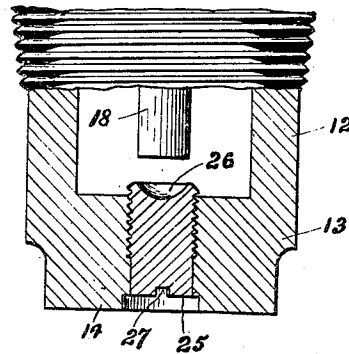


Fig. 2.



Witnesses

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ROBERT JAKE, OF ROCKYRIDGE, OHIO.

SPARK-PLUG.

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To all whom it may concern:

Be it known that I, ROBERT JAKE, a citizen of the United States, residing at Rockyridge, in the county of Ottawa, State of Ohio, have invented certain new and useful Improvements in Spark-Plugs; 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.

This invention relates to spark plugs such as are used in connection with internal combustion engines. It is a well known fact that the sparking terminals of plugs of this character are extremely apt to become unfastened after a short period of use by reason of the deposition on the sparking surface of an accumulation of soot and oil. It is also well understood that sparking terminals in plugs of this character are apt to "pit" under the influence of the electric discharge with the consequence that the surface is roughened and the deposits that accumulate are rendered difficult to remove.

The principal object of the present invention is to provide an improved form of spark plug which shall have a form of sparking terminal not adapted to receive and retain these accumulations and which will not "pit".

With the above and other objects in view the invention consists of a spark plug having an improved form of body together with improved terminals carried thereby.

The invention further consists in certain novel details of construction and combinations of parts hereinafter fully described, illustrated in the accompanying drawings, and specifically set forth in the claims.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and:—Figure 1 is a vertical section of a spark plug constructed in accordance with this invention. Fig. 2 is an enlarged detail view of the sparking terminals.

The plug body comprises a threaded portion 10 adapted to be screwed into the wall of an explosive engine cylinder and this threaded portion is provided with the usual nut 11 so that it may be screwed firmly in by means of a suitable wrench. Extending from the threaded portion 10 is a body 12 and upon the lower end of this body is a

yoke 13 provided with a central boss 14 having a screw threaded aperture 15 therein. Extending through the body is an opening 16 which has an enlarged portion 17 lying within the nut 11. Held within this opening 16 is a porcelain insulated sparking terminal 18 and the insulation thereof is indicated at 19 and is provided with a collar 20 which prevents the terminal being inserted too far in the body by reason of this collar bearing against the shoulder formed between the opening 16 and enlarged portion 17. Screwed over the enlarged portion 17 is a packing gland 21 and between the upper end of this packing gland and the collar 20 is suitable elastic packing 22. The insulation 19 is reduced at the upper end and on this reduced portion is fitted a metallic cap 23 preferably of brass or the like, the cap being held on to the terminal 18 by means of suitable threads formed on said terminal and in an opening in the cap. A binding screw 24 is held on the terminal beyond the cap so that a wire may be retained between the cap and binding screw. The lower end of this terminal is squared so that the end is formed by a plane perpendicular to the axis of the terminal. Within the threaded opening 15 is screwed a terminal 25 provided with a cup shaped depression 26 in the face proximal the terminal 18 and this terminal 25 is further provided with a suitable screw driver receiving slot or the like as indicated at 27, this being for the purpose of adjusting the distance between the opposed terminals. The relative sizes of the terminals 18 and 25 is such that the cup shaped depression in the latter will be as large or slightly larger than the end of the terminal 18.

In the operation of this plug when a spark passes from one terminal to the other it jumps from the edge of the squared off terminal to the rim of the cup and as this rim or edge becomes slightly worn the length of the gap will be increased and the spark will move around to a fresh position thus traveling continuously around the terminals and never continuing long enough in one position to "pit" the terminal. Furthermore, it is experimentally found that with this construction the deposition of soot on the terminals is practically obviated and that an extremely fat and efficient spark is obtained.

There has thus been provided a simple and efficient device of the kind described and for the purpose specified.

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

1. In a spark plug, a body provided with an opening therethrough, an integral yoke on said body provided with a threaded sparking terminal opening, a sparking terminal fixedly held in the body, and a threaded sparking terminal held in the threaded opening and provided with means to engage a tool, one of said terminals being provided with a cup shaped end.
2. In a spark plug, a body provided with an opening therethrough, an integral yoke on said body provided with a threaded sparking terminal opening, a sparking terminal fixedly held in the body, and a threaded sparking terminal held in the threaded opening and provided with means to engage a tool, one of said terminals being provided

with a cup shaped end and the other terminal having an end cut at right angles to the body.

3. In a spark plug, a body provided with an opening therethrough, an integral yoke on said body provided with a threaded sparking terminal opening, a sparking terminal fixedly held in the body, and a threaded sparking terminal held in the threaded opening and provided with means to engage a tool, one of said terminals being provided with a cup shaped end and the other terminal having an end cut at right angles to the body, the cup shaped end being of greater diameter than the opposed terminal end.

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

ROBERT JAKE.

Witnesses:

CHARLES PETERS,
J. S. COWLEY.