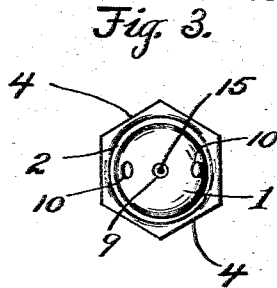
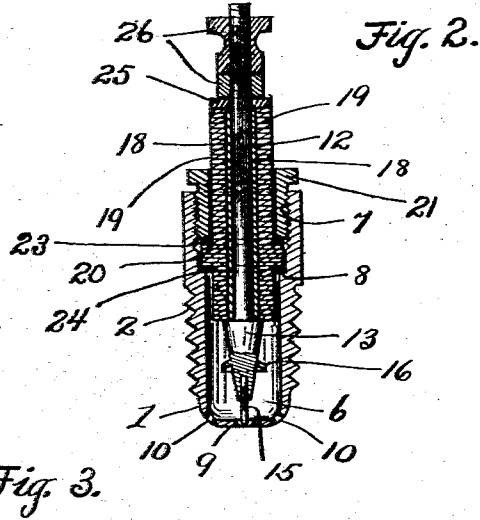
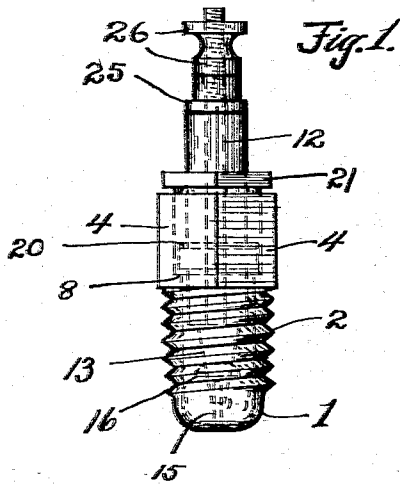


J. E. SCHAEFER, JR.
SPARK PLUG.

APPLICATION FILED FEB. 23, 1909.

946,878.

Patented Jan. 18, 1910.



Witnesses:
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UNITED STATES PATENT OFFICE.

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SPARK-PLUG.

946,878.

Specification of Letters Patent.

Patented Jan. 18, 1910.

Application filed February 23, 1909. Serial No. 479,379.

To all whom it may concern:

Be it known that I, JOSEPH E. SCHAEFER, Jr., a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Spark-Plugs; and I 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 pertains to make and use the same.

This invention relates to new and useful improvements in spark plugs.

One object of this invention is to provide a spark plug having such an arrangement of parts as will allow the gas from the engine cylinder ready access to the interior of the casing of the plug so that it will surround the ends of the electrodes and be readily ignited by the spark.

A further object of my invention is to provide a deflector or baffle arranged within the plug casing, the action of which will be to prevent the lubricating oil from the cylinder of the engine being forced back into the rear part of the plug casing, where it would become carbonized on the wall of the casing and form a cross circuit between the electrodes of the spark plug.

With these objects in view my invention consists in the combination of parts as described in the specification, pointed out in the claims and illustrated in the accompanying drawings.

In the accompanying drawings Figure 1 is an exterior view of a spark plug embodying my invention. Fig. 2 is a central section of the same. Fig. 3 is an end view of the same.

Again referring to the drawings 1 represents the casing or shell of the spark plug which is provided with the usual screw thread 2 whereby it may be screwed into the engine cylinder. The casing is also preferably provided with flat faces 4 for the application of a wrench in screwing it into position. In the lower part of the casing is arranged a chamber 6 and in the upper part a screw-threaded bore 7. A seat 8 is preferably formed in the bore 7 below the screw-threaded portion. In the closed end of the casing 1 is formed a central opening 9 and the sides of said opening are beveled so that the opening at the outside of the casing is

smaller than the opening at the inside and the wall around the opening at the outside of the casing is therefore very thin and may be said to have a knife-edge and forms one of the electrodes. On opposite sides of the opening 9 are formed other openings 10, the object of which will appear later.

Within the casing is arranged a spindle 12 which is preferably screw-threaded at its outer end and at its inner end is provided with an enlargement or head 13 which is approximately cone-shaped. In the lower end of the head portion 13 is inserted a pin 15 of any suitable material to form the other electrode. On the head portion 13 is arranged a baffle or deflector consisting of a funnel or saucer shaped flange 16. The spindle 12 is insulated from the casing in any suitable manner and as shown in the drawing this insulation consists of an inner wrapping 18 of sheet mica and an outer casing of mica rings 19. The insulating material is provided with an annular shoulder 20 which is adapted to fit on the seat 8 formed in the casing. An exterior screw-threaded sleeve 21 is provided, which screws into the upper end of the casing and clamps the shoulder 20 on the insulation against the seat 8 thereby holding the same rigidly within the casing. Washers 23 and 24 are preferably arranged above and below the shoulder 20 on the insulation. A washer 25 is arranged on the spindle above the insulation and on the spindle above the washer are arranged the adjusting nuts 26 in the usual manner.

When the plug is in use the gas from the cylinder will readily enter the chamber 6 through the openings 10 and the ends of the electrodes will be entirely surrounded by the gas so that the passage of the spark between the electrodes will readily ignite the same. After a few explosions the inner end of the spindle 12 and the baffle 16 thereon will of course become very hot. After each explosion the cylinder oil will be driven into the chamber 6 and in ordinary constructions would be deposited upon the walls on the rear part thereof where it would become carbonized and form a short circuit, but in the present construction the oil entering the chamber 6 will strike the baffle 16 which will prevent the oil reaching the rear part of the chamber and as the oil strikes the baffle 16

owing to the heat of the baffle it will be consumed or vaporized and drawn out on the exhaust stroke of the engine.

What I claim is,—

- 5 A spark plug comprising a casing having a rounded end which is provided with a central opening and small openings arranged adjacent to said central opening, the wall around said central opening constituting an
0 electrode and the central opening and openings adjacent the central opening permitting admission and exhaust of gas to and from the casing, a spindle arranged within the

casing and insulated therefrom, an electrode carried by said spindle, and a saucer-shaped baffle on said spindle and turned toward the openings in the rounded end of the casing, said baffle serving to catch the oil driven into the casing with the gas. 15

In testimony whereof, I sign the foregoing specification, in the presence of two witnesses. 20

JOSEPH E. SCHAEFER, JR.

Witnesses:

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