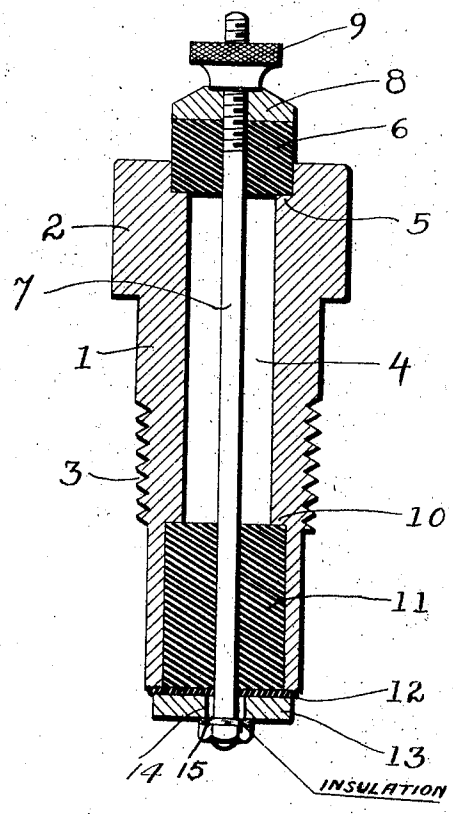
J. RANSOMER.

SPARK PLUG.

APPLICATION FILED AUG. 31, 1917.

1,333,731.

Patented Mar. 16, 1920.



WITNESSES

Earl R. Muckinman.

R. M. Smith.

INVENTOR

John Ransomer

BY Victor J. Evans

ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN RANSOMER, OF BATESVILLE, ARKANSAS.

SPARK-PLUG.

1,333,731. Specification of Letters Patent. Patented Mar. 16, 1920.

Application filed August 31, 1917. Serial No. 189,193.

To all whom it may concern:

Be it known that I, JOHN RANSOMER, a citizen of the United States, residing at Batesville, in the county of Indenepdence and State of Arkansas, have invented new and useful Improvements in Spark-Plugs, of which the following is a specification.

This invention relates to spark plugs, the main object of the invention being to produce what may be termed an oil proof or foul proof plug capable of being subjected to an excessive amount of lubricating oil without interfering with the operation of the plug, the electrodes of which have such a relation to each other that the current produces an annular spark which under severe tests has demonstrated its ability to burn the oil from the plug as fast as the oil touches the plug. This renders the plug practically self cleaning.

With the above and other objects in view, the invention consists in the novel construction, combination and arrangement of parts, herein fully described, illustrated and claimed.

The accompanying drawing represents a longitudinal section through the improved plug.

Referring to the drawings 1 designates the body or shell of the plug having the usual enlarged portion 2 formed with flat faces to receive a ring, the shell also comprising a threaded portion 3 adapted to be screwed into and removed from the usual threaded opening in the cylinder of an internal combustion engine.

In carrying out the present invention, the body or shell 1 of the plug is formed with a large central longitudinal bore 4 which forms a dead air space. At one end the body 1 is counterbored to form a rabbet or shoulder 5 in which is seated the inner end portion of an insulator 6 having a central bore through which is inserted the power electrode 7. A clamping nut 8 is threaded on the outer end portion of the electrode 7 and bears against the insulator 6. A binding post nut 9 is also threaded on the same end portion of the electrode 7.

At its opposite end the shell or body 1 is counterbored to form another rabbet or seat 10 for a second insulator 11 which just reaches to the inner extremity of the shell 1. An insulating spark deflecting disk 12 of slightly less diameter than the external diameter of the adjacent end of the shell or body 1, rests against the inner extremity of the plug and seals the same against the admission of oil, carbon or other foreign matter. An active disk 13 of carbon or metal rests against the bottom face of the insulating disk 12 and is of approximately the same diameter or a little less than that of the disk 12. The power electrode 7 extends centrally through the insulator 11, the insulating disk 12 and the carbon or metal disk or button 13.

The plug hereinabove described is especially efficient when used in an engine employing heavier hydrocarbon oils or kerosene. It has been found by actual test that, in a kerosene engine, all ordinary plugs now on the market will become foul in a very few minutes and cause stoppage of the engine. The improved plug has demonstrated its ability to keep clean by burning off any lubricating or other oil as rapidly as it reaches the plug. The improved plug has been running for a number of consecutive days and it is still running in perfect satisfaction.

The cap or button 13 is formed with a central opening 14 of larger diameter than the power electrode for the purpose of intensifying the spark. The electrode 7, therefore, has no electrical contact with the button 13, but insulation 15 is interposed between them.

I claim:

1. A spark plug having a body in the form of a shell, of conducting material, a stationary electrode passing through such body, a closure in the form of a plug of insulating material at each end of the body and extending but partially into the same, around the electrode, a substantial space existing between said plugs and between the sides of the shell and said electrode, whereby a body of dead air is inclosed in the shell around the electrode, a sparking button at one end of the body, contiguous to but insulated from the same, from which button the current jumps to said body, said button having a central hole through which the elec-

trode passes, and from which the sides of said hole are spaced.

2. A spark plug having a body, an electrode passing through such body, and insulated therefrom, and a sparking button at one end of the body contiguous to but insulated from the same, through a hole in which the electrode passes, an intensifying air gap being provided between the electrode and button, where the electrode passes through the button, said hole being closed to the exterior of the plug on all sides.

In testimony whereof I affix my signature.

JOHN RANSOMER.