

J. E. MURRAY.
SPARK PLUG.
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1,033,449.

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Fig. 1.

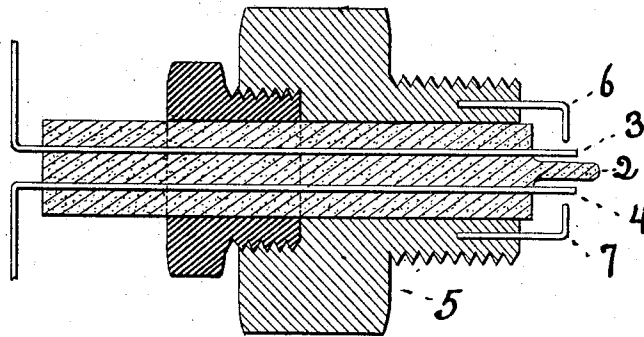
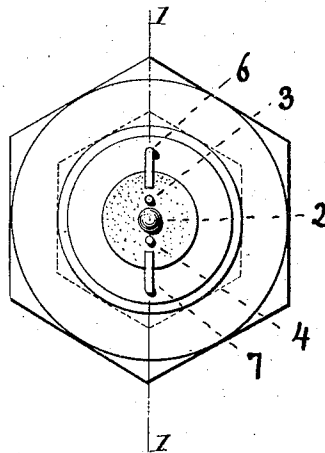


Fig. 2.



WITNESSES:

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SPARK-PLUG.

1,033,449.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JAMES E. MURRAY, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Spark-Plugs, of which the following is a specification.

My invention relates to improvements in spark plugs and has for its principal object the production of a plug which will promote the more economical, effective and advantageous construction and operation of gas engines fired by electric sparks from different sources by providing a single plug combining in itself effective means for sparking from two or more different igniting systems.

The invention is particularly applicable for use in automobiles and analogous constructions. In recent years it has become customary in the construction of such vehicles to provide for ignition from two separate sources of current, usually a battery and a magneto. To secure the best results, it is necessary to have the spark plug adapted to the source of current, as, for example, the distance between the sparking points and the size of the conductor must vary according to the source and power of the current: it has not, therefore, been practicable satisfactorily to use the same spark plug for both sources of current. This has occasioned the use of two sets of spark plugs, one adapted to take the current from the battery and the other to take that from the magneto. The result of this is disadvantageous construction, particularly because the cooling surface of the water-jacket around the cylinders is curtailed by the space which must be devoted to plugs entering the cylinders and because only one system of plugs can be located at the most advantageous firing position within the cylinders; it involves, moreover, much unnecessary expense and trouble for the manufacturer and user; and it precludes the use of both ignition systems in engines constructed for a single system.

My invention does away with these disadvantages by providing a single spark plug combining in itself suitable means for firing from two or more different ignition systems.

There are many well-known constructions of spark plugs, all of which consist essentially of a conductor insulated and separated at its sparking point from the point of another conductor. The particular forms, materials and fittings used are not important for present purposes, because my invention relates not to details of form, materials or fittings but to the combination in a single plug of sparking means adapted to two or more distinct ignition systems.

In the accompanying drawing is illustrated a simple embodiment of my invention, the details there shown being obviously susceptible of modification without departing from its spirit or scope.

In the drawings, Figure 1 is a sectional view taken at the line 1-1 of the end view shown in Fig. 2. Fig. 2 is an end view of the plug.

2 is insulating material, as, for example, mica through which extend two conductors 3 and 4 one of which is connected with the magneto and is preferably somewhat larger than the other, which is connected with the battery. The insulating material, 2, preferably extends beyond the sparking points of the conductors 3 and 4 to avoid the possibility of the spark jumping from one to the other. This, however, may be accomplished in other ways, as, for example, by making the distance between the sparking points of the conductors 3 and 6 and 4 and 7 less than the distance between the conductors 3 and 4.

5 is the usual shell.

6 and 7 are sparking points.

8 is the usual binding nut.

It will be understood that the conductors and insulators may be of any usual or suitable material and that the form illustrated in the drawing may be variously modified, as these details form no part of the invention.

I claim:—

1. In a spark plug, an insulating member, two or more conductors carried by said member and terminating outside of said insulating member, a portion of said insulating member extending between the extremities of the conductors.

2. In a spark plug, the combination of a non-conducting core having a sparking end formed with a projection, and a pair of electrical conductors insulated from each other and passing longitudinally through the core, said conductors terminating on opposite sides of said projection on said sparking end with said projection interposed between the ends thereof.

JAMES E. MURRAY.

Witnesses:

HERMAN GUSTOW,
DONALD WARDLAW.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."