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COMBINED SPARK PLUG AND SUPPRESSOR

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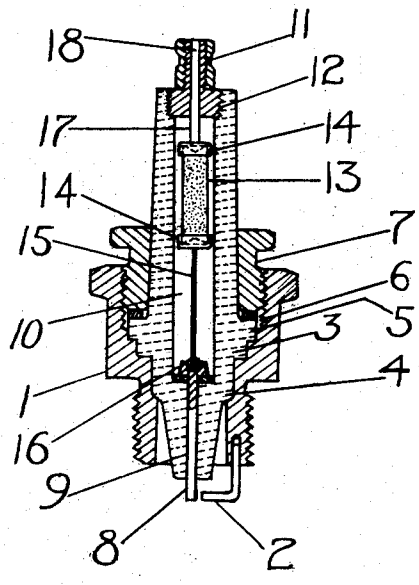

Byron B. Minnium
INVENTOR.

BY W. Z. Lord
ATTORNEYS.

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COMBINED SPARK PLUG AND SUPPRESSOR

Byron B. Minnium, Millcreek Township, Erie County, Pa., assignor to Erie Resistor Corporation, Erie, Pa., a corporation of Pennsylvania

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2 Claims. (Cl. 123—169)

It is common to supply ignition systems, particularly automobile ignition systems with suppressors if it is desired to operate a radio set in relation to be disturbed by the system. The present invention is designed to simplify the inclusion of the suppressors in the system and to that end provides for a suppressor in the spark plug. Where the suppressor is placed in the spark plug it is subjected to heat and if the suppressor element is one subjected to change in effectiveness, or by reason of deterioration though the action of the heat it is desirable to so control the heat transfer to and from the element as to prevent an accumulation of excessive heat in the element. Features and details of the invention will appear from the specification and claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing which shows a central section through a spark plug with the suppressor in place.

1 marks the spark plug body to which is attached one of the electrodes 2 usually grounded through the engine, and 3 the insulating shell usually of ceramic material, this shell extending through an opening 4 in the body. The shell has a shoulder 5 which extends into a socket 6 in the body and is secured in place by a screw-threaded plug 7. An electrode 8 is set in spaced relation to form a gap with the electrode 2 and extends through an opening 9 in the shell 4 into a cavity 10. The usual terminal post 11 is arranged at the top of the shell 3 and is secured in that shell by a screw-threaded end 12. A suppressor element 13 is provided with metallic connecting conductor ends 14. A conductor 15 extends from the lower end 14 to the upper end of the electrode 8. The upper end of the electrode 8 is provided with a head 16 to facilitate its connection with the conductor 15. A conductor 17 extends upwardly from the upper metallic end 14 through an opening 18 in the terminal 11. It is secured in the upper post, or terminal by solder, or other convenient means.

With this structure the element 13 is suspended in the cavity 10. The lower conductor 15 has very small heat exchange capacity. This is effected by utilizing a wire of very small gauge and preferably of material of small capacity for heat exchange as constantan and also by making it of considerable length. The conductor 17 extending outwardly from the element 13 is of ample heat conducting capacity and this is accomplished by a comparatively large cross section of material efficient for heat exchange and by making the span between the element and the terminal comparatively short. In this way the resistor element is protected against an accumulation of heat that would be detrimental to its action. On the other hand the suppressor element is brought very close to the spark which is of advantage in a functional way and is fully protected by the spark plug without any attention on the part of the operator assembling the ignition system.

What I claim as new is:—

1. A combined spark plug and suppressor comprising a spark plug having attached electrodes; a conductor leading from one of the electrodes to a conductor terminal including a suppressor element within the spark plug; and conductors leading inwardly and outwardly from the element, the inwardly leading conductor having small capacity for conducting heat to the element and the outwardly leading conductor having a comparatively large capacity for conducting heat from the element, said element conductors suspending the element in the spark plug.

2. A combined spark plug and suppressor comprising a spark plug having attached electrodes; a conductor leading from one of the electrodes to a conductor terminal including a suppressor element within the spark plug; and conductors leading inwardly and outwardly from the element, the inwardly leading conductor having small capacity for conducting heat to the element and the outwardly leading conductor having a comparatively large capacity for conducting heat from the element, said element conductors suspending the element in the spark plug out of contact with the walls of the spark plug.

BYRON B. MINNIUM.