

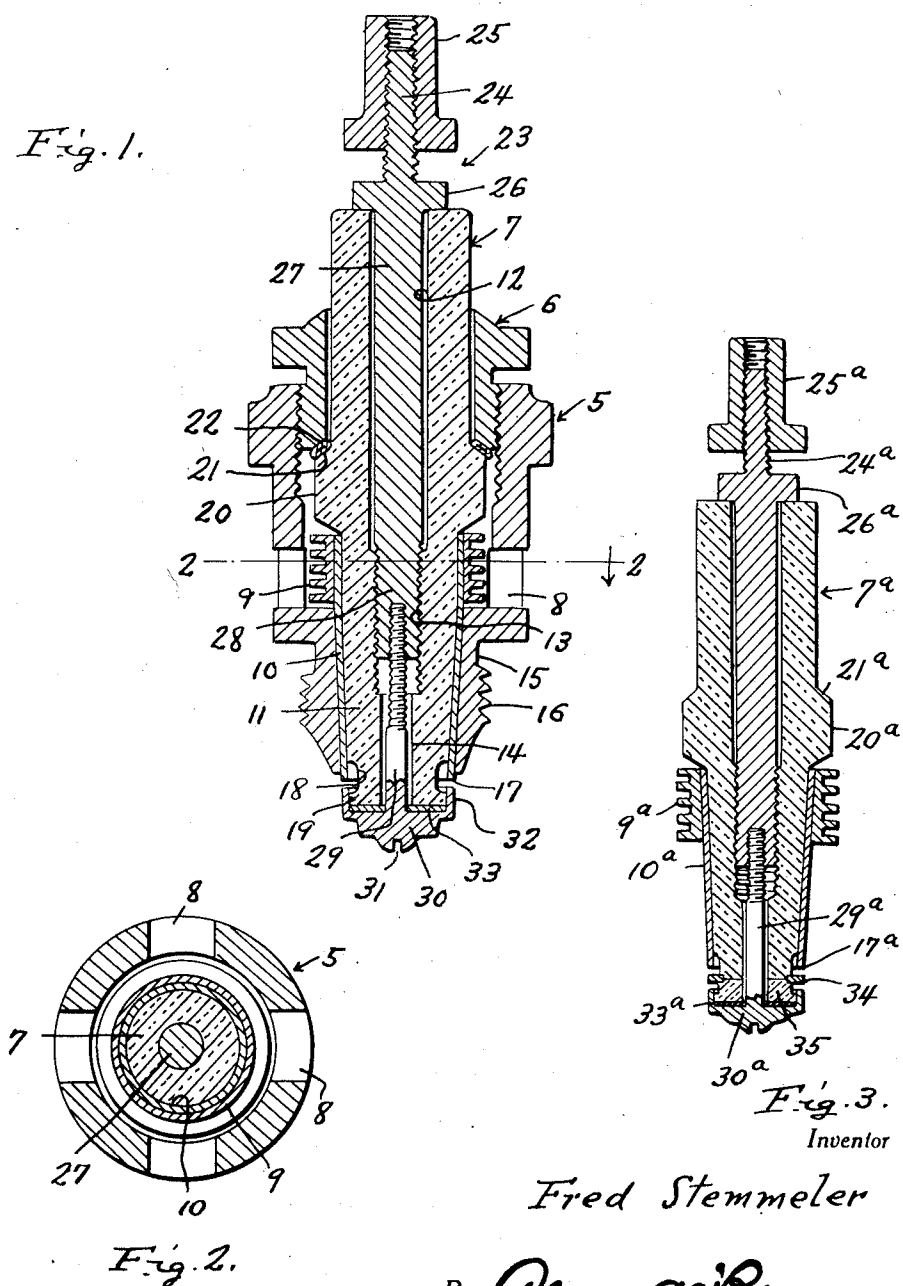
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SPARK PLUG

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SPARK PLUG

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1 Claim. (Cl. 123—169)

My invention relates generally to spark plugs, and particularly to a spark plug having novel construction and arrangement and wherein the spark gap extends circumferentially around the sparking end of the plug, and which spark gap is permanently adjusted, and an important object of the invention is to provide a spark plug of the character indicated above in which the burning of spark points is eliminated and the necessity for frequent re-setting thereof eliminated.

Another important object of the invention is to provide in a spark plug of the character indicated above means for effectively cooling the spark plug, the spark plug being capable of being very easily taken apart and cleaned.

Other important objects of my invention will be apparent from a reading of the following description in connection with the drawing, wherein for purposes of illustration I have shown a preferred embodiment of my invention.

In the drawing:—

Figure 1 is a vertical transverse sectional view taken through the embodiment.

Figure 2 is a horizontal sectional view taken through Figure 1 approximately on the line 2—2 and looking downwardly in the direction of the arrows.

Figure 3 is a transverse vertical sectional view showing the core assembly by itself.

Referring in detail to the drawing, the numeral 5 generally designates the spark plug shell which is substantially conventional in general contour and has threaded therein the clamping gland 6 which clamps the porcelain core 7 in place.

In the lower part of the shell 5 are radial openings 8 which communicate with the interior of the shell 5 and act as ducts for cooling air to reach the vertically spaced circumferential copper cooling fins 9 which are superposed on the upper end of the shell electrode 10 which is fitted on the slightly tapering lower end portion 11 of the porcelain core 7.

The porcelain core 7 is tubular in form having the enlarged bore portion 12 extending almost two-thirds of the way down from the top thereof and merging into the threaded portion 13 which leads into a reduced smooth portion 14 opening through the lower end of the core.

The shell 5 has the reduced depending portion 15 which is provided with spark plug hole engaging threads 16, and the lower end of the core depends below the lower end of the portion 13. The lower edge 17 of the electrode shell 10 ex-

tends slightly below the lower edge of the spark plug shell portion 17 and into the aperture of the rounded screw 18 which is circumferentially formed in the lower edge portion of the core and defines the annular shoulder 19 on the lower extremity of the core. The exterior of the bore above the electrode shell 10 is laterally expanded as indicated by the numeral 20 so as to define the tapered shoulder 21 on which lies the compressible gasket 22 which is engaged forcibly by the lower end of the gland 6 for forcing the core in place in the shell. The bore of the spark hole engaging portion 15 of the shell is conformably tapered with respect to the electrode shell 10 so that a jam fit is caused by setting in the flange 6 against the shoulder on the core 7.

A central electrode which is generally designated 23 comprises the upper threaded binding post portion 24 on which the binding post nut 25 is disposed and below this the annular portion 26 which overlies the top of the core 7, the body portion 27 which is slightly concentrically spaced from the sides of the bore portion 12 and which has on its lower end the threaded part 28 which engages the threaded portion 13 of the bore of the core. The lower end of the electrode 23 terminates in a threaded socket located above the reduced smooth bore portion 14 of the core and in this is threaded the shank 29 which is arranged concentrically spaced from the sides of the smooth bore portion 14 and has on its lower end the head 30 provided with the screw slot 31 in its lower end enabling application of a screw-driver thereto.

The head has the upwardly extending annular flange 32 which is of the same circular size as the lower edge 17 of the electrode shell 10 and is spaced at the proper sparking distance therefrom. The annulus 32 surrounds the shoulder 19 on the lower end or terminal of the core. Between the terminal of the core and the upper face of the head 30 is the copper washer 33 which acts as a shim for properly spacing the annular sparking rings. Should the rings become worn and require cutting down, the shim may be removed to procure again the proper sparking space therebetween.

It is believed obvious that the spark plug may be entirely disassembled by simply removing the clamp 6 and the shank equipped head 30 and that assembling is equally simple.

It will also be obvious that circulation of air takes place through the radial openings 8 in the shell to the cooling fins 9 surrounding the electrode shell 10, so as to keep the electrode shell 10

comparatively cool and prevent burning and pitting of the ring sparking member thereof. A new sparking head 30 may be put into place simply by screwing the shank 29 into place.

5 Although I have shown and described herein a preferred embodiment of my invention, it is to be definitely understood that I do not desire to limit the application of the invention thereto, and any change or changes may be made in the
10 materials, and in the structure and arrangement of the parts, within the spirit of the invention and the scope of the subjoined claim.

What is claimed is:—

A spark plug comprising an insulated core of

tubular form, a spark plug shell surrounding the core and engageable with a spark plug opening in a cylinder head or the like, a gland engaging the shell and the core and holding the core in the shell, a central electrode located in the bore of the core, an outside electrode in the form of a tube surrounding a lower portion of the core, an air chamber between the walls of the shell and the tube and cooling fins circumposed on a portion of the tube and positioned in said chamber, said shell having radial openings immediately adjacent the fins for admitting air to the chamber.

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