

R. A. STRANAHAN.
SPARK PLUG.
APPLICATION FILED FEB. 1, 1912.

1,042,619.

Patented Oct. 29, 1912.

Fig.

1.

Fig.

2.

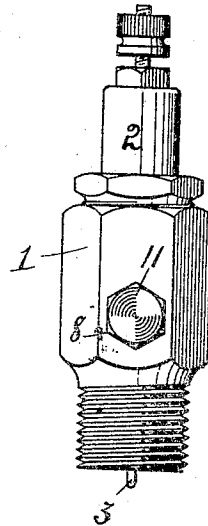
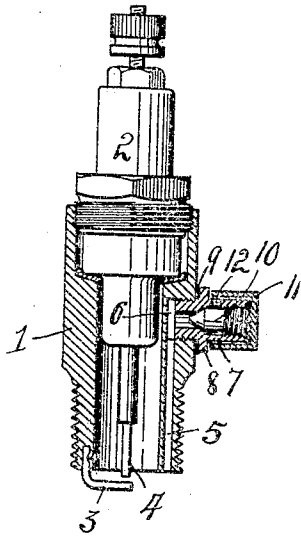
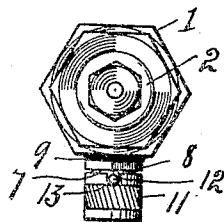


Fig.

3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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SPARK-PLUG.

1,042,619.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT A. STRANAHAN, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Spark-Plug; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to spark-plugs for internal combustion engines, and has for its object the provision of improved means in association therewith for introducing a priming charge into an engine cylinder in close proximity to the sparking points to facilitate a starting of an engine in cold weather or when the parts are chilled. In the use of spark-plugs having priming attachments of this nature considerable difficulty has been experienced on account of leakage occurring through the priming passage, which leakage affects the efficient running of the engine, and also by reason of the priming cups being open, which permits an accumulation or collection of dust and dirt therein, which, unless extreme care is taken will be washed into the cylinders with the priming mixture.

The purpose of the present invention is to provide a commercially practical priming attachment for spark-plugs which is provided with a close seating valve adapted to effectually prevent loss of compression within an associated cylinder, and also to provide means for closing or covering the priming opening when not in use.

Further objects will be apparent from the following description.

The invention is fully described in the following specification, and while, in its broader aspect, it is capable of embodiment in numerous forms, a preferred embodiment thereof is illustrated in the accompanying drawings, in which,—

Figure 1 is a side view of a spark-plug embodying the invention with a portion in central longitudinal section. Figs. 2 and 3 are side and outer end views thereof respectively.

Referring to the drawings, 1 designates the body shell or part of a spark-plug, which

threads into a cylinder wall, 2 the porcelain thereof which is securely fitted within the shell, and 3 and 4 the slightly spaced electrodes which are carried by the shell 1 and porcelain 2, respectively, as is well understood in the art.

In carrying out the features of my invention, the body-shell 1 is provided longitudinally in the wall thereof, preferably in opposition to the point of attachment of the electrode 3 thereto, with a bore or passage 5, which has one end opening without the inner end of the body-shell adjacent to the electrode ends and its opposite end opening into a socket 6, which is provided in a side of the shell without its point of entrance into a cylinder opening, as shown in Fig. 1. A nipple 7 is threaded or otherwise suitably secured in the socket 6, with its bore or passage in communication at its inner end with the bore 5 of the shell, and is preferably provided intermediate its ends with an annular shoulder or flange 8 to cooperate with a gasket 9 to form a tight joint with the shell.

A valve 10, preferably of needle form, is threaded into the outer end of the nipple 7 with its inner end adapted to seat against a conically restricted portion of the nipple passage, and has a cap 11 attached to its outer end for loosely fitting over the outer end portion of the nipple to serve both as a head or finger grip for the valve and as a dust guard for the priming hole 12, which is provided through a side of the nipple to the interior thereof without its valve seat. The inner edge of the cap 11 is preferably notched, as at 13, Fig. 3, in position to register with the priming hole 12 when the cap is given a partial turn to unseat the valve 10.

In priming an engine equipped with my improved plug, the cap 11 is first turned to uncover the priming hole 12 and to unseat the valve 10 and a small quantity of gasoline is then introduced into the nipple through said hole, from whence it passes to the engine cylinder through the bore or passage 5 in the body shell 1, being introduced into the cylinder at a point adjacent to the electrode terminals of the spark plug.

It is apparent that I have provided a priming means for spark-plugs which will not only introduce a charge through the shell to adjacent the ignition point of the plug, but is adapted to maintain the priming passage tightly closed to prevent any possi-

bility of leakage therethrough during a running of the engine, and which also has its priming opening closed except when opened for the introduction of a priming charge, thus preventing the accumulation of dust and dirt therein.

I wish it understood that my invention is not limited to any specific construction or arrangement of the parts except in so far as such limitations are specified in the claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is,—

1. A spark-plug having its shell provided longitudinally thereof with a charge introducing passage, a nipple attached to the shell with its bore in communication with said passage and having a priming hole in a side thereof, and a valve threaded into said nipple for seating in the bore thereof to close the same and having a part incasing the outer end portion of the nipple and movable with the valve to cover the priming hole therein when the valve is seated.

2. A spark-plug having its shell provided in the side thereof, without its point of entrance into a cylinder opening, with a socket and having a passage leading from said socket longitudinally through the shell wall and opening without the inner end

thereof, a nipple threaded into said socket with its bore in communication with said passage and having a priming hole through a side thereof, a valve threaded into said nipple for seating therein to close its bore and having its head forming a cap for incasing the outer end portion of the nipple and covering said hole when the valve is seated.

3. The combination with the shell of a spark-plug having a priming passage therethrough, of a nipple threaded into said passage and having a priming hole through a side wall thereof, and a valve threaded into said nipple for closing the bore thereof inside the point of entrance of said hole thereto, said valve having a fixedly attached cap loosely incasing the outer end portion of the nipple and covering said hole when the valve is seated and having an opening adapted to be moved into register with said priming hole when the valve is turned from seating position.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

ROBERT A. STRANAHAN.

Witnesses:

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M. Q. OPPENHEIM.