H. L. BROWNBACK.

SPARK PLUG.

APPLICATION FILED JAN. 15, 1908.

907,002. Patented Dec. 15, 1908.

Fig. 1.

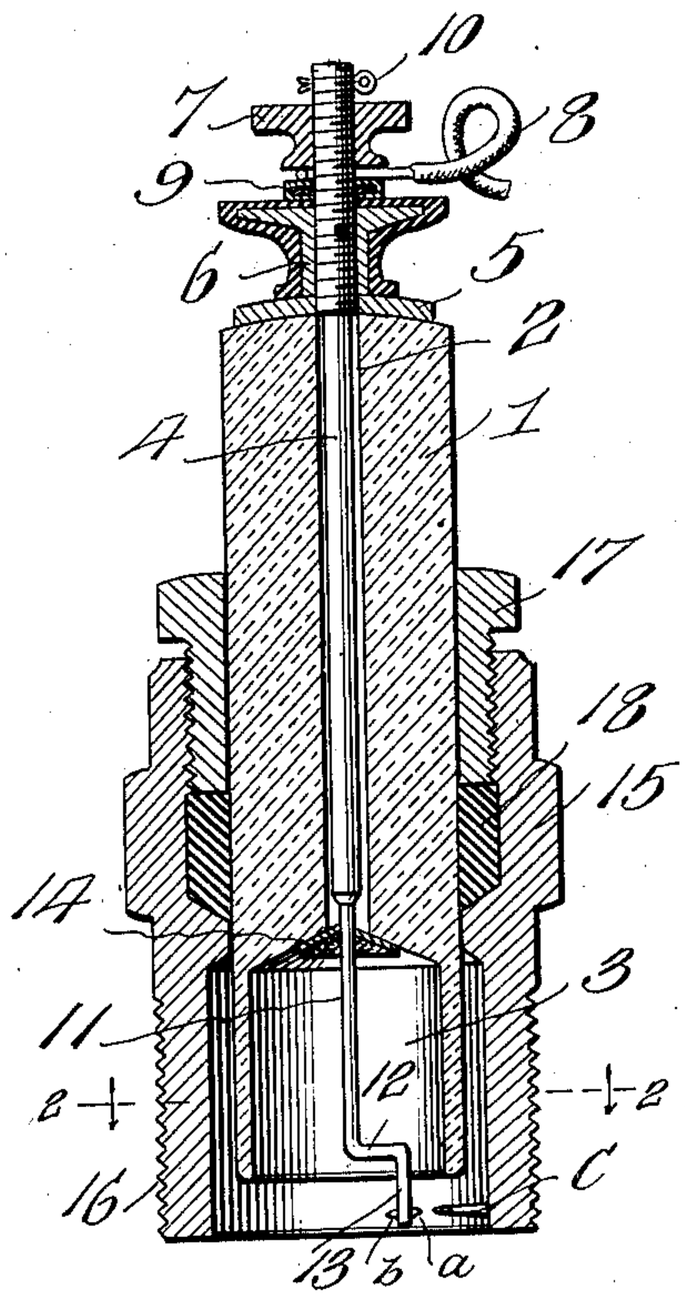
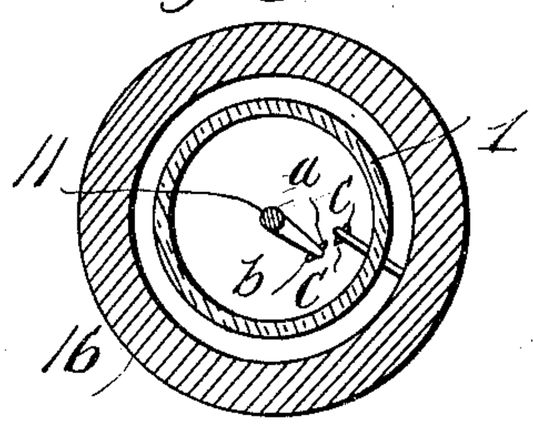


Fig. 2.



Witnesses

Frank Hough

E. R. Benyea

Inventor

Henry Lowe Brownback

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

HENRY LOWE BROWNBACK, OF NORRISTOWN, PENNSYLVANIA.

SPARK-PLUG.

No. 907,002. Specification of Letters Patent. Patented Dec. 15, 1908.

Application filed January 15, 1908. Serial No. 411,006.

To all whom it may concern:

Be it known that I, HENRY LOWE BROWNBACK, a citizen of the United States, residing at Norristown, in the county of Montgomery and State of Pennsylvania, have invented new and useful Improvements in Spark-Plugs, of which the following is a specification.

This invention relates to spark plugs for explosive engines, and one of the principal objects of the same is to provide a plug of simple construction in which the gap between the sparking points may be regulated in a moment while the engine is warmed up and running, thus obviating the annoyance of having to ascertain what is the matter when the spark points have been improperly adjusted so that they will not work.

Another object of the invention is to provide a double sparking point with means for turning one point or the other into operative position so that when one of the points becomes corroded and inoperative the other point may be readily adjusted to the required operative position.

In many instances a foreign substance like oil, water, gasolene, soot or carbon gets between the points and interferes with the operation. By means of my double points this defect may be overcome by adjusting the other point in proper position.

The above and other objects may be attained by means of the construction illustrated in the accompanying drawing, in which,—

Figure 1 is a longitudinal section taken through a spark plug made in accordance with my invention. Fig. 2 is a transverse section on the line 2—2, Fig. 1, looking in the direction indicated by the arrows.

Referring to the drawing for a more specific description of my invention, the numeral 1 designates a porcelain insulator having a central longitudinal bore 2, and the lower end of said insulator being recessed, as at 3, to form a sparking chamber. A central electrode 4 extends through the insulator 1 and is provided with screw threads at its upper end. The electrode extends through a copper washer 5 and through an insulated nut 6 and is provided with a nut 7 which holds the terminal 8 in place between it and the insulator 9. A cotter pin 10 is passed through the upper end of the electrode 4, and the lower end of said electrode is reduced in size, as at 11, and the terminal lower end is bent outwardly, as at 12, and downwardly, as at 13. The electrode passes through a copper asbestos lined gasket 14, and the insulator 9 may also be formed of copper with an asbestos lining. A double sparking point *a*, *b* is attached to the lower end of the electrode 4 in line with sparking points extending in opposite directions from the terminus of a fixed arm C, which is connected to the outer shell 15, said shell being provided with screw threads 16 for attachment to the engine and also provided with a nut 17 which engages the interior screw threads at the upper end of the outer shell, said nut having its lower end bearing against a rubber washer 18 which surrounds the insulator 1, said washer serving to hold the outer shell closely by friction to said insulator 1.

Whenever it is found necessary to change the sparking points the electrode is turned by loosening the nuts and applying a suitable tool to the same so that the point *a* is adjusted the required distance from one of the points *c* or the electrode may be turned so that the point *b* will be spaced the required distance from the other point *c*, as will be understood.

My spark plug is of simple construction, can be manufactured at comparatively slight cost and has various advantages over the spark plugs now in use.

Having thus described the invention, what is claimed as new, is:—

A spark plug comprising a shell formed with a fixed arm projecting within the shell, a plurality of sparking points projecting in opposite directions from the terminus of said arm, a non-conducting plug arranged within the shell and formed with a longitudinally disposed bore, an electrode extending through the bore and formed with a circumferentially reduced end, the terminal of said reduced end being bent into crank form with the end portion thereof depending within the shell approximately in horizontal aline-

ment with the fixed arm, and a plurality of sparking points projecting in opposite directions from the free end of the crank portion, the fixed arm preventing complete rotation of the electrode within the plug, whereby the relative positions of the respective fixed and movable sparking points may be determined.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY LOWE BROWNBACK.

Witnesses:
HENRY C. BROWNBACK,
FANNIE L. ROBERTS.