Oct. 28, 1930. L. A. HEADEN ET AL 1,780,076

IGNITION DEVICE

Filed Aug. 1, 1929

Fig. 1.

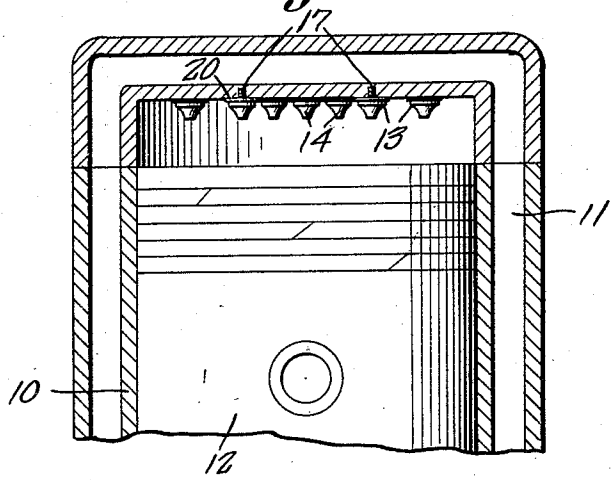


Fig. 2.

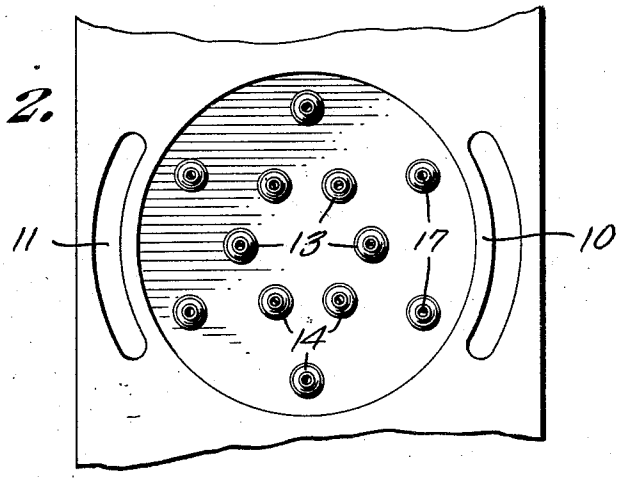
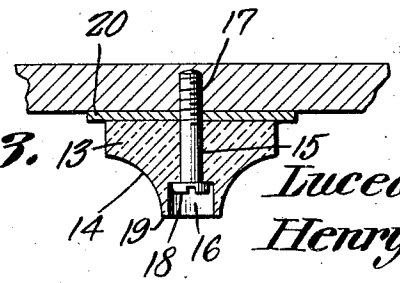


Fig. 3.



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WITNESS

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UNITED STATES PATENT OFFICE

LUCEAN A. HEADEN AND HENRY A. PETIT, OF ALBANY, GEORGIA, ASSIGNORS OF ONE-FOURTH TO ALBERT S. BACON, OF ALBANY, GEORGIA, AND THREE-FOURTHS TO NATIONAL OIL MANIFOLDS, INC., OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE

IGNITION DEVICE

Application filed August 1, 1929. Serial No. 382,763.

This invention relates to improvements in internal combustion engines and has especial relation to means for igniting the fuel gases within the engine cylinder.

An object of the present invention is to provide an ignition device of novel construction which is heated through the operation of the engine and maintained at a sufficiently high temperature to ignite the gases when the latter are compressed by the engine piston.

Another object of the invention is the provision of means for utilizing an ignition device of the above character in either a water or air cooled engine, and for mounting the device so that the cooling effect of the water will not reduce the temperature of the ignition device.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings:—

Figure 1 is a fragmentary sectional view showing a portion of an engine cylinder with the invention applied.

Figure 2 is a fragmentary plan view looking at the under face of the cylinder head.

Figure 3 is an enlarged fragmentary sectional view illustrating the manner of mounting the ignition devices.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the reference character 10 indicates the cylinder of an internal combustion engine which is water jacketed as shown at 11, after the manner of the usual water cooled engine. A portion of the piston which operates within the cylinder is indicated at 12.

The ignition device which is shown in the drawings comprises a porcelain body 13. This body is tapered as indicated at 14 to provide a pointed outer end and a relatively wide base. The body is provided with a concentrically arranged opening 15 whose outer end is counterbored as shown at 16. A fastening device in the form of a screw 17 extends through the opening 15 and is secured to the wall of the engine cylinder, while the head 18 of the screw is located within the counterbore an appreciable distance from the end of the body 13. As shown in Figure 3 of the drawings, the taper of the body 13 together with the wall of the bore 16 provides a relatively narrow annular heating point or flange 19.

A metal plate 20 is interposed between the porcelain body 13 and the adjacent wall of the engine cylinder. This plate is preferably formed of copper which possesses high heat absorbing qualities.

Preferably, the engine is started through the use of the ordinary spark plug, and when sufficient temperature has been obtained, current to the plug is cut off in any well known manner. Any number of heating elements may be utilized and these heating elements may be spaced upon the inside of the engine cylinder so that when properly heated they will ignite a maximum amount of the gases compressed within the engine cylinder.

By reason of the formation of the end of the porcelain body 13, this point or end will become highly heated so that when the gases are compressed they will be promptly fired. By reason of the heat absorbing qualities of the plate 20, water circulating through the jacket 11 will be prevented from lowering the temperature of the porcelain body 13.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claims.

Having described the invention what is claimed is:

1. In an ignition device for internal combustion engines, a porcelain body adapted to be secured to the inner face of the engine cylinder head, and a metallic member of high heat absorbing quality interposed between the device and the wall of the cylinder.

2. In an ignition device for internal combustion engines, a porcelain body adapted to be secured to the inner face of the engine

cylinder and having an opening therethrough and a counterbore at the outer end of the opening, a headed attaching device positioned within the counterbore and extending through the opening into the wall of the cylinder, and a tapered outer surface for the ignition device, said taper defining with the walls of the counterbore, a narrow annular heating point.

3. In combination, an internal combustion engine having a water cooled cylinder, an ignition device comprising a porcelain body, means to secure the body to the inner wall of the cylinder head, and a metallic member of high heat absorbing quality interposed between the ignition device and the wall of the cylinder.

4. In an ignition device for internal combustion engines, a tapered porcelain body having a relatively wide base and an opening extending through the body for the passage of an attaching member, said opening having a counterbore at the pointed end of the base and defining a narrow annular heating point.

In testimony whereof we affix our signatures.

LUCEAN A. HEADEN.
HENRY A. PETIT.