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A. L. SANDIN

ATTACHMENT FOR SPARK PLUGS

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Fig. 1.

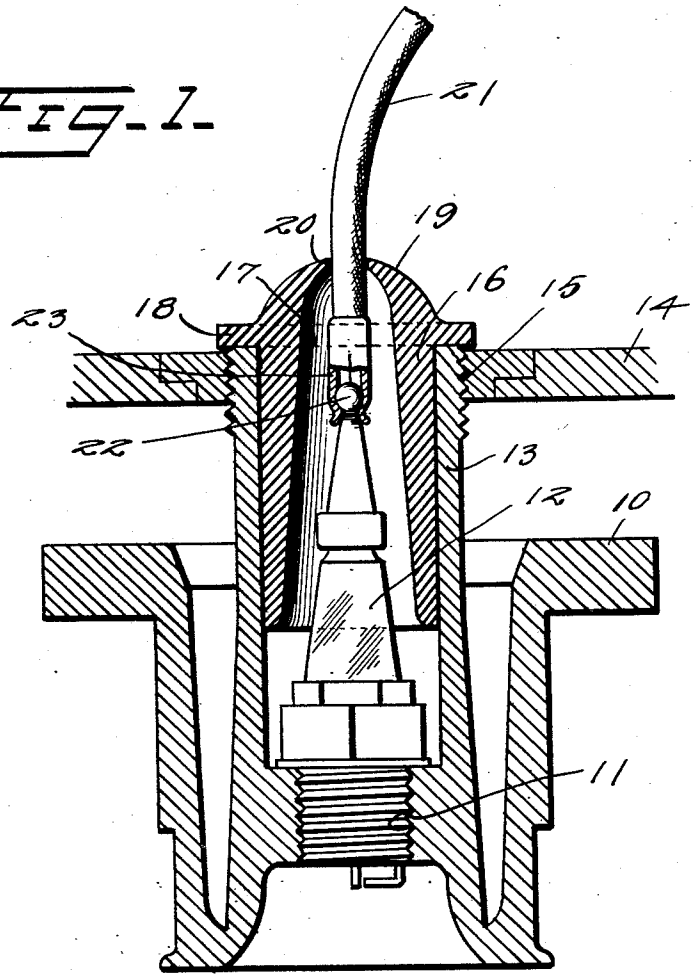
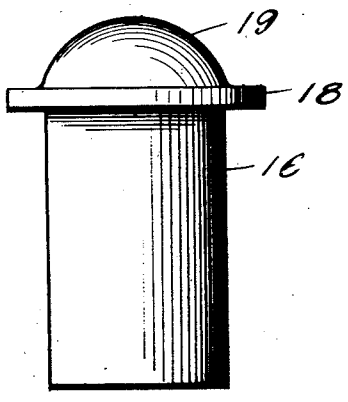


Fig. 2.



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ATTACHMENT FOR SPARK PLUGS.

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This invention relates to attachments for the spark plugs of sleeve valve engines and more particularly to a device for protecting the spark plugs and spark plug openings of the head of such engines.

An important object of the invention is the provision of a device of this character which will seal the upper end of the tubular boss surrounding the spark plug opening of sleeve valve engine heads, which serves as a means for connecting the water jacketed head of the engine thereto to prevent foreign matter from contacting with the spark plug in such manner as to short-circuit the same or to prevent the entrance of this foreign matter to the cylinder through the spark plug opening when the spark plug is removed.

A further object of the invention is to provide a device of this character which may be relatively cheaply produced, which will be durable and efficient in service and a general improvement in the art.

These and other objects I attain by the construction shown in the accompanying drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein:—

Figure 1 is a vertical sectional view through the cylinder head of a sleeve valve motor showing a protecting device constructed in accordance with my invention applied thereto;

Figure 2 is a side elevation of the protecting device removed.

Referring now more particularly to the drawings, the numeral 10 generally designates the cylinder head of a sleeve valve internal combustion engine having a central opening 11 for the reception of a spark plug 12. Surrounding this opening is a vertically extending tubular boss 13, which is connected and sealed to the water jacket head 14 of the engine, as indicated at 15. These bosses are open at their upper ends and accordingly there is a tendency of dust, dirt, oil and water to collect therein.

In accordance with my invention, I provide a closure for the upper end of this tubular boss, comprising a cylindrical plug 16, which is preferably formed of rubber and which has in its lower end an axial chamber 17 receiving the upper end of the spark plug. At its upper end, the plug is provided with a circumferential flange 18 adapted to rest upon the upper end of the boss and the upper end above the flange is concavely rounded, as indicated at 19. The chamber 17 continues through this upper end in the form of an opening 20, which is just of sufficient size to permit the introduction of the lead wire 21 to the spark plug.

The lead wire 21 preferably has engagment with the spark plug, permitting it to be inserted through the opening 20 and engaged with the spark plug, without the necessity of slipping the plug 16 from the boss 15. In the present instance, this connection is illustrated as a spherical head 22 formed upon the upper end of the main electrode of the spark plug and a resilient snap fastener 23 forming a terminal for the lead wire 21. It will be obvious that since the lead wire fairly closely fits in the opening 20, the entrance of foreign matter to the interior of the boss will be prevented. It will also be obvious that with the spark plug 12 removed, the plug will serve to prevent the entrance of foreign matter to the interior of the boss, where it might pass to the interior of the engine cylinder and cause damage thereto.

The plug 16 has a convexly curved upper end to shed water and other foreign matter and is provided with a central opening in the convexly curved end so as to allow the plug to be disengaged from the tubular boss and slipped back upon the wire 21 without detaching said wire from the spark plug. The closure plug 16 also has a long skirt extending downwardly into the tubular boss 13 a sufficient distance so as to prevent the displacement of the closure plug by an accidental pull or jerk upon the wire 21 passing through the opening in the convexly curved upper end. The diameter of the closure plug is just sufficient to allow the plug to be pushed into the tubular boss, thus affording some resistance against accidental dispacement.

Since the construction hereinbefore set forth is capable of a certain range of change and modification without materially departing from the spirit of the invention, I do not limit myself to such specific structure except as hereinafter claimed.

I claim:—

1. The combination with the cylinder head of an internal combustion engine having a socket in the lower wall of which a spark plug receiving opening is formed, of a plug for closing the upper end of the socket extending into the socket for a considerable distance

and having at its upper end a flange seating upon the face of the cylinder head about the edges of the socket, said plug being chambered at its lower end for the reception of the upper end of the spark plug and having an opening for the passage of a lead wire for the spark plug, the upper face of the plug inclining downwardly and outwardly from the edges of the lead wire receiving opening.

2. The combination with the cylinder head of an internal combustion engine having a socket in the lower wall of which a spark plug receiving opening is formed, of a plug for closing the upper end of the socket extending into the socket for a considerable distance and having at its upper end a flange seating upon the face of the cylinder head about the edges of the socket, said plug being chambered at its lower end for the reception of the upper end of the spark plug and having an opening for the passage of a lead wire for the spark plug, the upper face of the plug inclining downwardly and outwardly from the edges of the lead wire receiving opening, said opening being of a size to closely fit the lead wire, the edges of the opening being flexible.

In testimony whereof I hereunto affix my signature.

ARTHUR L. SANDIN.