G. ROSENBAUER.

SPARK PLUG TESTER.

APPLICATION FILED JULY 26, 1920.

1,380,839. Patented June 7, 1921.

Fig. 1.

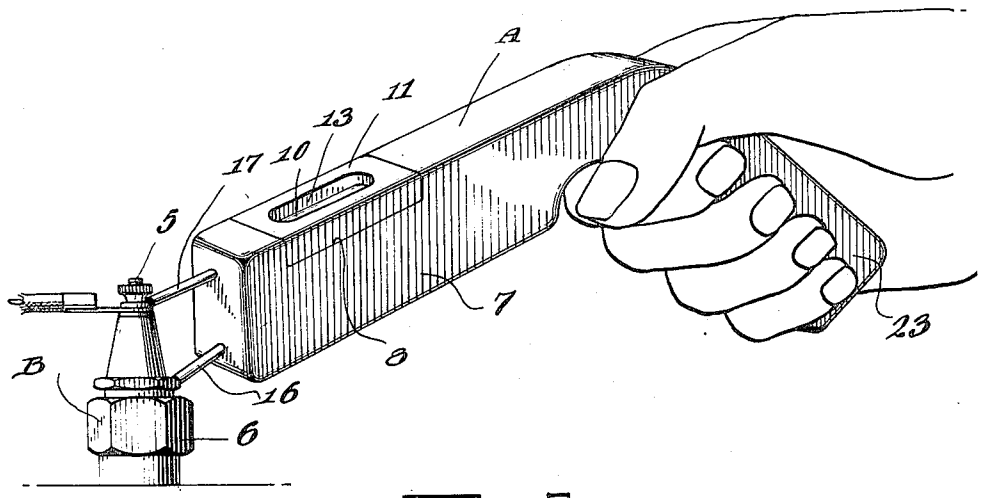


Fig. 2.

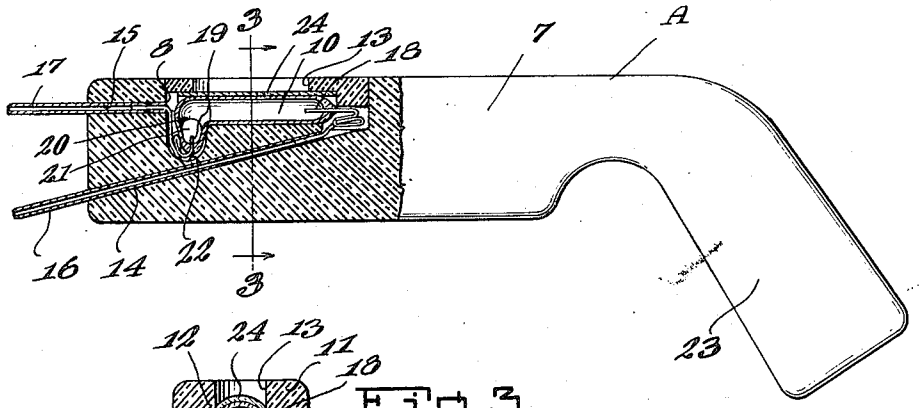
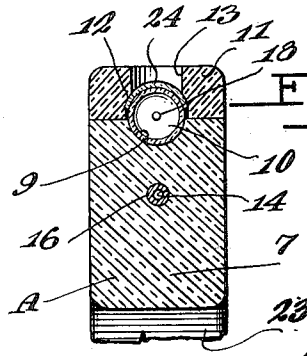


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SPARK-PLUG TESTER.

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To all whom it may concern:

Be it known that I, GUSTAVE ROSENBAUER, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Spark-Plug Testers, of which the following is a specification.

This invention relates to testing devices and the primary object of the invention is to provide an improved device for testing spark plugs while in operation, so that the exact condition of the plugs can be easily and quickly determined, without necessitating the removal thereof from the engine.

Another object of the invention is to provide an improved spark plug tester embodying a handle carrying an electric mercury lamp and a pair of contacts for engaging the poles of a spark plug, the mercury lamp being so positioned in the handle that the displacement thereof is prevented.

A further object of the invention is to provide an improved mercury electric lamp embodying a pair of spaced electrodes, one of which is arranged adjacent to the bottom of a pocket, formed for the reception of a globule of mercury, the pocket being so formed in relation to the body carrying the lamp that the mercury will always be positioned in correct relation to the electrode.

A further object of the invention is to provide an improved form of handle and an improved means for arranging the mercury electric lamp in the handle, so that the globule of mercury will always be held in its exact position, in the mercury lamp, when the handle is grasped.

A still further object of the invention is to provide an improved spark plug testing device of the above character, which is durable and efficient in use, one that is simple and easy to manufacture, and one which can be placed upon the market at a reasonable cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described, claimed and illustrated in the accompanying drawings, forming a part of this specification, and in which drawings,

Figure 1 is a perspective view of the improved spark plug tester, showing the same in operative relation to a spark plug.

Fig. 2 is a side elevation of the tester, showing parts of the same in section, and

Fig. 3 is a transverse section taken on the line 3—3 of Fig. 2.

Referring to the drawings in detail, herein similar reference characters designate corresponding parts throughout the several views the letter A generally indicates the improved spark plug tester and B a spark plug being tested. The spark plug B may be of the usual or any preferred type and includes central electrode or pole 5 and the bushing 6, which is grounded in the usual manner to the engine, with which it is associated.

The improved tester A includes a body 7, which is preferably formed of insulating material, such as wood, fiber or the like and is provided at its upper edge adjacent to its forward end with the cut out portion or recess 8. The lower wall of the recess 8 is provided with a longitudinally extending semi-cylindrical groove 9 for the reception of the electric mercury lamp 10, which will be hereinafter more specifically described. The electric mercury lamp 10 is held in place by substantially rectangular block 11, which is fitted within the cut out portion or recess 8. The lower surface of this block 11 is also provided with a longitudinally extending semi-cylindrical groove 12, which conforms to the configuration of the lamp 10 and the block is provided with a sight opening 13, through which the lamp may be readily seen. The block 11 can be held in place, by a suitable adhesive, or any other securing means.

The body 7 is provided with a diagonally extending bore 14 which extends rearwardly from the forward end of the body into the rear end of the recess 8. The forward end of the body is also provided with a bore 15, which communicates with the forward end of the recess. These bores 14 and 15 are adapted to receive contacts 16 and 17 which are adapted to engage the poles of a spark plug.

The electric mercury lamp 10 consists of an air exhausted tube, the opposite ends of which have electrodes 18 and 19 embedded therein. The forward end of the lamp 10 is provided with a depending pocket 20 in which the electrode 19 is embedded. The pocket 20 is also adapted to receive the globule of mercury 21, and prevents the displacement of the globule of mercury from out of

engagement with the electrode 19. The forward end of the recess 8 has its lower wall provided with a socket 22 for the reception of the pocket.

To insure that the user of the device will hold the body 7 in correct position, so as to not displace the globule of mercury 21 from out of the pocket 20, a depending pistol grip handle 23 is formed on the rear end of the body 7, and it will be seen that owing to the shape and arrangement of the handle on the body 7, that the pocket 20 will always be held in a lowered position. To protect the lamp 10 against breakage, a transparent guard 24 is placed over the outer surface of the same and is held in place by the block 11.

The electrodes 18 and 19 are connected respectively with the contacts 16 and 17 and as shown these contacts 16 and 17 are of hollow formation to facilitate the connection of the electrodes therewith. However it is to be understood, that the contact may be formed solid and secured to the electrodes by suitable conducting solder or the like.

In assembling the improved mercury lamp 10 in the body 7, the block 11 is removed and the lamp 10 is placed in the groove 9. The contact 16 is then slid in its bore 14 and the free end of the electrode inserted therein. The contact 16 is slid rearwardly as far as possible in the recess and a suitable instrument is then used to mash the hollow contact around the electrode. The electrode 19 is secured in the same manner to the contact 17 and when the contacts and electrodes have been securely connected together, the guard plate 24 is placed over the same and the block 11 secured in position.

The device is then ready for use and as clearly shown in Fig. 1 of the drawing the contact 17 is placed in engagement with the central electrode or pole 5 while the contact 16 is placed in connection with the bushing 6. If the spark plug is functioning properly, a brilliant light will be given in the lamp, but if the electrodes are broken or spaced too far apart, no light will be seen in the lamp and thus it will be known that the spark plug is broken.

From the foregoing description, it can be seen that an improved spark plug testing device has been provided of exceptionally simple and durable construction, and by means of which the exact working condition of a plug can be quickly determined without necessitating the removal thereof from the engine.

Changes in details may be made without departing from the spirit or scope of this invention, but what I claim as new is,

1. A tester comprising a body of insulation having a recess therein, a testing member arranged in said recess including a pair of electrodes, flexible wires connected to the electrodes, means for holding the testing member in the recess, and hollow contacts carried by the body and extending exteriorly of the same arranged to receive the flexible wires.

2. A spark plug tester comprising a body formed of electric non-conducting material, having a recess formed in its upper edge, an electric lamp fitted in said recess including a pair of spaced electrodes, a block of insulating material arranged to engage the upper surface of the lamp to hold the same in position against accidental displacement, and a pair of forwardly projecting contacts embedded in said body and connected to said electrodes.

3. A spark plug tester comprising a body formed of electric non-conducting material, having a recess formed in its upper surface, a mercury lamp fitted in said recess, including a pair of spaced electrodes, a block having a sight opening formed therein arranged to engage the upper surface of the lamp to hold the same against accidental displacement in said recess, and a pair of hollow contacts embedded in said body and receiving said electrodes.

4. A spark plug tester comprising a body formed of insulating material, a mercury lamp embedded in said body, including a pair of spaced electrodes, a depending pocket formed in said lamp at one end thereof, a globule of mercury arranged in said pocket, and a pair of spaced contacts embedded in said body and projecting outwardly from the forward end thereof and connected to said electrodes.

5. A spark plug tester comprising a body formed of insulating material, a mercury lamp embedded in said body, a depending pocket formed in said lamp, an electrode embedded in said pocket, a second electrode carried by the lamp arranged in spaced relation to the first electrode, a depending handle formed on said body, and a pair of forwardly extending spaced contacts embedded in said body and connected to said electrodes.

6. A spark plug tester comprising a longitudinally extending body formed of insulating material having a recess formed in its upper edge adjacent to the forward end of the body, a mercury electric lamp fitted in said recess, a block fitted in said recess arranged to engage the upper surface of the lamp and having a sight opening therein, a depending pocket formed in the lamp at the forward end thereof, an electrode fitted in said pocket, a second electrode carried by the lamp and arranged in spaced relation to the first electrode, a depending pistol grip handle formed on the rear end of the body, and a pair of spaced forwardly extending contacts embedded in said body and connected to said electrodes.

GUSTAVE ROSENBAUER.