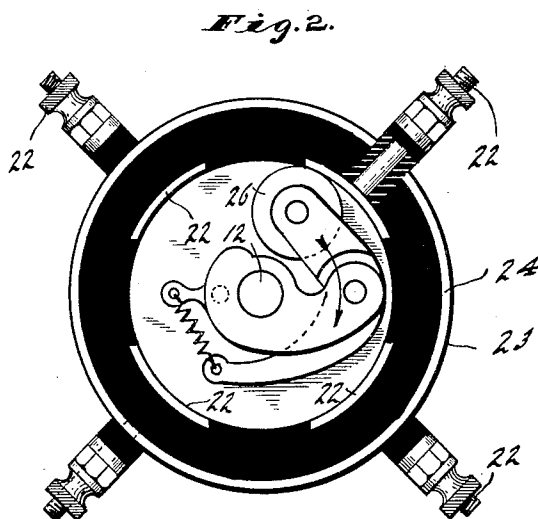
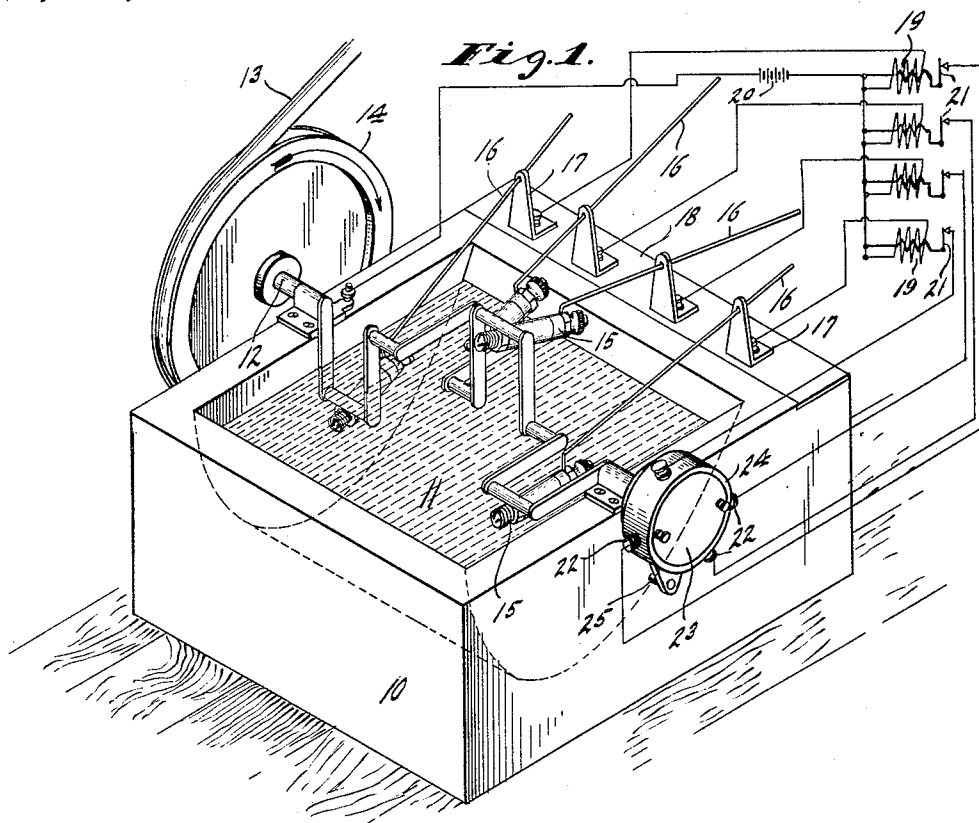


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SPARK PLUG DEMONSTRATOR.
APPLICATION FILED MAY 31, 1912.

1,056,185.

Patented Mar. 18, 1913.



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UNITED STATES PATENT OFFICE.

GEORGE F. KREITLEIN AND HARRY L. ROEGER, OF INDIANAPOLIS, INDIANA.

SPARK-PLUG DEMONSTRATOR.

1,056,185.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed May 31, 1912. Serial No. 700,572.

To all whom it may concern:

Be it known that we, GEORGE F. KREITLEIN and HARRY L. ROEGER, citizens of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Spark-Plug Demonstrator, of which the following is a specification.

Our invention relates to demonstrating devices, and has for its object the demonstrating of the operation of spark plugs, such as are used in internal combustion engines, when immersed in and saturated with oil.

The accompanying drawings illustrate our invention.

In the drawings, Figure 1 is a perspective view showing a display device embodying our invention, the electrical connections being shown diagrammatically; and Fig. 2 is a sectional view through the timer.

A tank 10 is provided for containing the oil 11, or other liquid, of which the effect or lack of effect is to be shown on the spark plug under demonstration. A crank shaft 12 is mounted on the tank 10 so that its cranks, four being shown, dip successively into the oil as the shaft is rotated. This rotation is obtained in any convenient manner, as from a belt 13 leading from a suitable source of power to a pulley 14 mounted on the shaft 12. Pivotaly mounted in any suitable manner on each crank of the shaft 12 is a spark plug 15, which has one terminal grounded on the shaft 12 and the other connected, by a stiff wire 16, to an upright 17 mounted on a strip of insulation 18 on one side of the tank 10. The wires 16 extend loosely through holes in the upper ends of the uprights 17, so that the wires can slide through said openings and can change their angles relative to the upright 17. Each upright 17 is connected to one terminal of the secondary of an induction coil 19, the other terminal of such secondary being grounded, conveniently through the exciting battery 20, on the shaft 12. The primaries of the induction coils 19 are connected in common to one side of the battery 20, the other side of which is grounded on the shaft 12 as stated above; and the other sides of the primaries are connected through vibrators 21 to the terminals 22, respectively, of a timer 23 mounted on the shaft 12 or otherwise oper-

ated synchronously therewith at either the same or a proportional speed. This timer is of a usual construction, such as shown in Fig. 2, having a casing 24, held stationary by a pin 25 projecting into the tank 10 and carrying the four insulated terminals 22, and a rotary member 26, shown as a roller, which is carried by the shaft 12 and is spring-pressed outwardly to engage the several terminals 22 as the shaft 12 is rotated. As the shaft 12 turns, the sparking ends of the spark plugs 15 are dipped successively into and withdrawn from the oil 11, and each picks up a quantity of oil from the main body thereof. At the same time the roller 26 engages the terminals 22 successively, thus successively completing the primary circuit of the induction coils 19 to produce sparking successively at the sparking ends of the several plugs. By adjusting the distributor 23 on the shaft 12, this sparking may be made to take place either in the main body of oil 11 or after the sparking ends of the plugs have been raised from the main body of oil but are saturated with the oil which they have dipped up. Thus the operation of spark plugs in oil or other liquids and the effects of different kinds of oil or other liquids on the spark plugs, can be demonstrated ocularly.

We claim as our invention:

1. A display device, comprising a tank for containing liquid, a shaft mounted on such tank, one or more spark plugs carried eccentrically by said shaft and arranged to be dipped into the liquid, and a timer operated synchronously with said shaft for making proper electrical connections to produce sparking at said spark plug or plugs at desired points in the rotation of the shaft.

2. A display device comprising a tank for containing liquid, a spark plug, means for dipping said spark plug into the liquid in said tank and withdrawing it therefrom, and a timer operated synchronously with said dipping and controlling the sparking at said spark plug.

3. A display device comprising a tank for containing liquid, a shaft mounted on said tank, means for mounting a spark plug eccentrically on said shaft to be dipped into and withdrawn from the liquid in the tank, and a timer operated synchronously with

said shaft to produce sparking at said spark plug at a desired point in the rotation of the shaft.

4. A display device comprising a tank for
5 containing liquid, means for dipping a spark plug into the liquid in said tank and withdrawing it therefrom, and electrical connections for said spark plug.

In witness whereof, we have hereunto set

our hands and seals at Indianapolis, Indiana, 10
this 25th day of May, A. D. one thousand
nine hundred and twelve.

GEORGE F. KREITLEIN. [L. S.]
HARRY L. ROEGER. [L. S.]

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
