Aug. 1, 1950 R. GRAVES 2,517,302

TIMING LIGHT

Filed April 8, 1946

FIG 3

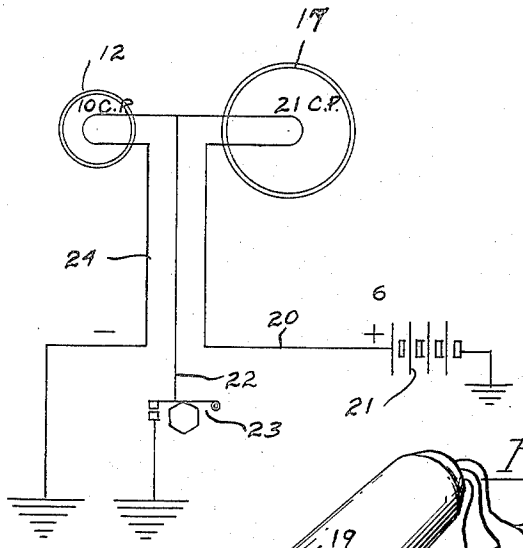


FIG 2

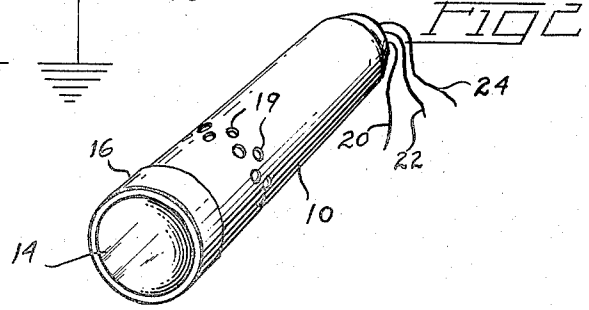
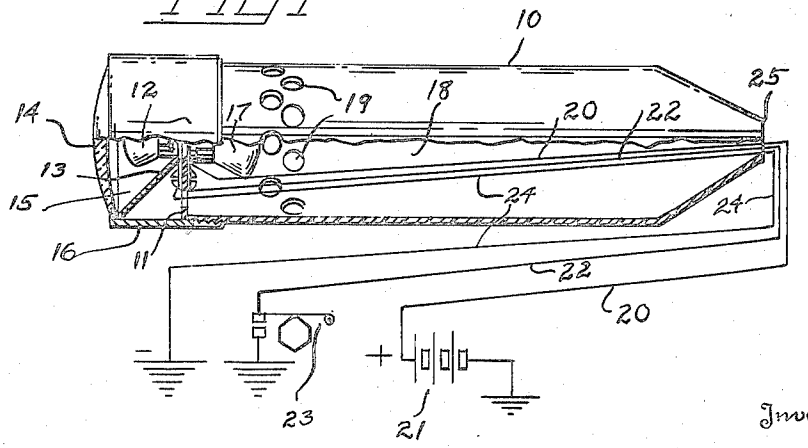


FIG 1



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TIMING LIGHT

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1 Claim. (Cl. 175—183)

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The present invention relates to a timing light or electrical tester used for timing an automobile motor or similar power machine.

The present invention has for its principal object to provide an electrically operated timing instrument designed for use in connection with the setting of the distributor of an internal combustion engine, which is of simple construction and may be employed without difficulty by any ordinary motor vehicle mechanic for the purpose of determining whether or not the distributor mechanism of the motor vehicle is properly set or adjusted for delivering the desired electric current impulse to the spark plugs in the engine.

Another object of the invention is to provide a device of the character stated which employs a pair of indicator lights of different current requirements, which are hooked up or joined in a novel manner whereby, when the device is connected as required with the motor vehicle battery, the distributor breaker arm, and a ground, the light requiring the greater amount of current for energization will be put in circuit with the battery through the breaker arm when the distributor points are closed and, when the distributor points are open the current from the battery will be caused to flow through the two lamps in series whereby the other lamp requiring the smaller amount of electric current will be illuminated to indicate the opened condition of the breaker points.

One embodiment of the invention is illustrated in the drawing, wherein like numerals relate to the same details in the different views:

Figure 1 is a side view, half in elevation and half in section of the tester and conductors in about full size;

Figure 2 is a perspective view of the same in smaller scale and

Figure 3 is a wiring diagram therefor.

Reference numeral 10 denotes a tubular casing of a size for comfortably carrying in the hand. One end of the casing is closed by a transverse partition 11 of insulating material carrying means for attachment thereon, on the forward or outer side thereof, of a small electric bulb 12 of about 10 candle power and requiring a small amount of current for its illumination, surrounded by a reflector 13 and covered by a lens or glass disk 14, thus providing a practically closed small chamber 15 at one end of the casing 10. A cap 16 is detachably connected with the forward end of the casing and protects these parts from injury. On the back of the partition 11 means is provided for the mounting of a larger

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electric bulb 17 of about 21 candle power and requiring a greater amount of current for its illumination than the bulb 12, to be enclosed in the large rear chamber 18 of said casing 10. The casing is preferably made of plastic material and if the casing is transparent, the burning of the bulb 17 can be observed from the outside. If the casing is non-transparent, a series of small apertures 19 are provided in the casing adjacent the larger bulb 17 for the same purpose.

With the aid of the wiring diagram in Figure 3, the use and operation of the instrument will be readily understood. Three electric conductors are provided and run through the pointed rear end 25 of the casing 10. The first conductor 20 is intended for connecting one side of the filament of lamp 17 with the positive pole of a battery 21 having its negative pole grounded.

A second conductor 22 connects the other side of the filament of bulb 17 and one side of the filament of bulb 12 through the base contacts of the bulbs, with the distributor breaker arm 23, while the other side of the filament of bulb 12, is grounded to the motor or any other metal part by means of the conductor 24.

With the motor at rest, and the flywheel of the motor set on the timing mark, the ends of the conductors are connected as follows: Conductor numbered 20 is attached to the positive pole of battery 21, conductor 22 is connected to the distributor breaker arm and conductor 24 is connected to ground. If the breaker points are closed the inside bulb 17 of the instrument will light. Thereupon the entire distributor unit should be turned slowly counter-clockwise, the operator meanwhile watching the bulbs until bulb 17 goes out and the bulb 12 lights. The two bulbs will not burn together as the current requirements of the two will be greater than that supplied. The current runs from the battery 21 along the conductors 20 and 22 to distributor. If the distributor points are closed, bulb 17 lights, but if the points are open the current continues through the bulb 12 to ground, whereupon bulb 17 goes out and bulb 12 lights. When bulb 12 burns this indicates that the motor is properly adjusted and the distributor structure is then secured against movement, in the customary manner. If a recheck is desired, the motor is turned over slowly while the light is pointed on flywheel mark and the bulb lights will change just as the mark goes by the pointer. It is not necessary to run the motor in order to get the timing and the operator does not have to see the

distributor points opening or closing as the light will show the timing.

Changes in detail from the form of the invention herein shown and described may be made without departing from the spirit of the invention as set forth by the subjoined claim.

I claim:

A testing instrument of the character described comprising a long tubular body forming a casing, an end wall across one end of the tubular body, a cap removably engaging and partially enclosing the said end of the body, said cap having a light transmitting outer end and forming with the end wall an incandescent lamp chamber, means for supporting two incandescent lamps on opposite sides of and upon said end wall with their bases in end opposed relation whereby one incandescent lamp is disposed in the chamber and the other lamp is disposed within the casing, an electric current conductor having a common connection with one side of the filament of each of two lamps mounted on the wall, and separate and independent electric conductors each connected with the other side of the filament of one lamp only, said casing wall being constructed in the part thereof surrounding a lamp in the casing to show the illumination of the incandescent lamp positioned within the casing, the opposite end of the casing body being formed for the passage of the conductors therethrough.

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