

[54] **IGNITION DISTRIBUTOR CAP WITH ISOLATED CAPACITOR AND RESISTOR**

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[56] **References Cited**

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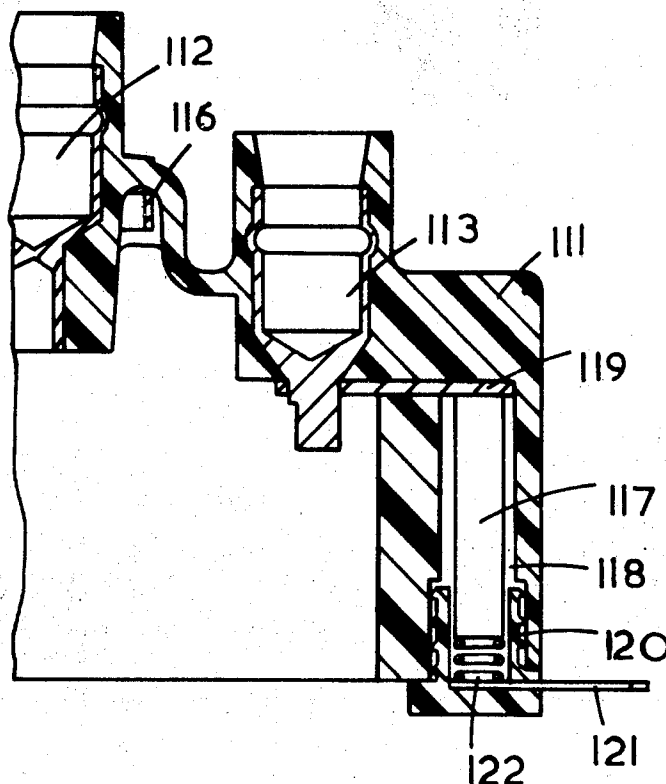
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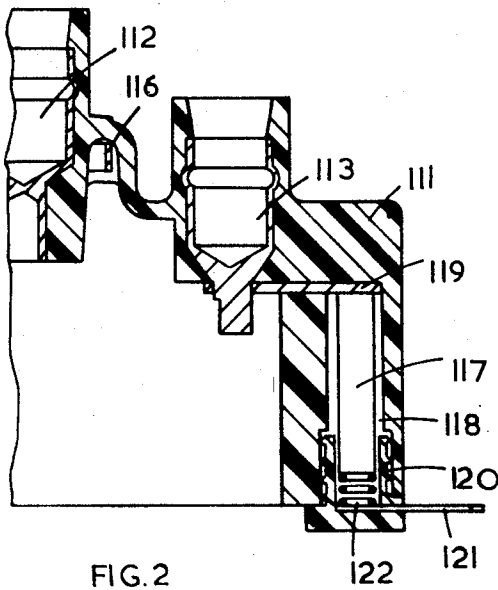
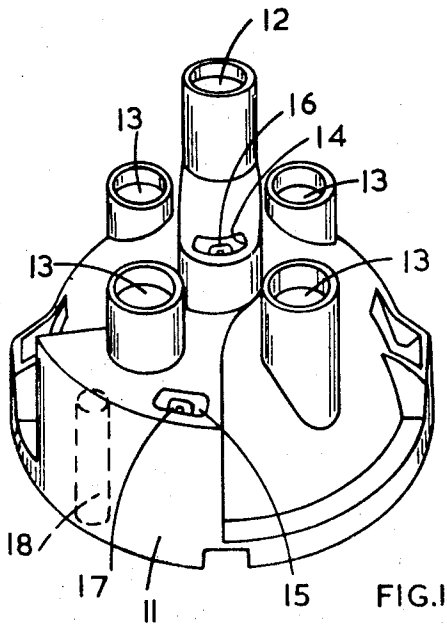
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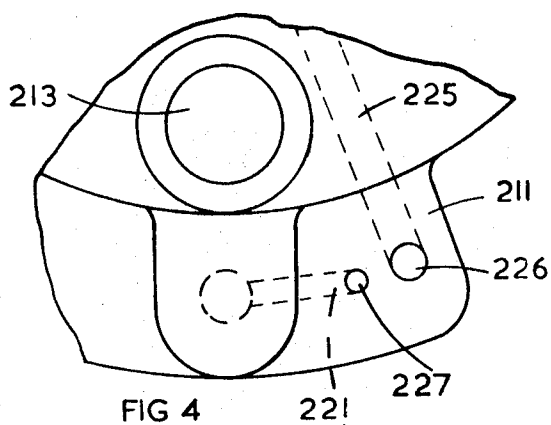
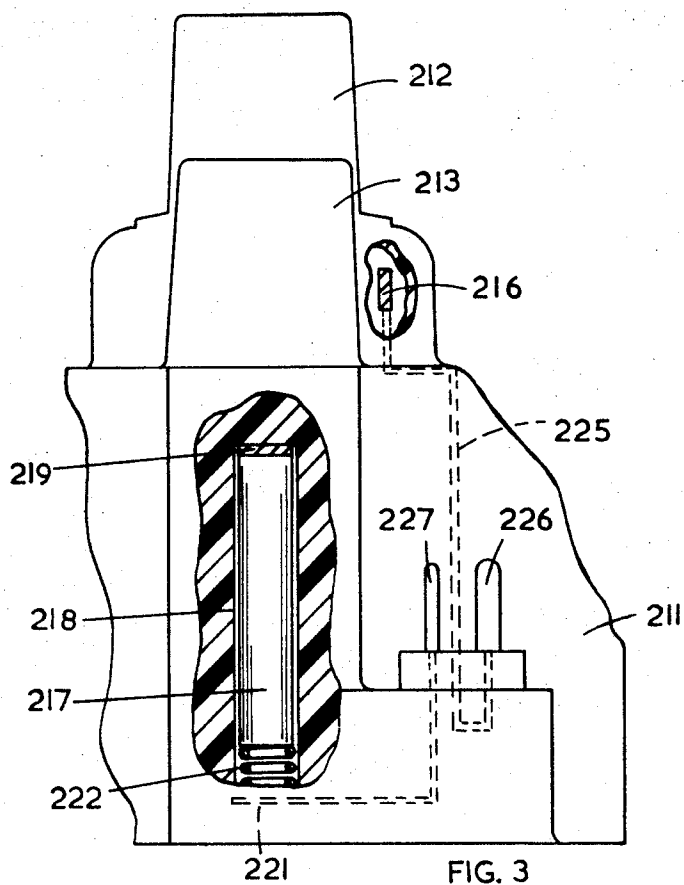
[57] **ABSTRACT**

The ignition distributor cap comprises an insulating body carrying an input terminal and a series of output terminals for successive contact by a rotor arm of the distributor. A connector forms with the input terminal a capacitor the dielectric of which is the material of the body. A resistor is connected to one of the output terminals and to a further connector.

5 Claims, 4 Drawing Figures







IGNITION DISTRIBUTOR CAP WITH ISOLATED CAPACITOR AND RESISTOR

This invention relates to caps for ignition distributors, and has for its object to provide such a cap in a form suitable for use in diagnostic equipment for indicating faults.

A distributor cap according to the invention comprises an insulating body part for connection to the distributor, the body part having an input terminal which when the cap is in position engages the rotor arm of the distributor, and a plurality of output terminals, one for each spark plug of the engine, there being further provided a terminal zone in or on the body part and defining with one of the terminals a capacitor having as its dielectric the material of the body part.

Preferably, the capacitor is defined between the terminal zone and the input terminal.

Most preferably, a resistor is connected between one of the output terminals and a further terminal zone on the body.

Embodiments of the present invention will now be described, by way of example, with reference to the accompanying drawings, in which:

FIG. 1 is a perspective view of an ignition distributor cap according to the present invention,

FIG. 2 is a sectional view of part of a modified distributor cap also according to the present invention, and

FIGS. 3 and 4 are part sectional views of parts of a further form of distributor cap according to the present invention.

Referring to FIG. 1, a distributor cap includes a molded insulating body 11 having an input terminal 12 and four output terminals 13. The cap is adapted for connection to a connection is completed from an ignition coil by way of the terminal 12 and a spring loaded brush to a rotor arm (not shown) within the distributor body. The rotor arm then completes electrical circuits by way of the output terminals 13 to the spark plugs of the engine in turn.

The body part 11 is moulded with two slots 14 and 15 and within the slots 14 and 15 are blade connectors 16 and 17 respectively. The connectors 16 and 17 are adapted for connection to diagnostic equipment, and the connector 16 forms with the input terminal 12 a capacitor, the dielectric of which is constituted by the material of the body part 11.

The connector 17 is connected to one of the terminals 13 through a megohm resistor (indicated generally by reference numeral 18). Thus, the diagnostic equipment receives signals indicating the voltage at the input to the rotor arm. The signal from connection 17 enables the readings obtained at terminal 16 to be related to a known spark plug.

Referring now to FIG. 2, the ignition distributor cap illustrated therein is similar to that shown in FIG. 1 and comprises an insulating body 111 with an input terminal 112 and four output terminals 113. An annular conductor 116 surrounding the terminal 112 and having a connector leading to the outside of the body 111 forms with the input terminal 112 a capacitor, the dielectric of which is constituted by the material of the body 111.

A resistor 117 located in a recess 118 in the body 111 is connected to one of the output terminals 113 by a conducting plate 119. The resistor 117 is retained in position by a barbed cap 120 which also carries a blade connector 121 connected with the resistor 117 by a compression spring 122 located internally of the cap 120.

As in the case of the embodiment of FIG. 1, the diagnostic equipment receives signals indicating the voltage at the input to the rotor arm and the signal from connector 121 enables the readings obtained at the connector of conductor 116 to be related to a known spark plug.

Turning now to FIGS. 3 and 4, the distributor cap illustrated therein is similar to that of FIG. 2 and comprises an insulating body 211 with an input terminal 212 and four output terminals 213 (only one shown). An annular conductor 216 surrounds the terminal 212 and has a connector 225 leading to an electrical plug pin 226 on the body 211. The annular conductor 216 forms, with the input terminal 212 a capacitor, the dielectric of which is constituted by the material of the body 211.

A resistor 217 is located in a recess 218 in the body 211 and is connected to one of the input terminals 113 by a conducting plate 219. The resistor 217 is connected via a spring 222 to a conductor 221 which leads to another pin 227 on the body.

In use, the diagnostic equipment is connected by means of a single multi-way electrical socket connector (not shown) engaged with the pins 226 and 227 with suitable provision for weatherproofing.

Resistors may be provided for more than just one of the distributor outlet terminals so that the reading related to more than one sparking plug can be obtained.

I claim:

1. A distributor cap comprising an insulating body part for connection to the distributor, said body part having an input terminal which when said cap is in position engages the rotor arm of the distributor, a plurality of output terminals, one for each spark plug of the engine, a conductor surrounding one of said terminals and being spaced therefrom by a portion of the material of said body part, a capacitor defined by said conductor and said one of said terminals, the dielectric of said capacitor being said portion of the material of said body part, and a further terminal extending from said conductor.

2. The distributor cap as claimed in claim 1, wherein said one of said terminals is said input terminal.

3. The distributor cap as claimed in claim 1, wherein a resistor is connected between at least one of said output terminals and a further terminal zone in or on said body part.

4. The distributor cap as claimed in claim 1, wherein said conductor is an annular conductor.

5. The distributor cap as claimed in claim 3, wherein said resistor is disposed in a recess in said body part and is retained in position by a barbed cap carrying the said terminal zone in the form of a connector extending externally of the body part.

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