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3,158,749

ANTI-THEFT DEVICE

Filed May 6, 1960

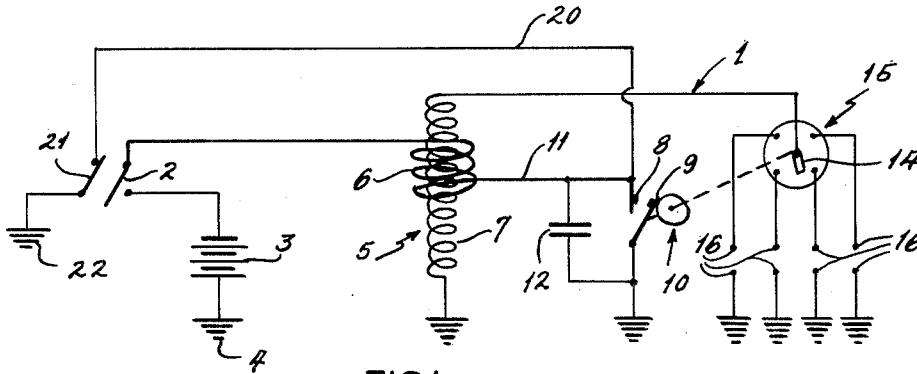


FIG. 1

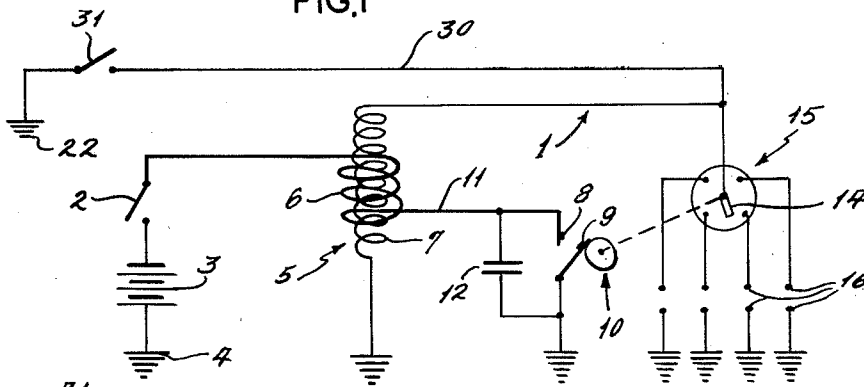


FIG. 2

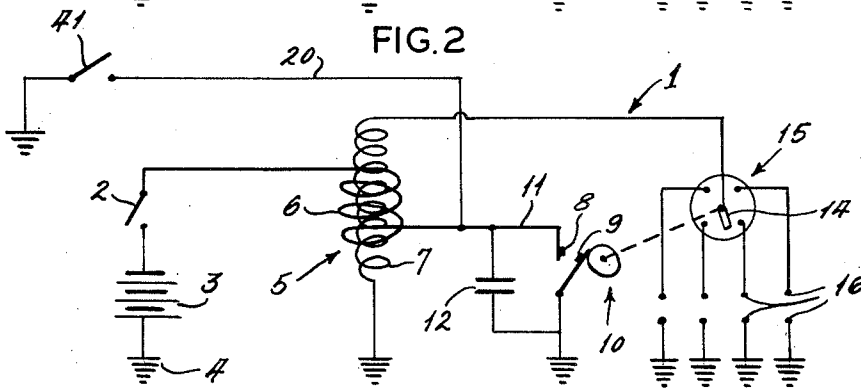


FIG. 3

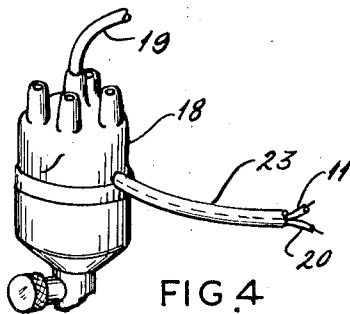


FIG. 4

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ANTI-THEFT DEVICE

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This invention relates to anti-theft devices.

Automobile theft constitutes a major problem to police, insurance companies, and the citizenry whose automobiles are stolen. The problem of discouraging automobile theft is one which has occupied the attention of many inventors. Numerous systems have been devised, many of which involve the sounding or appearing of an alarm, such as the sounding of the automobile horn, or the blinking of the lights. Others have involved in effect a second, hidden, ignition switch. A patent to Stone, No. 1,351,973, shows a combination of a horn sounding alarm system with a means for grounding the magneto.

These prior art systems have had certain disadvantages. Some of them have been complicated. In others, an audacious and ingenious thief could either disconnect the alarm device, since it is immediately apparent, for example, that the horn is blowing, or use a jumper or auxiliary power source, if no key is available, or the ignition switch apparently fails to work.

One of the objects of this invention is to provide an anti-theft device which is simple, economical to produce, easy to install, which cannot be jumped, and the existence of which is difficult to determine.

Other objects will become apparent to those skilled in the art in the light of the following disclosure and accompanying drawing.

In accordance with this invention, generally stated, an anti-theft device is provided, in combination with an internal combustion engine ignition system having a coil and a distributor, the distributor having a casing which houses both a distributor arm and a breaker mechanism. The distributor arm is electrically connected, through the casing, with the secondary winding of the coil. The breaker mechanism is electrically connected, through the casing, with the primary winding of the coil. The anti-theft device consists essentially of an electrical conductor electrically connected at the casing to at least one of the distributor arm and breaker mechanism, a switch electrically connected to the electrical conductor, and a ground connection to the side of the switch opposite its connection to the electrical conductor.

Preferably, the electrical connection of the conductor, to the breaker mechanism or distributor arm is within the distributor casing, and the electrical conductor leading to the switch, hence to ground, is indistinguishable from the other wires of the ignition system. This is especially feasible when the regular ignition switch is modified so as to close the grounding circuit when it opens the ignition circuit and vice versa.

The advantages of the anti-theft device of the invention are that it is extremely simple, that its existence is not immediately apparent, even when separate electrical conductors and a separate switch are used, and most importantly, that it cannot be jumped or even by-passed with an auxiliary power source.

In the drawing, FIGURE 1 is a diagrammatic view of an ignition system provided with an anti-theft device constructed in accordance with one illustrative embodiment of this invention;

FIGURE 2 is a diagrammatic view showing another embodiment of this invention;

FIGURE 3 is a diagrammatic view showing still another embodiment of this invention; and

FIGURE 4 is a view in perspective showing a distributor with the electrical conductor of the anti-theft

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device of this invention connected internally of the distributor.

Referring now to FIGURES 1 and 4 of the drawing for one illustrative embodiment of this invention, reference numeral 1 indicates an ignition system for an internal combustion engine provided with an anti-theft device of this invention. The ignition system 1 includes an ignition switch 2, a battery 3 connected at one side to one side of the ignition switch 2, and, on the other side, to a ground connection 4. The ignition system also includes a coil 5 having a primary 6 and a secondary 7. One side of the primary 6 is connected electrically to the side of the ignition switch 2 opposite the battery connection; the other side of the primary 6 is electrically connected by means of a conductor 11, to one point 8 of two points 8 and 9, of a breaker mechanism 10. The other point, point 9, is connected to ground. A condenser 12 is electrically connected across the points 8 and 9.

One end of the secondary 7 is electrically connected to ground, and the other is electrically connected to an arm 14 of a distributor 15. The circuit of the secondary is completed through the distributor and through spark plugs 16 to ground in the conventional manner.

Both the breaker mechanism 10 and the distributor arm 14 are housed in a distributor housing 18, shown in FIGURE 4.

In the embodiment of anti-theft device shown in FIGURES 1 and 4, an electrical grounding conductor 20, shown as occupying a single insulating sleeve 23, is connected to the conductor 11 at the place at which the conductor 11 is electrically connected to the breaker point 8. The electrical conductor 20 is connected to one side of a switch 21. The other side of the switch 21 is connected to a ground connection 22. In this embodiment, the ignition switch 2 and the grounding switch 21 are combined, in such a way that closing of the ignition switch 2 opens the grounding switch 21, and opening of the ignition switch 2 closes the grounding switch 21.

In the embodiment shown in FIGURE 2, a separate grounding switch 31 is provided, independent of the ignition switch 2. This is merely illustrative of the fact that such a separate switch may be provided. In this embodiment, a grounding conductor 30 is electrically connected at one end to the switch 31 and at the other end to the distributor arm 14. Referring to FIGURE 4, the electrical conductor 30 may be brought in with the usual cable 19, leading through the cap of the distributor 18 to the distributor arm 14. As in the embodiment shown in FIGURE 1, the side of the switch 31 opposite from the electrical conductor is electrically connected to a ground 22.

In the embodiment shown in FIGURE 3, the grounding conductor 20 is electrically connected to the breaker point 8 at one end and to a switch 41 at its other end. The switch 41 of this embodiment, unlike the switch 21 of the embodiment shown in FIGURE 1, is separate and independent from the ignition switch 2. In all other respects, the embodiment of FIGURE 3 is like the embodiment shown in FIGURE 1.

In any of the embodiments, particularly if the anti-theft device is not to be sold as original equipment, the electrical conductor connected to one of the distributor arm 14 and breaker point 8 can be led into the distributor casing 18 through a hole made in the lower part of the casing, so as to conceal the electrical connection.

It can be seen that when the grounding circuit of the anti-theft device of this invention is complete, that is, when the grounding switch 21, 31 or 41 as the case may be is closed, the usual jumper from the hot side of the battery to the coil primary 6 will accomplish nothing,

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since the breaker mechanism in the embodiments of FIGURES 1 and 3 and the distributor arm in the embodiment shown in FIGURE 2 are short circuited. Neither will a jumper across the ignition switch be effective. In the embodiment shown in FIGURES 2 and 3, even if the key be left in the ignition switch, the car cannot be started until the grounding switch is opened.

Even if an auxiliary power source (another battery and coil) is provided by the thieves, the engine cannot be started, because the shorting is accomplished in the device of this invention at the distributor casing. This is to be contrasted with the device of the patent to Stone, No. 1,351,973, which, at first glance, might seem to be similar in arrangement.

The switches 31 and 41 of the devices of the embodiment, shown in FIGURES 2 and 3 may be placed at any suitable and convenient, though disguised, positions, and the switches may take any desired form.

In the embodiment shown in FIGURE 1, in which the ignition switch is modified to provide a contact which works in the opposite direction from that of the ignition switch, if the wires leading to the ignition switch are pulled loose and then twisted together, as is sometimes done by car thieves, if the conductor 29 is not pulled loose, it will accomplish its function, but if it is pulled loose and twisted together with the wire leading from the hot side of the battery and the wire leading to the primary 6, it will still accomplish its function, since it will short out the primary 6.

Thus it can be seen that an auto theft device is provided which is simple and inexpensive, but, at the same time, highly effective.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. In combination with an internal combustion engine ignition system having a coil and a distributor, said dis-

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tributor having a casing housing a distributor arm, said distributor arm being electrically connected, by a conductor extending through said casing, with the secondary of the coil, an anti-theft device comprising a grounding conductor electrically connected at said distributor to, and physically encompassed within a common insulating sheath with, the conductor electrically connecting said secondary and said distributor arm, and a switch electrically connected to said grounding conductor and to ground whereby said grounding conductor can selectively be connected to and disconnected from ground.

2. In combination with an internal combustion engine ignition system having a coil and a distributor, said distributor having a casing housing a breaker mechanism, said breaker mechanism being electrically connected, by a conductor extending through said casing, with the primary of the coil, an anti-theft device comprising a grounding conductor electrically connected at said distributor to and physically encompassed within a common insulating sheath with, the conductor electrically connecting said breaker mechanism and said primary, and a switch electrically connected to said grounding conductor and to ground whereby said grounding conductor can selectively be connected to and disconnected from ground.

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