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W. HEMINGWAY, JR

IGNITION SYSTEM

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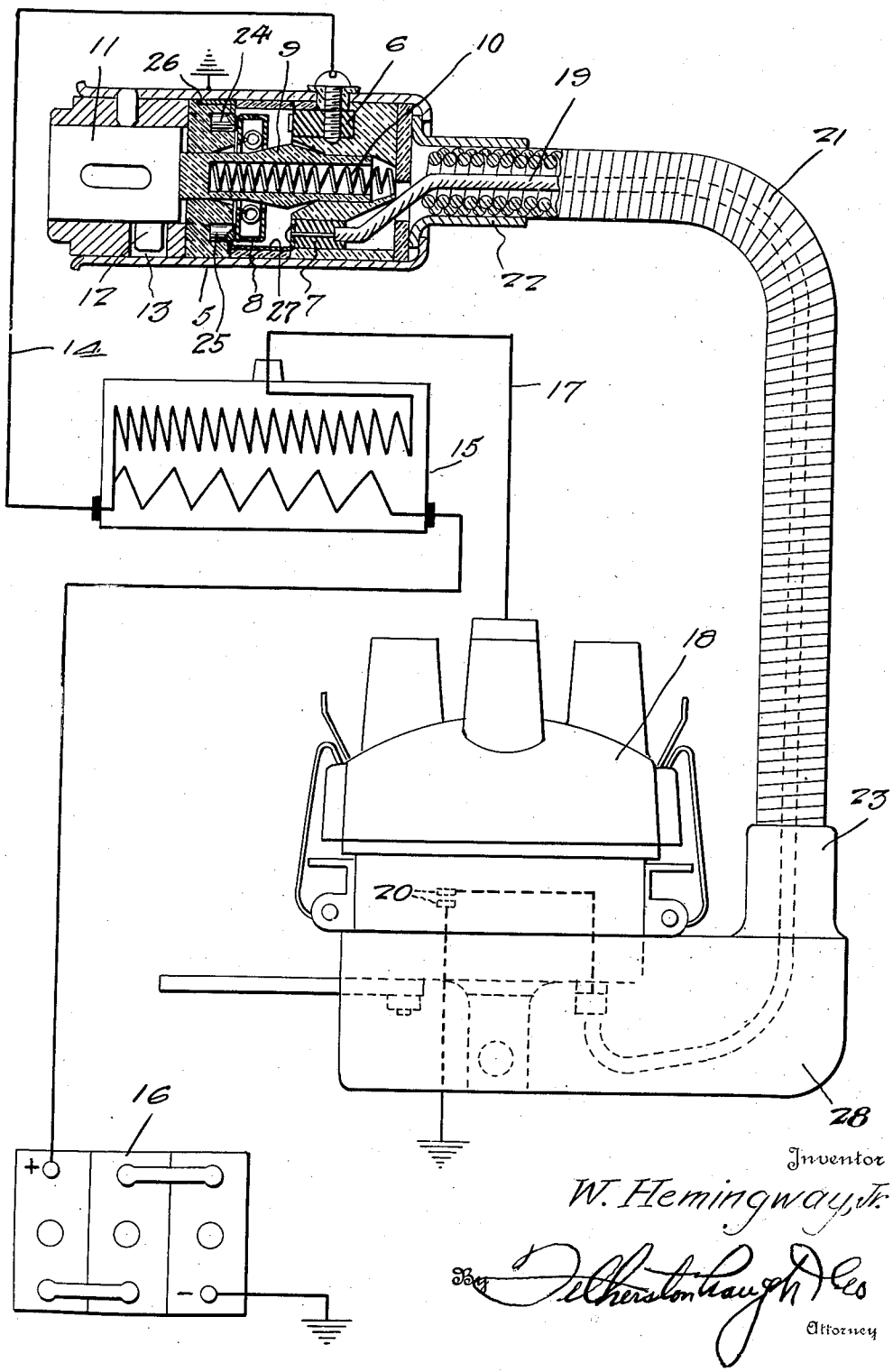

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UNITED STATES PATENT OFFICE.

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IGNITION SYSTEM.

Application filed July 7, 1925. Serial No. 42,058.

This invention relates to ignition systems as used in automobiles and motor boats and has for its principal purpose to prevent unauthorized use of the system without interfering with the accessibility of the spark coils, breaker points, timer, and other components to which convenient access must be frequently had for adjustment, repair or replacement.

Another purpose of the invention is to lock the ignition circuit against unauthorized use in such manner that reestablishment of the circuit can not be readily effected by the use of substitute spark coils or other components.

In one embodiment of the invention an incased lock switch is provided in the wire or line which connects one pole of the spark coil to one pole of the timer and that portion of the wire between the switch and the timer is provided with an inclosing armor. It is apparent that when the switch is locked in the open position the only way in which a thief may reestablish the ignition circuit is by the use of a substitute timer but this is impracticable because of the necessity of disconnecting the gearing and subsequently retiming the ignition circuit to produce a spark at the proper instant.

Other purposes and advantages of the invention as well as the novel details of construction and arrangement of parts will be more readily understood from the following description in connection with the accompanying drawing in which:

The single feature is a diagrammatic representation of an ignition system embodying my invention. It is to be understood that the invention is susceptible of embodiment in other forms of construction and arrangements than that shown and that various changes in the details and in the relative arrangement of the parts may be made within the scope of the claims without departing from the said invention or the principle thereof.

Referring to the drawing by reference characters, 5 designates an encased lock switch of the type disclosed in my copending application, filed March 18, 1925, and bearing Serial Number 16,509. For present purposes this switch may be briefly described as comprising a pair of spaced stationary contacts 6 and 7, which cooperate with a movable ring contact 8 adapted to be shifted into and out of engagement with said stationary contacts by means of a reciprocable actuating stem 9. Movement of this stem in a direction to close the switch is caused by a spring 10 while movement of the stem in the opposite direction to open the switch is controlled by a reciprocable lock barrel 11 including a locking bolt 12 adapted to engage in the opening 13 of the switch casing for locking the switch contacts in the open position shown in the drawing.

In the present instance switch contact 6 is connected by a conductor 14 to one terminal of the primary winding of the spark coil 15 while the other terminal of said winding is connected as shown to the insulated pole of the battery 16. The high tension terminal of the spark coil is connected in the usual manner by conductor 17 to the distributor 18 while the other stationary contact 7 of the encased lock switch is connected by a conductor 19 to one of the breaker points 20 of the timer structure. The other of the said breaker points is grounded as illustrated. This conductor 19 is inclosed in a tubular armor cable 21 having one end secured in a nipple 22 permanently fastened to the casing of the switch 5. The other end of said armor or cable is secured in like manner within the neck 23 of the timer cover 28 which is positioned beneath the timer and can not be removed except subsequent to removal of the timer. This casing which encloses the connection of the conductor 19 is preferably of burglar-proof material and is in ground connection with the timer-distributor. Thus it is apparent that when the switch is open that there is a path to the ground through the casing which encloses the lock and switch, the armor which encloses the conductor 19 and the walls of the casing 24.

In order to ground the conductor 19 when the switch contact 8 is in the position shown in the drawings I provide the stationary contacts 24 and 25, the former, contact 24, being grounded to the casing of the switch by the connection 26 and the latter, contact 25, being connected by a conductor 27 to the contact 7. When these contacts 24 and 25 are bridged by the contact 8 it will be evident that conductor 19 is

grounded through the metal casing of the switch and hence this conductor can not be used in any way for conducting current to the breaker points.

The switch casing may be grounded through the automobile structure or in any other manner as may be desired.

From the foregoing it will be seen that when the incased lock switch is locked in the open position, as shown in the drawing, the ignition circuit is disrupted; also that the conductor 19, having connection with one of the breaker points 20, is grounded; and also that the circuit cannot be established by the use of a substitute coil. The only way in which a thief possibly might reestablish the circuit would be either by the substitution of a timer, which is not practical because of the necessity of disconnecting the gearing, and subsequently retiming the ignition circuit, or by cutting or otherwise so mutilating the armor 21 as to enable access of a thief or other unauthorized person to the conductor 19. The cutting or mutilation of the armor 21 is possible, but the material employed and the construction thereof are such as to render such cutting or mutilation sufficiently difficult to render it impractical of accomplishment by a thief.

Having thus fully described what I now consider to be the preferred embodiment of the invention it will be understood that various modifications may be resorted to within the scope of the appended claims.

What I claim as my invention is:

1. The combination in an ignition circuit and a lock therefor, of a metallic casing which encloses the lock and switch, a metallic casing which is in contact with the timer-distributor casing, and armor which connects said casings, whereby, when the switch is grounded, the metallic casings and armor form a path for a ground.

2. In an ignition circuit, a locking device, comprising a switch in which the line contacts are opened and closed by a reciprocating sliding contact closer, combined with a reciprocatory lock structure by which said closer is operated, whereby the key which operates the lock also operates the circuit switch, the inward movement of said lock structure introducing a ground into the line leading to the timer.

3. In an ignition circuit, a locking device, comprising a switch in which the line contacts are opened and closed by a reciprocating sliding contact closer, combined with a reciprocatory lock structure by which said closer is operated, whereby the key which operates the lock also operates the circuit switch, the inward movement of said lock structure introducing a ground into the line leading to the timer and also opening the line.

4. In an ignition circuit, a locking device, comprising a switch in which the line contacts are opened and closed by a reciprocating contact closer, combined with a reciprocatory lock structure by which said closer is operated, the outward movement of the lock structure operating to close said switch, and the inward movement of said lock structure operating to open the switch and ground the timer-distributor directly and not through the coil.

5. In an ignition circuit, a locking device, a switch, a reciprocatory locking mechanism cooperating therewith, means whereby, upon the release of the locking bolt, said switch is moved to its closed position, and when the locking mechanism is in locked position the timer-distributor is grounded directly and not through the coil.

6. In an ignition circuit and a lock therefor, a burglar-proof metallic casing which encloses the lock, circuit switch, conductor and connection to the timer-distributor, the wall of said casing constituting a path for a ground when the switch is open.

7. In an ignition circuit and a lock therefor, a burglar-proof metallic casing which encloses the lock, circuit switch, conductor and connection to the timer-distributor, the wall of said casing constituting a path for a ground when the switch is open, and means to ground the circuit breaker contact directly and not through the coil.

In testimony whereof I hereunto affix my signature.

WILSON HEMINGWAY, JR.