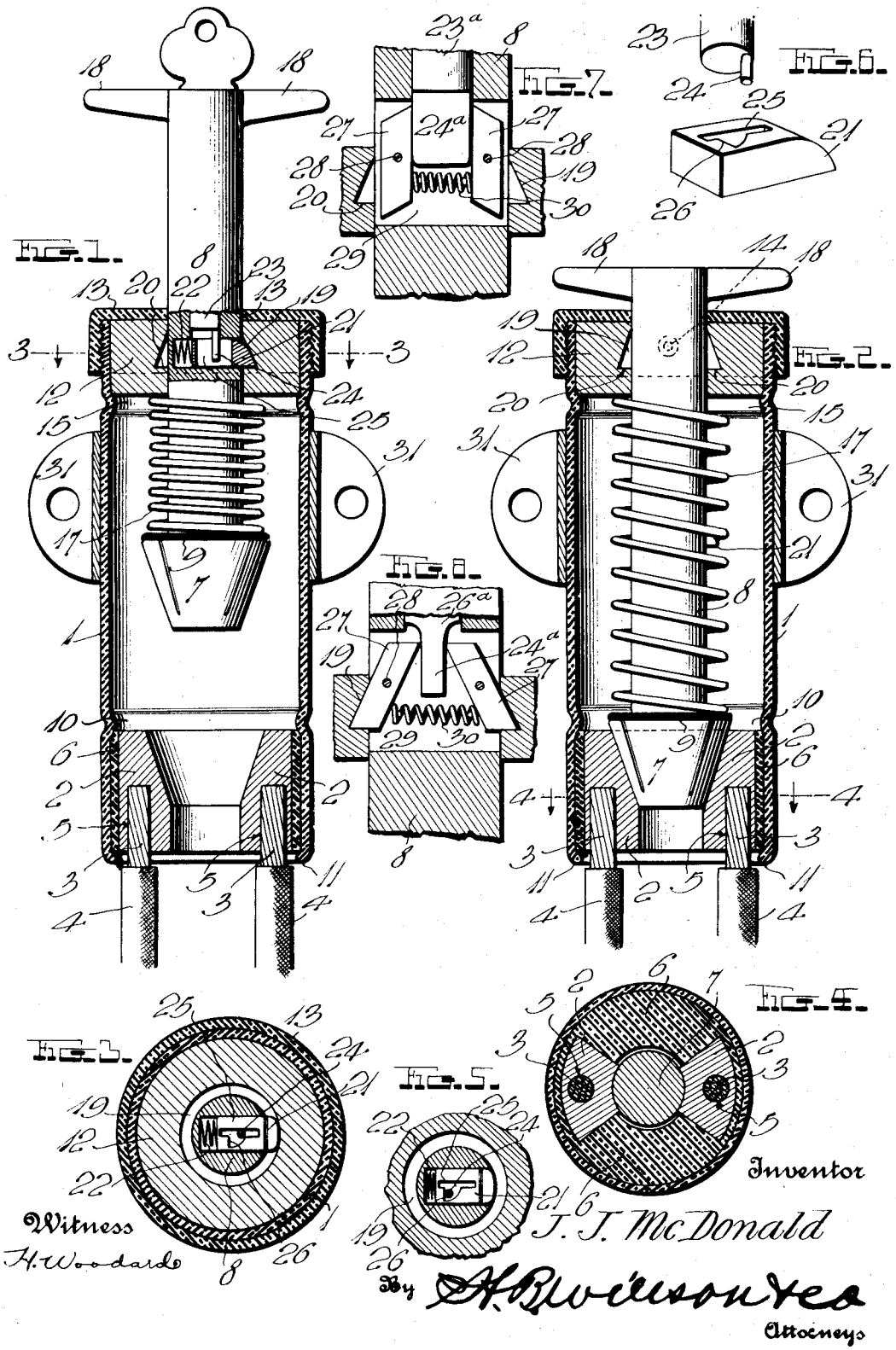
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ELECTRIC CUT-OUT

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ELECTRIC CUT-OUT.

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To all whom it may concern:

Be it known that I, JAMES JOSEPH McDONALD, a citizen of the United States, residing at Roseville, in the county of Placer and State of California, have invented certain new and useful Improvements in Electric Cut-Outs; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in electric cutouts for automobiles, and the principal object of the invention is to provide a simple and inexpensive, yet an effective switch which may be incorporated in the ground wire for the battery, or in the case of a two-wire system, in one of the lead wires, said switch being provided with an easily accessible operating handle, which may be quickly grasped by the driver to throw the battery out of circuit, in case fire should start by worn insulation on any of the wires in the usual wiring system. Thus, a great many serious fires may be averted, as worn insulation on wiring, is one of the most common causes for fires on automobiles. If the battery is thrown out of circuit as soon as fire starts from this cause, such fire can be easily extinguished without any appreciable damage to the machine.

Another object of the invention is to provide novel means whereby the switch may be locked in open position so that it may also be used to prevent unauthorized running of automobiles and will consequently diminish theft to a large extent.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, the description being supplemented by the accompanying drawing.

Figure 1 is a vertical sectional view of one form of invention showing the switch in open position.

Figure 2 is a duplicate of Fig. 1 with the exception that it illustrates the switch closed.

Figures 3 and 4 are horizontal sectional views on lines 3—3 and 4—4 of Figs. 1 and 2 respectively.

Figure 5 is a detail sectional view similar to the central portion of Fig. 3 but illustrating the plunger locking bolt in retracted position.

Figure 6 is a perspective view showing the lock barrel and the plunger locking bolt in juxtaposition.

Figures 7 and 8 are detail sectional views illustrating a different form of locking means for the switch plunger.

In the drawings above briefly described, the numeral 1 designates an elongated casing which may be formed of hard rubber, fibre or any other insulating or non-insulating material. Within one end of this casing, I have shown a pair of contacts 2 for connection with the ends 3 of two sections 4 into which one of the ordinary battery leads is divided, said terminals being preferably soldered in sockets 5 formed in the outer ends of the contacts 2. These contacts are preferably embedded in an insulating ring 6 held within one end of the casing wall, and the opposed surfaces of said contacts are exposed at the inner periphery of the ring, as shown. These exposed portions of the contacts, preferably diverge inwardly to tightly engage a tapered switch plug 7 which is carried by a straight operating plunger 8, said plug being insulated from the plunger as indicated at 9, and being preferably of a split, yieldable formation.

In order to hold the ring 6 within one open end of the casing 1, I prefer to press a circumferential portion of the latter inwardly, as indicated at 10, or to otherwise provide an internal rib to abut the inner edge of said ring, while to abut the outer edge of the ring, an end of the casing may well be turned inwardly as indicated at 11.

A closure ring 12 is mounted in the end of the casing 1, remote from the ring 6 and is held against removal, preferably by means of a screw cap 13 which may be locked against movement by a set-screw 14 (dotted lines in Fig. 2). The inner edge of the ring 12 preferably abuts an internal rib 15 on the casing wall, which rib may be formed in the same manner as the rib 10. The plunger 8 passes slidably through the ring 12 and through a central opening 16 in the cap 13, and a coiled compression spring 17 surrounds said plunger and at one end bears against the ring 12, while its other end may be associated with the plug 7 from which it is insulated. The spring 17 normally holds the plug 7 engaged with the contacts 2, but the plunger 8 is provided with suitable finger grips or the like 18, by means of which said plunger may be raised to the

position shown in Fig. 1, to disengage the plug from the contacts and thus throw the battery of the machine out of circuit. Suitable means is provided on the plunger 8, for co-action with the ring 12, to hold said plunger in raised position, and this means is preferably controlled by a lock, so that the improved switch may be used to lock a car against unauthorized use.

In the form of construction shown, the inner periphery of the ring 12 is provided with a continuous groove 19 having an abrupt wall 20 constituting a shoulder for co-action with projectable and retractible locking means carried by the plunger 8. In the form of construction shown in Figs. 1 to 5, this locking means comprises a spring-pressed locking bolt 21 which normally projects from the plunger 8 as shown in Fig. 2, when the switch is closed. By an upward pull on this plunger, the bolt 21 moves inwardly when it contacts with the ring 12 and when the plunger is raised enough, the actuating spring 22 of said bolt projects the bolt into the groove 19, and the bolt engages the wall 20, so that the plunger is held in raised position, with the switch open.

For releasing the bolt 21 from the locked position of Fig. 1, I have shown a rotatable key-controlled lock barrel 23, mounted within the plunger 7, said barrel 23 having an eccentrically positioned pin 24 projecting into a slot 25 in the bolt 21, the pin being normally so positioned that it will not interfere with sliding movement of the bolt. When the barrel 23 is turned by means of a key however, the pin 24 strikes the shoulder 26 of the bolt and retracts the latter, to permit closing of the switch.

In the form of construction illustrated in Figs. 7 and 8, a pair of locking levers 27 are pivoted at 28 in a slot 29 formed in the plunger 8, and a spring 30 is interposed between two ends of said levers to normally spread them to the position shown in Fig. 8, so that they are in readiness for engagement with the groove 19. To release this locking means, I have shown a key-controlled locking barrel 23^a within the plunger 8, provided with a flat end 24^a receivable between the closely spaced ends of the levers 27 and normally positioned as shown in Fig. 8. To release the levers 27 from the groove 19, the barrel 23^a is turned and its flattened end will spread the levers to the position shown in Fig. 7.

The device may be attached to a machine at any desired point, and for this purpose, I have shown it provided with suitable apertured ears 31. It is always installed at such a point as to have the plunger 8 readily accessible for outward pulling at a moment's notice, and thus if fire starts, said plunger may be immediately pulled outwardly to the position of Fig. 1, to break the battery circuit. Thus, if faulty insulation has been the cause of the trouble, it can cause no further damage and the fire may easily be extinguished before it obtains any appreciable headway. This is the primary intent of the invention as above set forth, but it will act also as a theft preventer, as when the switch is locked in open position, the machine cannot be operated under its own power.

As excellent results may be obtained from the details disclosed, they may be followed if desired, but within the scope of the invention as claimed, numerous minor changes may be made.

I claim:

1. A switch of the class set forth comprising a casing, switch means in said casing, a plunger for operating said switch means, a ring in one end of said casing through which said plunger passes, the inner periphery of said ring being provided with a shoulder, spring-projected locking means carried by the plunger for engagement with said shoulder to hold the switch in open position, and means for holding said ring in the casing, said means comprising an internal rib abutting the inner edge of the ring and a cap on an end of the casing abutting the outer edge of said ring.

2. A switch of the class set forth comprising an elongated casing open at both ends and having internal ribs spaced inwardly from said ends, an insulating ring fitted within one end of said casing and carrying a pair of spaced contacts, said one end of the casing being turned inwardly against the outer edge of said ring while the inner edge of the latter abuts one of said ribs, a second ring fitting within the other end of the casing and abutting the other internal rib, a cap on the last named end of the casing holding said second ring in place, a plunger passing through the second named ring and having a contact co-operable with the aforesaid contacts, a spring surrounding said plunger and bearing against the second ring for normally engaging the contacts, and co-operable locking means carried by said plunger and second ring for holding the former in a switch open position.

In testimony whereof I have hereunto affixed my signature.

JAMES JOSEPH McDONALD.