

June 22, 1926.

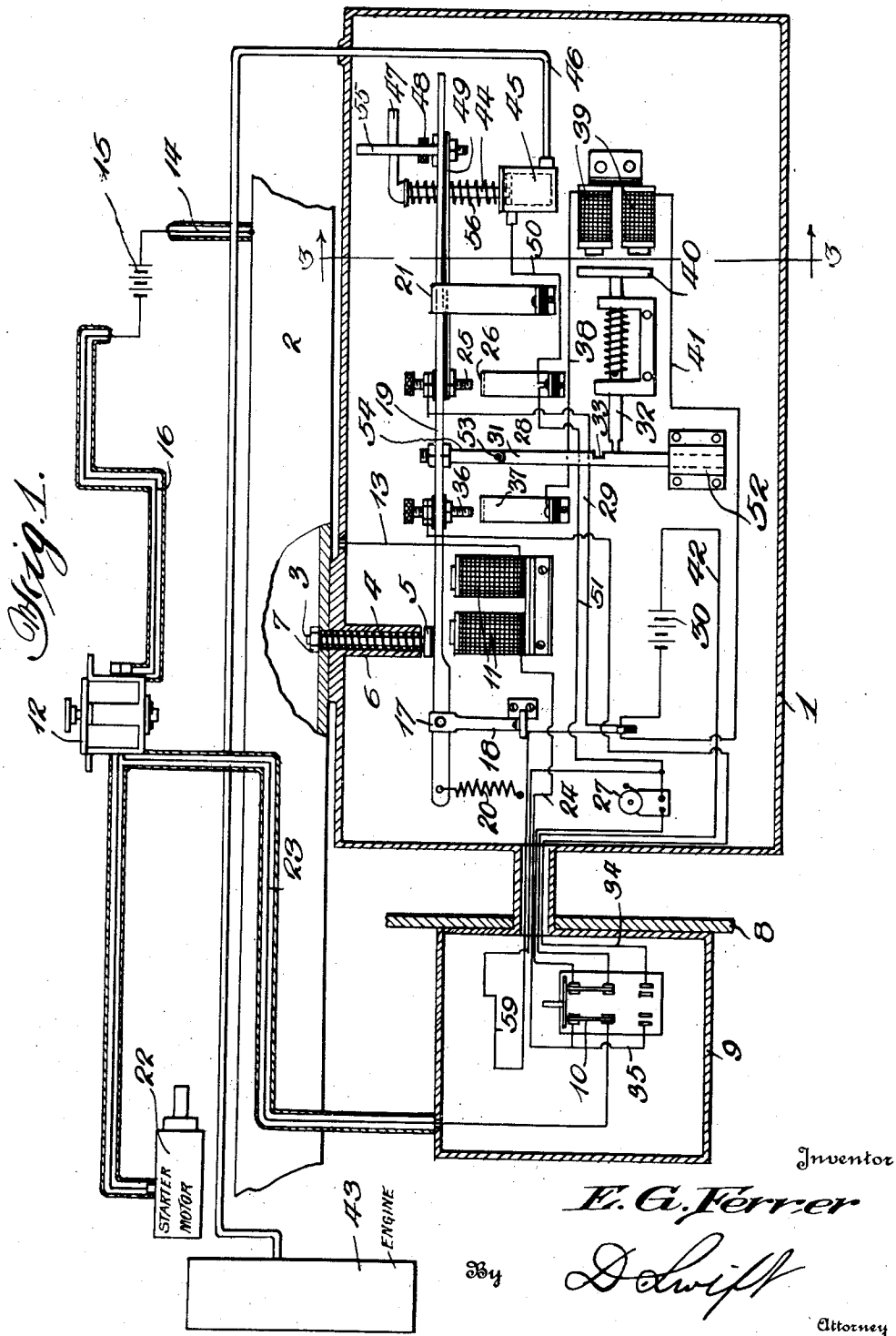
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VEHICLE ALARM

Filed Feb. 15, 1923

2 Sheets-Sheet 1



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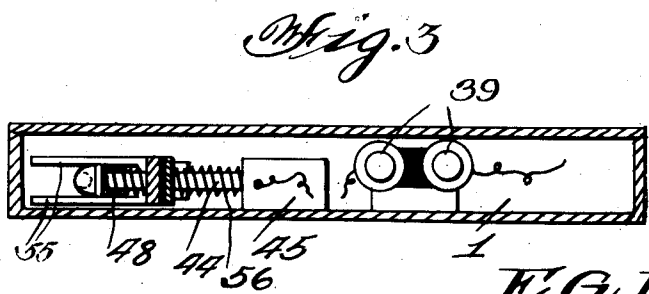
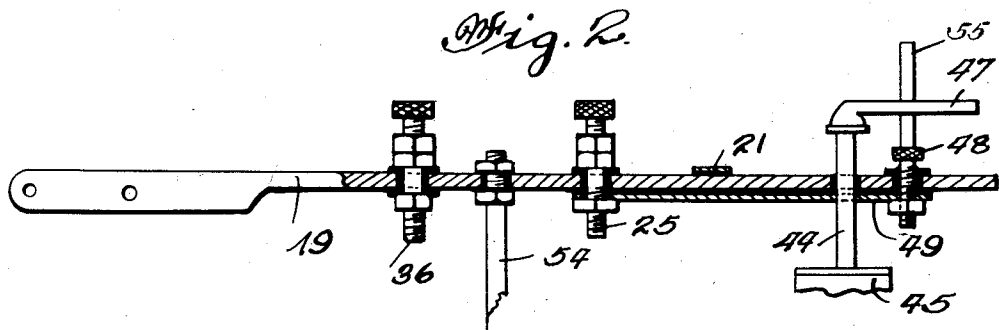
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UNITED STATES PATENT OFFICE.

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VEHICLE ALARM.

Application filed February 15, 1923. Serial No. 619,188.

The invention relates to vehicle alarms, and has for its object to provide a device of this character wherein a bell will be sounded if an unauthorized person attempts to start the vehicle, and the bell continues to sound until an authorized person, such for instance as the owner of the vehicle, stops the same.

A further object is to provide a pivoted arm having contact members, which arm is moved in the direction of fixed contact members by means of relays and provided with a notched arm, the notch of which receives a spring actuated shaft for holding the pivoted arm in operative position where the signalling means will continue to ring after an attempted starting of the vehicle.

A further object is to provide means whereby the signalling device will be actuated through the suction of the pump incident to the suction created in the cylinders when the engine is started, in case of failure of the other actuating means.

A further object is to encase all of the working parts of the device in a hard metal casing and pipes thereby making it difficult for unauthorized persons to tamper with the mechanism or with the wires.

A further object is to provide the metal casing, in which the pivoted arm is disposed, with a spring actuated supporting bolt, which when loosened by an unauthorized person will move the pivoted arm to operative position for sounding the alarm.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawing, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawing:—

Figure 1 is a diagrammatic view of the device.

Figure 2 is a horizontal sectional view through the pivoted arm in the main casing.

Figure 3 is a transverse sectional view

through the circuit maker and breaker box taken on line 3—3 of Figure 1.

Referring to the drawing, the numeral 1 designates a metallic main casing, which may be secured to the vehicle in any suitable place, however preferably to the side rail 2 of the vehicle frame by means of a bolt 3. The bolt 3 extends through a sleeve 4 carried by the casing and has its head 5 in engagement with the inner end of said sleeve for securely holding the casing against movement. Surrounding the bolt 3 is a coiled spring 6, which coil spring is interposed between the frame 2 and the head 5 of the bolt, in such a manner whereby if an unauthorized person attempts to remove the casing 1 by removing the nut 7, the bolt 3 will be forced inwardly by the coiled spring for actuating mechanism hereinafter set forth.

Disposed adjacent the instrument board 8 is an auxiliary metallic casing 9, in which the main switch 10 is disposed. Disposed within the main casing 1 is a magnet 11, which magnet is in circuit with the starting switch 12 through the wires 13 and 14, which are connected to the frame 2 and the storage battery 15, which battery has a wire connection 16 with the starting switch. Pivotaly mounted at 17 to a bracket 18 is an armature arm 19, which arm is held in normal position by means of a coiled spring 20, which holds the arm in engagement with the stop 21. When the starting switch 12 is depressed thereby throwing the starting motor 22 into operation, the current flows from the storage battery 15 through the starting switch 12, wire 23, switch 10, wire 24 to the magnets 11, thereby energizing the magnets and causing a downward movement of the armature arm 19 and a contact of the contact member 25 with the spring contact member 26, which closes the circuit to the bell 27 through the wires 28 and 29, thereby starting the ringing of the bell even before the engine is started by the starting motor and consequently warning the public that an automobile is about to be operated by an unauthorized person. Electric energy for ringing the bell is supplied from the bat-

tery 30 within the casing 1. Connected to the armature arm 19 is a rod 31, which rod moves downwardly upon a downward movement of the arm 19 until the spring actuated shaft 32 is received in the notch 33, at which time the armature arm will be held in down operative position, thereby insuring the continued ringing of the bell 27 until the circuit is broken by the owner of the automobile who has access to the casing 9 to throw the switch 10. When the switch 10 is thrown to the reverse position shown in Figure 1, the circuit is completed over the wires 34 and 35, which wires lead to the contact member 36 carried by the armature arm, which contact 36 engages the spring contact arm 37, the current then passing over the wire 38 to the magnets 39, energizing the magnets and imparting a pull on the armature 40 carried by the spring actuated shaft 28, thereby moving the shaft 32 out of engagement with the notch 33 and allowing the armature arm 19 to move upwardly under the influence of the springs 20, and consequently stopping the ringing of the bell by disengaging contacts 25 and 26. The circuit from the magnets 39 is completed over the wire 41, batteries 30, wire 42, and the switch 10 to which said wire 42 is connected. If the magnets 11 should fail to operate the suction created within the cylinders of the engine 43, when the engine is started, will draw the vacuum pump stem 44 inwardly into the pump 45, which has a pipe connection 46 with the engine, and consequently moves the arm 47 carried by the stem into engagement with the conductor contact member 48 and consequently allows electric energy to pass over the conductor plate 49 to the contact member 25, which is moved into engagement with the spring arm 26 by the downward movement of the free end of the armature 19, which has been forced down by the arm 47. In this case the bell circuit is closed over the wire 50, which is grounded to the pump 45, wire 51 in circuit with the battery 30 and bell 27, thereby insuring the operation of the device upon failure of operation of the magnets 11. By providing spring contact arms 26 and 37 full electrical contact is made before the armature reaches its ultimate limit of travel and increases compression on the contact thereby making positive contact all times. It will be seen that when the switch 10 is in reverse position for energizing the magnets 39 for releasing the armature 19, it will be impossible to burn out the batteries and said magnets if the switch 10 is left in reverse position, for the reason that, as soon as the armature arm 19 is released, the contacts 36 and 37 break the circuit. The bar 31 is slidably mounted in a bearing member 52, which insures proper guiding thereof and has its upper end pivotally connected

at 53 to a member 54 carried by the armature arm 19. The arm 47 is disposed between the spaced guide arms 55 carried by the end of the armature arm 19 and guide the arm 47 into contact with the conductor member 48. The guide arms 55 are preferably formed from non-conductor material. Surrounding the pump stem 44 is a coiled spring 56, which spring forces the stem outwardly after each suction operation thereof. All of the wiring outside the boxes 1 and 9 is preferably disposed in steel conductor pipes, thereby making it difficult for unauthorized persons to cut the wires and consequently break the circuits. However if an unauthorized person should attempt to remove the bolts 3 by removing the nuts 7, the spring 6 will force the bolts inwardly into engagement with the armature arm 19 and immediately cause a rocking of the arm 19 and ringing of the bell 27.

The general arrangement of the device will vary as to position according to the particular construction of the vehicle to which it is applied, however all of the wiring and working parts of the device are encased in steel of an extremely hard type thereby making it difficult for an unauthorized person to cut the same for rendering the device inoperative.

From the above it will be seen that a vehicle theft alarm is provided, which is positive in its operation, and one wherein an alarm bell will be sounded upon attempted starting of the vehicle by unauthorized persons. It will also be seen that auxiliary means is provided for insuring the operation of the bell upon failure of the main operating mechanism, such for instance as the non-operation of the magnets 11.

The invention having been set forth what is claimed as new and useful is:

1. The combination with a vehicle signal electrically operated, an engine, of a circuit maker and breaker for said signal, said circuit maker and breaker comprising a pivoted armature arm, contacts carried by the armature arm and adapted to be moved into engagement with contacts, a notched arm carried by the armature arm and adapted to be held against movement in one direction by a spring actuated stop, magnets for moving the armature arm, switch means, which when closed operates the electrically actuated signalling means, magnetic alarm switch operating means whereby when an attempt is made to operate the engine, an alarm will be actuated, switch means for releasing the spring actuated detent suction means controlled by the engine upon starting of the engine whereby the armature arm will be rocked to operative position upon failure of the magnet means to rock the armature arm.

2. The combination with a theft signal

comprising a casing, a signal within the casing said signal being actuated by a rockable arm of a supporting bolt for said casing, said bolt extending through a support and through a sleeve in the casing and having its end engaging the end of the sleeve, a spring interposed between the support and the end of the bolt, said bolt being in alignment with the rockable armature arm whereby upon loosening of the bolt the spring will force the bolt into engagement with the armature arm and rock the same to operative position.

In testimony whereof I have signed my name to this specification.

EMANUEL G. FERRER.