June 26, 1923.

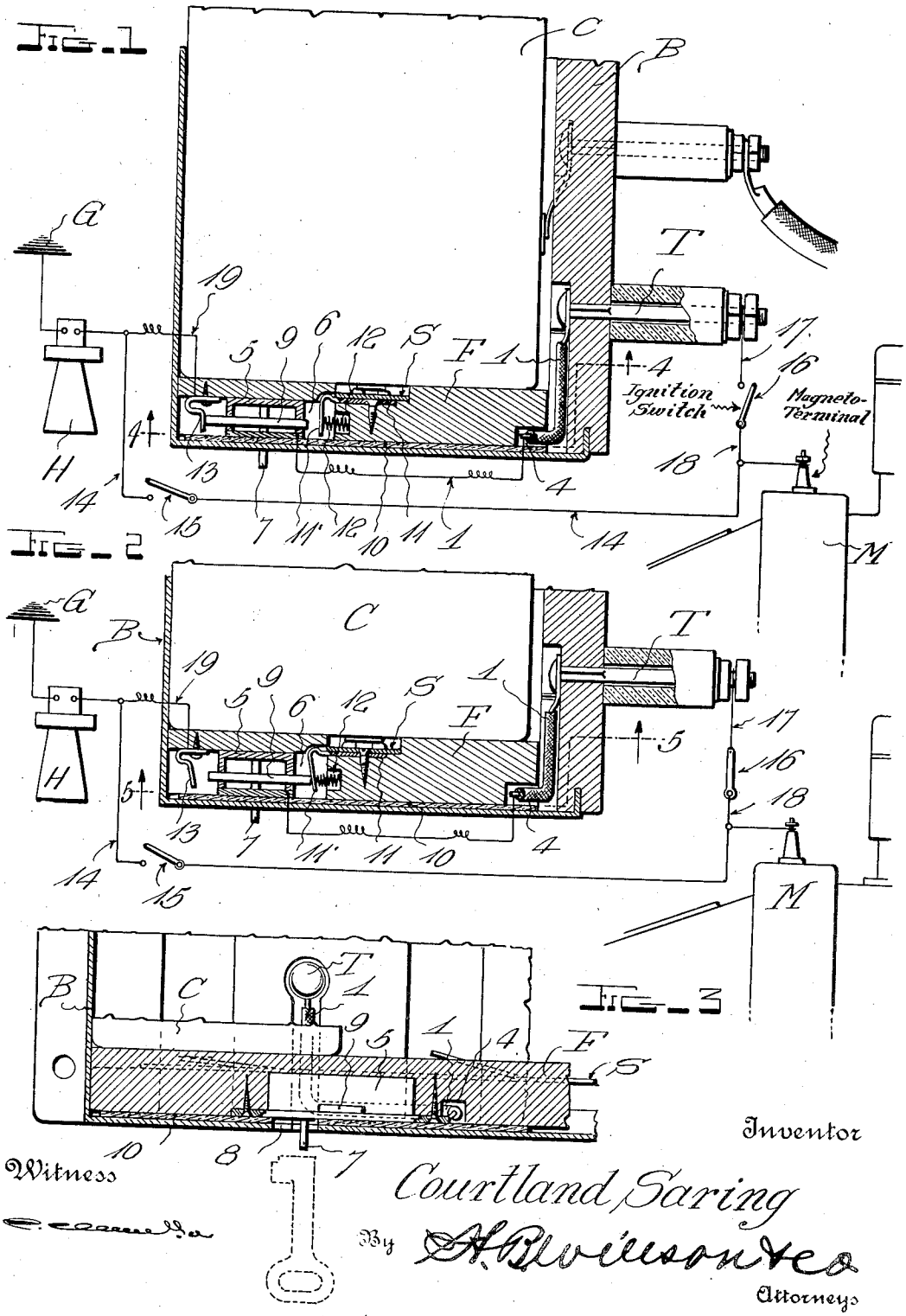
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C. SARING

HIDDEN SWITCH FOR COIL BOXES

Filed March 6, 1922

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

FIG. 4

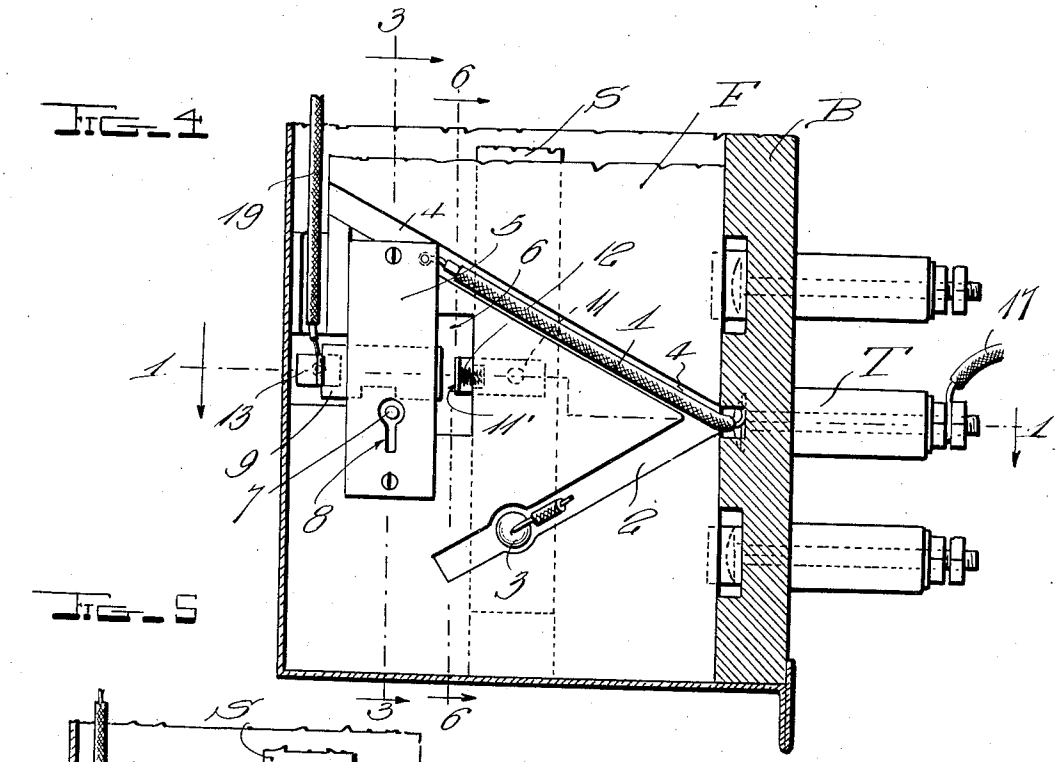



FIG. 5

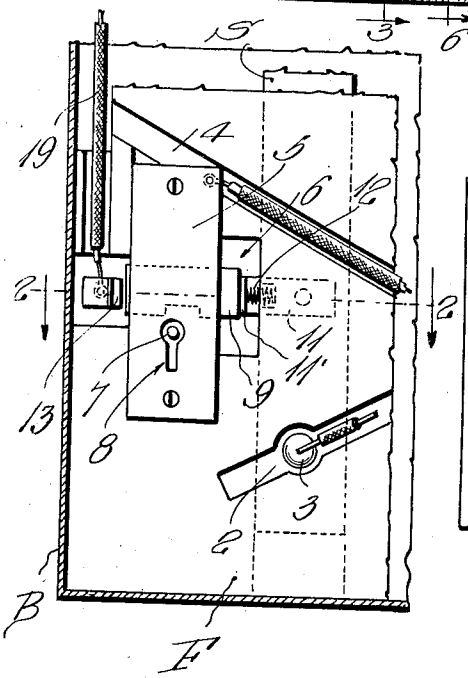
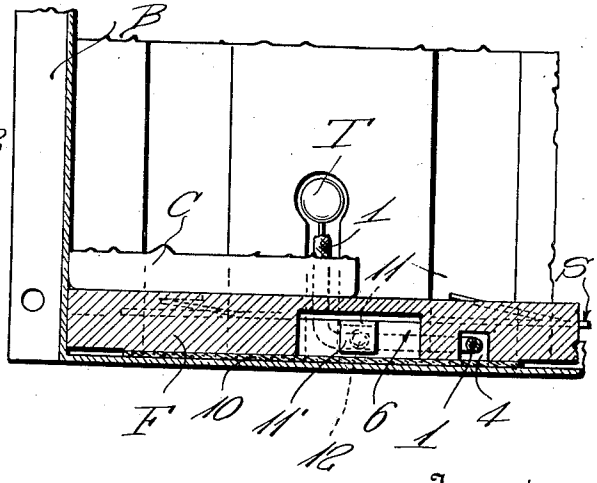



FIG. 6




Witness

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Patented June 26, 1923.

1,459,995

# UNITED STATES PATENT OFFICE.

COURTLAND SARING, OF SHARON, PENNSYLVANIA.

## HIDDEN SWITCH FOR COIL BOXES.

Application filed March 6, 1922. Serial No. 541,469.

*To all whom it may concern:*

Be it known that I, COURTLAND SARING, a citizen of the United States, residing at Sharon, in the county of Mercer and State of Pennsylvania, have invented certain new and useful Improvements in Hidden Switches for Coil Boxes; 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.

This invention relates to an improved construction in coil boxes and one object of the invention is to so construct the coil box that a switch which in the form shown will be a key-operated lock, may be provided beneath the flooring board of the coil box where it cannot be readily found, this switch being operated by means of a key which will be passed through the bottom of the coil box so that it cannot be readily discovered what is wrong with the ignition system when an unauthorized person attempts to start the automobile.

Another object of the invention is to so construct the switch that it may be positioned between two contact elements, one of which is connected with the conductor strip which engages the coil unit in the box and the other of which will be connected with the circuit of the signal horn between the horn and control switch thereof so that when this contact is engaged by the bolt element of the lock and the usual switch of the ignition system is turned on, the signal horn will be sounded and continue to operate.

Another object of the invention is to so construct this device that a conventional structure of coil box and flooring board for the same may be made use of, the conductor wire leading from the terminal for the source of energy being connected with the lock which constitutes the switch element instead of with the conductor strip carried by the flooring and engaging the coil unit.

This invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a view taken through the coil box and showing the coil box in vertical transverse section, the view being taken along the line 1—1 of Fig. 4.

Figure 2 is a view similar to Fig. 1 with the switch moved to provide contact with the contact element of the conductor strip which engages the coil unit, the view being taken along the line 2—2 of Fig. 5.

Figure 3 is a sectional view taken along the line 3—3 of Fig. 4.

Figure 4 is a sectional view taken along the line 4—4 of Fig. 1 looking upwardly and showing the switch in position to complete circuit through the horn and out of engagement with the contact of the strip which engages the coil unit.

Figure 5 is a sectional view taken along the line 5—5 of Fig. 2 with the switch moved to engage the contact of the coil unit engaging conductor strip.

Figure 6 is a sectional view taken along the line 6—6 of Fig. 4.

The coil box B is of a conventional construction for carrying the coil unit C and will be provided with the usual terminal T with which the wire leading from the magneto or other source of power M will be connected. This coil box is further provided with the usual flooring board F which carries the conductor strip S, the conducting strip extending longitudinally of the floor board for contact with the coil unit in the usual manner. The wire 1 which extends from the terminal T is usually positioned in a groove 2 formed in the under face of the floor board and is connected with a terminal 3 of the conductor strip S but with the present construction, this wire 1 will be positioned in a groove 4 which extends diagonally across the underface of the floor board and will have connection with a lock 5 formed of conducting material and constituting the switch element. This lock or switch as it may be termed is secured in a seat formed in the underface of the floor board and has its intermediate portion extending into a pocket 6 formed in the floor board. The lock shown is of the key-operated type and will be provided with a guide pin 7 which extends through a key-hole 8 formed in the bottom of the coil box so that the key indicated by dotted lines in Fig. 3 can be easily guided into the proper position for entering the key-hole and lock. With the key in place, the bolt element 9 of the lock can be moved to the position shown in Fig. 4 or to that shown in Fig. 5 and the key removed thus leaving the bolt element of this lock in the adjusted position desired.

A pad 10 which is formed of insulating material such as sheet rubber or any other suitable material is placed in the coil box beneath the floor board so that a short circuit between the lock and the bottom of the coil box will be prevented. The conductor strip S is in engagement with a contact strip 11 which extends transversely from the conductor strip into the pocket 6 and has its free end portion bent to provide a depending arm 11′ positioned in the path of movement of the bolt element 9. This strip is formed of flexible material and therefore the free end portion may be moved from the position of Fig. 1 to that of Fig. 2 against the action of the spring 12 when engaged by the bolt element 9. This spring 12 will therefore serve to hold the depending end portion of the contact strip in close engagement with the bolt and provide a good contact between the bolt and strip when the bolt is projected to the position shown in Fig. 2, so that the circuit will be completed through the coil unit. A contact 13 which is of a conventional tongue construction is secured in the pocket 6 upon the opposite side of the bolt or switch 5 and in the path of movement of the bolt 9 so that when the bolt is in the position shown in Fig. 1, it will contact with this contact 13.

The horn H will be grounded as shown at G and will be connected with the magneto by means of a conductor wire 14, a switch 15 of a conventional structure being provided intermediate the length of this wire 14 so that the horn may be operated whenever desired. The usual ignition switch 16 is also provided and will be connected with the terminal T by means of the usual conductor wire 17 and will be connected with the wire 14 between the switch 15 and magneto by means of the usual conductor wire 18. A wire 19 leads from the contact 13 and is connected with the wire 14 between the switch 15 and the horn so that the horn may be operated and caused to sound a warning when an unauthorized person attempts to start the automobile by closing the switch 16 or placing a bridging wire from the wire 17 to the wire 18. From an inspection of Figs. 1 and 2, it will be readily seen that when the lock or switch 5 is operated by an authorized person and the bolt element 9 moved into engagement with the contact of the conductor strip S, the circuit through the conductor strip will be completed and therefore when the switch 16 is closed, the current from the magneto may pass through the terminal T and through the wire 1 into the switch 5 and from this switch to the contact of the conductor strip S and thus up into the coil unit. If however an unauthorized person attempts to start the automobile by closing the switch 16 with the bolt 9 in the position shown in Fig. 1, the current will pass through the switch 5 to the contact 13 and through the wire 19 to the horn thus causing the horn to be sounded as long as the switch 16 is closed. This will give warning that the car is being tampered with by an unauthorized person. It will thus be seen that there has been provided an improvement in coil boxes which will prevent the car from being started by an unauthorized person.

I claim:

1. A coil box including a terminal for connection with a source of energy, a flooring board for the coil box, a conductor strip extending longitudinally of the flooring board, a contact extending from said conductor strip, a switch carried by the flooring board and including an element movable into and out of engagement with the contact, and a conductor for connecting the switch with a source of energy terminal carried by the coil box.

2. A coil box, a flooring board for the coil box, a conductor strip extending longitudinally of the flooring board, a contact extending from one side of said conductor strip, a lock carried by the flooring board and including a bolt element movable to extend beyond a selected side of the lock and having one end movable into and out of position for engagement with the contact, a contact carried by the flooring board upon the opposite side of said lock for engagement by the bolt element of said lock when moved out of engagement with the contact of said conductor strip, a conductor for connecting the lock with a source of energy terminal of the coil box, and a conductor for connecting the contact of the flooring board with a signal energizing circuit intermediate the signal and control switch of the circuit.

3. A coil box including a terminal for connection with a source of energy, a flooring board for the coil box, a conductor strip carried by the flooring board for engagement with a coil unit, a contact for said conductor, a switch in the form of a lock having a bolt element movable into and out of engagement with the contact of the conductor strip, and a conductor connecting the switch with said terminal.

4. The structure of claim 3 having the bottom of the coil box provided with an opening, the switch being positioned beneath the flooring in operative relation to the opening in the bottom of the coil box whereby the switch may be actuated externally of the coil box by a key passed through the opening.

5. The structure of claim 3 having the contact of the conductor strip formed of flexible material and extending from the side of the conductor strip and having its free end portion bent to extend in spaced relation to the switch and in operative relation to the bolt element, and resilient means

yieldably holding the free end portion of the contact strip against movement away from the switch when engaged by the bolt thereof.

6. The structure of claim 3 having the flooring provided with a pocket and a groove leading from the pocket, the switch being mounted in the pocket and the conductor for engaging the terminal extending from the switch through the groove, the conductor strip for engaging the coil unit being positioned in a groove and the contact engaged by the bolt element of the switch being in the form of a flexible strip extending from the side of the conductor strip into the pocket and having its free end portion bent to extend in operative relation to the bolt element.

7. The structure of claim 3 having the flooring provided with a pocket and a groove leading from the pocket, the switch being mounted in the pocket and the conductor for engaging the terminal extending from the switch through the groove, the contact element of the conductor strip being in the form of a strip extending from the side of the conductor strip into the pocket and having its free end portion extending in operative relation to the switch.

In testimony whereof I have hereunto set my hand.

COURTLAND SARING.