

H. E. GILLAND.
LOCK.

APPLICATION FILED JUNE 7, 1919.

1,364,048.

Patented Dec. 28, 1920.
2 SHEETS—SHEET 1.

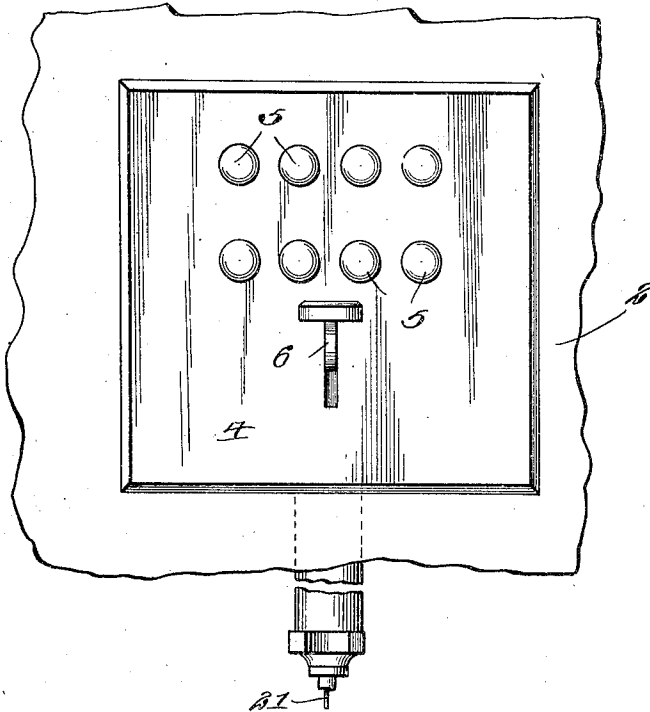


Fig. 1.

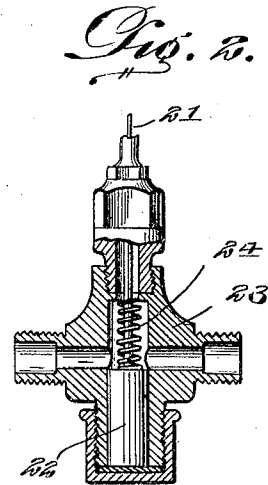


Fig. 2.

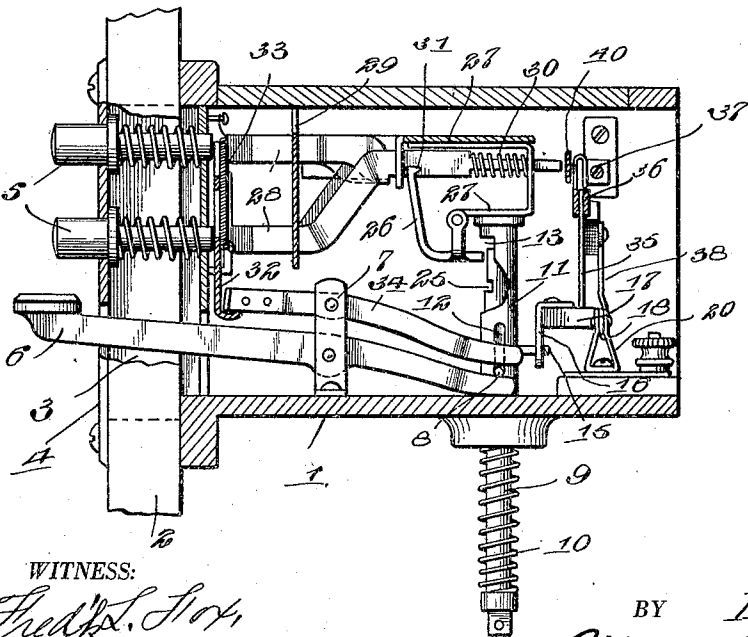


Fig. 3.

WITNESS:

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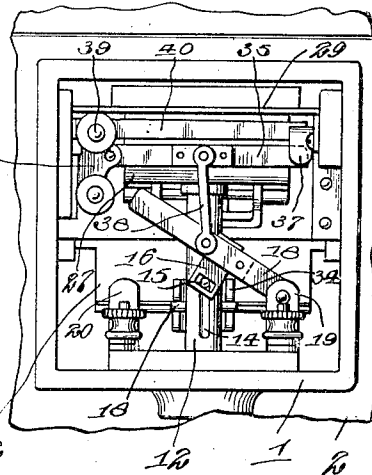
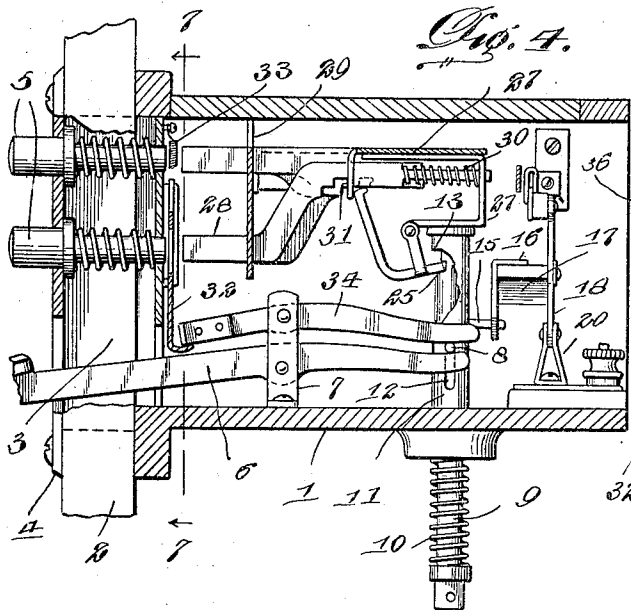
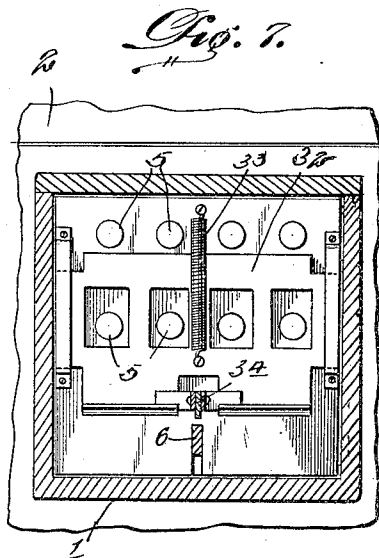
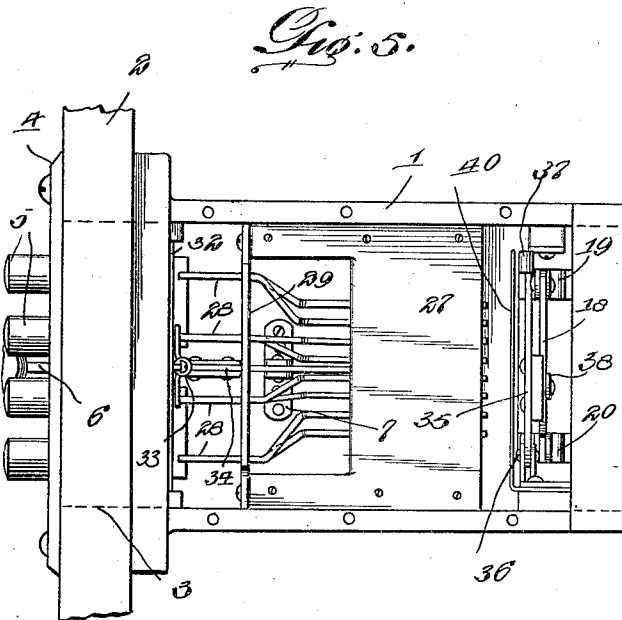


Fig. 6.



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LOCK.

1,364,048.

Specification of Letters Patent. Patented Dec. 28, 1920.

Application filed June 7, 1919. Serial No. 302,426.

To all whom it may concern:

Be it known that I, HOMER E. GILLAND, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented new and useful Improvements in Locks, of which the following is a specification.

This invention relates to improvements in locks for automobiles and the like and the principal object of the invention is to provide a combination lock with means for cutting off the supply of gasoline to the carbureter and for breaking the ignition circuit.

Another object of the invention is to provide means whereby an alarm will be sounded when an unauthorized person attempts to unlock the device.

The invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a front fragmentary view showing the invention placed on the dash of an automobile;

Fig. 2 is a detailed sectional view of the valve for controlling the fuel supply;

Fig. 3 is a longitudinal sectional view with the parts in unlocked position;

Fig. 4 is a like view with the parts in locked position;

Fig. 5 is a plan view with the parts in locked position and with the cover of the case removed;

Fig. 6 is a rear view with the parts in locked position;

Fig. 7 is a section on line 7—7 of Fig. 4.

In these views 1 indicates a case which may be connected with the dash 2 of the automobile, said dash being provided with an opening 3 which registers with the case and which is covered by the plate 4. The said plate and the front of the casing are provided with suitable openings for receiving the keys 5, which are in the form of spring plungers, and the locking lever 6. This lever is pivoted intermediate its ends to the lug 7 projecting upwardly from the

bottom of the case and the inner end of said lever is forked and engages a cross pin 8 carried by a vertically movable rod 9. This rod passes through an opening in the bottom of the casing and is normally held in its lower position by means of the spring 10. The upper end of the rod, within the casing, engages a tubular member 11 which is slotted, as at 12, to receive the pin 8. The upper part of the tubular member 11 is provided with an opening 13 to expose the upper end of the rod 9 for a purpose to be hereinafter described. This tubular member is also provided with a slot 14 at its rear part through which projects a pin 15 carried by the rod 9 and this pin engages in an opening in a plate 16 carried by an insulated block 17 which is secured to a lower switch blade 18. This blade is pivoted at one end to a contact 19 and has its other end adapted to engage with the opposite contact 20. These contacts are suitably located in the ignition system of the automobile so that when the blade is raised the circuit to the motor will be broken. The rod 9 has its lower end connected by a flexible member 21 to the stem of a valve 22 which is located in the valve casing 23 placed in the fuel supply of the motor. The valve 22 is normally held in inoperative position with the supply line open, by the spring 24.

It will thus be seen that when the rod 9 is in its lower position the fuel line to the motor will be opened and the circuit to the ignition means of the motor will be closed so that the motor may operate. When the lever 6 is depressed to raise the rod 9 the valve 22 will be raised to shut off the supply of fuel to the motor and at the same time the blade 18 will be raised to break the circuit of the ignition means and thus the motor will be unable to operate.

When the rod 9 is raised a notch 25 therein will be engaged by a latch member 26 which is pivoted to a bracket 27 carried by the case and having its lower portion secured to the tubular member 11. This latch means is of substantially L-shape with one of its arms provided with upwardly extending portions which engage the pivot pin. That part of the rod directly above the notch is flattened to make the lower wall of the notch project beyond this flattened part so that this lower wall will come in contact with the latch member to rock said member and force its edge into the notch,

said edge working in the opening 13 in the tubular member 11. In this way the rod 9 is held in raised position against the tension of the spring 10.

5 The latch member is released from the rod 9 when the proper keys are pushed inwardly and the means for doing this consists of a plurality of push rods 28 slidably mounted in the bracket 27 and plate 29 and normally
10 held in their outermost positions by the springs 30. These push rods have their outer ends offset so that they will come opposite the ends of the keys 5, to be engaged by said keys when the same are pushed
15 inwardly. Each push rod is provided with a notch 31 for receiving the upper edge of the latch member. These notches 31 are arranged at different points on the push rods so that certain of the keys must be
20 pushed inwardly to place all the notches in alinement and thus permit the latch member to enter said notches and thus release the rod 9. In this way one must know just
25 which keys to push inwardly to unlock the device as otherwise he cannot place the notches in alinement. As soon as the notches are in alinement the pressure of the spring
30 10 on the rod 9 will cause the latch member to rock on its pivot so that its upper end will enter the notches in the push rods and its lower edge will leave the notch in the rod 9. The latch member will remain in engagement with the notches until the lever
35 6 is again manipulated to raise the rod 9 to again rock the latch member and thus cause its upper edge to leave the notches and permit the push rods which have been moved, to return to normal position.

I provide a locking plate 32 for preventing the keys from being pushed inwardly when the parts are in unlocked position. This plate is slidably mounted in the rear of the front part of the case and is normally held in its upper position by means of a
40 spring 33. The plate is moved to its lower position by a lever 34 pivoted to the lug 7 and having one end engaging a flange on the lower edge of the plate 32 and its other end forked and resting on the pin 8 carried by
45 the rod 9. Thus when the lever 6 is actuated to raise the rod 9 the lever 34 will lower the plate 32 so as to permit movement of the keys. In this way a person is prevented from securing the combination by
50 manipulating the keys while the device is in inoperative position and this arrangement also prevents the latch member or plungers being damaged by said plunger rods being moved while in engagement with the latch
55 member.

I also provide means for sounding an alarm when an unauthorized person should attempt to manipulate the keys to unlock the device. These means consist of a switch
60 blade 35 pivoted to a contact 36 and having

its free end adapted to engage with the contact 37, said contact being located in the alarm circuit. The blade 35 is pivoted to the blade 18 by the link 38 so that when the blade 18 is raised by the rod 9 to break the
70 ignition circuit, said blade 35 will be moved into closed position and when the blade 18 is lowered said blade 35 will also be lowered to break the alarm circuit. The contact 37 is normally disconnected from the alarm circuit
75 as the terminal 39 of the circuit is connected with a spring blade 40 which has its free end normally spaced from the contact 37 so that the alarm circuit is not completed when the blade 35 is in closed position.
80

Said blade 40 is placed in such a position that it will be engaged by the ends of the push rods when the keys are pushed inwardly to their full extent. In this way if
85 a person not familiar with the combination should attempt to unlock the device by pushing in the keys he would force the ends of the plunger rods against the spring blade and thus complete the circuit to the alarm
90 causing the same to sound and thus notify the authorities that an attempt is being made to steal the automobile. However, when the proper combination keys are pushed in, the plunger rods operated thereby will release
95 the parts before their ends come in contact with the spring blade so that the switch blade 35 will be lowered and thus break the alarm circuit before the spring blade is pushed against its contact so that the alarm
100 will not be sounded.

It will be seen that the device can be locked by simply depressing the lever 6 and that when so locked the fuel supply will be cut and the ignition circuit broken and the
105 alarm circuit set. If any of the keys should be pushed in, the alarm circuit will be closed to sound the alarm and it will be impossible to unlock the device unless the proper combination keys are manipulated to place all
110 the notches in alinement. While the device is in locked position any one or all of the keys may be pushed in without unlocking the device as the push rods will have free movement as the latch member has its upper
115 end below the movement of the rods. By pushing in the proper keys the parts will be released so as to close the ignition circuit and permit the fuel to flow to the motor.

What I claim is:—

120 1. In combination with a fuel supply valve, an ignition circuit switch and a pair of alarm switches, a casing, a movable member therein connected with the valve and switches, an operating lever for moving said
125 member into a position to close the valve and open the ignition switch and close one alarm switch, a latch member for holding said movable member in operative position and lock combination means for releasing the latch
130

member, said means closing the second alarm switch if the wrong combination parts are manipulated.

2. In combination with a fuel supply
5 valve, an ignition switch and a pair of alarm switches, a casing, a movable member therein connected with the valve and switches, an operating lever for moving said member into a position to close the valve and open the ig-
10 nition switch and close one alarm switch, a latch member for holding said movable member in operated position, notched push rods for permitting said latch member to release the movable member, said push rods having
15 extensions for engaging an element of the other alarm switch for closing the same and

combination keys for actuating said push rods.

3. A device of the class described comprising a casing, a movable member there- 20 in, a fuel supply valve connected with said member, an ignition switch connected with said member, an operating lever for moving said member into locking position to close the valve and open the switch, a latch mem- 25 ber for holding said member in locking position, combination means for releasing said latch member and means for preventing the movement of said means when the parts are in unlocked position. 30

In testimony whereof I affix my signature.
HOMER E. GILLAND.