Nov. 4, 1941. H. ARRIAZA H. 2,261,868

ELECTRIC SAFETY DEVICE FOR LOCKS

Filed Sept. 13, 1939

Fig. 1.

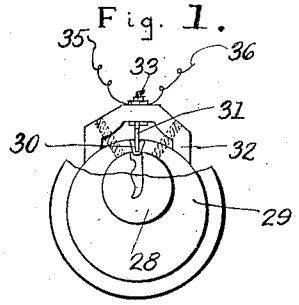


Fig. 2.

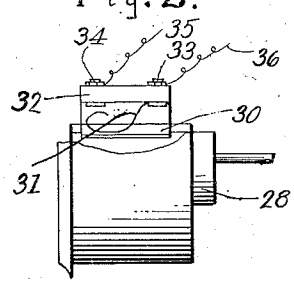


Fig. 3.

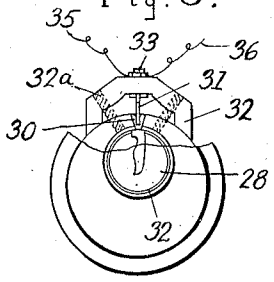
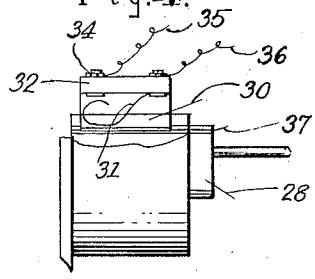


Fig. 4.



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Patented Nov. 4, 1941

2,261,868

UNITED STATES PATENT OFFICE

2,261,868

ELECTRIC SAFETY DEVICE FOR LOCKS

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Application September 13, 1939, Serial No. 294,754

3 Claims. (Cl. 200—55)

This invention relates to electric safety devices for door locks and its object is to provide a simple and practical method of making electrical connections with said locks for sounding alarms and/or making light signals when the locks are being opened, picked, taken off or tampered with, and the means whereby this method may be put in practice with different kinds of locks. The method of the present invention comprises connecting the leads of an electric circuit to terminals located within said locks or their accessory parts or attached thereto in such a manner that on inserting a key or any other implement or when such keys or implements are being turned in the lock, the circuit will be closed and a sound alarm and/or a signal lamp lighted, efficient protection being provided for the circuit wires in their passage by the door hinges and door to the lock, and means for giving the alarm when the unscrewing of the lock or the hinges is attempted.

Several embodiments of the present invention in its application to lever and barrel locks of the "Yale" and other similar types will be described hereinbelow in connection with the accompanying drawing, in which:

Figure 1 illustrates the circuit closing device applied to a barrel lock of the "Yale" or similar type for connecting the alarm when a key or other implement is introduced; Figure 2 is a side view partly in section of this lock; Figure 3 is a similar view as Figure 1 but with an additional device for allowing the lock to be opened with a special key without connecting the alarm; and Figure 4 is a view similar to Figure 2 indicating the additional device mentioned in connection with Figure 3.

In the circuit closing device for barrel locks of the "Yale" and other similar types, shown in Figures 1 and 2, a bridge member of insulating material **32** is fixed by screws **32***a* centrally to the top part of the lock casing. **31** is a curved laminated spring fixed at one of its ends to a screw **33** which passes through the top part of said insulating bridge member and forms the terminal of a circuit wire **36**. The free curved end of spring **31** is located below, and at some distance from, another screw **34** which forms the terminal corresponding to the circuit wire **35**. The under part of spring **31** fits loosely in the slot of a U shaped insulating member **30** with slant sides which rests in a corresponding slot made in the upper part of the lock barrel **28**. When the key is introduced the insulating member **30** is pushed upwards and spring **31** makes contact with screw **34** thus closing the alarm circuit.

The device shown in Figures 3 and 4 is similar to that of Figures 1 and 2, except that the key barrel **28** of the lock is reduced in size in order to fit loosely on its exterior periphery a sleeve **37**, the exterior diameter of which is equal to the exterior diameter of the normal key-barrel **28**, shown in Figures 1 and 2. Sleeve **37** has an upper slot corresponding to that of said barrel, in which lodges the U shaped insulating member **30**, and has the necessary perforations in the lower part of its periphery for the passage of the vertical plugs of the lock. The insulating member **30** rests in the slot of sleeve **37**, but does not reach the slot of the reduced barrel **28** shown in Figures 3 and 4. With this arrangement, a key of the right profile and normal height corresponding to the larger key barrel **28** of Figures 4 and 5 will open the lock and close the alarm circuit by pushing upwards the spring **31** as already described, but if a key of the same profile and of a lower height, obtained by reducing the upper border of the key so that it may not touch the outer sleeve **37**, be used, barrel **28** will be turned and the lock opened without closing the alarm circuit.

It must be understood that the scope of the present invention is not limited to the various embodiments herein above described, since the alarm circuit closing method of the invention may be applied to the locks or their accessory parts in a great number of ways, the most convenient of which being selected for each particular case.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. A door key actuated circuit closer comprising a rectangular frame member of insulating material of inverted U-shape cross section, a door lock key guide in the upper part of which said frame is fixed, a curved leaf spring fixed in the upper part of said frame, a screw securing one end of said spring and constituting a circuit terminal, a cam member of insulating material positioned in said frame member engageable by the edge of a key and operative to raise the free end of the spring upon insertion of a key within said member, and a terminal contact carried by said frame member normally free from the free end of said spring and engaged thereby upon insertion of a key to raise said cam member.

2. In a circuit closer for locks of the "Yale"

type comprising a fixed barrel, an insulating yoke secured to the top of said barrel, a curved leaf spring fixed to the yoke at one end thereof and having a conductor connected to said end, a contact carried by the other end of said yoke in the path of said spring and normally free from contact therewith, and a key carrying member rotatable in said barrel and normally alined below said spring whereby the edge of the key when inserted in said member closes the spring against said contact, said key carrying member being of greater diameter than the normal key whereby a normal key will fail to actuate said spring.

3. In a circuit closer for locks of the "Yale" type comprising a fixed barrel, an insulating yoke secured to the top of said barrel, a curved leaf spring having one end secured to the yoke and having a conductor connected to said yoke, a contact carried by the said yoke at a point remote from the conductor in the path of said spring and normally free from contact therewith, a conductor connected to the last mentioned contact, and a key carrying member rotatable in said barrel and normally alined with the yoke whereby insertion of a key, the edge of said key engages the insulating yoke and closes the spring against said contact, said key carrying member being of greater diameter than the normal key whereby a normal key will fail to actuate said spring.

HUMBERTO ARRIAZA H.