July 5, 1966 H. EICKHOFF III 3,259,707

ELECTRICAL DOOR SIGNAL

Filed Jan. 6, 1965

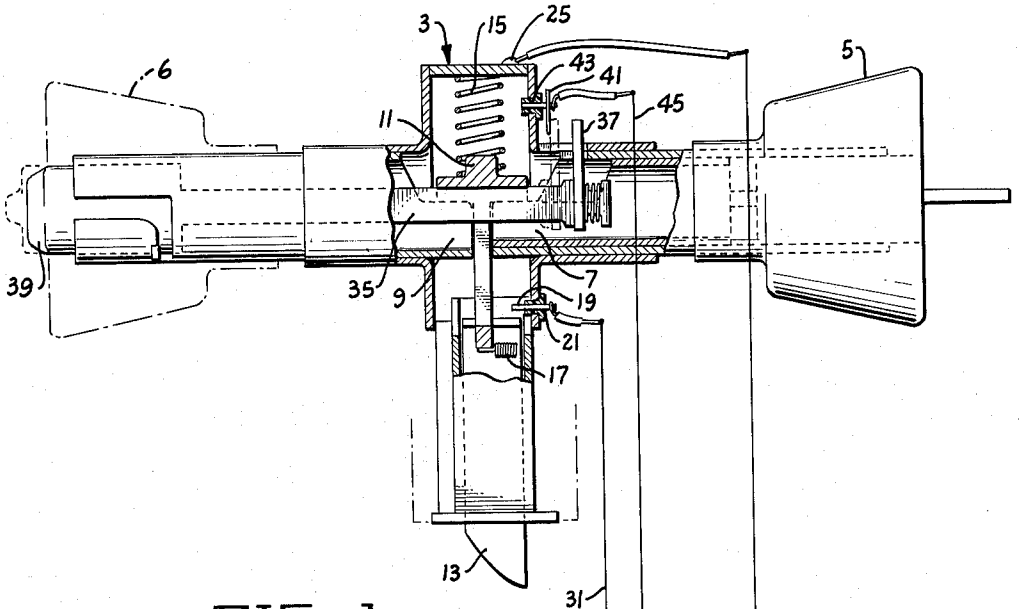
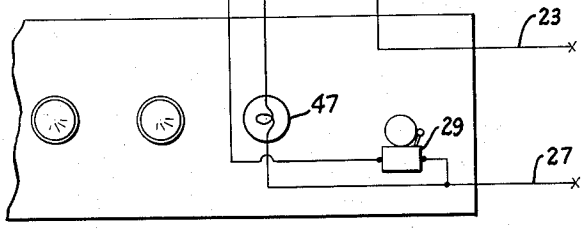


FIG. 1.



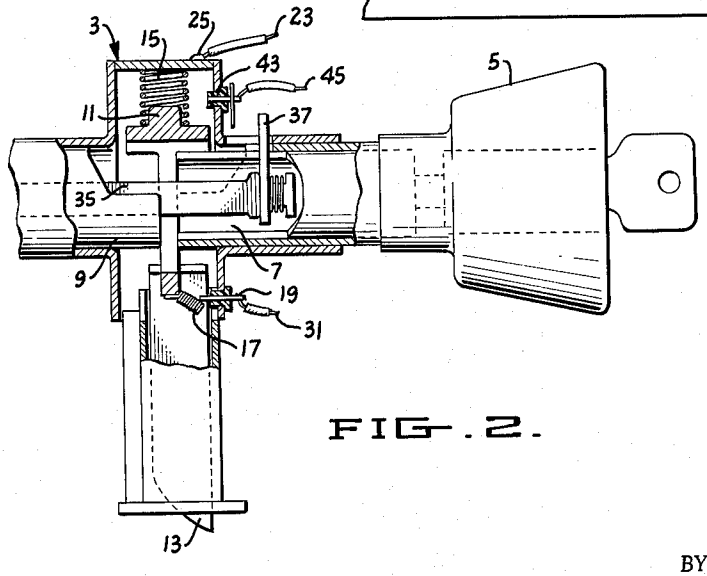


FIG. 2.

INVENTOR.
HENRY EICKHOFF III
BY Eickhoff & Eickhoff
ATTORNEYS

United States Patent Office

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ELECTRICAL DOOR SIGNAL

Henry Eickhoff III, 1165 Barcelona Drive, Pacifica, Calif.

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1 Claim. (Cl. 200—61.67)

This invention relates to a lock system and more particularly relates to a system whereby one can tell at a remote point when a door is opened.

In many instances, it is desirable from a security standpoint to provide means whereby one can tell when the bolt of a lock is thrown at a remote point. In accordance with the present invention, a simple modification is made of an existing lock so that an indication is given at a remote point when the bolt of the lock is turned. In accordance with one embodiment of the invention, a second circuit is provided within the lock structure so that one can tell at a remote point whether or not the door is locked.

In the drawings forming part of this application:

FIGURE 1 is a plan view, partly in section, of a lock embodying the present invention and also showing suitable associated circuitry.

FIGURE 2 is a partial view, similar to FIGURE 1, showing the bolt of the lock in a retracted position.

Turning now to a description of the drawings by reference characters, there is shown a lock having a frame generally designated **3**, having an outside knob **5** and an inside knob **6**. The outside knob is operatively connected to an eccentric member **7**, while the inside knob is operatively connected to an eccentric member **9**, each of said eccentric members bearing against a bolt actuating member **11**, which is connected to bolt **13**. The bolt actuator **11**, and thus bolt **13**, is biased outwardly by a spring **15**. The structure thus far described is conventional, and in accordance with the present invention, the lock structure is modified by providing a small contact **17** on the bolt actuating mechanism **11** and also by providing a second contact **19** which is mounted on the frame of the lock and insulated therefrom by means of an insulator **21**. A first wire **23** leading to a source of electricity, not shown, is attached to the frame **3** at a suitable point such as **25**. A second wire **27** leading to the source of electricity is connected to a bell **29** and then to the contact **19** by means of wire **31**. Thus, when the bolt is retracted, as is shown in FIGURE 2, contacts **17** and **19** are brought together, closing the circuit, causing the bell to sound.

As was mentioned above, the circuit of the present invention can also be provided with means whereby one can tell at a remote point whether or not the lock is locked. Thus, in a conventional lock, the locking bar **35** has a key member **37** at one end and a small knob **39** at the other. When the bar **35** is to the right, as is shown in solid lines, the locking member **37** prevents rotation of the eccentric

member **7**, so that one cannot open the door by turning the outside knob. However, if the bar is moved to the left as is shown in dot-dash lines, either by turning the knob **6** or the knob **39**, the key member **37** is brought out of engagement, so that the knob **5** can be used to open the door. In the modification shown, a contact **41** is held to the frame **3** but insulated therefrom by insulator **43**, so that a wire **45** can be attached to the contact **41**. This wire leads to a light bulb **47** and thence to wire **27**. Thus when the parts are in the position shown in the solid lines in FIGURE 1, i.e., the door is locked, there is no indication from the bulb **47**, but should the bar **35** be moved to the left, i.e., the door is unlocked, the key member **37** will contact the contactor **41**, closing the circuit and lighting the bulb **47**. Of course, the contact can be rearranged for a reverse operation as is more fully set forth in my copending patent application, Serial No. 413,491, filed November 24, 1964.

It will be obvious to those skilled in the art that many variations can be made in the present invention without departing from the spirit thereof. For instance, an audible warning has been shown for the bolt actuation indicator, and a visual indicator for the locking mechanism. However, both of these could be visual or both audible and the like.

It is believed apparent from the foregoing that I have provided a simple, yet effective, means of showing whether or not the bolt of a door is actuated, which may be combined with a device for showing whether or not the door is locked.

I claim:

In a lock structure having a bolt which is extended from a frame when the door is latched and which is retracted to unlatch the door, the improvement comprising two stationary contact points on said frame, a moveable locking bar within said frame having a locking member thereon whereby movement of a key in said lock structure brings said locking member in contact with a stationary contact point to close an electrical circuit, a bolt member at right angle to said moveable locking bar and responsive thereto, and a bolt actuating mechanism connected to said bolt member and having a moveable contact thereon whereby retraction of said bolt member brings said moveable contact in contact with a stationary contact point to close an electrical circuit.

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BERNARD A. GILHEANY, *Primary Examiner.*

J. J. BAKER, *Assistant Examiner.*