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C. DOEPPPEL

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DOOR LOCK SAFETY DEVICE

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FIG.1.

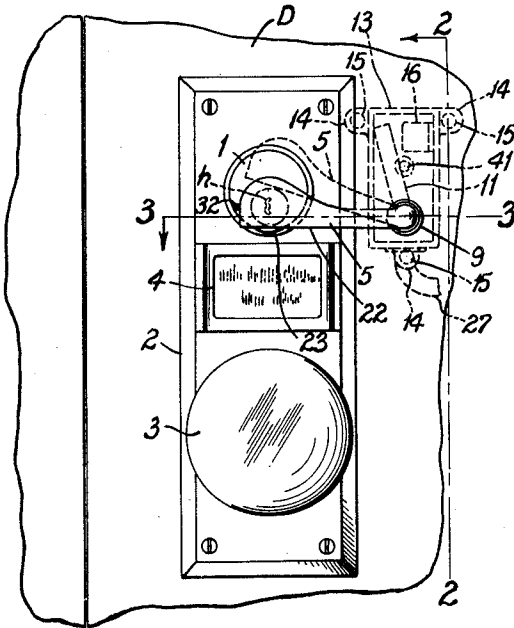


FIG.2.

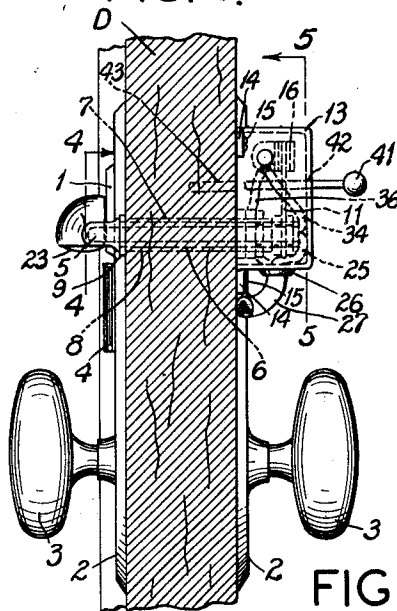


FIG.6.

FIG.4.

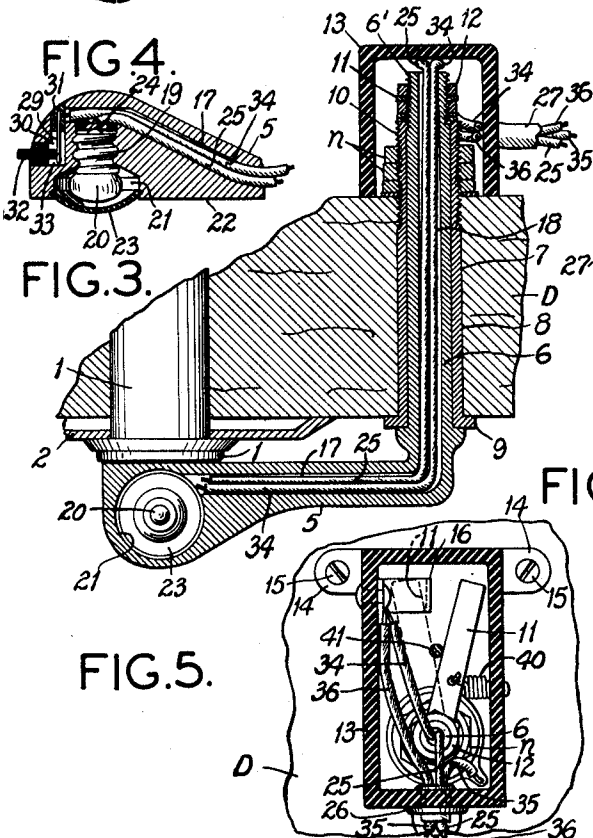


FIG.3.

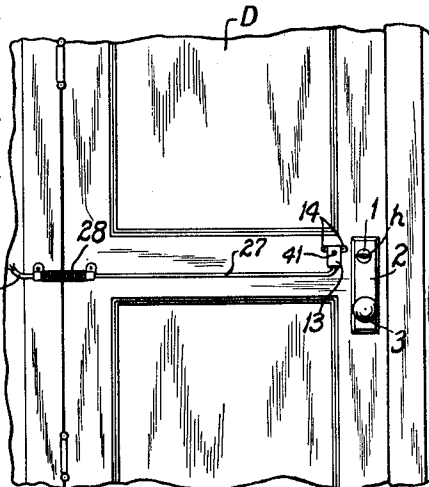


FIG.7.

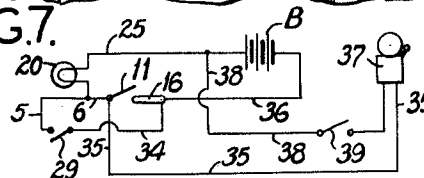


FIG.5.

INVENTOR;
CARL DOEPPPEL
BY *Harry A. Reimer*
ATTORNEY

UNITED STATES PATENT OFFICE

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DOOR LOCK SAFETY DEVICE

Carl Doeppel, St. Louis, Mo.

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4 Claims. (Cl. 240—2.13)

My invention has relation to improvements in door lock safety devices and it consists in the novel features of construction more fully set forth in the specification and pointed out in the claims.

5 The principal object of the invention is to provide a door lock safety device in the form of a shield for the keyhole of the lock which must be moved in order to insert the key, whereupon a switch is closed to cause an alarm within the
10 building.

Further objects of the invention are to provide a safety device which, upon being moved, illuminates the keyhole; one which may be fixed in immovable position to make access to the keyhole impossible; one which may be used solely as an illuminating device for a name plate on the door; one in which the alarm may be rendered inoperative if desired; and one possessing other advantages which will be better apparent from a detailed description of the invention in connection with the accompanying drawing, in which:

Figure 1 represents a fragment of the outer surface of a door showing my invention applied thereto; Fig. 2 is a vertical longitudinal section taken on the line 2—2 of Fig. 1; Fig. 3 is an enlarged horizontal section taken on the line 3—3 of Fig. 1 with parts broken away; Fig. 4 is a sectional detail taken on the line 4—4 of Fig. 2; Fig. 5 is a vertical sectional detail taken on the line
30 5—5 of Fig. 2.

Figure 6 is a fragmentary view of the inner surface of a door showing my invention applied thereto; and Fig. 7 is a diagrammatic view of the electrical connections embodied in my improved
35 safety device.

Referring to the drawing, D represents an outer door of a home or commercial building equipped with a conventional type of cylinder lock 1, escutcheon plate 2 and door knobs 3, 3. In the
40 present instance, a name plate 4 is fixed on the escutcheon plate 2 below the cylinder lock 1.

My invention comprises a shield for the keyhole *h* of the cylinder lock 1, which shield is in the form of a lever 5 formed on the end of a hollow spindle 6 rotatably mounted in a sleeve 7 disposed in a bore 8 through the door D adjacent to the escutcheon plate 2 (Fig. 1). The sleeve 7 has its outer end provided with a flange 9 and its inner end provided with threads 10 on which are
45 disposed a plurality of nuts *n* to hold the sleeve 7 securely in place. It will be observed that the threaded end 10 of the sleeve 7 is of sufficient length so that it is readily adaptable to doors of different thicknesses. The hollow spindle 6 has a
50 threaded extremity 6' which projects beyond the

threads 10 of the sleeve 7 and a switch lever 11 is disposed over this threaded extremity and held securely in place by means of a lock nut 12.

A suitable case 13 is disposed over the projecting ends of sleeve 7 and spindle 6 and switch lever 5 11 and has a plurality of perforated lugs 14 whereby it may be fixed to the inner surface of the door by screws 15. Within the case 13 is a fixed contact 16 adapted to receive the end of switch lever 11 when the lever 5 is raised and, of
10 course, the spindle 6 rotated within the sleeve 7. Within the lever 5 is a passageway 17 forming a continuation of passageway 18 in spindle 6, said passageway 17 communicating with a socket 19 for receiving a lamp 20. The socket 19 has a
15 flaring enlargement 21 opening in the lower surface 22 of the lever 5 and, if desired, a lens 23 may be fixed in any well-known manner in said socket 19 as to cover the lamp 20. A contact 24 is fixed in the upper part of socket 19 and insulated
20 from the lever 5 (which is metallic) and a conductor 25 is connected to said contact and led through the passageways 17 and 18 into the case 13 and through an insulating thimble 26 in said case to form one wire of a three-wire cable 27
25 extending across (or through) the door D. The cable 27 is protected by a spring guard 28 disposed over the hinge line of the door and fixed to the door and to the door casing (as shown in Fig. 6).

A push-button switch is also mounted in the outer end of lever 5, said switch comprising a spring contact 29 mounted in a bore 30 by means of an insulating plug 31 and a push-button 32 mounted in a counter-bore 33, said push-button
35 also being insulated from the lever 5.

A conductor 34 is connected to spring contact 29 and is led through passageways 17 and 18 to fixed contact 16 within case 13. A conductor 35 is connected to the end of spindle 6 within the case 13 and brought out of said case through the thimble 26, said conductor also forming one of the wires of the three-wire cable 27. The third conductor of the three-wire cable 27 is a conductor 36 connected to the fixed contact 16 and
45 also passed through the thimble 26. It will be seen by referring to Fig. 7 that conductor 25 is connected to a battery B (or transformer if desired) as is also the conductor 36, while conductor 35 leads to a bell or other alarm 37. The
50 alarm 37 is also connected to conductor 25 by means of a conductor 38 in which is inserted a cut-out switch 39 so that if desired, the alarm may be rendered inoperative.

By referring to Fig. 5, it will be seen that a 55

coil spring 40 is connected from one wall of the case 13 to the switch lever 11 maintaining said lever out of contact with the contact 16 except when the lever 5 is raised to uncover the keyhole h.

The lever 5 may be locked in its horizontal position to cover the keyhole h by means of a pin 41 inserted through an opening 42 in the case 13 and an aligning socket 43 in the door D.

From the foregoing it is apparent that if anyone attempts to manipulate the lock 1, he must first raise the lever 5 in order to obtain access to the keyhole h.

As soon as the lever 5 is raised, the lever 11 will engage with contact 16 whereupon both the alarm circuit and the circuit of lamp 20 will be closed as follows: from battery B to conductor 25, lamp 20, lever 5 (in which the lamp is grounded) spindle 6, switch lever 11, contact 16, conductor 36, to battery B. The circuit just traced is the lamp circuit, while the alarm circuit comprises conductor 25, conductor 38, switch 39, alarm 37, conductor 35, spindle 6, switch lever 11, contact 16, conductor 36, and battery B.

If one wishes first to illuminate the name plate 4 without sounding the alarm within the premises, he closes the push-button switch, including spring contact 29, whereupon the following circuit is closed: from battery B through conductor 36 to fixed contact 16, through conductor 34 to spring contact 29, through the lever 5 (against which spring contact 29 is grounded and the button 32 is pushed) to the lamp 20, conductor 25 and back to the battery B.

Thus, my improved device serves the two-fold purpose of enabling one to ascertain the owner of the premises and at the same time prevents tampering of the lock by unauthorized persons through the sounding of the alarm as soon as the lever 5 is manipulated.

Obviously, the alarm need not be located within the premises, equipped with my improved safety device, but may be located in a police station or any other place desired to give notice that someone is attempting to enter the protected premises.

Having described my invention, I claim:

1. In combination with a door lock provided with a keyhole, a safety device therefor comprising

a rotatable member extending through the door and a lever arm at one end thereof, said rotatable member and lever arm being formed integral and L-shaped with a continuous socket therein, a switch element at the opposite end of the rotatable member, a second switch element adapted to be contacted by the first switch element when the lever arm is moved, a lamp in said lever arm, a source of electrical energy, and suitable electrical conductors between the source of energy, lamp, and the switch elements, said conductors being housed within the socket aforesaid.

2. In combination with a lock provided with a keyhole, a safety device therefor comprising a rotatable member having a lever arm at one end and a switch element at the opposite end, a second switch element adapted to be contacted by the first switch element when the lever arm is moved, a lamp in said lever arm, a source of electrical energy, and suitable electrical connections between the source of energy, lamp and switch elements, said lever arm normally being disposed over said keyhole to provide a shield therefor.

3. In combination with a lock having a keyhole, a safety device therefor comprising a rotatable member having a shielding element for the keyhole at one end and a switch element at the opposite end, a second switch element adapted to be contacted by the first switch element when the shielding element is moved away from said keyhole, a lamp in said shielding element, a source of electrical energy, and suitable electrical connections between the source of energy, the lamp and the switch elements.

4. In combination with a lock having a keyhole, a safety device therefor comprising a rotatable member having a shielding element for the keyhole at one end and a switch element at the opposite end, a second switch element adapted to be contacted by the first switch element when the shielding element is moved away from said keyhole, a lamp in said shielding element, a source of electrical energy, suitable electrical connections between the source of energy, the lamp and the switch elements, and means for locking the rotatable member against movement.

CARL DOEPPEL.