Jan. 28, 1936. D. E. SMILEY 2,029,002

KEYHOLE ILLUMINATING MEANS FOR DOORS

Filed March 6, 1933

Fig. 1.

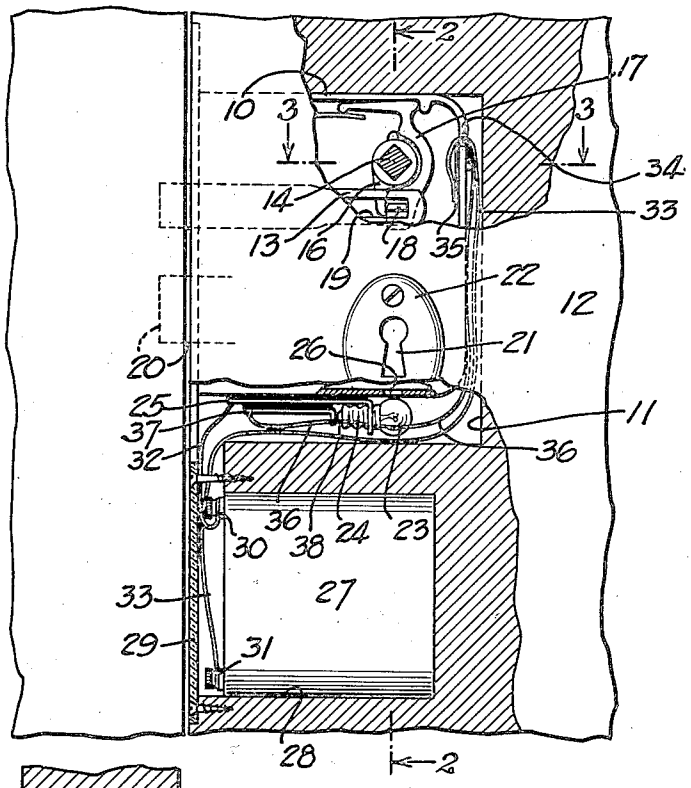


Fig. 2.

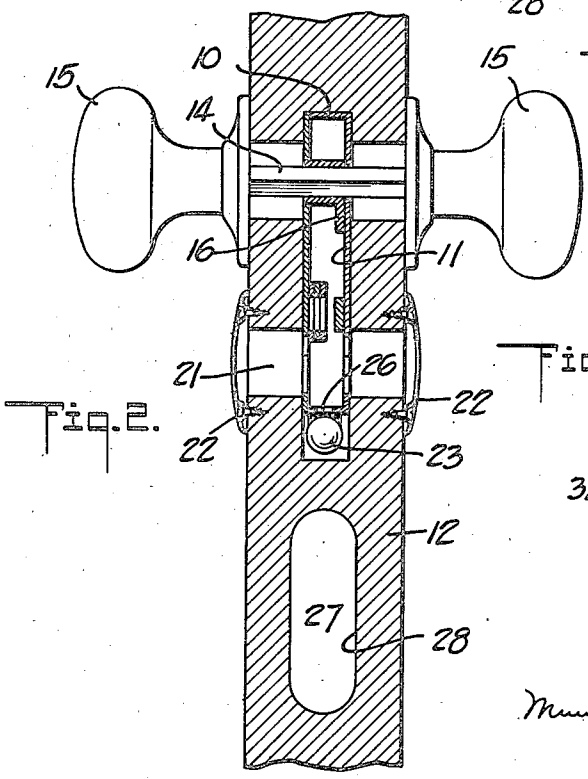


Fig. 3.

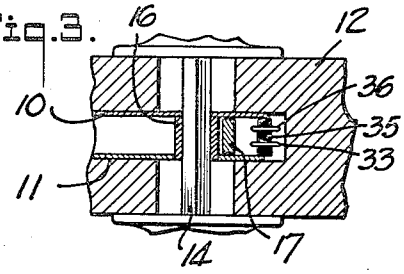
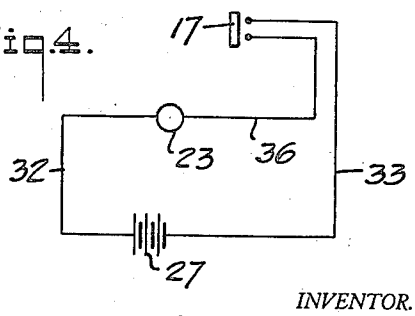


Fig. 4.



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KEYHOLE ILLUMINATING MEANS FOR DOORS

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Application March 6, 1933, Serial No. 659,890

2 Claims. (Cl. 240—2.13)

This invention relates generally to doors, and more particularly to locks thereof, and it is the purpose of this invention to provide means by which the keyhole of a lock can be illuminated to render it clearly visible in the dark, whereby to obviate the delay and annoyance attendant the effort of searching for the keyhole in a darkened location.

Only one form of the invention will be described, following which its novel features will be pointed out in claims.

In the accompanying drawing

Figure 1 is a view showing in side elevation, partly broken away, the invention associated with a door and the lock thereof;

Figure 2 is a vertical sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a horizontal sectional view taken on the line 3—3 of Figure 1;

Figure 4 is a diagrammatic view of an electrical circuit embodied in the invention.

Similar reference characters designate similar parts in each of the several views.

Referring specifically to the drawing, this invention is shown for the purpose of illustration associated with a conventional lock, including a rectangular casing 10 fitted in a recess 11 in the free edge of a door 12. A sliding latch bolt 13 is actuatable upon rotation of a spindle 14 having knobs 15 fixed thereto at opposite sides of the door; and the operative connection between the spindle and latch bolt includes a lever 16 fixed to the spindle and engaging one arm of a bell crank lever 17, which arm is provided with a lug 18 working in a slot 19 of the latch bolt, all as shown in Figure 1. The lock also includes a locking bolt 20 adapted to be actuated by a key (not shown) insertable into the casing 10 through a keyhole 21 formed by registering openings in the casing, door and escutcheon plates 22.

The illuminating means embodying this invention comprises an electric lamp 23, the metallic shell 24 of which is threaded into an angle bracket 25 of conducting material, the bracket being secured to and insulated from the casing 10 to support the lamp in the recess 11 immediately below the casing and in proximity to the keyhole 21. Between the lamp and the keyhole, the casing is provided with an opening 26 through which light rays emanating from the lamp when lighted are projected into the keyhole to thus illuminate the latter from interiorly of the door and render it visible in the dark.

In the present instance, current is adapted to be supplied to the lamp from a battery 27 under the control of a switch which is manually operable from exteriorly of the door. The battery 27 is fitted in a recess 28 formed in the free edge of the door adjacent the recess 11; and the recess 28 is closed by a removable cover plate 29 of insulating material.

From the battery terminals 30 and 31, respectively, lead insulated conductors 32 and 33, the former of which is soldered to the bracket 25. The conductor 33 is extended about the lock casing through a slot 34 in the latter, and is bent upon itself to extend within the casing directly opposite that arm of the bell crank lever 17 which is operatively connected to the latch bolt 13 through the medium of the lug 18 and slot 19 as previously described. The free end of the conductor 33 is bared and insulated from the casing by a strip of insulation 35 as shown in Figure 1. A third conductor 36 is soldered to a contact member 37 fixed to, and insulated from, the bracket 25, the contact member engaging the center terminal 38 of the lamp when the shell of the latter is screwed into the bracket as shown in Figure 1. The conductor 36 is extended about the casing 10 and through the slot 34 in spaced relation to the conductor 33, with the free end of the conductor 36 being bared and insulated from the casing and from the conductor 33 by the strip of insulation 35, as shown in Figure 3.

The operation of the invention is as follows:

Let it be assumed that the door is locked by the locking bolt 20. In order to illuminate the keyhole 21, it is only necessary that one of the knobs 15 be turned to release the latch bolt 13, which operation rocks the bell crank lever 17 into bridging engagement with the free ends of the conductors 33 and 36 to complete a circuit through the lamp 23 as follows:

From the terminal 30 of the battery 27, through conductor 32, bracket 25, shell 24 of the lamp, the lamp filament, center terminal 38 of the lamp, contact member 37, conductor 36, bell crank lever 17, and conductor 33, back to the battery through the terminal 31. So long as the knob is held in this position, the keyhole will be illuminated so as to be clearly visible in the dark, for the insertion of a key.

When the knob is released, it will be manifest that the circuit will be disrupted to extinguish the lamp, as the lever 17 is normally urged to disengage the conductors 33 and 36 under the action of the usual spring provided for the latch bolt 13.

The invention can be equally well associated with a cylinder lock or other forms of locks, and the switch can be provided independent of the

latch mechanism, it only being desirable that the switch be conveniently accessible from exteriorly of the door, at a location on the knob or adjacent thereto. Furthermore, the usual 110 volt current supplied to consumers can be substituted for the local battery, by extending feed wires through the door jamb and having contacts on the jamb and door which will establish electrical connection between the feed wires and the conductors 32 and 33 when the door is closed.

I claim:

1. A door having a lock provided with a keyhole, a latch bolt, and a manually operable actuator for the latch bolt; an electric lamp supported within the door in a position for light rays from the lamp to be visible through the keyhole when the lamp is lighted, while rendering the keyhole free for the insertion of a key; and a circuit including a battery enclosed within the door, conductors insulated from each other and electrically connected to the battery and lamp, said conductors having spaced terminals, and means operable by said actuator from exteriorly of the door to complete the circuit through said terminals and thereby supply current from the battery to the lamp.

2. A door having a lock the casing of which is provided with a keyhole and is mortised in the door; the lock having a latch bolt and a manually operable actuator therefor; an electric lamp supported by the casing of the lock in the door mortise in a position to project light rays through an opening in the casing so as to be visible through the keyhole from exteriorly of the door; and an electrical circuit including a battery enclosed within the door; conductors insulated from each other and electrically connected to the battery and lamp; the conductors having spaced terminals; and a bridging member operable by said actuator from exteriorly of the door to bridge said terminals so as to complete the circuit and thereby supply battery current to the lamp.

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