

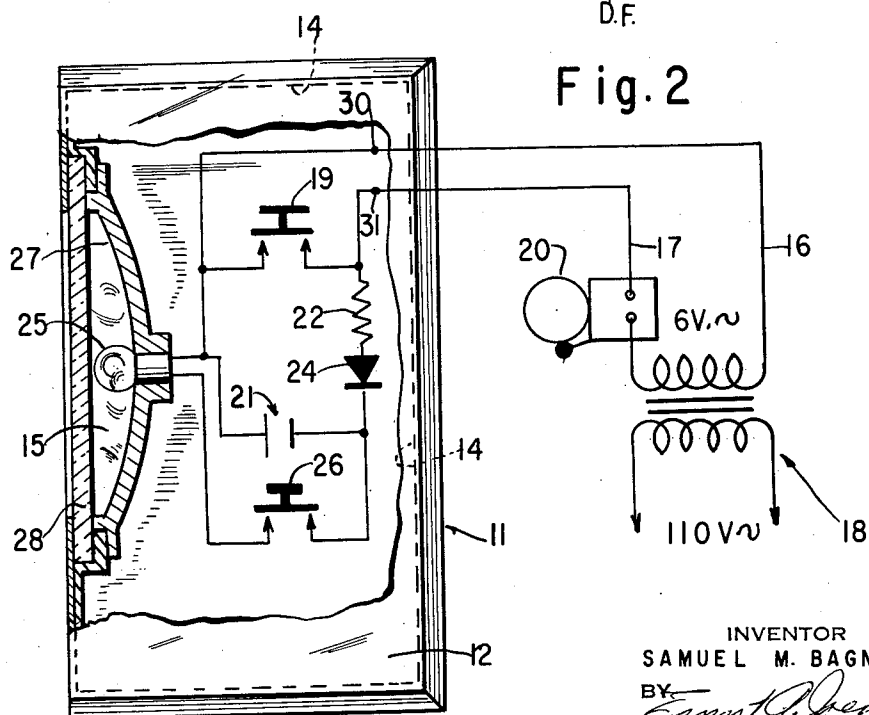
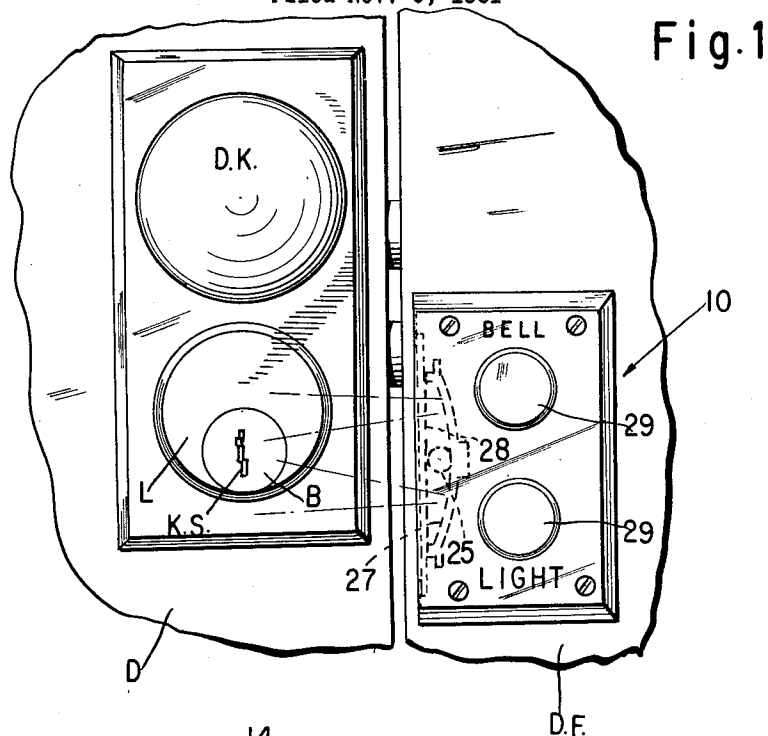
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LAMP ILLUMINATING NETWORK

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LAMP ILLUMINATING NETWORK

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The present invention relates to illumination, and, more particularly, to an improved illuminating network for locating the door knob and the keyhole of a lock and for identifying the key which fits the lock.

Heretofore, numerous door knob and keyhole illuminating devices have been proposed for the entrance of enclosures such as buildings, apartments, hotel rooms and the like, but such devices were subject to the difficulty that they required a separate power circuit which included wiring leading into the enclosure and make the installation cost of the device a material item.

Accordingly, an object of the present invention is to overcome the foregoing difficulties by providing a lamp illuminating network which can be combined with or can be readily connected in a bell ringing network without additional wiring.

Another object is to provide an article of manufacture or device such as a push button switch which includes a casing for confining the components of the lamp illuminating network or the components of a combined bell ringing and lamp illuminating network.

Another object is to provide such a network wherein a lamp having a high light output can be utilized.

Another object is to provide such a device which includes indicia for assisting persons who are unfamiliar with the device in locating the switch for ringing bell both during daytime and in the dark.

A further object is to accomplish the foregoing in a simple, practical, economical and reliable manner.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

A preferred embodiment of the invention has been chosen for purposes of illustration and description, and is shown in the accompanying drawing, forming a part of the specification, wherein:

FIG. 1 is a more or less schematic fragmentary front elevational view of the door knob and keyhole for the door of an enclosure and a device in accordance with the present invention mounted on the wall or door frame adjacent the portion of the door shown in this view.

FIG. 2 is an enlarged view of the device shown in FIG. 1 with the front wall or cover broken away to illustrate details of construction and including a combined bell ringing and lamp illuminating network having certain components thereof confined within the casing of the device.

Referring now to FIG. 1 of the drawing in detail, there is shown a door D mounted in a door frame DF, hardware secured to the door including a door knob DK and a lock L having a barrel B provided with a keyhole or key slot KS, and a device 10 in accordance with the present invention mounted on the door frame or wall and adjacent the hardware.

The device 10 generally comprises a casing 11 (FIG. 2) adapted for securement to the door frame in any conventional manner, and certain components of a network confined within the casing as about to be described.

The casing 11, as shown in FIGS. 1 and 2, is generally rectangular and has a plurality of sides including a front wall 12 and four side walls 14, and may have a back wall if required. One of the sides, preferably the side wall facing the hardware on the door, is provided with

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a window or opening 15 for the purpose described herein-after.

In FIG. 2 a combined bell ringing and lamp illuminating network is shown which comprises two electrical conductors such as wires 16 and 17, a source of alternating current such as the six volt output of a 110 volt "bell" transformer 18 connected across the wires 16 and 17, a bell operating switch 19 connected across the wires 16 and 17, a bell 20 connected in one of the sides (17) between the source 18 and the switch 19, a secondary battery 21 connected across the wires 16 and 17, a resistor 22 and a rectifier 24 connected in series in one of the wires (17) between the switch 19 and the battery 21, a lamp 25 connected across the battery 21, and a lamp operating switch 26 connected between a terminal of the battery 21 and a terminal of the lamp 25.

The casing 11 confines the switches 19 and 26, the battery 21, the resistor 22, the rectifier 24 and the lamp 25 which is positioned adjacent the window 15 at the middle thereof.

Preferably, the lamp is mounted on a light reflector 27 in back of the lamp, such as a curved strip of shiny material having its ends secured to the inner side wall at opposite ends of the window or opening 15. If desired, a strip 28 formed of highly translucent or transparent material is secured to the interior of the side wall over the opening 15 to thereby seal the opening and protect the lamp and the reflector to prevent discoloration thereof or dirt from being deposited thereon to impair the brilliance of the lamp.

The device 10 preferably is located with respect to the hardware on the door so that the lamp 25 and the key slot KS are in horizontal alignment and a good portion of the light provided by the lamp is directed onto the key slot. This also provides a zone spaced from the door knob where there is sufficient light to enable a person to inspect a bunch of keys to identify the key which fits the lock of the door.

The switches 19 and 26 as shown are of the push button type having a push button 29 for manually actuating the switch which button is accessible from the exterior of the casing 11, for example at the front wall thereof (FIG. 1).

The resistor 22 and the rectifier 24 are of the generally known and available miniature type and occupy very little space within the casing 11. The secondary battery 21 likewise occupies a minimum amount of space and actually may be confined and sealed within a disc having a diameter of about 0.75 inch and a thickness of about 0.25 inch.

A secondary battery, which has been found suitable for the space and operational requirements of the network in accordance with the present invention is a cell having a cadmium-cadmium oxide electrode and a nickel-nickel oxide electrode immersed in an aqueous potassium hydroxide solution serving as the electrolyte.

The battery cell by being connected at all times across the source 18 is under constant charge. This is permissible because the cadmium electrode has an excess of cadmium oxide formed thereon so that oxygen liberated by overcharge, diffuses to the cadmium electrode and further oxidizes it and hydrogen liberated on overcharge reduces the excess cadmium oxide to cadmium and combines with oxygen to form water, before hydrogen and oxygen dissolve in the electrolyte to produce an explosive mixture of gases under pressure within the cell and before the cell is dried out due to the electrolyte decomposition of the water in the potassium hydroxide solution to gases, oxygen and hydrogen. The cell in this manner can withstand an indefinite overcharge approaching infinity.

During discharge of the cell, the cadmium is oxidized to cadmium oxide and nickel oxide (NiO_2) is reduced

to nickellous oxide (Ni_2O_3); and during charge, cadmium oxide is reduced to cadmium and nickellous oxide is oxidized to nickelic oxide.

Such a battery has a potential of 1.35 volts and has a sufficient current output to fully illuminate a 1.25 volt, 20 watt lamp although a one watt lamp is adequate to enable a person to find the proper key and locate the keyhole. When the battery is connected across a six volt charging source, a 150 ohm resistor 22 is used to limit the charging current to its proper range.

In operation of the network, the switch 19 is closed to operate the bell 20 and the switch 26 is closed to illuminate the lamp 25 but the closing of the switch 19 will not affect the lamp and the closing of the switch 26 will not affect the bell by reason of the selection and arrangement of the components of the network. However, the portion of the network within the casing of the device requires only two electrical connections at terminals 30 and 31 to the wire 16 from one side of the source 13 and to the wire 17 from one terminal of the bell which wires are already installed for a bell switch and thus are available for connection to the device 10.

It will be appreciated that in some instances it may be desirable to leave the already installed bell ringing switch in place and to simply mount a device 10 adjacent such switch with its terminals 30 and 31 connected across the bell ringing switch. When the device is installed in this manner, the switch 19 can be omitted in the portion of the network within the casing 11 because an equivalent switch is available externally of the casing.

It is also contemplated that the door may open from the right (as shown) or from the left. Should the door open from the left, the device 10 is mounted on the door frame to the left of the door but is inverted so that the window 15 again faces the hardware on the door.

The term "bell" is used herein in a broad sense and is intended to include equivalent devices of the audible and/or visual type including chimes, buzzers, whistles, annunciators and the like.

In view of the foregoing description, it will be seen that the present invention provides a device of the type described herein which can be installed for use with the bell ringing switch of newly built enclosures and can be installed for use with existing enclosures to replace either entirely or in part the bell ringing switch without the requirement of any additional wiring, that is wiring other than the two wires normally required for the bell ringing switch.

As various changes may be made in the form, construction and arrangement of the parts herein, without de-

parting from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all matter herein is to be interpreted as illustrative and not in any limiting sense.

I claim:

1. A combined bell ringing and lamp illuminating network comprising the following elements each having first and second terminals: a source of alternating current, a bell, a bell operating switch, a secondary battery, a resistor and a rectifier connected in series, a lamp, and a lamp operating switch, which elements are electrically connected with the first terminal of said source to the first terminal of said bell, the second terminal of said bell to the first terminal of said bell operating switch and to the first terminal of said resistor and rectifier, the second terminal of said source to the second terminal of said bell operating switch, the second terminal of said resistor and rectifier to the first terminal of said secondary battery and to the first terminal of said lamp operating switch, the second terminal of said secondary battery to the second terminal of said bell operating switch and to the first terminal of said lamp, and the second terminal of said lamp operating switch to the second terminal of said lamp.

2. An article of manufacture comprising a casing; the following elements each having first and second terminals and being in said casing: a bell operating switch; a secondary battery, a resistor and a rectifier connected in series, a lamp, and a lamp operating switch, which elements are electrically connected with the first terminal of said bell operating switch to the first terminal of said resistor and rectifier, the second terminal of said resistor and rectifier to the first terminal of said secondary battery and to the first terminal of said lamp operating switch, the second terminal of said secondary battery to the second terminal of said bell operating switch and to the first terminal of said lamp, and the second terminal of said lamp operating switch to the second terminal of said lamp; first terminal means electrically connected to the first terminal of the bell operating switch; and second terminal means electrically connected to the second terminal of the bell operating switch, said terminal means being arranged for electrical connection with a source of alternating current and a bell.

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