Sept. 2, 1941. W. A. GRAY 2,254,842

ILLUMINATING ATTACHMENT FOR THE ENTRANCES OF BUILDINGS

Filed June 8, 1940

FIG. 1.

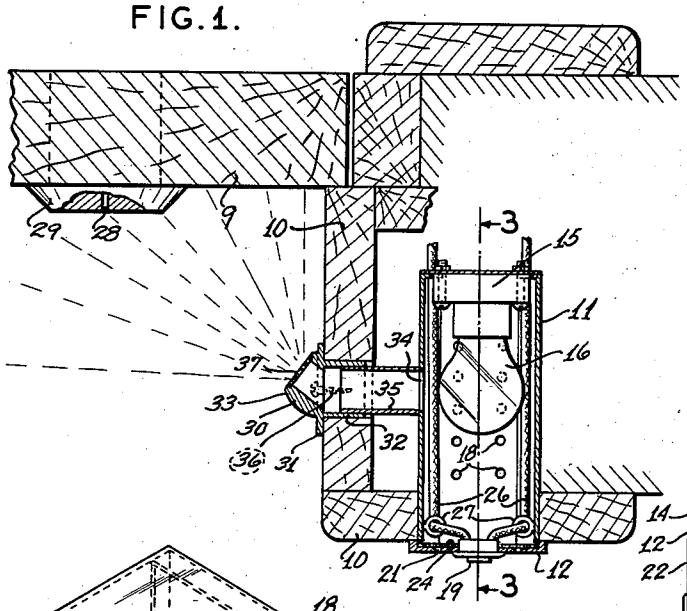


FIG. 2.

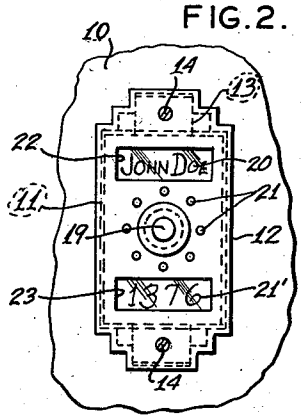


FIG. 3.

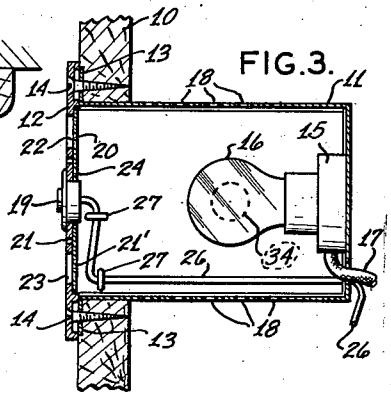


FIG. 4.

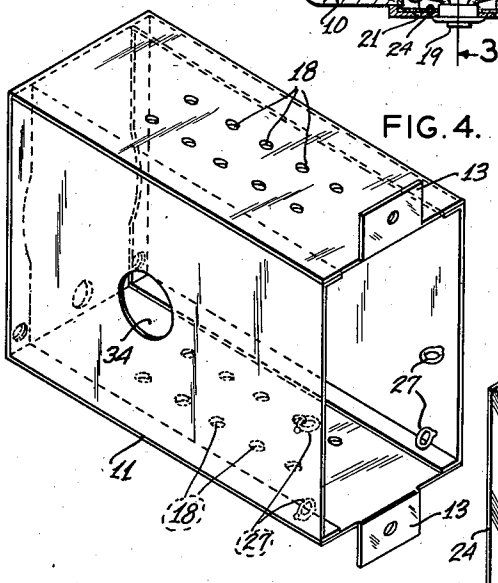


FIG. 5.

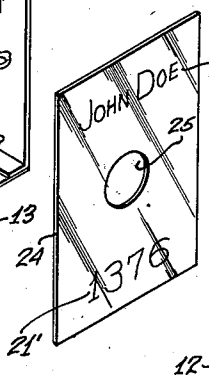


FIG. 6.

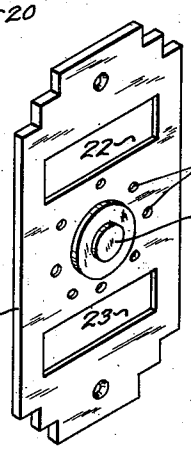


FIG. 7.

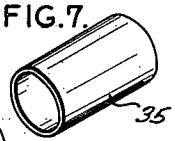
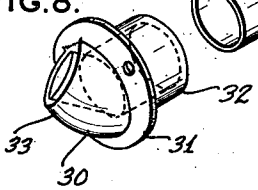


FIG. 8.



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ILLUMINATING ATTACHMENT FOR THE ENTRANCES OF BUILDINGS

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Application June 8, 1940, Serial No. 339,413

10 Claims. (Cl. 240—2.13)

This invention relates to illuminating attachments for the entrances of buildings, and its several features may be employed to illuminate reading matter showing the street number of the building, the name of the occupant, the door-bell switch, and the lock or keyhole of the door.

An object of the invention is to produce a simple, inexpensive and entirely feasible means for accomplishing all of these results. A further object is to produce a neat and attractive device of this kind adapted to be easily and quickly installed in the door frame or other part of the building.

Actual tests of the new device have shown that it very effectively performs all of the above-mentioned functions, and at the same time provides additional illumination quite desirable at the entrance of a building. For example, the door, steps, porch and other objects remote from the device become more or less clear, and a relatively bright light is available for the inspection and selection of the door key, while the keyhole is clearly displayed in a beam of light.

Several advantages appear in the means for illuminating the lock or keyhole, and it is to be understood that advantages are gained by this novel feature when used alone, independently of the other features. In other words, the invention comprises a number of unitary features having a very desirable cooperative effect when all of them appear in a single device, but some of the features may be omitted without departing from the invention.

With the foregoing and other objects in view, the invention comprises the novel construction, combination and arrangement of parts hereinafter more specifically described and shown in the accompanying drawing, which illustrates one form of the invention. However, it is to be understood that the invention comprehends changes, variations and modifications within the scope of the claims hereunto appended.

Fig. 1 is a horizontal section illustrating portions of a door and door frame equipped with a device embodying features of this invention.

Fig. 2 is a front view showing a group of illuminated devices at the front of a concealed lamp housing.

Fig. 3 is a section taken approximately on the line 3—3 in Fig. 1.

Fig. 4 is a perspective view of the lamp housing.

Fig. 5 is a perspective view of a transparent or translucent closure for openings in the front wall of the housing.

Fig. 6 is a perspective view of said front wall.

Fig. 7 is a perspective view of a duct through which light is transmitted from one side of the housing.

Fig. 8 is a perspective view of a projector for transmitting light to the door and other objects more or less remote from the lamp housing.

In Fig. 1 I have shown fragments of a door 9 and a door frame including a jamb 10 at one side of the door. It is to be understood that the new device may be located in any desired position at or near the doorway of a building. However, it is usually most convenient to install the apparatus in the door jamb, as suggested in Fig. 1.

To illustrate one form of the invention, I have shown a lamp housing 11 provided with top, bottom, side and rear walls, all concealed within the door jamb, and a front wall 12 exposed at the front of said jamb. The housing is provided with attaching flanges 13 extending from its top and bottom walls, as shown in Fig. 4, to receive screws 14 (Fig. 3) which pass through the front wall 12 and enter into the jamb 10. These screws detachably secure the lamp housing to the jamb, and at the same time permit independent removal of the front wall 12.

The rear wall of the housing 11 is provided with a socket 15 to receive an electric lamp 16. The electrical conductors 17 for energizing the lamp may extend through an opening or openings in the rear wall of the housing, as indicated in Fig. 3. The power of the lamp 16 may be only a few watts, so it will generate very little heat. However, the top and bottom walls of the housing are provided with vent openings 18 for the circulation of air through said housing.

The exposed front wall 12 of the housing constitutes a support for a unitary group of devices, including a push button switch 19 to actuate the door bell, the name of the occupant of the building appearing at 20, and the street number at 21'. The push button switch 19 is illuminated by means of light projected through an annular series of openings 21 formed around the push button. The name and street number appear at display openings 22 and 23 formed in the front wall 12, and this identifying indicia can be printed, painted or otherwise applied to a translucent or transparent sheet 24 which forms a closure for all of the openings 21, 22 and 23 in said front wall. As shown in Fig. 5, the sheet 24 may be provided with an opening 25 to receive the push button switch. This sheet is preferably made of fire-proof material and cemented to the

inner face of the front wall 12, so as to prevent the entrance of dust, insects, etc., at the openings in said wall 12. Said transparent or translucent sheet 24 may be frosted to avoid an undesirable glaring light at said openings.

To efficiently distribute the light from the relatively weak lamp 16, the inner faces of the housing 12 may be polished, plated, painted, or otherwise treated, to provide bright reflecting surfaces, and to avoid objectionable shadows, the electrical conductors 26 leading from the push button switch 19 may be passed through eyes 27 on the side walls of the housing 11, and also through holes near the rear lower corners of said housing.

I will now refer to a means for transmitting light from the interior of the housing 11 to various objects more or less remote from said housing. This feature can be employed to illuminate the lock or keyhole of the door, as well as other selected areas near the entrance of the building. It can be selectively located to illuminate portions of the floor, steps, threshold, etc., and in many instances it will perform the essential, or most desirable functions ordinarily obtained from high powered porch lamps, or the like.

To illustrate one form of this feature in Fig. 1 I have shown a keyhole 28 in a lock 29 on the door 9, and a projector 30 through which light is transmitted to said lock. In the form of the invention shown by Fig. 1, the projector 30 is separated from the lamp housing 11 and separately secured to a portion of the building structure near the entrance door 9. More specifically stated, this form of the projector comprises a circular base 31 seated against a side wall of the jamb 10, a tubular member 32 extending inwardly from said base and rotatably mounted in the jamb, an exposed light-projecting member 33 extending outwardly from the base and having an inclined light outlet at an acute angle to said base, said light-projecting member 33 being united with and movable about the axis of the tubular member 32.

When the light-projecting member is widely separated from the lamp housing 11, said housing can be conveniently provided with an opening 34, and a separate duct 35 may be employed to transmit light from the housing to the exposed projecting member 33. The opening 34 shown in Fig. 1 is formed in a side wall of the lamp housing at a point adjacent to the lamp 16, and the duct 35 extends laterally at a right angle to said side wall. In commercial practice, the ducts 35 may be made of various lengths to fit into the different conditions found in building structures, and the duct selected for a particular installation may be adjustably telescoped with the tubular member 32, as shown in Fig. 1.

To install a device in a jamb of the type suggested in Fig. 1, a simple rectangular opening is formed in the front of the jamb to receive the lamp housing 11, and a round hole is bored in the side wall of the jamb to receive the tubular member 32 of the light projector. These simple operations can be very readily performed by an ordinary workman, and the several elements of the device can be easily inserted into the openings in the jamb. The base 31 of the light projector will then lie at a right angle to the exposed front wall 12 of the lamp housing. The projector 30 will be adjustable in an arcuate course around the axis of its tubular member 32, so as to project the light in the desired direction, and after this adjustment has been obtained, the projector may be secured by means of one or more screws 36 (Fig. 1) passing through its base flange 31.

Actual tests of the device have shown that the light projector has a number of important functions, not only in clearly illuminating the keyhole while providing a clear light for selection of the required key, but also in more or less clearly illuminating various objects near the entrance of the building. The light can be transmitted from the outlet of the projector in the form of diverging rays as suggested in Fig. 1, so as to illuminate large areas adjacent to and remote from the projector.

Furthermore, the adjustable projector can be set to meet various conditions found at the different types of entrances, and it can be selectively adjusted in accordance with the functions desired by the user. For example, the keyhole illumination may be obtained by the extreme upper portion of the flaring light, while most of the light is directed downwardly toward the floor, threshold, or steps adjacent to the door, and when the door is opened, this light will be projected into the interior of the building, so as to expose the floor and other objects inside of the entrance hall or room.

In fact, the new device can be located in various positions remote from the entrance door, and any desired lens, or the like, can be employed to obtain the desired beam of light. However, I have found that a desirable spreading light can be obtained by merely applying a simple translucent disk 37 to the outlet of the projector 30. This disk is conveniently made of frosted transparent material cemented to the projector, so as to exclude dust, insects, etc. The frosted material tends to eliminate an objectionable bright spot which appears when the light is transmitted through the duct 35, and thence across the inclined inner faces of the projector 30.

In this field of invention, a series of problems appeared in the numerous different conditions found at the entrances of buildings. For example, the location of the door bell push button may be at either side of the door, and in the jamb or in a wall at some unexpected point remote from the jamb, while the door knob may be at the right or the left of a person entering the building. However, the problems involved in these variations are almost entirely eliminated by the flexibility or universality of the new device. The lamp housing can be inverted either with or independently of its front wall 12 to selectively locate its light outlet 34 at either the right or left side of the housing. The rotary projector 30 having an inclined light outlet can be turned to direct the center of the flaring light to either the right or left of the axis of rotation, and at the most desirable angle with respect to the door and other objects.

I claim:

1. In an illuminating attachment for the entrance of a building having an entrance door, a lamp housing associated with said door, a lamp within said housing, and means for projecting light from said lamp to said door, said means including a projector separated from said lamp housing and adjustably attached to a portion of the building, and a duct through which light is transmitted from the interior of said housing to said projector, the said projector being rotatably mounted in said portion of the building and provided with an inclined light outlet at an angle to the axis of rotation.

2. In an illuminating attachment for the entrance of a building having an entrance door, a lamp housing associated with said door, a lamp within said housing, and means for projecting diverging rays of light from said lamp to said door, said means including a projector separated from said lamp housing and separately secured to a portion of the building, said projector comprising a base, a tubular member extending inwardly from said base and rotatably mounted in the last mentioned portion of the building, an exposed light-projecting member extending outwardly from said base and having an inclined light outlet at an angle to said base, said light-projecting member being movable about the axis of said tubular member, and a duct through which light is transmitted from said lamp housing to said projector.

3. In an illuminating attachment for the entrance of a building having an entrance door provided with a lock, a lamp housing associated with said lock, a lamp within said housing, and means for projecting light from said lamp to said lock, said means including a projector separated from said lamp housing and separately secured to a portion of the building, said projector comprising a base detachably secured to the last mentioned portion of the building, a tubular member extending inwardly from said base and rotatably mounted in the last mentioned portion of the building, an exposed light-projecting member extending outwardly from said base and having an inclined light outlet at an acute angle to said base, said light-projecting member being united with and movable about the axis of said tubular member, and a duct through which light is transmitted from said lamp housing to said projector, said duct being telescoped with said tubular member to permit adjustment of said exposed light-projecting member toward and away from said lamp housing.

4. In an illuminating attachment for the entrance of a building having an entrance door provided with a keyhole, a lamp housing comprising walls concealed within a portion of the building and a front wall having identifying indicia exposed at the front of the first mentioned walls, a lamp within said housing, and means for projecting light from said lamp to said keyhole, said means including a projector separated from said lamp housing and separately secured to a portion of the building, said projector comprising a base arranged at a right angle to said exposed front wall and detachably secured to the last mentioned portion of the building, a tubular member extending inwardly from said base and rotatably mounted in the last mentioned portion of the building, an exposed light-projecting member extending outwardly from said base and having an inclined light outlet at an acute angle to said base, said light-projecting member being united with and movable about the axis of said tubular member, and a duct through which light is transmitted from said lamp housing to said projector, said duct being adjustably telescoped with said tubular member.

5. In an illuminating address attachment for the entrance of a building having a door frame and a door provided with a keyhole, a lamp housing having top, bottom and oppositely disposed side walls surrounded by and concealed within said door frame, said lamp housing also having an exposed front display wall for the address of the building, and means for simultaneously illuminating the keyhole and the exposed front display wall, said means including a lamp in said housing to illuminate said exposed front display wall, and a projector to direct light from said lamp to said keyhole, said projector comprising a tubular light duct communicating with said housing and having an outer end separated from the housing, said separated outer end of the projector being exposed and directed toward the keyhole.

6. In an illuminating address attachment for the entrance of a building having a door frame and a door provided with a keyhole, a lamp housing having top, bottom and oppositely disposed side walls surrounded by and concealed within said door frame, said lamp housing also having an exposed front display wall for the address of the building, and means for simultaneously illuminating the keyhole and the exposed front display wall, said means including a lamp located between said concealed side walls to illuminate said exposed front display wall, and a projector to direct light from said lamp to said keyhole, one of said concealed side walls having an opening communicating with said projector, said projector being provided with an extended outer end portion remote from the last mentioned concealed side wall, and said extended outer end portion being exposed at one side of said door frame to direct light from said opening to said keyhole.

7. In an illuminating address attachment for the entrance of a building having a door frame and a door provided with a keyhole, a lamp housing having top, bottom and oppositely disposed side walls surrounded by and concealed within said door frame, said lamp housing also having an exposed front display wall for the address of the building, and means for simultaneously illuminating the keyhole and the exposed front display wall, said means including a lamp located between said concealed side walls to illuminate said exposed front display wall, and a projector to direct light from said lamp to said keyhole, one of said concealed side walls having an opening communicating with said projector, said projector being provided with an extended outer end portion separated from and adjustable toward and away from the last mentioned concealed side wall, so as to locate the separated projector in the desired position with relation to the door frame and lamp housing, and said extended outer end portion being exposed at one side of said door frame to direct light from said opening to said keyhole.

8. In an illuminating address attachment for the entrance of a building having a door frame and a door provided with a keyhole, a lamp housing having top, bottom and oppositely disposed side walls surrounded by and concealed within said door frame, said lamp housing also having an exposed front display wall for the address of the building, and means for simultaneously illuminating the keyhole and the exposed front display wall, said means including a lamp in said housing to illuminate said exposed front display wall, and a projector to direct light from said lamp to said keyhole, said projector comprising a tubular light duct communicating with said housing and having an exposed outer end separated from the housing, said exposed outer end of the tubular light duct being adjustable independently of said exposed front display wall, so as to selectively regulate the keyhole illumination after said display wall is located in the desired position.

9. In an illuminating address attachment for the entrance of a building having a door frame and a door provided with a keyhole, a lamp housing having top, bottom and oppositely disposed side walls surrounded by and concealed within said door frame, said lamp housing also having an exposed front display wall for the address of the building, and means for simultaneously illuminating the keyhole and the exposed front display wall, said means including a lamp located between said concealed side walls to illuminate said exposed front display wall, and a rotatable projector to direct light from said lamp to said keyhole, one of said concealed side walls having an opening communicating with said projector, said projector being provided with an exposed outer end portion separated from the last mentioned concealed side wall, said exposed outer end portion being located at one side of said door frame to direct light from said opening to said keyhole, said exposed outer end portion being adjustable toward and away from said lamp housing and separately adjustable around the axis of the rotatable projector, so as to locate said projector in the desired position with relation to said door frame, lamp housing and keyhole, and means for securing said exposed outer end portion in the operative position to which it is adjusted.

10. In an illuminating address attachment for the entrance of a building having a door frame and a door provided with a keyhole, a lamp housing having top, bottom and oppositely disposed side walls surrounded by and concealed within said door frame, said lamp housing also having an exposed front display wall for the address of the building, and means for simultaneously illuminating the keyhole and the exposed front display wall, said means including a lamp located between said concealed side walls to illuminate said exposed front display wall, and a projector to direct light from said lamp to said keyhole, one of said concealed side walls having an opening alined with said lamp and communicating with said projector, said projector comprising a base separated from said lamp housing, a tubular member extending inwardly from said base and rotatably mounted in said door frame, an exposed light-projecting member extending outwardly from said base and having an inclined light outlet at an acute angle to said base, said exposed light projecting member being united with and movable about the axis of said tubular member, and a duct through which light is transmitted from said opening in the concealed side wall to said projector, said duct being telescoped with said tubular member to permit adjustment of the tubular member toward and away from said lamp housing, and a screw connecting said base to the door frame.

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