

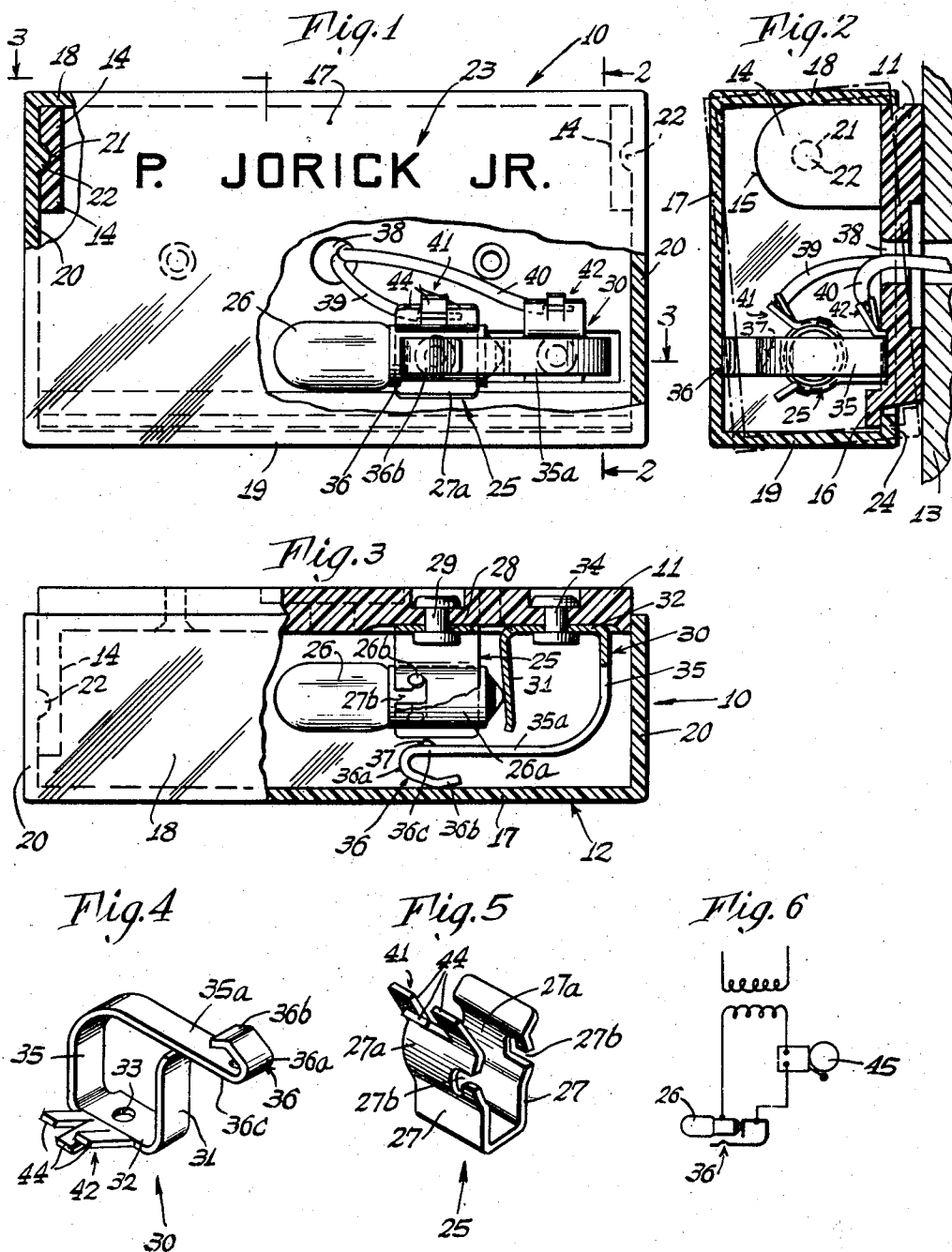
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ILLUMINATING ELECTRICAL INDICATOR

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ILLUMINATING ELECTRICAL INDICATOR

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4 Claims. (Cl. 40—130)

This invention relates to an electrical indicator, and more particularly to a simplified electrical, illuminating indicator for use in a sound producing circuit.

Heretofore, efforts have been made to include in an electrical doorbell system an electrical, illuminating indicator sign to identify the name of the occupant and/or street number. Such indicators are especially helpful at night or in poorly lighted doorways, areas and the like. However, devices of this type heretofore known were relatively complex, bulky, intricate and rather expensive to manufacture. As a result they have not become very successful commercially.

Accordingly, it is an object of this invention to provide a simplified, compact and relatively inexpensive, electrical illuminating indicator for use in an electrical doorbell system.

It is another object of this invention to provide a continuously illuminated indicator in combination with an electrical doorbell system, or which may be readily adapted for use with existing doorbell systems.

It is another object of this invention to provide in combination with a sound producing circuit, an electrical, illuminating indicator which is deenergized when the sound producing circuit is energized.

It is another object of this invention to provide for an illuminating indicator which is made of relatively very few parts, and which may be assembled and/or disassembled quickly and easily, by hand, without the use of any tools, if necessary.

These objects are accomplished by providing for a housing unit which includes a front plate having identifying indicia thereon and a base plate, the former being pivotally mounted with respect to the latter and forming therewith a pivotal button. Cooperating means are further provided thereon, to normally limit the pivoting movement therebetween. Disposed between the front and base plate is a socket means for locating an electrical lamp to illuminate the front plate and a resilient means positioned adjacent the lamp. The resilient means is arranged so that a portion thereof is in engagement with the lamp forming a contact therewith, and another portion thereof being in engagement with the front plate to normally urge the latter outwardly. The socket and resilient means are further provided with means for frictionally connecting thereto conductors and forming therewith a solderless connection. Thus, when the conductors are connected to a source of electrical energy, the electric lamp is energized. To energize the sound producing circuit the front plate is pivoted, and in so doing, the resilient portion engaging the same is displaced. The displaced portion of the resilient means has thereon a contact point to engage the lamp whereby the lamp is shorted out of the circuit and the bell or sound producing means is energized. In this manner, the extinguishment of the lamp is indicative of the sounding of the bell.

A feature of this invention resides in the provision whereby the front plate of the housing functions as a

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pivotal button for shorting out the lamp and for energizing the sound producing circuit.

Another feature of this invention resides in the provision of a resilient means having a portion which forms an electrical contact with the lamp and another portion which functions as a leaf spring, for normally urging the front wall outwardly, and as a normally open switch for the sound producing circuit.

Another feature resides in the provision of cooperating portions on the base plate and front plate of the housing whereby the said cooperating portions engage each other for limiting the outward movement of the front wall, whereby the resilient means is maintained in bias relationship with said front plate.

Another feature of this invention resides in a socket and resilient means having means for frictionally securing electrical conductors and forming therewith a solderless connection.

Another feature of this invention resides in the provision wherein the electrical illuminating indicator, according to this invention, comprises very few parts which are assembled in such a manner that they may be readily assembled and disassembled quickly and easily.

Other features and advantages will be apparent from the specification and claims when considered with the drawings, in which:

Figure 1 is a front elevational view of the simplified illuminating indicator having portions of the front wall broken away.

Fig. 2 is a sectional side view taken along line 2—2 of Fig. 1.

Fig. 3 is a top view shown partly in section taken along line 3—3 of Fig. 1.

Fig. 4 is a detail perspective view of the lamp socket means.

Fig. 5 is a detail perspective view of the resilient means.

Fig. 6 is a schematic diagram of the electrical sound producing circuit in combination with the improved electrical illuminating indicator.

According to this invention the improved and simplified electrical indicator herein illustrated comprises a housing 10 having a base plate 11 and a front plate 12. While the particular form of the housing may take any desired shape or form, the illustrated embodiment of this invention illustrates a base plate 11 which is substantially rectangular and which is adapted to be supported to any suitable supporting surface 13, as for example a door or a wall of a building or the like, by any suitable means.

The opposite upper corners of the base plate 11 are provided with forwardly projecting ears 14 having rounded ends 15. Along the bottom of the base 11 there is provided an offset depending portion 16 which is adapted to be spaced for the supporting surface, the purpose of which will be hereinafter discussed.

The front plate 12 of the improved indicator of the illustrated embodiment includes a front portion 17 having connected thereto top, bottom and side enclosing walls 18, 19 and 20 respectively. As shown in Figs. 1 and 2, the front plate 12 is pivotally mounted to the base plate so that the edges of the enclosing wall portion overlap the peripheral portions of the base plate. While any suitable hinge construction may be utilized to accomplish this, the ears 14 are provided with a recess 21 for receiving detents 22 positioned on the inner side of the opposite side walls 20. While the housing may be made of any suitable material it is preferred that it be formed of an inexpensive moldable material such as plastic or the like, so that it may be readily cast or formed to facilitate manufacture. It will be further noted that the front portion 17 has thereon identifying indicia 23 which may consist of the name and address or other identifying indicia of the particular individual whose residence, place

of business, and/or like is to be identified. Either the front portion and/or the identifying indicia is formed of translucent or transparent material so that a light disposed therebehind may pass therethrough and illuminate the indicia. Thus, the indicator is rendered readily visible and noticeable at night or in poorly lighted areas.

As shown in Fig. 2, the bottom wall 19 is provided with an upstanding flange portion 24 which is in normal engagement with the depending offset portion 16 of the base 11. Thus the flange portion 24 and offset portion of the base form cooperating surfaces for limiting the outward movement of the front plate, as it will be more fully described.

Disposed intermediate the base and front plates is a socket means 25 for positioning therebetween an electrical lamp 26. According to this invention the socket means consists of a substantially U-shaped bracket having the leg portion 27 thereof provided with arcuate portions 27a for holding therebetween the end 26a of the light bulb. As illustrated in Fig. 3 the base of the socket means is provided with an aperture 28 through which a fastener 29 is inserted to secure it to the base plate. As shown in Fig. 3 the end of the fastener projecting through the base plate is recessed so as to provide the base with a smooth contacting surface for securing it to a supporting surface. Intermediate the arcuate portion 27a of the leg members of the socket means there is provided oppositely formed L-slots 27b for receiving lockpins 26b which are usually positioned on the end of an electrical lamp. Thus the lamp is securely positioned in the socket by aligning the pins with the slots and rotating the bulb a few degrees.

Adjacent the lamp, as best seen in Fig. 3 and shown in detail in Fig. 5, there is provided a novel resilient means 30 which functions as an electrical contact for the light bulb and also has a leaf spring when normally urging the front plate outwardly to a position limited by the flange 24 and offset portion 16. As will be hereinafter described the resilient means also functions by a normally open switch in the sound producing circuit.

As illustrated in detail in Fig. 5, and as assembled in Figs. 1 to 3, the resilient means 30 includes a substantially U-shaped portion having a leg member 31 positioned adjacent the end of the lamp and in contact therewith (Fig. 3). The base 32 of the U-shaped portion is provided with an aperture 33 through which a fastener 34 is positioned to secure it to the base plate in a manner similar to that of the socket means. The other leg 35 of the U-portion has connected thereto an extended portion 35a which is laterally bent in the direction of the lamp and has connected to the end thereof a second substantially U-shaped portion 36, the base 36a of which is positioned at substantially right angles to said first U-shaped portion. The second U-shaped portion 36 of the resilient means is so arranged that a leg portion 36b thereof engages the inner side of the front plate whereby it normally urges the front plate outwardly.

As will be seen in Fig. 3 the other leg portion 36c which forms a continuation of the leg portion 35a is normally spaced from the lamp adjacent the open end of the socket bracket 25. A contact point 37 is positioned on the leg member 36c opposite the light bulb so when the front plate 12 is pivoted for energizing the sound producing circuit, the front plate engaging the resilient means displaces the leg portion 36c thereof inwardly so that the contact point 37 engages the lamp.

As shown in Figs. 1 and 2 the base plate 11 is provided with an aperture 38 through which the electrical conductors 39 and 40 pass and connect to a source of electrical energy. The ends of the conductors are respectively connected to the socket 25 and to the resilient means 30. In order to facilitate the connecting of the conductors to the light socket and to the resilient means to form therewith a circuit, both the socket and the resilient means are provided with a projecting tab portion 41 and 42

respectively which are preferably provided with slits forming the tab with a plurality of fingers 44. In this manner the terminal portions of the connectors are frictionally engaged by alternate fingers of each means to produce therewith a solderless connection. See Figs. 1 and 2. Thus it will be seen that these fingers produce a rigid and fast connection so that the conductors are quickly and easily connected thereto without the aid of any solder or soldering iron.

Accordingly, the illuminating indicator illustrated herein is connected in a sound producing circuit (see Fig. 6) in a well known manner whereby the lamp is continually illuminated while the conductors are connected to a source of an electrical energy.

When the conductors are so connected the current is continually flowing to the light circuit. Thus when it is desirable to sound the buzzer system, the front plate of the indicator is pivoted as shown in dotted lines in Fig. 2. In pivoting the front plate the leg portion 36c of the resilient means is displaced so that the contact point 37 thereon engages the base of the lamp. This engagement between the lamp and the contact point causes the lamp to be shorted out at the circuit in the well known manner, thus extinguishing the lamp. This shorting of the lamp enables the current to become sufficiently great to sound an audible means 45 in the sound producing circuit. Thus, as long as the sound producing circuit is closed by pivoting of the front plate, the lamp is extinguished and the operator is aware that the audible signal is being sounded.

According to the invention it will be noted that the illuminating, electrical indicator herein described is relatively simple in construction, inexpensive to produce and is positive in its operation. It is made of relatively very few parts which can be readily produced in quantity at low cost, and further can be readily assembled and disassembled, by hand, without tools, if necessary.

Variations and modifications may be made within the scope of the claims and portions of the improvements may be used without others.

I claim:

1. A simplified electrical, illuminating indicator adapted to be used in an electrical sound control circuit comprising a base plate adapted to be secured to a supporting structure, a front plate pivoted thereto having top and bottom and side walls projecting rearwardly therefrom, said bottom wall having a flange portion cooperating with said base plate to limit outward pivotal movement of said front plate, said front plate having translucent portions with identifying indicia thereon and forming therewith a housing, socket means disposed between said plates for supporting a lamp, resilient means positioned within the housing and having respective portions thereof engaging said lamp and said front plate, and conductors connecting said means for energizing said lamp to illuminate said indicia, said front plate being pivotally mounted on said ears and forming thereon a pivotal button whereby said resilient portion normally urges said front plate outwardly and away from said base plate for maintaining said lamp energized and whereby pivoting of said front plate inwardly displaces said resilient portion engaging the front plate to short out the lamp and energize the sound circuit.

2. A simplified electrical, illuminating indicator adapted to be used in an electrical sound circuit comprising a base plate engageable with a supporting structure, a front plate having translucent portions with identifying indicia thereon forming therewith a housing, socket means disposed between said plates for supporting a lamp, resilient means positioned within the housing, and conductors connecting said means for energizing said lamp to illuminate said indicia, said front plate being pivotally mounted relative to said base plate and forming thereon a pivotal button, said resilient means including a U-shaped portion having a leg portion adjacent said

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socket and adapted to engage the end of the lamp forming electrical contact therewith, and having a second substantially U-shaped member having a leg portion thereof resiliently connected to said other leg of said first-mentioned U-shaped portion, the other leg of said second U-shaped member engaging the front plate, said second U-shaped member normally urging said front plate outwardly and away from said base plate for maintaining said lamp energized and whereby pivoting of said front plate inwardly displaces said second U-shaped member to short circuit the lamp and energize the sound circuit.

3. The invention as defined in claim 2 wherein said resilient means includes finger means for frictionally securing thereto a conductor by wedging the same therebetween and forming therewith a solderless snap connection.

4. A simplified electrical, illuminating indicator adapted to be used in an electrical sound circuit comprising a molded plastic base plate adapted to be secured to a supporting structure, a molded plastic front plate pivoted thereto having top and bottom and side walls projecting rearwardly therefrom, said bottom wall having a flange portion cooperating with said base plate to limit outward pivotal movement of said front plate, said front plate cooperating with the base to form a housing and having translucent portions with identifying indicia thereon, socket means disposed between said plates for sup-

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porting a lamp and comprising a U-shaped stamped metal lamp-receiving clip secured to the base and a separate resilient sheet metal contact means secured to the base and positioned within the housing and having one portion engaging said lamp and a second portion engaging said front plate adjacent said lamp base and urging the plate outwardly from the base, and conductors connecting said clip and contact means for normally energizing said lamp to illuminate said indicia, a conductor connecting the contact member to said electrical sound circuit, movement of the pivotally mounted front plate causing the second portion of the contact member to engage the lamp base and complete the circuit to the electrical sound circuit and to short out the lamp.

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