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PUSHBUTTON SWITCH HAVING A NAMEPLATE LIGHT SIGNAL

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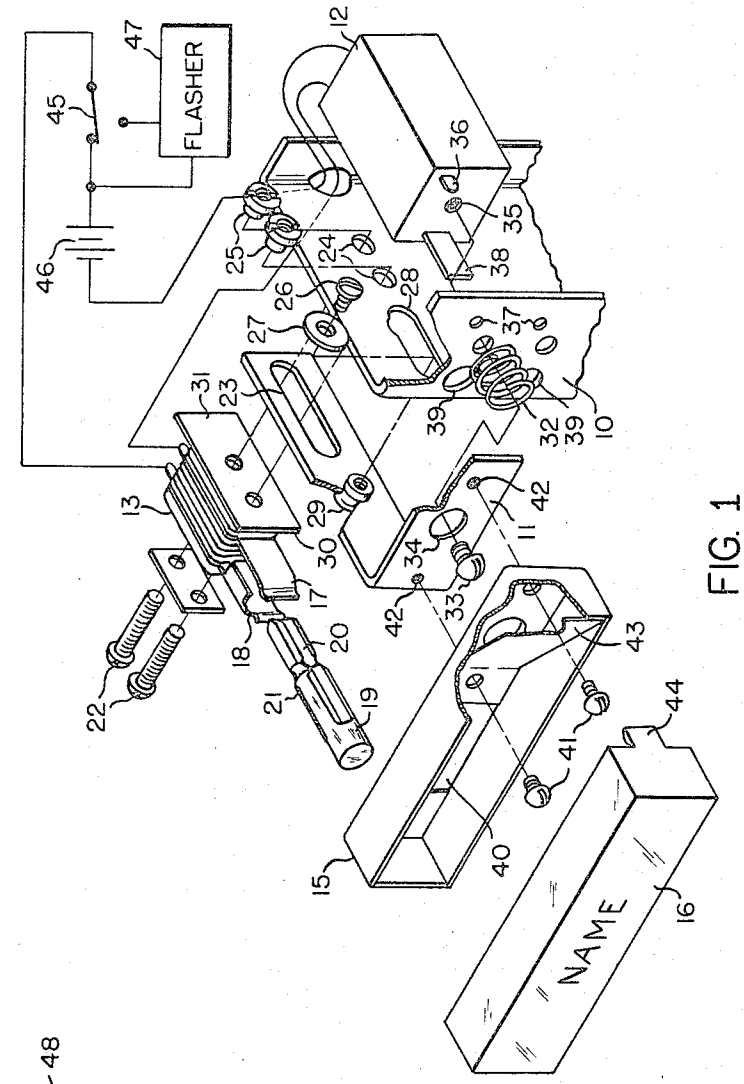


FIG. 1

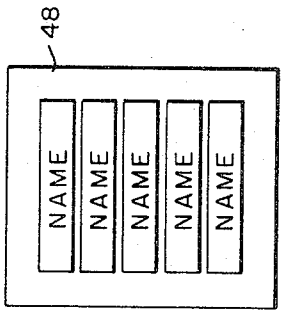


FIG. 2

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PUSHBUTTON SWITCH HAVING A NAMEPLATE LIGHT SIGNAL

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ABSTRACT OF THE DISCLOSURE

Pushbutton nameplate light signal modules are secured one above another to a vertically disposed supporting bracket or channel. Each module has a lamp receptacle and a switch secured to respective sides of the channel. An L shaped bracket is provided for actuating the switch having one leg disposed between the receptacle and the channel and slidable longitudinally within limits, and the other leg of the bracket having a light box secured thereto. The light box has an opening for receiving light from a lamp in the receptacle, and a reflector is provided in the light box for even illumination by the lamp of a quickly detachable translucent nameplate cover.

Background of the invention

The present invention relates to pushbuttons for illuminating nameplate signals, and it more particularly relates to modular pushbutton signals secured one above another on a supporting channel, each modular unit having an elongated light signal button for the illumination of indicia such as the name of a person.

Buttons of this character are useful, for example, in a hospital, as a doctor's register for indicating whether a doctor is present or absent from the hospital. For this use the several nameplate signals display names of doctors and the nameplates are selectively illuminated in accordance with whether a doctor is in or out. A doctor can register himself into the register, for example, by depressing the button bearing his name and thereby causing the signal in the button to be illuminated. When the doctor leaves the hospital, he may actuate his button for a second time and cause the signal in that button to be extinguished. This mode of operation is made possible by operating switches in response to actuation of the buttons which in turn close and open their contacts respectively in response to alternate button actuations.

Summary

The system according to the present invention provides a personnel reporting register made up of a plurality of modular selectively illuminated pushbutton light signals secured to a vertically disposed supporting channel. Each of the modules comprises a lamp receptacle, secured to one side of the channel, and a switch secured to another side of the channel. An L shaped switch operating bracket is provided for operating the switch having one leg disposed between the bracket and the receptacle and operable longitudinally within limits. The other leg of the bracket operates the switch to turn it on and off respectively in response to alternate actuations of the associated pushbutton.

A light box is secured to the switch operating leg of the bracket for illuminating a nameplate in a light box cover, the light box having an opening through which light is received from a lamp within the receptacle. The light box contains a reflector for diffusion of the light to obtain even illumination for the nameplate.

One object of the present invention is to provide a register having modular pushbutton light signals that are

simple and inexpensive to manufacture, and that provide desired even illumination and are readily accessible for replacement of lamps and the changing of nameplates.

Other objects, purposes and characteristic features of the present invention will be in part obvious from the accompanying drawing, and in part pointed out as the description of the invention progresses.

In describing the invention in detail, reference is made to the accompanying drawing in which:

FIG. 1 is an exploded perspective view, partly in cross-section, of a typical modular push button light signal unit provided according to one embodiment of the present invention and supported on a vertically disposed supporting channel; and

FIG. 2 is an elevational view of a personnel register constructed according to the present invention.

With reference to FIG. 1, one embodiment of the present invention comprises a channel support **10** to which a plurality of pushbutton switch modules are secured. Each of the modules has a bracket **11** for actuating a switch **12**. Each module has a nameplate light signal including a lamp receptacle **13** secured to the supporting bracket **10**, a lamp **19**, a light box **15** secured to the bracket **11** and a nameplate cover **16** for the light box **15**.

The lamp receptacle **13** comprises contact fingers **17** and **18** for supporting a lamp **19** and making contacts respectively with lamp conductors **20** and **21**. The lamp supporting fingers **17** and **18** are insulated from each other and supported in a stack of sheets of insulating material with their ends protruding from the insulating material to provide wire connections at the back. The lamp receptacle **13** is secured in assembly to the supporting channel **10** by screws **22** which pass through a longitudinal opening **23** in one leg of bracket **11** and through holes **24** in the bracket **10**. Screws **22** are threaded into nuts **25** which are preferably formed to have shoulders bearing against the inner side of the channel **10** and smooth bosses passing through the longitudinal opening **23** in the bracket **11** for guiding the bracket **11** during longitudinal movement of the bracket.

Bracket **11** is secured to the channel **10** in a manner to permit its longitudinal movement by a screw **26** which passes through a washer **27** and through an elongated transverse opening **28** in the channel **10** and into a nut **29** secured into the bracket **11**. The nut **29** has a portion extending within the slot **28** to guide the longitudinal movement of the bracket **11** and to provide proper spacing to permit free movement of the bracket **11**. The nut **29** extends through bracket **11** and the outer end of the nut **29** protrudes to serve as a stop when the bracket **11** is actuated to its depressed position wherein the nut **29** strikes the forward edge at point **30** of a striker and guide plate **31** that is secured between the receptacle **13** and the bracket **11**.

Disposed between the front leg of the bracket **11** and the front portion of the supporting channel **10** is a compression spring **32** which biases the bracket **11** to a forward position. This spring is secured to the channel **10** by a screw **33** which is inserted through an opening **34** in bracket **11** that is large enough for passage of the head of the screw. The screw **33** passes through the channel **10** and is threaded into a hole **35** in the switch **12**. The switch **12** has a registration pin **36** that enters a hole **37** in channel **10**. The switch **12** also has a longitudinally operable operating lever **38** which passes through an opening **39** in the channel **10**. Thus the switch **12** is subject to actuation by longitudinal movement of the bracket **11**. The switch **12** is preferably of the type wherein alternate actuations of the operating lever **38** open and close the contacts respectively of the switch.

The light box **15** is constructed of sufficient length to provide space for a nameplate in its cover **16** and it is formed with an opening **40** for light from the lamp **19** to enter the box. It is preferable that the end of the lamp **19** be frosted and that it extend into the opening **40**. The light box **15** is secured to the bracket **11** by screws **41** which are threaded into holes **42** in the bracket **11**. One of these screws also secures one end of a suitable reflector plate **43** which is diagonally disposed within the right hand portion of the box **15** for providing even illumination from the lamp **19** of the nameplate in the cover **16**. The cover **16** for the box **15** is formed with ears **44** at its back sides for making the cover **16** quickly detachable from the box **15**. The name to be displayed by the light signal can be typed or printed on translucent material and inserted on the inside of the light box cover **16**.

One manner in which the modules can be used in combination is illustrated in FIG. 2, wherein a register **48** comprises a plurality of the modules disposed one above another.

FIG. 1 illustrates one system of electrical control that can be provided for a lamp **19** of a typical module. This comprises the use of a two position switch **45** for selecting energization of the lamp **19** with steady energy from a source of energy **46** when the switch **45** is in its upper position, and for selection of energization of the lamp **19** with flashing energy governed by a suitable flasher **47** when the switch **45** is in its lower position. The switch **12** is connected in series with the lamp **19** to turn the lamp **19** on and off in accordance with manual actuation of the bracket **11**. The switch **45** can be positioned to provide a steady or a flashing aspect of the signal to convey specific information, such as whether or not there is a message for the particular party named on the name plate.

Having thus described one embodiment of a pushbutton switch having a nameplate light signal, it is desired to be understood that this form is selected to facilitate the disclosure of the invention, rather than to limit the number of forms the invention may assume. While the invention has been described in its preferred embodiment, it is to be understood that the words which have been used are words of description rather than of limitation, and that changes within the purview of the appending claims may be made without departing from the spirit and scope of the invention in its proper aspects.

What I claim is:

1. A pushbutton switch having a nameplate light signal on the face of the pushbutton adapted to be secured as one of several modular units to a channel support, comprising,

(a) a lamp receptacle secured to the channel support on the outside of the channel support having a lamp disposed therein,

(b) a switch secured within the channel support for controlling energization of the lamp having an operating lever extending through an opening in the channel,

(c) an L shaped bracket secured on the outside of the channel support to be operable within limits longitudinally in a direction transverse of the channel having a side leg disposed between the lamp receptacle and one side of the channel support and having a front leg spaced away from another side of the channel support for longitudinal operation of the lever of the switch, and

(d) a longitudinal light box secured to the front leg of the bracket having an opening for receiving a portion of the lamp and having a translucent nameplate cover secured thereto.

2. The invention according to claim **1** wherein the nameplate cover is quickly detachable from the light box.

3. The invention according to claim **1** wherein the bracket is secured to the channel support by screws passing through the bracket at two spaced locations, the screw at one location passing through a longitudinal slot in the bracket and the screw at the other location passing through a slot in the channel support.

4. The invention according to claim **1** wherein a compression spring is disposed between the front leg of the bracket and said another side of the channel support for biasing the bracket away from said other side of the channel.

5. The invention according to claim **1** wherein the lamp enters the light box through an opening in its base at one side of the center of the light box base, and a reflector is included in the box at the other side of the center of the base and disposed at an angle relative to the base for providing even illumination of the nameplate cover.

6. The invention according to claim **5** wherein a portion of the lamp extending within the light box is frosted.

7. A plurality of pushbutton switch modules having nameplate light signals and secured one above another to a supporting channel, each of the modules comprising,

(a) a translucent nameplate cover adapted to be secured to a light box,

(b) a light box having one side enclosed by the cover and having a lamp for illumination of the nameplate,

(c) a switch secured within the channel for governing energization of the lamp having an operating lever extending longitudinally through an opening in the channel in the direction of the light box,

(d) an L shaped bracket disposed on the outside of the channel having one leg operably secured to the channel to permit limited longitudinal movement of the bracket for operating the switch by another leg of the bracket,

(e) means for securing the light box to the other leg of the bracket whereby pressure applied manually on the cover of the light box actuates the switch for illumination of the nameplate.

8. The invention according to claim **7** wherein a nameplate cover for each module is detachably secured to the light box of that module for quick detachment to change the nameplate or replace the lamp.

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