

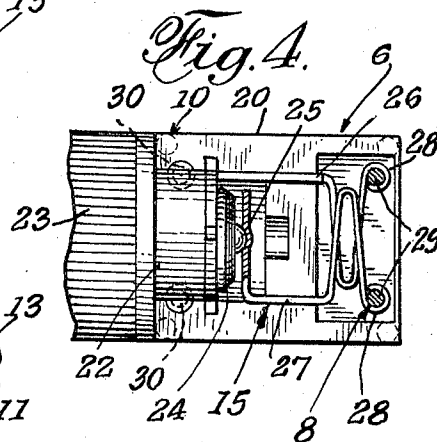
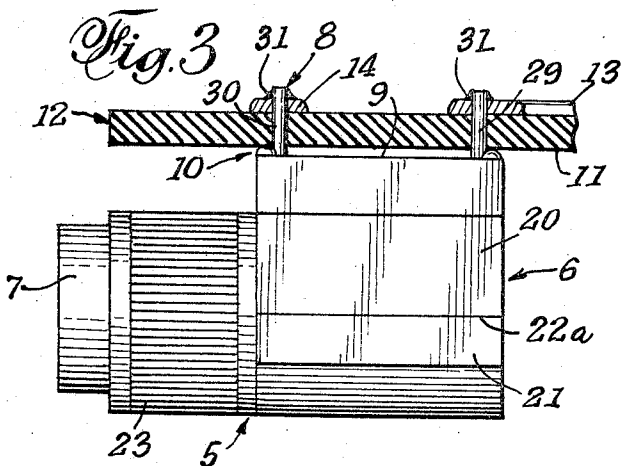
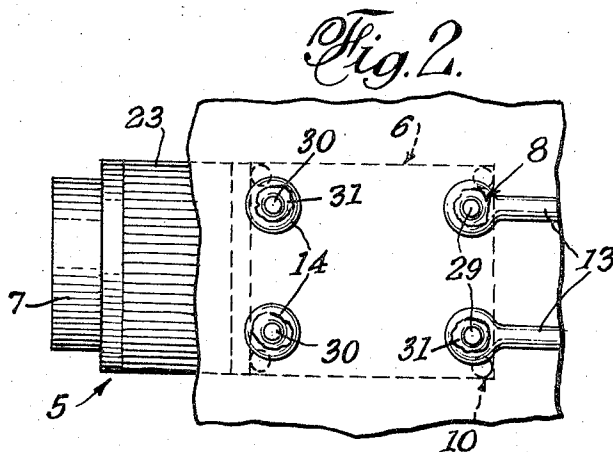
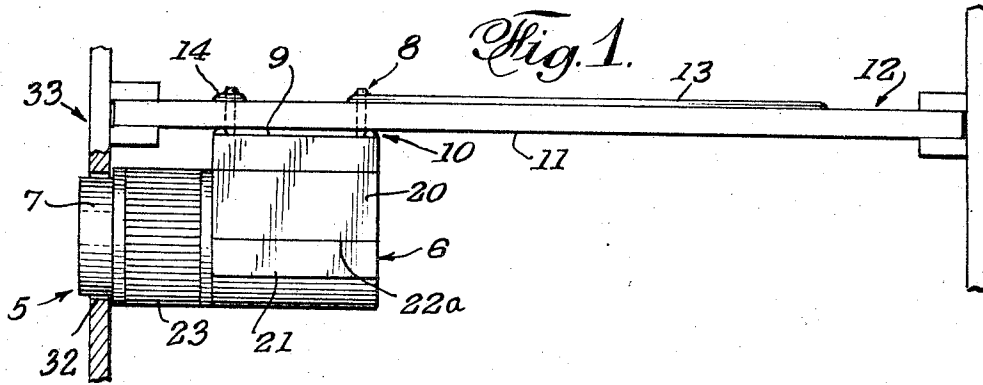
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INDICATOR LIGHT AND LIGHT HOUSING FOR PRINTED-CIRCUIT BOARDS

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INDICATOR LIGHT AND LIGHT HOUSING FOR PRINTED-CIRCUIT BOARDS

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4 Claims

ABSTRACT OF THE DISCLOSURE

An indicator light with at least one dummy and two or more light-terminal pins which, when extended through holes in a circuit board and soldered to printed elements on the opposite side of the board, fixedly hold the light in operative position. Small protuberances on a dielectric part of the light are operatively associated with said pins and engage the board to space the light therefrom.

Background of the invention

Panel boards for mounting such indicator lights are eliminated, and the board-mounting walls or panels are provided with clearance holes for the lens ends of lights to provide for easy visibility thereof. Prior art, other than disclosures showing panel-mounted lights, is unknown to the applicant.

The fields of the invention are manifold since the same is adapted for use in stationary and mobile electronic apparatus and installations, such as communications; ground, sea and air travel; plant operation; etc.

Summary of the invention

While otherwise conventional, the present indicator light 5 has its body 6 formed so its light lens 7 is directed along an axis at right angles to a set of mounting pins 8 of which at least one is a dummy pin and the others are electric terminal pins. The pins 8 extend from the face 9 of the light body 6, and said face is provided with a plurality of protuberances 10 adapted to engage one face 11 of a printed-circuit board 12 when said pins extend through the board and the ends thereof are soldered to circuit elements 13 and dummy washers 14 on the opposite side of the board. The protuberances 10 space the light body 6 from the face 11 to prevent capillary movement of moisture from the board 12 to electrical components 15 of the light 5.

This invention has for its objects to provide means of the character above referred to that are positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description of the preferred embodiment and/or in the accompanying drawing. However, said drawing merely shows, and the following description merely describes, one embodiment of the present invention, which is given by way of illustration or example only.

In the drawing, like reference characters designate similar parts in the several views.

Brief description of the drawing

FIG. 1 is an edge view of a printed-circuit board in operative position and provided with an indicator light according to the present invention.

FIG. 2 is an enlarged face view of a broken portion of said board with the light shown therebeneath.

FIG. 3 is a similarly enlarged view taken on a plane parallel to the plane of FIG. 1, showing the manner of connecting the indicator light to the printed-circuit board.

FIG. 4, to the same scale as FIGS. 2 and 3, is a plan view of the body of said light, opened to show the inner construction.

Description of the preferred embodiment

The light body 6 comprises two dielectric body parts 20 and 21 that are joined along a plane indicated by the line 22a. Said parts, in the usual manner, are formed to house the metallic base 22 of a lamp holder 23 which is provided, on its outer end, with the lens 7. The usual electric lamp is housed in the holder 23, the base 24 of said lamp extending through the holder base 22 into the interior of the body 6. Said base 22 constitutes one electrical terminal for said lamp and a central projection 25 of the lamp, insulated from the lamp base, constitutes the other terminal. A contact 26 extends into resilient engagement with the terminal 22 and a similar but oppositely formed contact 27 extends into resilient engagement with the lamp terminal 25.

As shown, said contacts 26 and 27 are provided with eyes 28 that are engaged over and in electrical contact with two of the pins 8, the same being designated 29. Thus, the pins 29 constitute the current-conducting terminals of the indicator light 6.

In this case, four pins 8 are shown, the two current-conducting pins 29 and two dummies 30. The latter are fixed in the housing part 20 and are spaced from all current-conducting elements in the housing 6.

As shown best in FIGS. 2 and 3, the pins 29 extend through the board 12 and through the two conductive circuit elements 13, and the pins 30 extend through said board and through the dummy washers 14. By flushing solder 31 over said pins 8, elements 13 and washers 14, the indicator light is firmly mounted on the panel 12 and is in electrical contact with the circuit elements 13 printed on the board 12.

The protuberances 10 are provided in the face 9 of the body 6 and are preferably placed at the corners of said face, the same serving to space the light body 6 from the board for the reasons given hereinabove.

As can be seen in FIG. 1, the indicator light may be mounted on the board 12 so that its lens 7 may be directed through a clearance hole 32 in the frame 33 that mounts a plurality of such boards. It is evident, therefore, that a separate light-mounting panel is not required and that the above-described manner of mounting a light on a printed-circuit board serves the dual purpose of affixing the light on a board and holding the same in viewing position by means of the board only.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. An indicator light for printed-circuit boards having two spaced circuit elements and at least one metallic printed washer spaced from said elements, said elements and washer being printed on one face of the board, said light comprising:

- (a) a dielectric body adapted to mount a holder for an electric lamp and extending on a line in one direction from the body, said body housing two contacts for engagement with the terminals of said lamp,
- (b) a face of said body being disposed in parallel relation to said line of extent of the lamp,
- (c) two pins, one electrically connected to each said contact and extending from said body through and at right angles to said face on the body,
- (d) at least a third pin connected only to the body and extending through and at right angles to said face,

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- (e) said three pins being adapted to pass through registering holes in the printed-circuit board from the opposite face of the board and into respective contact with the mentioned circuit elements and washer, and
- (f) solder connecting the pins and the circuit elements and washer with which they are in contact.
2. An indicator light according to claim 1 in which said face of the dielectric body is provided with protuberances that are adapted to engage the circuit board to space the latter and the body from each other.
3. An indicator light according to claim 2 in which the mentioned body face is rectangular and the protuberances are located adjacent the corners thereof.
4. An indicator light according to claim 3 in which a fourth pin similar to the third pin is provided, the four

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pins being disposed in quadrangular relation adjacent to and inward of the protuberances.

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