INDICATOR LIGHT ASSEMBLY

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ABSTRACT

An indicator light assembly comprising a method of attaching the leads of a bulb to a terminal through the use of an arced connector portion formed in the terminal which is pressed down on the leads tightly engaging them to the terminal.

2 Claims, 7 Drawing Figures
INDICATOR LIGHT ASSEMBLY

BACKGROUND OF THE INVENTION

1. Field of the Invention
The use of a neon glow lamp as a means of illumination in an indicator light assembly permits direct engagement of the leads of the lamp with the terminals. In this case there is no need of lamp supporting structure such as a socket or the like. One of the difficulties of engaging the lamp leads to the terminal is that the attachments are individually made, which is a costly and time consuming process.

2. Description of the Prior Art
Early in the history of indicator light assembly art, leads from bulbs were attached or engaged to terminals through the use of soldering or welding. In some cases the terminals were provided with spring arms which were bent over and pressed into engagement with the leads from the bulb as well as with the conductors. This method of engagement was of course extremely slow and did not allow the use of automatic methods of attachment. In some cases, the terminal had a hold formed in it through which the lead from the bulb was passed and then bent into the loop with a soldering operation completing the assembly.

SUMMARY OF THE INVENTION
This invention is directed at an indicator light assembly having a unique method of attaching the leads of a bulb to a blade terminal.

An object of the present invention is to provide a blade terminal having a bowed connector portion sheared therefrom through which the leads from the bulb are passed, the bowed connector portion being pressed into engagement with the leads.

Another object of the present invention is to provide a holder insert having a protuberance which is engageable by a pair of tangs sheared from the terminals.

Another object of the present invention is to provide holes on the shear lines which form the bowed portion thereby creating release areas through which the leads protrude when the bowed portion is pressed into engagement therewith, preventing the leads from being sheared by the edges of the bowed portion.

BRIEF DESCRIPTION OF THE DRAWINGS
FIG. 1 is an exploded view of an indicator utilizing the new fastening concept;
FIG. 2 is a side elevation of a blade terminal;
FIG. 3 is a perspective of the blade terminal shown in FIG. 2;
FIG. 4 is a perspective of the blade terminal attached to a lead;
FIG. 5 is a section taken on line 5—5 of FIG. 4; and
FIG. 6 is a section showing the attachment of the tabs to the protuberance of the separator portion.

DESCRIPTION OF THE PREFERRED EMBODIMENT
In the drawings there is shown an indicator light assembly comprising a cylindrical housing 10, a holder insert 12, a pair of blade terminals 14, a bulb 16 with two leads 18 extending therefrom and a resistor 20 which is connected to one of the leads 18 and which has a conductor 22 extending from it.

The housing 10 includes a tubular wall open at one end and closed off at the other by an arced cap portion or lens 24. Spaced longitudinal slots are formed on each side of the tubular wall providing flexible engagement ribs 26 in opposed relation to each other. The external surface of the engagement rib 26 has converging and diverging portions defining a knuckle therebetween. A pair of opposed square holes 28 are formed in close proximity to the other open end of the housing 10. The cap portion 24 overhangs the area defined by the tubular wall providing a shoulder 30.

The holder insert 12 comprises a flat, rectangular terminal separator portion 32 having an arced flange 34 extending from each side at approximately the midpoint thereof. Each of the flanges 34 has a rectangular slot 36 formed therethrough which opens into a cavity defined by an arced wall 38 extending from the flange 34 and the separator portion 32. Longitudinal slits are made on each side of the wall 38 allowing a portion of it to flex away from the separator portion 32. A protuberance 40 extends upwardly from the separator portion 32 at the entrance to the cavity remote from the flange 34. An ear 42 extends from each side edge of the separator portion 32.

The blade terminal 14 is generally rectangular in configuration and has a bowed connector portion 44 sheared from the body thereof in close proximity to one terminal end. The sheared slits which form the bowed portion 44 each having a semi-circular hole 46 formed at their midpoint. A semi-circular hole 47 is formed on each side edge of the bowed connector portion 44. Two tabs 48 are sheared in spaced relation to each other from the blade terminal 14 extending on the opposite side of the blade terminal 41 from the bowed portion 44, are bent upward and have their free terminal ends 50 facing each other.

To engage the holder insert 12 with the blade terminal 14 the operator holds the end of the terminal 14 having the bowed portion 44 and pushes the terminal into the cavity formed by the wall 38, over the protuberance 40 and out the slot 36. The first of the tabs 48 rides over the protuberance 40 and snaps behind it trapping it between the free terminal ends 50 of the tabs 48. A blade terminal 14 can thus be locked into engagement with the holder insert on each side of the separator portion 32.

The lead 18 and the conductor 22 are passed on each side of the separator portion 32 and underneath the bowed portion 44. A tool such as a pair of special pliers is used to press both the bowed portions 44 simultaneously toward their respective terminals 14 pushing portions of the leads 18 and the conductor 22 into the semi-circular holes 46 and 47 thereby preventing the edges of the bowed portions 44 from shearing them. Automatic equipment can be used to insert the blade terminals 14 into the holder insert 12 as well as engage the lead 18 and conductor 22 with the bowed portions 44.

The assembly of the holder insert 12, the blade terminals 14, the bulb 16 and the resistor 20 is passed into the housing 10 bulb first until the ears 42 engage the square holes 28. This engagement places the flange 34 into abutting relation with the edge of the open end of
the housing 10 and positions the lamp 16 in relation to
the cap portion 24. The total assembly can be engaged
to an apertured support by engaging the engagement
ribs 26 with the edge of the aperture and the shoulder
30 with the surface adjacent the aperture.

With reference to the foregoing description it is to be
understood that what has been disclosed herein
represents an embodiment of the invention and is to be
construed as illustrative rather than restrictive in na-
ture and that the invention is best described by the fol-
lowing claims;

I claim:

1. An indicator light assembly comprising a housing,
a lamp having a pair of leads, a holder insert and a pair
of terminals, each of the terminals having a bowed con-
necter portion, the leads positioned under the bowed
cnector portion, the holder insert including a separa-
tor portion, the separator portion having a flange ex-
tending from each side, the flange having an aperture
formed therethrough, and a portion of the terminals
passed through the aperture, and the separator portion
having a protuberance formed on each side thereof,
spaced from the flange and a pair of tabs formed from
the terminals, the tabs having free terminal ends in
spaced opposed relation to each other the tabs engag-
ing the protuberance.
2. An indicator light assembly comprising a housing,
a lamp having a pair of leads, a holder insert and a pair
of terminals, each of the terminals having a bowed por-
tion extending upward from a base, the base having a
front edge, the bowed portion having a forward edge in
close proximity to the front edge, both the front edge
and forward edge having notches formed therein, the
leads positioned over the notch formed on the forward
eedge and under the notch on the front edge of the
bowed portion, the lamp positioned within the housing
and the bowed portion fixed in abutting position with
the leads and the terminals associated with the holder
insert.

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