

Nov. 1, 1966

G. L. WEBB ET AL

3,283,286

TEST LAMPS

Filed March 1, 1965

2 Sheets-Sheet 1

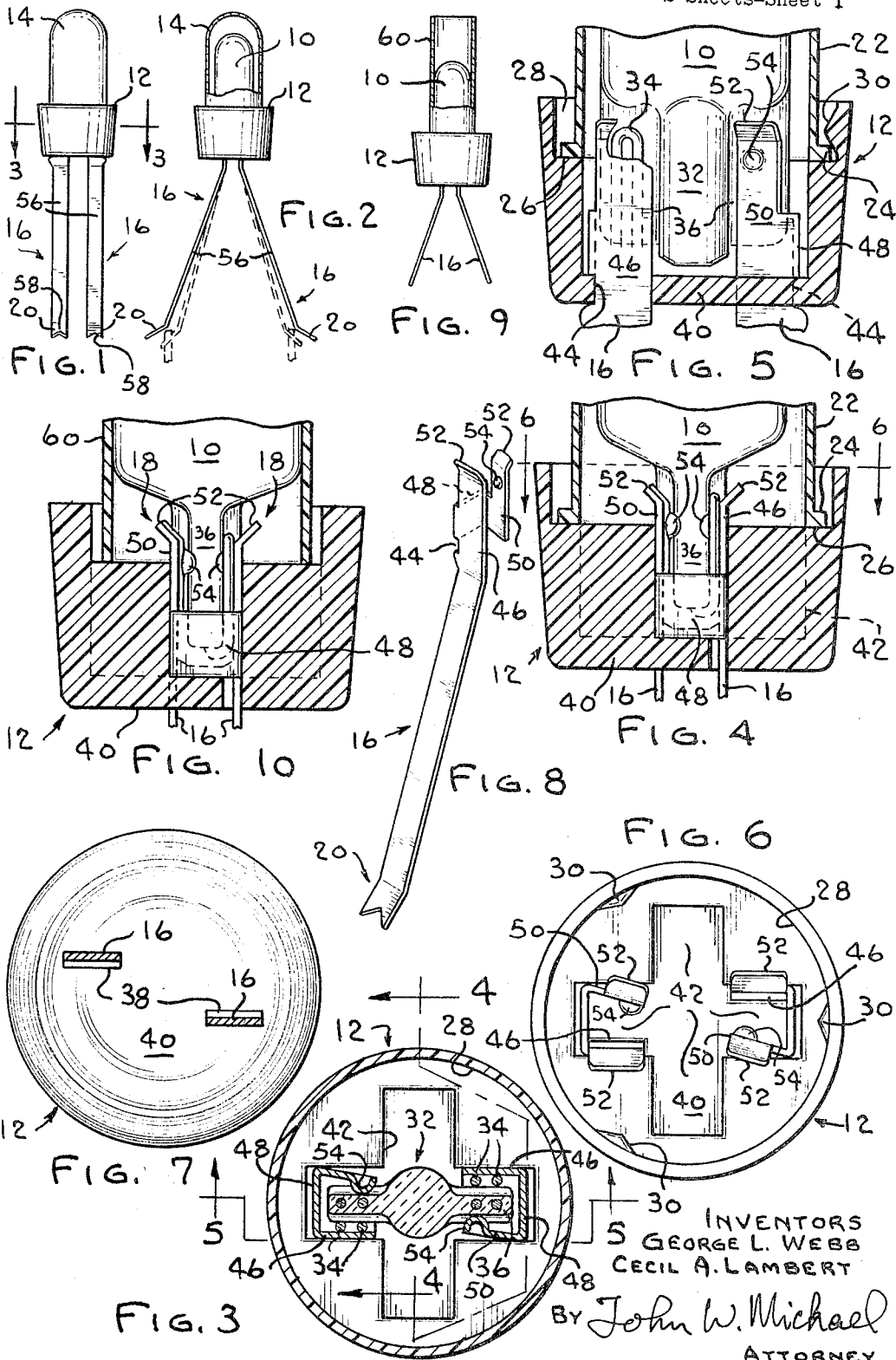


FIG. 6

FIG. 7

FIG. 3

INVENTORS
5 GEORGE L. WEBB
CECIL A. LAMBERT

By John W. Michael
ATTORNEY

Nov. 1, 1966

G. L. WEBB ETAL
TEST LAMPS

3,283,286

Filed March 1, 1965

2 Sheets-Sheet 2

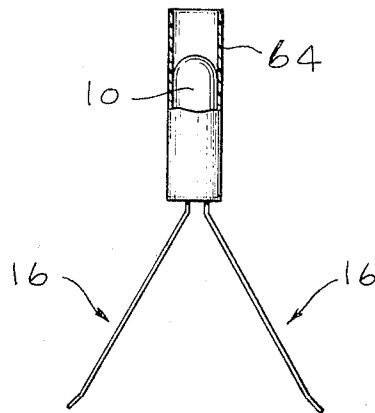


FIG. 11

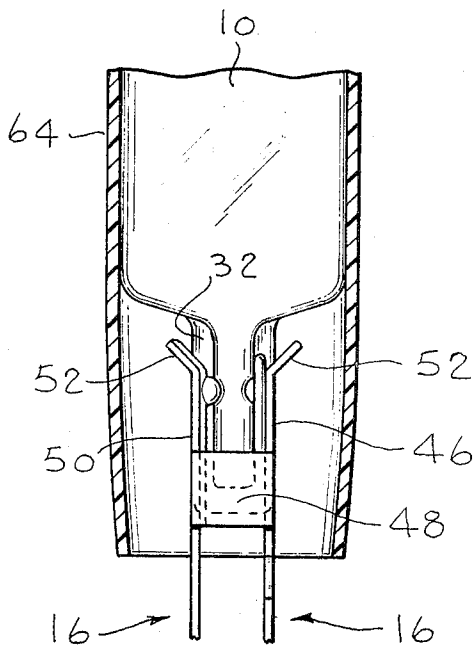


FIG. 12

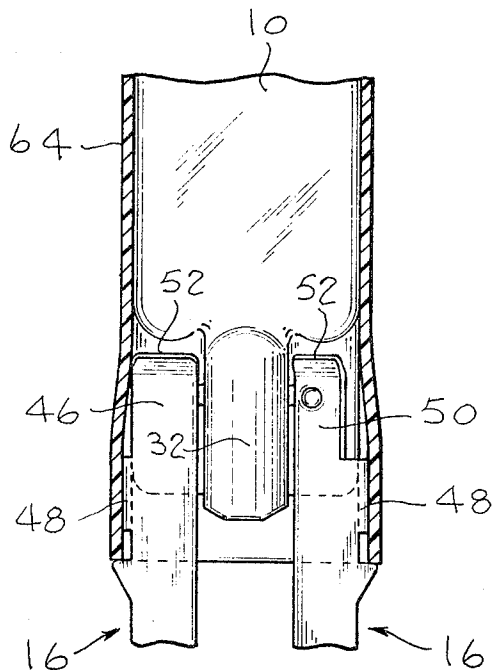


FIG. 13

INVENTORS
GEORGE L. WEBB
CECIL A. LAMBERT
By *John W. Michael*
ATTORNEY

1

3,283,286 TEST LAMPS

George L. Webb and Cecil A. Lambert, Fond du Lac, Wis., assignors to Wells Manufacturing Corporation, Fond du Lac, Wis., a corporation of Wisconsin
Filed Mar. 1, 1965, Ser. No. 435,812
2 Claims. (Cl. 339-59)

This invention pertains to improvements in test lamps such as are used to determine the existence or lack of existence of potential between two terminals.

The principal object of this invention is to provide an effective test lamp which is of extremely simple construction.

A further object of this invention is to provide a test lamp which is particularly adapted to be connected between two extending terminals of electrical apparatus.

Essentially, the above objects are attained by providing two resilient leg members which have one of their ends positioned within a plastic base of the lamp and form resilient jaws for engaging the contact wires of the bulb and which have their other end extending downwardly from the base and terminating in contacting portions by means of which the test lamp may be resiliently engaged with the terminals of the electrical apparatus to be tested. This construction utilized two stampings to form the socket as well as the external connection members for the test lamp and further permits the resilient leg members to support the test lamp in an upright position when it is engaged with the terminal screws of electrical apparatus. The simplicity of the design will be more fully appreciated from the detailed description of the two embodiments of this invention which is given further in this specification.

Other objects and advantages will be pointed out in, or be apparent from, the specification and claims, as will obvious modifications of the embodiments shown in the drawings, in which:

FIG. 1 is a side elevation view of the test lamp embodying the present invention;

FIG. 2 is a side elevation of the test lamp shown in FIG. 1 taken from the right hand side and showing in broken lines the position of the resilient legs when they are engaged with two terminals;

FIG. 3 is an enlarged cross-sectional view taken on line 3-3 of FIG. 1;

FIG. 4 is a fragmentary cross-sectional view taken on line 4-4 of FIG. 3;

FIG. 5 is a fragmentary cross-sectional view taken on line 5-5 of FIG. 3;

FIG. 6 is a top view of the base with the bulb and cover being removed from the test lamp;

FIG. 7 is a bottom view of the base;

FIG. 8 is a perspective view of one of the leg members of the test lamp;

FIG. 9 is a view similar to FIG. 2 showing a modification of the present invention;

FIG. 10 is a cross-sectional view similar to FIG. 4 and showing a fragmentary cross-sectional view of the base of the modification;

FIG. 11 is a side elevation view of another embodiment of the present invention;

FIG. 12 is an enlarged cross-sectional view of the test lamp shown in FIG. 11 and similar to those views shown in FIGS. 4 and 10; and

FIG. 13 is an enlarged cross-sectional view of the test lamp shown in FIG. 11 and similar to the view shown in FIG. 5.

Referring to the drawings in detail, the test lamp embodying the present invention is comprised of five parts; namely, commercially available light bulb 10, a base 12 made of electrically nonconductive material, a dome

2

shaped transparent or translucent cover 14 surrounding the bulb and secured to the base, and two leg members 16 which are provided with contact jaws 18 at their upper ends and with notched contacting portions 20 at their lower ends by means of which the test lamp may be connected between two extended terminals as shown in broken lines in FIG. 2.

As particularly illustrated in FIGS. 3 and 4, the plastic cover 14 has a transparent or translucent body section 22 which terminates in a transversely extending flange 24. The flange rests on a shoulder portion 26 within recess 28 of the base and is secured thereto by three transversely extending nibs 30 provided in the sidewalls of the recess. The cover and base are of plastic material which has sufficient resiliency to permit the cover to be snapped into place by merely pushing it downwardly into the recess and past the nibs 30. Similarly, the cover may, of course, be removed by merely pulling it from the recess. However, the holding force between the flanges 24 and nibs 30 is sufficient to render the cover an integral part of the test lamp and not to permit unintentional separation of the cover and base.

The light bulb is of known design. It has a flat base portion 32 with external U-shaped contact wires 34 extending on opposite sides of separate flat flange portions 36. This type of bulb is adapted for connection by lineal sliding motion within an appropriate socket.

The leg members 16 are made of spring brass or other conductive resilient material. The legs extend through apertures 38 provided in the bottom wall of 40 of the cross-shaped recess 42 of the base 12. The legs are provided with a notch 44 which engages the wall 40. The jaws 18 form a socket for the light bulb and are comprised of a flat contact member 46, a web 48 and a jaw member 50. The contact and jaw members are provided at their upper ends with outwardly extending flanges 52 to form a guided entrance for the socket. When the light bulb is inserted it engages flanges 52 and pushes the jaws apart to thereby cause the dimple 54 to engage one side of the base portion 32 and the contact member 46 to press against the contact wires 34 with sufficient force to provide good electrical contact between the leg and the light bulb.

The leg members 16 have a fairly long main portion 56 and terminate in the outwardly extending contact portions 20. The contacting portions may be either provided with a V-notch 58 as shown in FIG. 8 to obtain a "biting" contact with the terminals, or by upturned corners of a square end of the leg. The alternative provides equally effective contact with which case the square ends for each portion 20 are turned up at their corners to define spurs (not shown) which would be adapted to bite into the terminals between which the test lamp is connected. When the test lamp is placed between two terminals the leg members 16 are moved towards each other and the V-notches 58 are engaged with the terminals. The leg members provide sufficient bias to press the contacting portion 20 in firm engagement with the terminals as well as to permit the lamp to remain in an upstanding position. At this point it should be noted that the apertures 38 are of slightly greater transverse dimension than the thickness of the leg members. This is primarily a manufacturing expedient which permits the leg members to be easily connected to the base by merely pushing the contacting and main portions through the apertures 38 until the notch 44 snaps into engagement with the wall 40 of the base 12.

The second embodiment of this invention pertains to a further simplification. This simplification resides in substituting a tubular cover portion 60 for the dome shaped cover 14. This cover portion may be merely a tube of plastic transparent or translucent material which is of

3

sufficient size to slide over the bulb 10 and resiliently engage its sides. This construction permits the bulb to be covered and avoids the flanges 24 and nibs 30 required for the test lamp illustrated in FIGS. 1-8. In all other respects this second embodiment is alike to the first described embodiment.

The embodiment shown in FIGS. 11 and 13 is a further simplification of the test lamp described heretofore. In this embodiment the test lamp is comprised of only four components; namely, a transparent or translucent resilient tube 64, which resiliently engages the sides of the light bulb 10 and engages the webs 48 of the two leg members 16. It is apparent that in this embodiment the resilient tube is utilized as the cover as well as base for the test lamp and its resiliency provides the necessary force to hold the four components into a unitary assembly. As seen when comparing FIGS. 12 and 13, the tube 64 is somewhat expanded in FIG. 13 to embrace the jaw portions of the leg members 16 and is slightly contracted along its other axis. This embodiment is particularly well suited commercially for applications in which the test lamp is marketed as a single use item and, therefore, requires extremely low production and assembly costs.

Although but two embodiments of the present invention have been illustrated and described, it will be apparent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

We claim:

1. A test lamp for temporary connecting two terminals of electrical apparatus and having a socket for receiving the base portion of a slidably connectable light bulb, comprising:

- a base member of insulating material and having a recess for receiving the base portion of the light bulb;
- two electrically conductive resilient leg members connected to said base member and each having a jaw portion positioned in said recess and operable to

4

resiliently grip the base portion of the light bulb to provide the socket for the light bulb, said leg members also having a leg portion extending through said base member and terminating in a contacting portion; each leg portion being substantially longer than said jaw portions; said leg portions extending divergently outwardly in respect to each other from said base portion; and said contacting portions being movable towards each other thereby bending said leg portions and thus creating an outward bias on each contacting portion, said bias being sufficient to provide electrical contact between said contacts and the terminals of the electrical apparatus as well as to support the test lamp by said leg members on the terminals.

2. A test lamp comprising:

a slidably connectable light bulb having a bulb portion and a base portion which is adapted to be engaged in a socket connecting the bulb to a source of electrical energy;

two electrically conductive leg members each having jaw portions which engage said base portion of said light bulb to form a socket therefor, and a resilient translucent tubular member extending over said bulb and base portions of said light bulb and resiliently engaging said bulb portion and said jaw portions to fix said leg members to said base portion.

References Cited by the Examiner

UNITED STATES PATENTS

2,093,663	9/1937	Suzuki	339—59
3,017,599	1/1962	Loesch	339—144 X
3,049,689	8/1962	Clarkson	339—176
3,069,650	12/1962	Atkins	339—59
3,084,304	4/1963	Sloan	339—61

EDWARD C. ALLEN, *Primary Examiner*.

W. DONALD MILLER, *Examiner*.