April 11, 1950 M. L. McHENRY ET AL 2,503,677

INDICATOR SOCKET FOR DEVICES IN SERIES CONNECTION

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Fig. 1

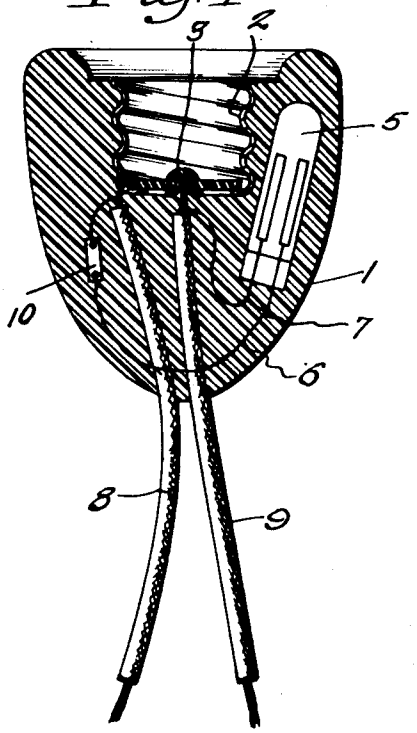


Fig. 2.

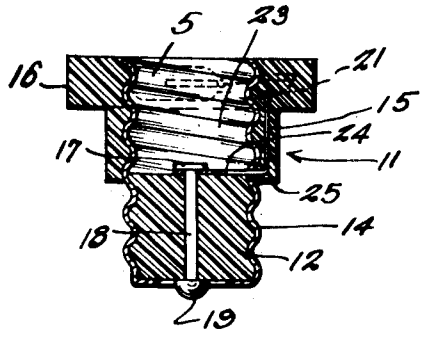
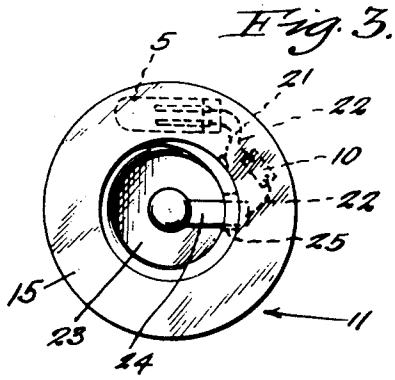


Fig. 3.



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INDICATOR SOCKET FOR DEVICES IN SERIES CONNECTION

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2 Claims. (Cl. 177—311)

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This invention relates to indicator sockets for electrical devices, permitting to locate defective devices and it has for its main object to provide indicating means so associated with said socket that a single unit is formed having practically the same smooth or ornamental shape and surface with which the conventional or specially designed ornamental socket is provided.

A further object of the invention consists in using an indicator device which is enclosed in the socket material and which is nevertheless able to indicate clearly the presence of a defective lamp.

A further object of the invention consists in using a socket of insulating translucent material enclosing a glow discharge tube, the glow discharge of which may be observed through the walls of the socket.

A further object of the invention consists in embedding a neon tube together with its resistance and its connections within a socket of ovoid shape, provided with contacts whose insulating material is made from translucent plastics capable of being molded around the tube and its connections.

Two modifications of the invention are specifically described and shown in the drawings. It is, however, to be understood that these modifications are not the sole embodiment of the invention and are serving as examples to explain the principles on which it is based. The specification enables experts skilled in this art to construct further modifications which may be required and these further modifications are therefore not departures from but are parts of the invention.

In the accompanying drawing:

Figure 1 is an elevational sectional view of a socket constructed in accordance with the invention.

Figure 2 is an elevational sectional view of an adapter.

Figure 3 is a top view of the adapter shown in Figure 2.

For many purposes, especially for the purpose of decoration, such as window decoration or Christmas tree decoration a large number of low voltage lamps or of other units are connected in series in a circuit to be connected with the mains. If one of these lamps or units is defective or loose or burns out the entire series is extinguished or is cut off. A test to find out the defective lamp or unit has therefore to include all the lamps or units of the series and their sockets and connections. Such a test, as a rule, is no longer undertaken by the user for whom the multiplicity of possible sources of the defect is confusing.

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The invention provides means for the immediate identification of the defective structure or unit whether it be a lamp or some other electrical unit.

As seen in Figure 1 the socket 1 of the lamp which is to be connected in series with other lamps consists of a clear, transparent or of a semi-transparent plastic material carrying the normal contact equipment which, if it serves for lamps, as indicated in the drawings, comprises the metal sleeve contact 2 provided with the conventional rounded threads and the central contact 3. A small neon lamp 5 is embedded into the plastic material connected by wires 6, 7 to the two above-mentioned contacts 2 and 3. A small resistance 10 may be included in said circuit so that it is connected in series with the neon lamp 5. The cables 8, 9 may be partly embedded into the plastic material or may be drawn through bores provided in the same.

The socket shown in the drawing is a decorative socket and may be used for Christmas tree or shop window decoration.

Where fixed connections with conventional sockets are already provided in the lamp circuit the lamps may be inserted into an indicating adapter socket, such as shown in Figures 2 and 3. The indicating adapter 11 comprises a plug 12 provided at the outside with the conventional screw-threaded metal sleeve 14, the upper half of which projects and, on the outside, is surrounded by an adapter socket member 15 made of transparent or semi-transparent plastics. The inner side of the sleeve is free and encircles a cavity 23 receiving the projecting lamp socket. This member 15 is provided with a flange 16 or an enlarged upper portion into which the neon lamp 5 and the small resistance 10 is embedded.

The contacts of the adapter are formed by the sleeve 14 on one side and by a small metal disc 17 arranged on the end of a bolt 18 at the top of the plug 12, which is surrounded by the metal sleeve 14. The bolt 18 leads to a head 19 which furnishes the central contact point of the adapter and which contacts the central contact of the conventional socket (not shown) into which the adapter is to be screwed.

The wires 21, 22 with which the neon lamp 5 and the resistor 10 is connected with the sleeve and the central contact may be embedded into the plastic material. The conductor 21 is soldered to a strip 24 which passes through a hole 25 made in the sleeve 14 and which is screwed to the central disc 17 to which it may be soldered or otherwise fixed.

As will be clear, the plug 12 of the adapter will be screwed into the conventional socket of the circuit while the socket of the lamp or other unit is screwed into the sleeve surrounding cavity 23 in the upper member 15 of the adapter.

When a lamp burns out or becomes loose, or shows any other defect breaking the circuit, the neon lamp 5 will be connected across the full voltage difference and will start to glow. The current drawn by the neon lamp is small and the other lamps will therefore not be lighted by this current. The neon lamps which are associated with the other lamp sockets will, of course, not operate as they remain short circuited by the lamp to which they are connected in shunt.

The system of embedding small neon lamps connected in shunt to the current drawing contacts of a current consuming unit, into transparent or semi-transparent sockets, may be employed in arrangement, other than those mentioned, for instance in radio sets, in which the low volt filament circuits of the tubes are connected in series and in like arrangements.

We claim:

1. An indicating socket for electric lamps, comprising a translucent molded body made of plastic of a semi-ovoid shape with a cavity at one end lined with the customary screw threaded cylindrical sleeve for the reception of the lamp and provided with a central contact at the bottom of the cavity, conductors leading to said sleeve and to said central contact passing from the cavity through the body of the socket to the other end of the socket, a neon lamp and a resistance both embedded within the molded translucent body of plastic and further conductors leading to said neon lamp and resistance embedded within said socket body and connected with the above named sleeve and central contact.

2. An indicating socket for electric lamps, comprising a translucent molded body of plastic of a semi-ovoid shape provided with a cavity at one end, lined with the customary screw threaded cylindrical sleeve for receiving the electric lamp and further provided with a central contact at the bottom of the cavity, conductors passing from said cavity through the body of the socket to the other end of the socket leading to said sleeve and central contact, and embedded within the body of the socket, a rod shaped cylindrical neon lamp arranged substantially in the direction of the longitudinal axis of the ovoid shaped body, a high resistance, said neon lamp and said resistance being both embedded and held within the molded translucent body, and conductors connected with said sleeve and said central contact leading to said resistance and neon lamp embedded within said molded translucent socket body.

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