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R. E. CURTIS

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SOCKET TUBE SHIELD AND GROUND

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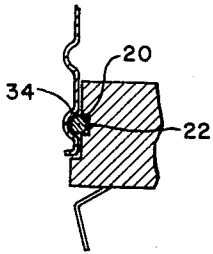


FIG-3

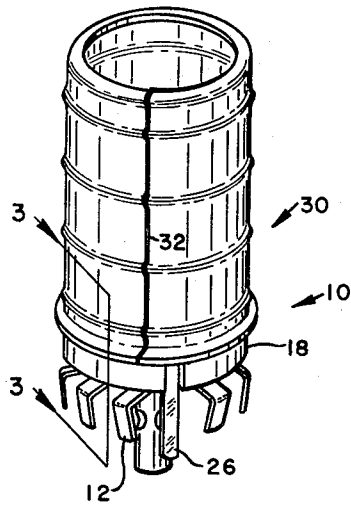


FIG-1

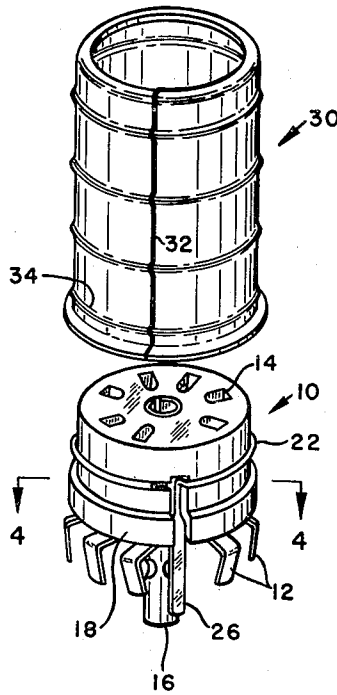


FIG-2

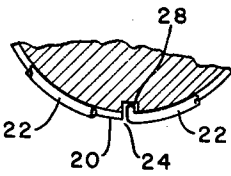


FIG-4

INVENTOR
RUSSELL E. CURTIS

BY *Michael Hertz*
ATTORNEY

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SOCKET TUBE SHIELD AND GROUND

Russell E. Curtis, Clarence, N. Y., assignor to Sylvania Electric Products Inc., a corporation of Massachusetts

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4 Claims. (Cl. 339—14)

This invention relates to an improvement in a socket and to the combination with such sockets of an electrical conductive shield to shield an element which may be plugged into the socket.

The object of the invention is to provide a socket and a socket and shield combination which shall have means to assure better electrical connection between a ground lead on the socket and the shield than in prior art devices.

A second object of the invention is to provide means to assure better mechanical association between the shield and the socket than in the prior art to avoid unintentional separation of socket and shield.

A third object of the invention is to provide a means for providing a connection between socket and shield in which the connection may be made by a simple thrust action of the shield adjacent the socket in any perpendicular position of the shield relative to the socket, and without rotating the shield into place on the socket.

Still another object of the invention is to provide means for enabling electrical and mechanical association of tube shield and socket without making any changes in a conventional type of shield.

These and other objects will become apparent upon reading the following specification and claims when taken in conjunction with the accompanying drawing in which:

Fig. 1 is a perspective view of a type of socket embodying the invention, said socket being shown as associated with a shield.

Fig. 2 is a perspective view showing the shield above and in position to be thrust down into locking engagement with the socket.

Fig. 3 is a fragmental section on the line 3—3 of Fig. 1, and

Fig. 4 is a fragmental section on the line 4—4 of Fig. 2.

Referring to the drawings in greater detail, at 10 there is indicated a socket which is here illustrated as a tube socket, although it should be realized, after reading the disclosure and claims herein, that the socket may be modified to receive other electric devices requiring a shield or a grounded shield.

The tube socket is here shown as incorporating the conventional tube pin or prong receiving members in the form of clips 12 mounted in recesses 14 in the socket, this particular form of socket being intended for use with printed circuits and wherein the ends of the clips 12 are bent into contact with and soldered to the printed circuit conductors on the undersurface of an insulating board, the socket bearing against the upper surface of the board. As is conventional in the art, the socket is also provided with a central sleeve 16, to be used as may be necessary in the incorporation of the socket with its associated circuitry.

The socket of the invention is generally cylindrical and is provided with a stop element here shown as a flange 18. The lower end of the tube shield is brought

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to rest on this stop element. The socket is further provided with a peripheral groove 20 in which is tightly laid a wire loop 22 of a thickness to extend beyond the cylindrical wall. The groove may have any cross section desired, it being here shown as square but the wire should preferably be round to permit application of the shield to and separation from the socket. Formed perpendicularly to the groove 20 and to the flange 18 is a slot 24 in which the end 26 of the loop of wire 22 is positioned so that it lies within the periphery of the cylinder. The wire end is made long enough to enable it to be attached to a ground connection in the circuitry. As seen in Fig. 4, the wire 22 is bent inwardly at 28 to enter the slot and then downwardly past the flange and bottom of the socket.

Cooperating with the socket is a shield 30 which is of conventional structure. It is essential, however, that it be of a metal having some springiness and that it be split longitudinally as indicated at 32. It is also essential that it be provided with a circular internal depression, as 34, at a suitable height above the flange, to properly engage the wire 22 and, preferably, the socket is so proportioned that when the lower edge of the shield rests on the flange, the depression will fit over the wire. The circular depression is here shown as the inside surface of a circular corrugation of the shield.

When the shield is forced over the wire, it will snap into locking position with the socket and into tight engagement with the wire thereby affording good electrical and mechanical connection of socket and shield. It should also be noted that no particular orientation of sleeve to socket, in the plane of the surface of the socket, is necessary to effect the connection. The shield may be separated from the socket by a prying action tending to spread the shield as by insertion of a tool between the flange 18 and lower edge of the shield and forcing the two apart.

Having thus described the invention, what is claimed as new is:

1. A socket comprising a member provided with a cylindrical wall and having clips in its upper end surface and extending through the bottom of the socket, a stop element extending from the sides of the cylindrical wall and at the lower end thereof, a circular groove around the cylinder at an elevation above the stop element, and a wire laid in said groove and of a size to protrude beyond the cylindrical wall, said wire continuing downwardly of the socket to a position below the same with the downward extension lying within the cylindrical wall.

2. A socket comprising a member provided with a cylindrical wall, clips in its upper end surface and extending through the bottom of the socket, a stop element extending from the sides of the cylindrical wall and at the lower end thereof, a circular groove around the cylinder at an elevation above the stop element, a second groove in the cylindrical wall running vertically of the socket and intersecting the first groove, and a wire of a thickness to extend beyond the periphery of the cylindrical wall when in said first groove and lying wholly within the second groove and continuing down below the socket.

3. A socket comprising a member provided with a cylindrical wall, clips in its upper end surface and extending through the bottom of the socket, a peripheral flange about the cylindrical wall near the bottom of the socket, a circular groove in said wall at a spaced distance above the flange, a wire laid tightly in said groove but of a size to protrude beyond the periphery of the cylindrical wall, a second groove in said cylindrical wall transverse to and intersecting the first groove and flange, the wire continuing downwardly in said second groove and terminating in a position below the bottom of the member.

4. A socket comprising a member provided with a cy-

lindrical wall, clips in its upper end surface and extending through the bottom of the socket, a peripheral flange about the cylindrical wall near the bottom of the socket, a circular groove in said wall at a spaced distance above the flange, a wire laid tightly in said groove but of a size to protrude beyond the periphery of the cylindrical wall, a second groove in said cylindrical wall transverse to and intersecting the first groove and flange, the wire continuing downwardly in said second groove and terminating in a position below the bottom of the member, and a hollow shield having a cylindrical wall with a recess in the interior portion of the wall extending circularly of the wall and parallel to the base of the shield, said shield being positioned on said socket with the base in engage-

ment with the flange and with the recessed portion embracing the protruding portion of the wire.

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