SOCIET FOR ELECTRIC JACK PLUGS

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The present invention relates to an improved socket for
receiving what is termed a "jack" plug, that is a plug in
which the pin (which is inserted in the socket) is divided
transversely to its length into two co-axial contact making
portions which are insulated one from the other.

Broadly, according to the present invention there is pro-
vided a socket for a jack plug which comprises a hollow
unitary body part which is a molding of insulating mate-
rial which is formed on its inner face with two or more
axially directed channels for slidingly receiving contact
strips, an externally threaded bush at one end of said
moulding for facilitating fixation of the socket to a support
or panel and which constitutes an entry opening for the
pin of a jack plug, and a cap slideable over said moulding
and formed with an end wall having openings through
which ends of the contact strips may project for connect-
ing them in an electric circuit.

The assembly of the component parts of a socket as set
forth in the preceding paragraph is extremely simple as
it is only necessary to slide the contact strips into their
associated channels or grooves whereby they are retained
in spaced apart relation, and then to slide the cap over
the body part until the outer ends of the strips engage
through the openings to leave outer portions of the strips
exposed for connection in a required circuit.

As the strips are enclosed in the body part and not ex-
posed there is no risk of them becoming distorted, and
as they are positively located in the said grooves there is
no risk of a short circuit.

To enable the invention to be clearly understood, a pre-
ferrable embodiment thereof will now be described by way
of example with reference to the accompanying drawings,
wherein:

FIGURE 1 illustrates a socket of a first embodiment in
elevation, and

FIGURE 2 is a vertical section.

FIGURE 3 is a transverse section taken on the line
III—III of FIGURE 1.

FIGURE 4 illustrates the three contact strips in per-
pective.

FIGURE 5 illustrates a socket of a second embodiment
in elevation, and

FIGURE 6 is a vertical section through the socket
shown in FIGURE 5.

Referring firstly to FIGURES 1 to 4 of the drawings, the
socket comprises a one-piece tubular molded body
part 1 of a suitable plastics material which is formed inte-
rally at one end with an externally threaded smaller
diameter hollow boss or bush 2 for receiving a nut 3 by
means of which the socket may be secured to a support
or panel. The mouth of this boss constitutes an entry
opening for guiding the pin of a jack plug into the cavity
of the body part 1.

In the embodiment being described the body part 1 is
fitted with three contact strips or fingers (as shown in
FIGURE 4) and for this reason has its inner face formed
with three parallel channels or grooves 4 which extend
longitudinally or axially of the body part.

The first contact 5 is bent at one end 5a so that when
it is slid into the body part the bent end 5a enters the
said boss 2 as clearly shown in FIGURE 2, the bent end
engaging over the step where the smaller diameter boss
2 merges into said body part 1. This bent end 5a co-acts
with and contacts the outer coaxial contact making por-
tion of the pin of a jack plug. The other end 5b forms a
solder tag.

The second contact strip 6 is shorter than the first con-
tact strip 5 so that it does not project into the boss 2 and
comprises a narrow portion 6a forming a tag and a wider
portion 6b, the latter being intended to be engaged by
a third contact strip 7 about to be described.

This third contact strip 7 comprises a main part 7a
which engages in its associated groove in the body part 1
and one end 7c is bent back V-fashion and the end of this
bent back portion is bent laterally at 7d so as to bridge
the inside of the body member 1 and make contact with
said second contact strip 6 until such time as the jack
plug is inserted when it makes contact with the outer end
or extremity of the pin of the jack plug. The end 7c
forms a solder tag. Preferably, this third contact strip
7 is made of a hard springy material such as phosphor
bronze or beryllium-copper.

The filament of the strips 5, 6 and 7 in the channels or
grooves 4 ensures that they are positively located and
that the parts in said grooves are insulated from one
another.

After the inner portions of the strips 5, 6 and 7 have
been slid into their respective grooves 4 in the body part
1 an outer cap or sleeve 8, closed at one end 8a, is slid
axially completely over the body part 1, the closed end
wall 8c of this sleeve 8 being formed with very small slit-
like openings 9 through which the tag ends of the strips
5, 6 and 7 can pass to the outside of the cap 8 to provide
exposed portions which can be connected in an electric
circuit.

The parts 5b, 6a and 7c of the strips or fingers 5, 6
and 7 which extend through the slit-like openings 9 in
the end wall 8a of the cap 8 are narrower than the main
portions of the strips so that the wider main parts present
shoulders which about the inner faces of the cap and so
prevent axial displacement of the strips through the slits
9 in the cap.

To ensure that the cap is correctly located so that the
slits 9 therein register with the ends 5b, 6a and 7c of the
strips when the cap 8 is slid onto the body part 1, the body
part is formed (see FIGURE 3) with a longitudinal
groove 10 on its outer face in which can slide a rib 11
formed integrally with and internally of the cap 8 so that
unless the rib 11 and groove 10 are aligned the cap cannot
be pushed over the body part. Alternatively, the groove
10 can be formed inside the cap 8 and the rib 11 on the
outside of the body part 1.

Referring next to the modification illustrated by FIG-
URES 5 and 6, the construction is very similar to that
illustrated by FIGURES 1 to 4 except for minor details.
In this embodiment the cap or sleeve 8 is made more shal-
low and only extends for approximately half the length
of the body part 1 and the surface of the latter left ex-
posed by the cap 8 is formed with circumferential ribs 12
to facilitate handling. Also, the fixing nut 3 is serrated
and formed with a screw-driver slot.

I claim:

1. A socket for an electric jack plug comprising in com-
bination:
(a) a unitary hollow body of insulating material having
an axis,
(1) an inner wall of said body defining a chamber
open in both axial directions,
(2) said inner wall being formed with a plurality
of axially elongated grooves, open in one axial
direction;
(b) guide means on said body for guiding a portion
of a jack plug into one open axial end of said chamber,
said guide means including a tubular externally
threaded bush integral with said body;
3. A plurality of contact strips, each of said strips having an inner elongated portion received in one of said grooves in sliding engagement and an elongated tag portion projecting from the other open axial end of said chamber, said tag portion being narrower than said inner portion and defining a shoulder with said inner portion; and

(d) a cap member closing said other open end, said cap member being formed with a plurality of slits therethrough, the tag portions of said contact strips respectively passing through said slits, and said shoulders thereof abutting against said cap member in said chamber,

(1) said inner wall having a radially extending face near said open end abuttingly engaging one of said inner portions.

2. A socket as set forth in claim 1, wherein the said inner portions of said contact strips are in abutting radial contact with said inner wall of said unitary hollow body in said grooves.

3. For assembly into a socket for a jack plug, in combination:

(a) a unitary hollow body of insulating material having an axis,

(1) an inner wall of said body defining a chamber having a first and a second axially terminal opening, said second opening being larger than said first opening,

(2) said inner wall being formed with a plurality of grooves axially extending inward from said second opening and having respective axially closed ends in said chamber;

(b) a tubular guide member integral with said body extending from said first opening outward of said chamber;

(c) a plurality of contact strips, each contact strip having an elongated inner portion and a tag portion longitudinally extending from said inner portion and narrower than the same so as to define a shoulder therewith, the inner portion of each contact strip being dimensioned to be slidably received in a respective one of said grooves in abutting engagement with said closed end while the tag portion projects outward from said second opening; and

(d) a cap member adapted conformingly to receive a portion of said body in a position in which a portion of the cap member closes said second opening, said cap member being formed with a plurality of slits therethrough for passage of said tag portions in said position of said body when the corresponding inner portions are received in said grooves.

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