SELF-ADAPTING CONNECTOR

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Fig. I

Fig. II

Fig. III

Fig. IV

Fig. V

Fig. VI

Fig. VII

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This invention relates to electrical terminal connectors with range for automatic adaptation to widely diverse types for efficient circuit closing cooperation. This invention has utility when incorporated in plural socket types of connectors or attachment devices, more particularly with the sockets relatively shiftable to vary the spacing therebetween. Additional alignment or register compensation is called for in that the socket terminal proper has a float latitude for some lateral movement, even angularly.

Referring to the drawings:

Fig. 1 is a plan view, on an enlarged scale, of an embodiment of the invention in a two-prong receiver electric terminal connection device, with one of the four parts of the unit removed; Fig. 2 is a section on the line II—II, Fig. 1, looking in the direction of the arrow, of one of the complementary half-seat portions for a socket terminal and lead way thereto; Fig. 3 is a perspective view, on a still further enlarged scale, of the spring leaf hinge to provide a rocking joint in assembling the relatively movable sockets of a pair in this electric terminal device; Fig. 4 is a plan view of the unit of Fig. 1, in fully spread or divergent position of the sockets, as contrasting with the converse or reduced spreading position of Fig. 1; Fig. 5 is an end detail, with parts broken away, of the entrance throat for a prong of one of the socket parts, with socket terminal flare ends in position therewith;

The housing

The insulation housing unit is herein shown as comprised of four parts or sections 1, 2, assembled in pairs, being right and left.

Supply lines to terminals

Electric current supply lines 3, 4, each have insulation 5 which is a flexible conduit or insulation covering 6 passing thru a laterally yieldable helical wire sleeve 7 with an inner end larger diameter single wrap 8. As protruding therefrom, the covering 6 is removed and the two insulation portions 8 are separated to have the sup-
3 thru the wrap 8 of the wire into the windings 7, with the tongue 27 directed inward from end 29 of the assembly 1, 2. This brings the bar portion 28 in the angle portion 22. Any output upon the electric supply lines 3, 4, is transmitted from the grip cheeks 26 to the bar 28 riding against the rib 23.

The hinge spring leaf

Spaced inward from the way portion 22 is a V- channel 30 having one straight wall toward the end 29 and the slightly spreading wall toward the insulation end having the seat 15. Toward the way 21 and short thereof, the channel seat 30 ends in a cylindrical seat or socket 31. A spring is provided of strip sheet stock with ends 32 toward each other in a common plane from end loops 33 having a connecting web 34 therebetween lying against the leaf ends 32 to be re-inforced thereby.

Assembly of the unit

In the molding of plastic stock into the insulation elements 1, 2, the seat or recess portions require mold draft configuration for core withdrawal. It is essential that an assembly element, especially one combining therewith hinge or flex properties, be positively anchored with the elements with which it is to be associated. By configuring the leaf hinge embracing portion 30 to pinch at its bottom, there is positive preclusion of lost motion wobble, while the cylindrical socket 31 for the respective loops 33 as half length in each of the opposing sections 1, 2, as complementary, provide efficient and positive end holding means for the spring leaf web 34 as bridging the way across a wide angle juncture 35 between straight portions 36 from the socket throat receiving ends and the portions 37 to the ends 29. The extent of divergence possible for flexing of the spring leaf 34 is determined for closeness as the faces 36 abut (Fig. 1), and for divergence, as the faces 37 abut (Fig. 4). Bolt openings 38 are now in alignment to receive bolts 39. As these nut engaging bolts 39 draw the respective element pairs 1, 2, together, the leaf portion 34 of the spring is snugly seated.

The user may grasp roughened or ribbed portion 40 to effect a registering spread between the socket throat seat portions 15, for thrusting the connector unit toward a prong pair. The relative looseness for the socket terminal, is such that it readily finds itself slip along the prong, even to a considerable degree of structure departure or even distortion.

What is claimed and it is desired to secure by Letters Patent is:

An adaptable electric connector comprising a pair of terminals, a housing providing a pair of chambers for the terminals, said housing including a first pair of sections each having an open side half chamber, there being seat way means in registry between said sections at a straight way intermediate portion, each section having a cylindrical way portion to which the straight portion extends, a leaf spring having a flat intermediate portion in the straight way portion and an end loop in each cylindrical way portion thereby to hold the two sections assembled with the spring protruding through its extent from the way portions, a second pair of housing sections complementary to said first pair with way means to complete enclosure of the protruding portion of the spring and with half chamber portions to register with and complete the chambers in the housing for the terminals, as assembly means in addition to the spring coacting between the first and second pair of housing sections to anchor the spring in the thus completed connector, whereby the two sections completing one chamber may swing on the spring as a hinge in movement relatively to the two sections completing the other chamber, there being conductor lead means into the housing to the terminals, said lead means entering the housing more remote from the chambers than the spring.

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