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[33] **Italy**
[31] **7637B/68**

[54] **ELECTRICAL TERMINAL HAVING CHANNEL-
SHAPED CONTACT SECTION**
2 Claims, 7 Drawing Figs.

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339/276, 339/277
[51] Int. Cl. **H01r 5/08**
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713/119

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ABSTRACT: A tube terminal for bus bar application has an oval crimping ferrule for receiving twin wires and a tongue of shallow channel section of width substantially equal to that of the ferrule.

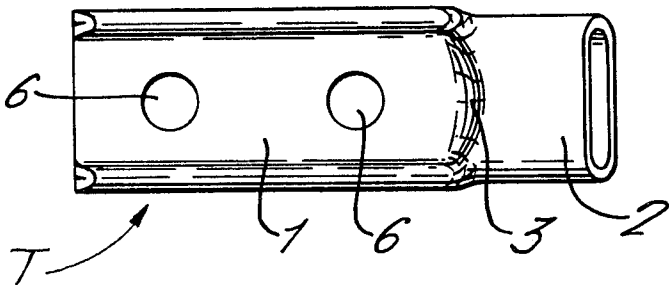


FIG. 1.

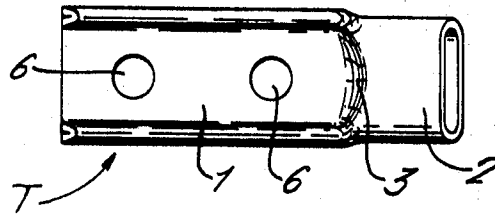


FIG. 2.

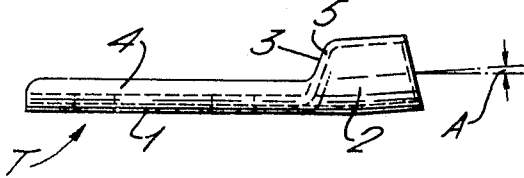


FIG. 3.

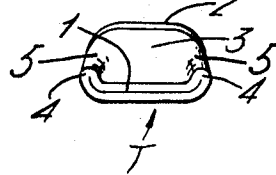


FIG. 4.

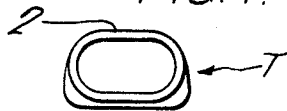


FIG. 5.

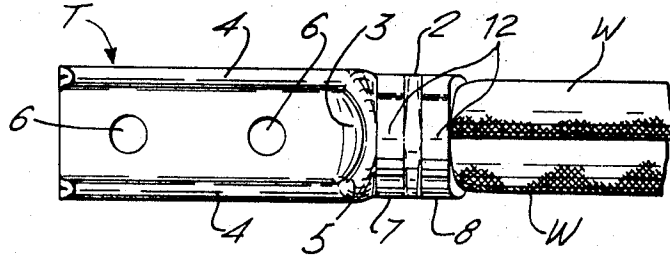


FIG. 6.

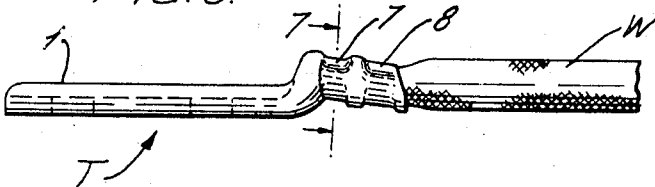


FIG. 7.



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ELECTRICAL TERMINAL HAVING CHANNEL-SHAPED CONTACT SECTION

This invention relates to terminals and more particularly to electrical terminals having channel-shaped electrical contact sections.

A terminal is formed from a length of tubular stock which is flattened over a portion of its length to define a tongue of twice the tube wall thickness integral with a ferrule formed by a section of tube for receiving the end portion of a wire and adapted to be crimped about the wire.

A terminal according to the present invention comprises a wire-receiving ferrule portion integral with an elongated tongue of twice the tube wall thickness, the tongue having its longitudinal sides turned up to define a generally channel section.

An object of the invention is to provide an electrical terminal having a channel-shaped contact section for connection to round bus bars.

Another object is the provision of a channel-shaped contact section of a terminal to provide large area of contact with round bus bars.

A further object is to provide a channel-shaped contact section having a double thickness to assure heavy current can be carried thereby.

Other objects and attainments of the present invention will become apparent to those skilled in the art upon a reading of the following detailed description when taken in conjunction with the drawings in which there is shown and described an illustrative embodiment of the invention; it is to be understood, however, that this embodiment is not intended to be exhaustive nor limiting of the invention but is given for purposes of illustration in order that others skilled in the art may fully understand the invention and the principles thereof and the manner of applying it in practical use so that they may modify it in various forms, each as may be best suited to the conditions of a particular use.

The invention will now be described, by way of example, with reference to the accompanying partly diagrammatic drawings, in which:

FIG. 1 is a top plan view of a terminal;

FIG. 2 is a side elevational view of the terminal of FIG. 1;

FIG. 3 is a front elevational view of the terminal of FIGS. 1 and 2;

FIG. 4 is a rear elevational view of the terminal of FIGS. 1 and 2;

FIG. 5 is a top plan view similar to that of FIG. 1 of the tube terminal crimped to a pair of stranded wires;

FIG. 6 is a side elevational view of the connection of FIG. 5; and

FIG. 7 is a section taken on line 7-7 of FIG. 6.

The terminal T of FIGS. 1 to 4 comprises a tongue portion 1 defining a contact section and a ferrule portion 2 integrally joined at a transition section 3. The terminal is formed from a seamless tube which is flattened over a major portion of its length to define the tongue 1 of double metal thickness, as seen in FIG. 3. The ferrule portion 2 is partially flattened from its original circular cross section to an oval cross section, as seen in FIG. 4, having its major axis parallel to the width of the tongue 1. Ferrule portion 2 can, of course, take other configurations as desired such as, for example, circular, rectangular, etc.

The tongue 1 is formed at a side of the ferrule 2 to define an extension of the ferrule profile at one side, and the longitudinal

dinal axis of the ferrule 2 is inclined relative to the tongue 1 at a slight angle A. The tongue 1, as seen in FIG. 3, has its longitudinal sides 4 turned up to define a generally channel-shaped section of width substantially equal to that of the oval ferrule portion 2.

The transition section 3 between the tongue 1 and the ferrule 2 has a concave form, as seen in FIG. 1, defining sides 5 extending rearwardly at an inclination from the upturned sides 4 of the tongue to merge with the ferrule portion. Transition section 3 defines a stop means to stop movement of wires W thereinto prior to being crimped therein.

The tongue 1 is formed in the base of the channel section with a pair of spaced apertures 6 for receiving screws or bolts to clamp the terminal tongue to a round bus bar or other conductor.

The terminal is advantageously applicable in heavy current applications where it is necessary to make bus bar connections. It is desirable to maintain the maximum width of the tongue within a small space and this end is achieved in the terminal of the invention by the channel section of the tongue. This allows the tongue to be of width equal to the minimum required while ensuring that adequate metal is retained for conducting the desired current.

The oval cross section of the ferrule facilitates the arrangement of two flexible stranded wires for crimping in the ferrule 2 side by side, as shown in FIGS. 5, 6 and 7. The wires and terminal are suitably matched so that the total wire cross section is substantially equal to the terminal metal cross section, and the terminal and the wires have corresponding current-carrying capacities. Normally this would have required a much wider terminal than is possible by use of the invention.

As shown in FIGS. 5 and 6, the wires are arranged side by side with their ends disposed in the ferrule 2. The ferrule is crimped about the wire ends by a pair of spaced crimps 7, 8, each of which has a cross section as shown in FIG. 7. The crimp is formed by mating press dies which confine the cross section throughout its periphery to present a lower flat surface 9, flat side surfaces 10, generally perpendicular to surface 9 and smoothly merging with that surface through curved portions 11. The upper surface of the crimp section comprises a central convexity 12 between a pair of flat shoulders parallel to base 9 and joining the convexity to the sides 10. The wire ends are deformed within the ferrule to a voidless cross section.

It will, therefore, be appreciated that the aforementioned and other desirable objects have been achieved; however, it should be emphasized that the particular embodiment of the invention, which is shown and described herein, is intended as merely illustrative and not as restrictive of the invention.

We claim:

1. An electrical terminal formed from a metal tube, said terminal having a contact section and a ferrule section, said contact section comprising a tongue of flattened configuration thereby having a thickness equal to twice the thickness of the tube metal, said tongue having its longitudinally extending sides turned upward to define a channel section, the tongue and its sides being substantially solid and being substantially longer than the ferrule section, said ferrule section being of oval cross-sectional configuration and having a major width parallel to and substantially equal to that of the tongue.

2. An electrical terminal according to claim 1 wherein said ferrule section has an axis disposed at an angle with respect to an axis of said contact section.