

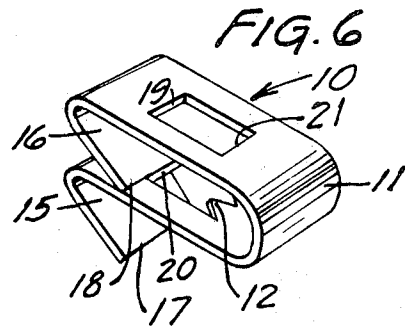
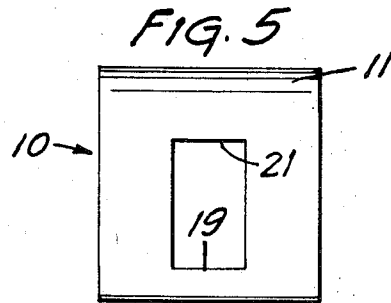
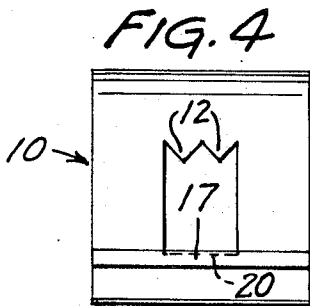
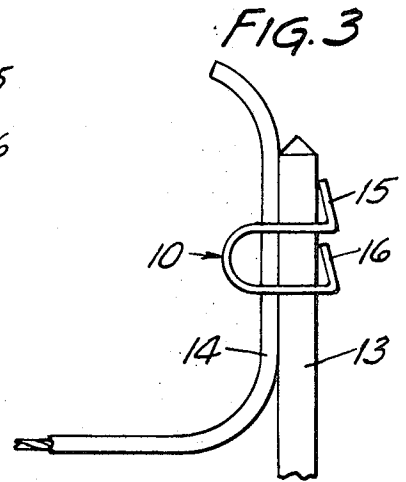
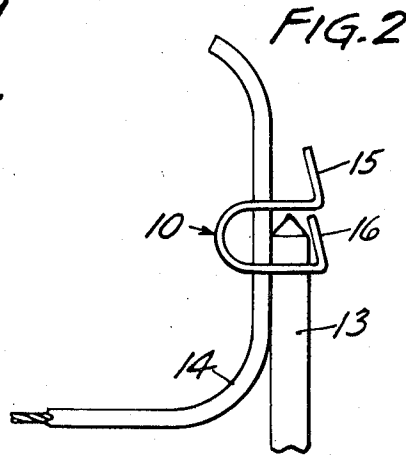
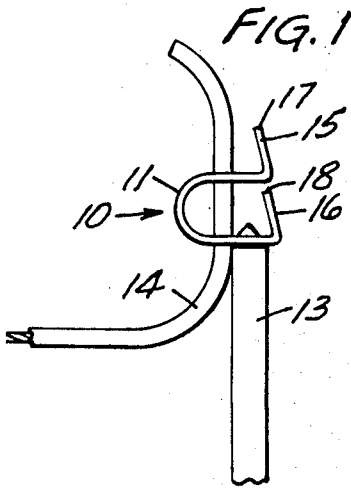
Sept. 1, 1970

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3,526,870

SPRING TENSION CONNECTOR FOR WIRE-WRAP POST

Filed June 6, 1968



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3,526,870

**SPRING TENSION CONNECTOR FOR  
WIRE-WRAP POST**

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Filed June 6, 1968, Ser. No. 734,966

Int. Cl. H01r 11/20

U.S. Cl. 339-97

2 Claims

**ABSTRACT OF THE DISCLOSURE**

A U-shaped connector which provides continuous spring tension connection between a wire-wrap post and an insulated solid or stranded wire without requiring removal of insulation.

This invention relates to connectors for making solderless contact between wire-ends and post type terminals.

Wire wrapping devices have been described in the prior art for attaching bare wire-ends to post-like terminals in forming electrical connections as in the wiring of electronic devices or the completing of electrical circuits. The form of connection, and a typical device for making the same, are illustrated in U.S. Pat. No. 3,332,632. The wire-wrap post is ordinarily of rectangular or square cross section, so that the wire end, when wrapped tightly about the post in a closed spiral configuration, makes permanent contact particularly at the corners. The method requires pre-stripping the insulation at the end of the wire, and is ineffective with stranded conductors.

The present invention provides improved means for obtaining and maintaining electrical connection between wire-ends and wire-wrap or similar post type terminals. Removal of insulation is not required, the connector penetrating and displacing the insulation and making contact between post and conductor. The connector is spring loaded so that positive contact is maintained under all use conditions. In particular, the invention makes possible the connecting of insulated stranded wire to post type terminals. These and other advantages are obtained without significantly increasing the size of the connection, and with greatly simplified apparatus and technique, by employing spring type connector elements now to be described.

In the drawing,

FIGS. 1, 2 and 3 are side elevations of a preferred form of the connector element as applied to a vertically positioned wire-wrap post and wire-end in three successive stages of application,

FIGS. 4 and 5 are top and bottom plan views respectively of the connector element in the position shown in FIG. 1, and

FIG. 6 is a view in perspective of the connector of FIGS. 1-5.

The connector 10 of FIGS. 1-6 consists of a strip of flat spring metal 11 formed into a generally U-shape. Each leg of the U is centrally perforated to provide a post-accepting opening, preferably a rectangularly shaped opening as illustrated. The opening in the upper leg of the connector placed as shown in FIGS. 1-3 and as shown in FIG. 4 is defined at the end nearest the base of the U by a toothed edge 12. The openings in the two legs are in line and are of a size just sufficient to accommodate both a wire post 13 and a wire 14 in the manner hereinafter

described when the connector is forced over the two as shown in FIGS. 1-3.

The terminal portions 15 and 16 of the two legs of the U are bent back at an acute angle and with the ends 17, 18 slightly overlapping the corresponding edges 19, 20 defining the forward ends of the respective openings.

The connector is applied as illustrated in FIGS. 1-3. The insulated wire-end 14 is first threaded through the two openings and held adjacent the end edges 12, 21 thereof, and the connector is then positioned above the post 13 and with the openings in alignment therewith. The entire connector, carrying the wire-end is driven onto the post by sharp impact, the force preferably being applied equally to both legs of the U-shaped connector. This result may be accomplished by holding the sides of the connector between the parallel jaws of suitable pliers or similar tool, but is more conveniently carried out with a specialized close-fitting tool designed for the purpose and which is slotted to receive the edges of the legs of the U-shaped connector while still permitting resilient deformation of the folded terminal portions 15, 16. The ends of these latter portions are thereby pressed tightly against the post 13 on the side opposite the position of the wire 14 and remain under spring tension. The toothed edge 12 penetrates and displaces the insulating covering of the wire and makes full electrical contact with the conductor. Except with the toughest insulating coverings the insulation is displaced also from between the conductor and the post, thus providing additional and surprisingly effective contact.

Both solid and stranded type conductors are equally effectively contacted and held in position by the toothed edge 12 and are further supported between the post 13 and the end wall 21 of the opening in the opposing leg opposite the edge 19, the latter serving as a strain relief support for the standing part of the wire, to further protect and maintain the electrical contact.

In a specific illustration, a connector element designed for use with a wire-wrap post having a square cross section measuring .045 inch on each side is made of Phosphor bronze sheet having a thickness of 0.126 inch. The overall length of the connector is .155 inch, the width is .150 inch. The openings are each .070 inch in maximum length and .050 inch in width. The terminal portions of the legs are bent back at an angle of seventy-five degrees with the remainder of the leg, and each has a length of .06 inch. The base of the U is formed about a radius of .035 inch. The shaped connector is given a protective plating of gold over nickel.

What is claimed is as follows:

1. A solderless spring-connector adapted for making electrical connection between an insulated wire and a wire-wrap post, said connector comprising a generally U-shaped strip of flat spring metal, each leg of the U being centrally perforated to provide a post-accepting opening, one of said openings being defined at the inner end by a toothed edge, the two openings being in line to receive a said post, the terminal portion of the leg containing said one opening being bent back at an acute angle to the outside of the U, the terminal portion of the opposing leg being bent back at an acute angle to the inside of the U, the length of said openings being just sufficient to accept a said wire and post with the free ends of said terminal portions in spring contact with said post.

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2. Method of connecting an insulated wire-end to a wire-wrap post comprising inserting said wire-end through the openings of the connector of claim 1, placing the connector adjacent the end of said post with the openings in alignment with said post and with the wire-end against the inner toothed edge, and then driving said connector onto said post under impact distributed over both legs of said connector.

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U.S. Cl. X.R.

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