April 16, 1968 G. B. GLOVER IV 3,378,807

WIRE CONNECTOR CLIP

Filed March 28, 1966

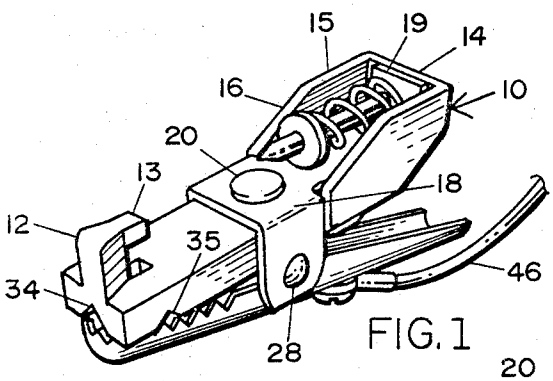


FIG. 1

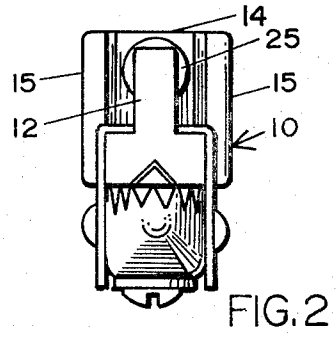


FIG. 2

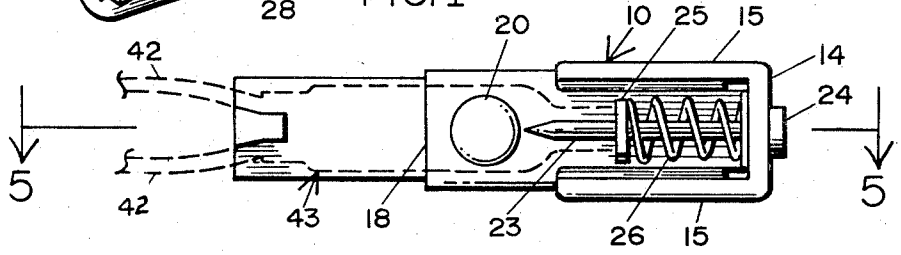


FIG. 3

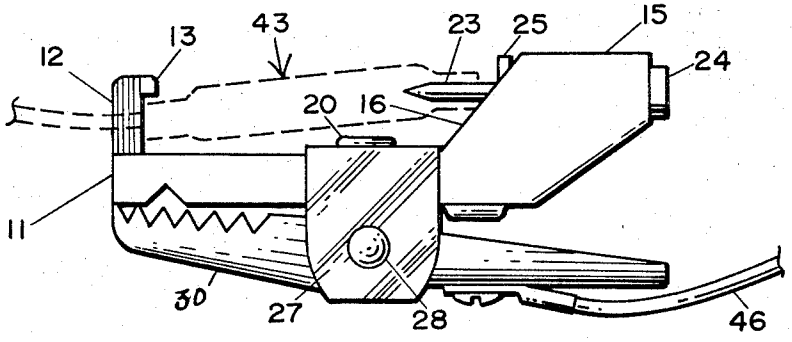


FIG. 4

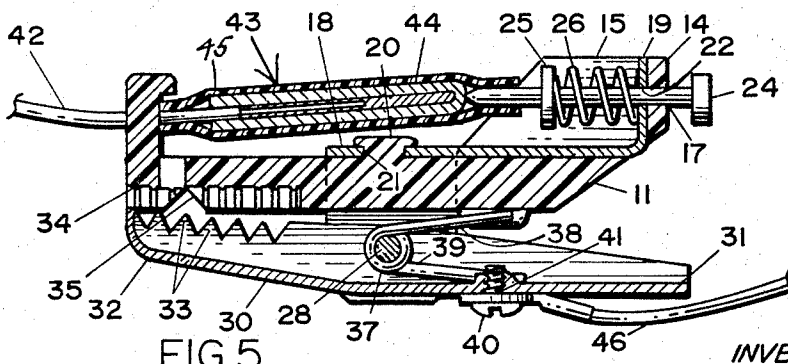


FIG. 5

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United States Patent Office 3,378,807
Patented Apr. 16, 1968

3,378,807

WIRE CONNECTOR CLIP

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Filed Mar. 28, 1966, Ser. No. 537,962
3 Claims. (Cl. 339—32)

This invention relates to wire connecting devices and is more particularly directed to a wire connector clip.

When it is desired to connect two wires together at their ends presently in communications systems, a B-wire connector is used. A plastic jacket, of which the B-wire connector is made, insulates the ends of the wires. In order to make a temporary electrical connection with these wires that are connected together by the B-wire connector, the latter must be either torn off, mutilated or pierced by a conductor in order to contact the ends of the wires. The present invention contemplates making an electrical connection with the wires bound together by the B-wire connector without the necessity of destroying the B-wire connector. Therefore, a principal object of the present invention is to provide a wire connector clip which is capable of making an electrical connection with wires that are connected together by means of a B-wire connector without the necessity of having a mutilate or destroy the B-wire connector.

Another object of the present invention is to provide a wire connector clip for receiving and holding securely a B-wire connector and making an electrical connection with the wires connected together by the B-wire connector wherein the wire connector clip is simple in construction, inexpensive in cost and can be readily removed from the B-wire connector when the electrical connection is no longer desired.

With these and other objects in view, the invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming a part of this specification with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

FIGURE 1 is a perspective view of a wire connector clip constructed in accordance with my invention.

FIGURE 2 is an end view.

FIGURES 3 and 4 are top and side elevational views respectively with a B-wire connector shown by dotted lines.

FIGURE 5 is a longitudinal cross sectional view taken along the line 5—5 of FIGURE 3.

Referring to the drawing wherein like numerals are used to designate similar parts throughout the several views, the numeral **10** refers to a wire connector clip embodying my invention and consisting of a flat base member **11** made of non-conductive material such as plastic and the like. The base member **11** is provided with a post **12** mounted at one end, which post **12** extends upwardly of the base member **11** and terminates in a lip or flange portion **13** extending inwardly and at a substantially horizontal direction. At the other end of the base member **11**, there is an end wall **14** and adjacent side walls **15** which extend forwardly a relatively short distance and then tapers downwardly as along **16** to the base member **11**. The rear wall **14** and walls **15** form a cavity for receiving a contact making assembly as is explained in detail hereinafter, the rear wall **14** being provided with a bore **17**.

Positioned within the aforementioned cavity is an L-shaped clip support made of electrical conductive material and consisting of a body portion **18** lying on the base member **11** with a leg portion **19** lying against the inner surface of the rear wall **14**. The body portion **18** is made fast to the base member **11** by a stud **20** extending upwardly of the base member **11** and through an opening **21** in the body portion **18**. The free end of the stud **20** is peened to secure the body portion **18** against displacement on the base member **11**. The leg portion **19** is provided with a bore **22** aligned with the bore **17** for receiving a conductive contact pin **23** that extends therethrough.

The contact pin **23** which is pointed at one end, is provided with a head **24** at the other end and a retaining washer **25** secured on the pin **23** intermediate the ends of the pin **23**. Also mounted on the contact pin **23** is a coil spring **26** which extends between the leg **19** of the clip support and the retaining washer to yieldingly urge the pointed end of the pin **23** forwardly and the head **24** of the pin **23** in contact engagement with the rear wall **14**.

A pair of ears or tabs **27** extend downwardly of the sides of the body portion **18** to a position below the base member **11**. A pin **28** extends between the tabs **27** and pivotally supports an alligator clip **30** at its midportion. The alligator clip **30** consists of a handle **31** at one end and a lip portion **32** on which a plurality of teeth **33** are formed.

On the lower surface of the base member **11** is a V-shaped slot **34** extending longitudinally from the forward end of the base member **11** with a plurality of transverse serrations formed in the slot **34**. There is a second V-shaped slot **35** which extends transversely of the base member **11** in proximity of the teeth **33** of the lip **32**. The function of the V-shaped slots **34** and **35** is to cooperate with the teeth **33** of the lip portion **32** of the alligator clip **30** to securely hold a terminal as described in detail hereinafter.

A coil spring **37** that is wound about the pin **28** is provided with leg portions **8** and **39** which abut against the base member **11** and handle **31** to yieldingly maintain the lip portion **32** in contact relation with the forward end of the base member **11**. A bolt **40** threadedly mounted in a bore **41** formed in the handle **31** acts as a terminal post for a conductor **46** which connects the slip **30** to an instrument or whatever it is necessary to electrically connect the insulated wires **41** and **42**.

The wires **41** and **42** are connected or spliced together at their ends by means of a conventional B-wire connector **43** which consists of a metallic sheath **44** enshrouding the ends of the wires **41** and **42** so that ends become electrically connected together. A tubular plastic cover **45** is then placed over the sheath **44** to insulate the metallic sheath.

As an illustration in demonstrating the usefulness of my wire connector clip **10**, all wires in telephone circuits emanating from a person's house are connected to a wire leading to the exchange building by means of a B-wire connector. In attempting to locate a certain line or checking it out or in locating an unused line, the telephone technician will either remove the B-wire connector **43** or mutilate it by piercing through the insulator cover **45** with a sharp instrument.

In the use of my wire connector clip **10** the B-wire connector **43** is not removed nor does it have to be replaced. All that need be done is place the free end of the B-wire connector **43** at the pointed end of the contact pin **23** and slide the connector **43** until it engages the retainer washer **25** and compresses the coil spring **26**. The other end of the B-wire connector **4** is then abutted against the post **12** with the wires **42** straddling the post **12**. The contact pin **23** will have pierced the metallic sheath **44** thereby making electrical contact with the wires **42**. The electrical energy of the wires **42** will be

conducted through the contact pin **23**, the coil spring **26**, then through the metallic clip support consisting of the leg portion **19**, body portion **18**, tabs **27**, clip **30** and finally to the terminal **40** and lead wire **46** which is connected to a head set or appropriate meter (not shown). The V-slots **34** and **35** are for receiving terminal posts, which can be readily inserted and removed thereform if a further connection is required.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A wire connector clip comprising a substantially elongated base member having a post mounted at one end of said base member and an end wall at the other end thereof, said end wall having an opening, said base member being a nonconductor of electricity, a conductor strip lying on said base member and having a leg portion lying along said end wall, means fastening said conductor strip to said base member, said leg portion having an opening in alignment with said opening in said end wall, tab portions mounted on said conductor strip and extending on each side of said base member, and alligator clip means pivotally mounted between said tab portions, spring means resiliently maintaining said alligator clip means in contact relation with said base member, contact pin means extending through said openings having a point at one end extending in the direction of said post, a head mounted on the other end of said contact pin means engaging an outer portion of said end wall, a retaining washer mounted on said contact pin means intermediate said ends and a coil spring mounted on said contact pin means and extending between said retaining washer and said leg portion of said conductor strip.

2. The structure as recited by claim **1** wherein said alligator means comprises a substantially elongated body portion having a handle portion at one end, a lip portion at the other end, and a plurality of prongs forming a tooth portion at said lip portion engaging said base member.

3. The structure as recited by claim **2** wherein said base member is provided with a longitudinally disposed slotted portion in alignment with said lip portion of said alligator clip means and a second slotted portion transversely disposed of said base member, said slots being formed on the lower surface of said base member.

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