April 14, 1970 R. A. POTRUCH 3,506,944

CLIP-TYPE WIRE CONNECTOR

Filed April 16, 1968

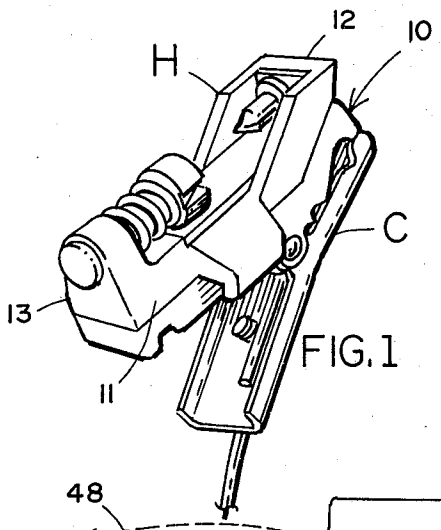


FIG. 1

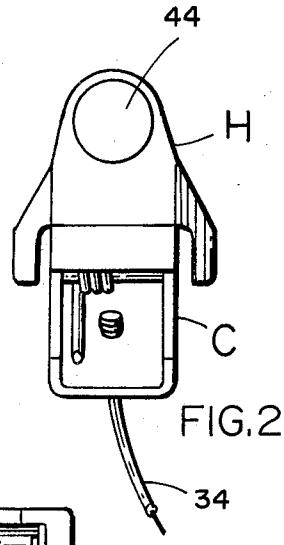


FIG. 2

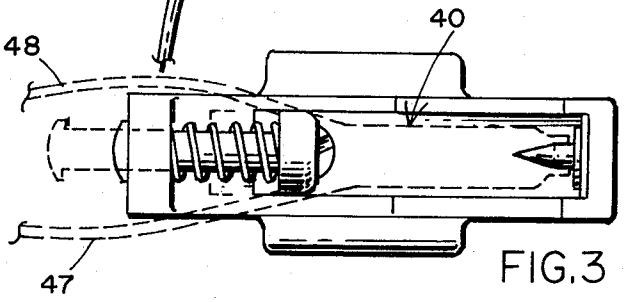


FIG. 3

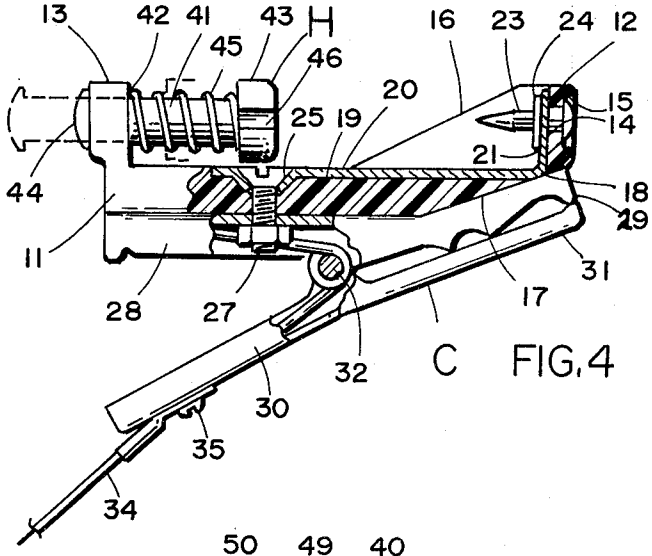


FIG. 4

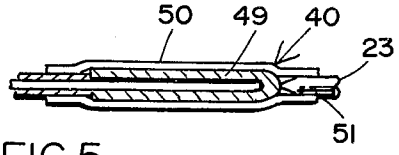


FIG. 5

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CLIP-TYPE WIRE CONNECTOR

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ABSTRACT OF THE DISCLOSURE

A B-wire connector clip having a holder for the B-wire connector and an alligator clip attached to the holder which consists of a fixed pin making electrical contact with the B-wire connector and a slidable member engaging the B-wire connector yieldingly forcing the B-wire connector in the direction of the fixed pin and an electrical conductor connecting the fixed pin and the alligator clip whereby electrical energy may flow from the B-wire connector to the alligator clip.

This invention relates to wire connectors and is particularly directed to a wire connector utilizing an alligator clip for B-wire connectors. This invention is an improvement over my copending application Ser. No. 537,962, which issued as Patent No. 3,378,807, on Apr. 16, 1968, for Wire Connector Clip.

A principal object of the present invention is to provide a B-wire connector clip which permits the ready mounting of the connector on the device and an electrical contact readily made with the wires connected to the B-wire connector.

Another object of the present invention is to provide a fixed contact pin which engages the metallic shield of the B-wire connector at one end making positive contact therewith while the B-wire connector is yieldingly held in contact position by a coil spring mounted on the other end of the device.

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 invention.

In the drawing:

FIGURE 1 is a perspective view of my improved wire connector clip;

FIGURE 2 is an end view, thereof;

FIGURE 3 is a top plan view with a B-wire connector shown by dotted lines;

FIGURE 4 is a longitudinal cross sectional view; and

FIGURE 5 is a cross sectional view of a typical B-wire connector.

Referring to the drawing wherein like numerals are used to designate similar parts throughout the several views, the numeral **10** refers to my improved wire connector consisting of two parts, namely B-wire holder H and the clip itself C.

The holder H is made preferably of molded plastic or any other non-conductor of electricity consisting of an elongated flat body portion **11** at the ends of which are upwardly extending flanges or end walls **12** and **13**.

The end wall **12** which is provided with a bore **14** and a recess **15**, both being concentrically disposed is joined along its side edges to the body portion **11** by tapering side walls **16**. The bottom surface of the body portion **11** tapers upwardly as at **17** in the direction of the end wall

13 with a slot **18** formed at the juncture of the body portion **11** and the end wall **12**, which slot **19** extends through the body portion **11**.

There is an elongated recess formed in the top surface of the body portion **11** receiving an L-shaped conductor **20** whose leg portion **21** rests against the end wall **12**. A bore in the leg portion **21** permits the securing of a metallic fixed pin **23** which extends through the bore **14** of the end wall **12** and engage the leg portion **21** by means of a metal washer **24** welded or otherwise fastened to the pin **23** so that electricity may travel from the pin **23** to the conductor leg **21** and conductor **20**.

The conductor **20** is provided with a bore **25** which is aligned with a bore **26** in the main body portion **11** for receiving a bolt **27** that fastens one leg **28** of the metallic alligator clip C to the B-wire holder H making electrical contact with the conductor **20**. The nose portion **29** of the alligator clip C extends at an oblique angle in relation to the leg portion **28** so that the upper surface of the nose portion **29** engages with and makes electrical contact with the conductor **20** at the position of the slot **18**. The leg portion **30** and nose portion **31** which extend in approximately coplanar relation are pivoted as at **32** to the leg portion **28** and nose portion **29** with a coil spring **33** to maintain the nose portions **29** and **31** in yieldingly closed position.

An insulated conductor **34** is secured at one end to a terminal post **35** fastened to the leg portion **30** of the alligator clip C for directing the electrical current that passed from the pin **23**, conductor **21**, **20** and to the alligator clip C to an instrument for the purpose of indicating such electrical current.

In order to releasably hold a B-wire connector **40** in place on the holder H a cylindrical member **41** which is slidably positioned in a bore **42** formed in the end wall **13** is provided with head portions **43** and **44** positioned at the ends of the member **41** and a coil spring **45** extending between the end wall **13** and the head portion **43** to yieldingly maintain the head portion **43** in a direction closest to the pin **23**. The head portion **43** is slotted along each side as at **46** for receiving and holding the insulated wires **47** that extend into the B-wire connector.

The B-wire connector **40** is of conventional construction consisting of the two insulated wires **47** and **48** with their ends exposed and in contact relation with a metallic sheath **49** and a plastic cover **50** encasing the metallic shield **49**. The plastic cover **50** is provided with a throat portion **51** for receiving the pin **23** to permit the latter to contact the metallic sheath **49**.

In the normal use of my wire connector slip **10**, the wire end of the B-wire connector **40** is placed against the head portion **43** and force is applied thereon to cause the coil spring to be compressed and the head portion **43** to slide toward the end wall **42**. When the open or free end of the B-wire connector **40** is clear of the pin **23**, the latter is inserted into the opening **51** and the B-wire connector **40** is released. The coil spring **45** will cause the head portion **43** and the B-wire connector to slide in the direction of the end wall **12** and cause the pin **23** to engage and make electrical contact with the conductor sheath **49** as shown. The electrical energy in the wires **47**, **48** will travel through the pin **23**, conductor **21**, **20** and to the alligator clip C where it can be conducted through the wire **34** to an instrument (not shown) or through another wire (not shown) which may be held between the nose portions **29**, **31** of the alligator clip.

What I claim as new and desire to secure by Letters Patent is:

1. A B-wire connector clip comprising an elongated body portion having an opening, first and second end walls extending upwardly at the ends of said body mem-

ber, each of said end walls having bores extending therethrough, the first end wall having a slidable member mounted in said bore and a coil spring mounted on said slidable member yieldingly urging said slidable member in the direction of said second end wall, a conductor member mounted on an upper surface of said body portion and extending along said second end wall, said conductor member having bores in alignment with said bore in said second end wall and in said body portion, a pin extending through said bores in said second end wall and said conductor and engaging said conductor, said pin extending the direction of said slidable member, an alligator clip having a bore and mounted along the lower surface of said elongated body portion and metallic fastening means extending through said bores in said body portion, said conductor and said alligator clip whereby electrical current will be transmitted from said pin to said alligator clip.

2. The structure as recited by claim 1 wherein said

main body portion has a second opening adjacent said second end wall, and said lower surface of said main body portion extends at an oblique angle whereby said alligator clip engages said conductor member at said second opening.

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U.S. Cl. X.R.

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