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PIN GRIP TERMINAL-HERMETIC SEAL

Filed March 13, 1967

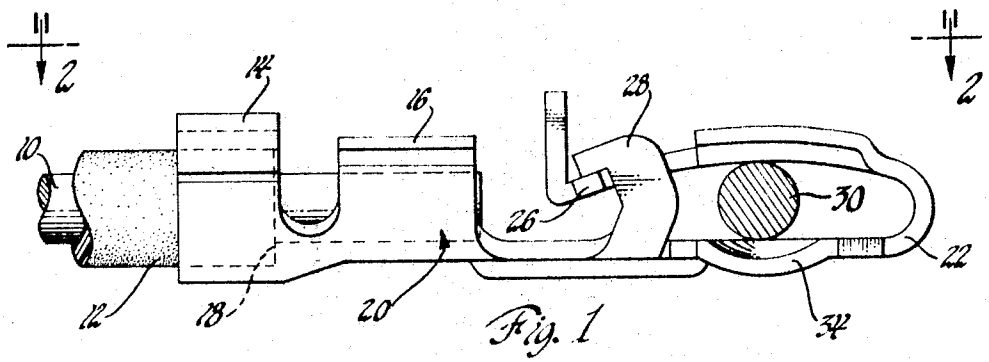


Fig. 1

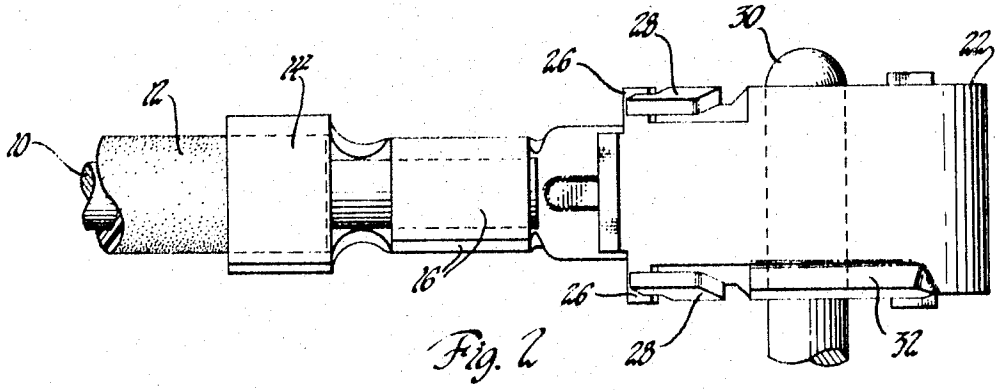


Fig. 2

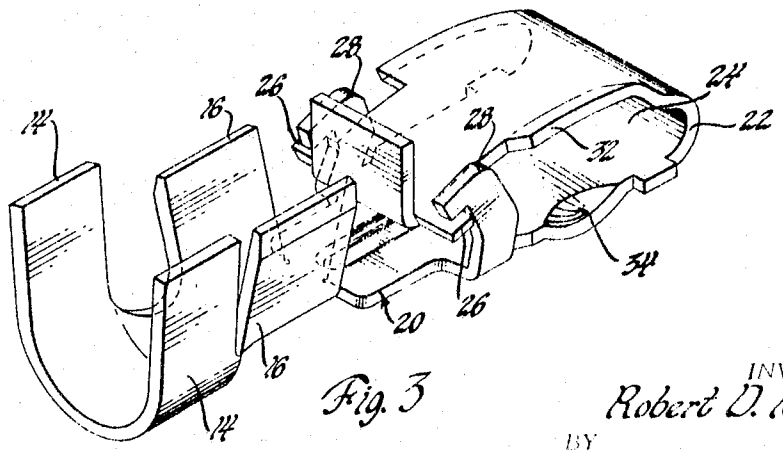


Fig. 3

INVENTOR.
Robert D. Kennedy
BY
Donald P. Sebuecki
ATTORNEY

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PIN GRIP TERMINAL-HERMETIC SEAL

Robert D. Kennedy, Warren, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

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ABSTRACT OF THE DISCLOSURE

In a preferred form, this disclosure relates to an electrical connector for resiliently gripping a pin terminal. The connector comprises a unitary, thin metal body having a relatively flat intermediate portion and a pair of end portions. One of the end portions includes a pair of crimping flanges which are adapted to be respectively crimped on the insulation and the bare wire of a wire conductor. The other of the end portions is folded back over the intermediate portion to define an opening for receiving the pin terminal. The connector further includes a pair of spaced flanges integral with the intermediate portion of the metal body and which extend transversely thereof toward the other end portion. The flanges have hook-shaped end sections and the other end portion of the metal body has a pair of lateral flanges at its opposite sides which slidably engage along the underside of the hook-shaped end sections. The opening defined by the intermediate and other end portion has a transverse dimension which is less than the transverse dimension of the pin terminal so that when the pin terminal is inserted therebetween the intermediate and other end portions are flexed outwardly and thereby resiliently grip the pin terminal, and with the lateral flanges on the other end portion sliding on the underside of the hook-shaped end sections during the outward flexing movement of the portions.

This invention relates to electrical connectors and more particularly to an electrical connector having portions adapted to frictionally engage an electric wire and which has other portions arranged to resiliently grip a cylindrical terminal.

It is an object of the present invention to provide a simple spring metal connector with improved design which is permanently attached to the end of an insulated wire and which resiliently and frictionally fits around and grips a cylindrical terminal.

It is another object of the present invention to provide a connector which is permanently attached to the end of an insulated electrical wire which is adapted to resiliently engage various types of cylindrical terminals having diameters within given parameters which tend to fasten more securely to a terminal when the terminal is forced into frictional engagement with a resilient portion thereof.

It is still another object of the present invention to provide a connector within the purview of the aforementioned objects which is simple to operate and which is economical to manufacture.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawings wherein a preferred embodiment of the present invention is clearly shown.

In the drawings:

FIGURE 1 is a side elevation of the subject invention with the terminal shown in section;

FIGURE 2 is a view in the direction of the arrows 2 in FIGURE 1;

FIGURE 3 is a perspective view of a connector of the subject invention.

Referring to FIGURE 1, conductive wire **10** is covered by insulation **12** and is inserted between flanges **14** and **16**. Flanges **14** and **16** are better seen in FIGURE 3 in their free form and are substantially U-shaped cradle members. The insulation **12** is stripped from wire **10** along line **18** so that flange **14** can be deformed around insulation **12** and flange **16** can be deformed around wire **10**. When flanges **14** and **16** are deformed, they take on a substantially overlapping O-shaped configuration. In this manner, connector body **20** is permanently attached to the end of wire **10**.

Referring to FIGURE 3, an extension **22** of body **20** is substantially flat in shape and is folded back over itself to form an aperture **24**. Outwardly projecting flanges **26** are adapted to receive upstanding hooked members **28** so that a round terminal **30**, such as seen in FIGURE 2, when forced into aperture **24**, causes flanges **26** to more firmly interlock with hooked members **28** causing a resilient frictional engagement with connector body **20** and terminal **30**. Bent out portions **32** and **34** provide a lead-in to aperture **24** to facilitate the insertion of terminal **30** into aperture **24**.

It should be noted that connector body **20** is of one-piece construction and, in its preferred form, is of spring metal material. Clamping flange **14** is noted as being of slightly larger dimension than flange **16** which allows one clamping movement to bring about the same amount of gripping between the clamping flanges and the different diameter wire and insulation. Also worthy of note is the free form of the overlapping extension **22** which allows clearance between flanges **26** and hooked members **28**. This feature coupled with the lead-in portions **32** and **34** allows the particular connector bodies shown to be connected with terminals **30** having varied external dimensions. It should also be noted that the wrap-over design of extension **22** permits the engagement of connector body **20** with terminals that are not exactly cylindrical and which may take an oblong or square shape in cross section. In summary, the subject connector body can engage wires of various dimensions and terminals of various dimensions and shapes. Consequently, utility of the subject connector is extended resulting in a much more versatile connector.

While the embodiment of the present invention, as herein disclosed, constitutes a preferred form, it is to be understood that other forms might be adopted.

What is claimed is:

1. An electrical connector for resiliently gripping a pin terminal comprising: a unitary, thin metal body having a relatively flat intermediate portion and a pair of end portions, one of said end portions including a crimping flange which is adapted to be crimped on a metal conductor, the other of said end portions being folded back over said intermediate portion to define an opening for receiving the pin terminal, a pair of spaced flanges integral with said intermediate portion and extending transversely thereof toward said other end portion, said spaced flanges having hook-shaped end sections, said other end portion of said metal body having flanges which extend laterally of its opposite side adjacent its free end and which slidably engage the hook-shaped end sections along their undersides when folded back over the intermediate portion, said opening having a transverse dimension which is less than the transverse dimension of the pin terminal so that when said pin terminal is inserted in the opening the intermediate and other end portions are flexed away from one another and resiliently grip the pin terminal, the lateral flanges sliding on the underside of the hook-shaped end sections when the intermediate and other end portions are flexed.

2. An electrical connector for resiliently gripping a

cylindrical pin terminal comprising: a unitary, thin, metal body having a relatively flat intermediate portion and a pair of end portions, one of said end portions including spaced pairs of upwardly projecting cradle members, one pair of the cradle members being adated to be folded to engage the insulation of an electrical wire while the second pair of the cradle members being adapted to be folded to engage the conductive portion of the electrical wire, the other of said end portions being folded back over said intermediate portion to define a generally oval-shaped opening for receiving the cylindrical pin terminal, a pair of spaced flanges integral with said intermediate portion and extending transversely thereof toward said other end portion, said pair of spaced flanges having inverted hook-shaped end sections, said other end portion of said metal body having flanges which extend laterally of its opposite side adjacent its free end and with the flanges slidably engaging the hook-shaped end sections, said oval-shaped opening having a transverse dimension which is less than the diameter of said cylindrical pin terminal so that when the pin terminal is inserted therein the intermediate and other end portion of the

body members are caused to move outwardly and with the lateral flanges sliding along the underside of the hook-shaped end sections whereby the cylindrical pin terminal is resiliently gripped.

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MARVIN A. CHAMPION, Primary Examiner

JOSEPH H. McGLYNN, Assistant Examiner

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