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2,746,025

WIRE CONNECTOR

Filed March 25, 1954

Fig. 1.

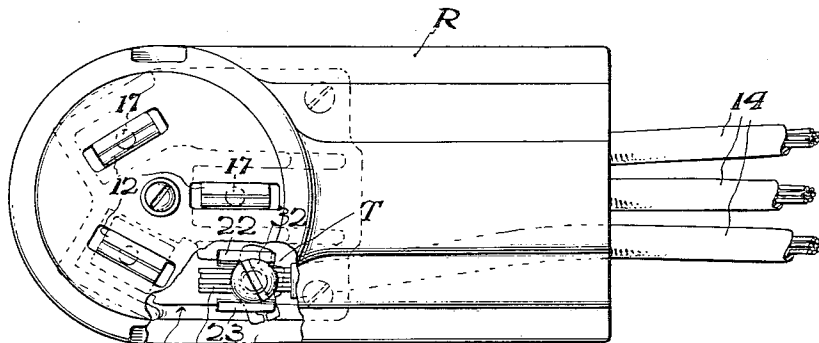


Fig. 2.

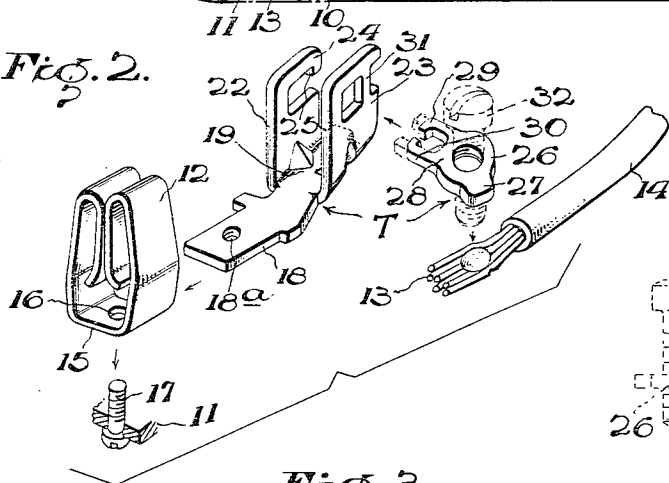


Fig. 4.

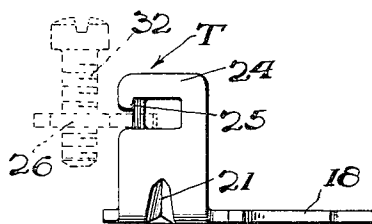


Fig. 3.

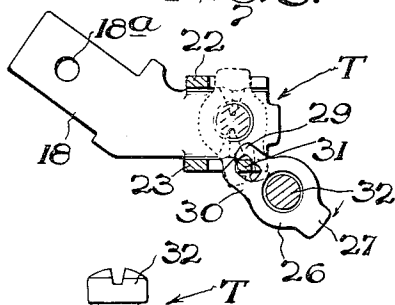


Fig. 5.

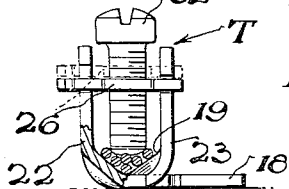
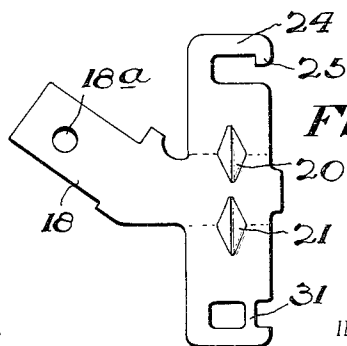


Fig. 6.



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WIRE CONNECTOR

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2 Claims. (Cl. 339-272)

The present invention relates to a solderless electric wire connector or pressure terminal, and in particular to a pressure terminal such as is used on range and power receptacles of, for example, a capacity of fifty amperes more or less.

These power receptacles include spring clips for quick connection to the load and such clips are secured in some suitable manner to the wire connector. It is one object of this invention to provide novel means for assembly and operative connection of the clips with the wire connector.

Heretofore, most pressure terminals included a plurality of separate elements, at least one of which is likely to be dropped and lost when being assembled for the purpose of making a wiring connection. Therefore, it is another object of this invention to link these otherwise separate elements together, whereby the elements of the connector are always in assembled relation and can safely be moved to and from their connecting positions without the chance of being dropped or lost. That is to say, for example, the wire clamping bolt or screw has a swinging tethered connection with one of the upstanding walls of the wire channel receiving element.

A more specific object is to form the wire connector with a wire receiving channel bounded on each side by upstanding walls with means formed in the upper ends of the walls of the wire channel for permanently linking the parts of the connection together, as by pivotally supporting a pressure terminal to one of the channel walls, thereby permitting connection of a wire in the wiring channel in a minimum of time.

Other more specific objects and advantages of the present invention will be apparent from the following description when read in connection with the accompanying drawing, wherein:

Figure 1 is a top plan view of a power receptacle showing the power clips partly in elevation and with a portion of the receptacle case broken away to disclose the novel pressure terminal in wire connecting position.

Figure 2 is a separated or exploded view of the several elements or parts of the present invention before being linked together.

Figure 3 is a top plan view partly in cross section showing the pressure terminal linked together and illustrating its wire connecting and non-connecting positions in dotted and full lines, respectively.

Figure 4 is a view in side elevation of the assembly of Figure 3.

Figure 5 is a front view of the wire receiving channel with the present terminal in wire connecting position.

Figure 6 is a plan view of the wire channel blank prior to assembly.

Referring to the drawing in detail and first with reference to Figure 1, there is shown a power receptacle R comprised of a metal backing plate 10, a clip and pressure-terminal support 11 of insulation material, such as Bakelite, a plurality of spring clips 12, and a cooperating novel pressure terminal assembly, such as is illustrated in the

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remaining figures next to be described. Also, in Figure 1 is shown the insulation stripped end 13 of one of the power leads 14.

One spring clip 12 is shown in Figure 2 in perspective and comprises a U-shaped body with the free ends bent over toward each other in a downward direction toward the base 15 thereof. This base is formed with an opening 16 for a threaded bolt 17, or other suitable fastener, anchored in the insulation material of support 11 to project upward therethrough to a desired distance above the clip base 15, that is, for a distance equal to the thickness of an offset extension 18 of the wire channel 19 of the pressure terminal T. The extension 18 is formed with a threaded opening 18a, so that the support 11, clip 12 and pressure-terminal T may be assembled together prior to subsequent mounting on the metal backing plate 10.

From the foregoing, it is believed clear that the extension 18 seats on the top of clip base 15 and serves to hold the same solidly fixed in power source transmitting position from the novel pressure-terminal wire channel 19.

The wire channel comprises a U-shaped body the base of which is pushed inward at each side to form ribs 20 and 21, and is a unitary continuation of the offset clip holding extension 18, see Figures 2, 4 and 6. Wire channel 19 includes upstanding side walls 22 and 23, respectively. The free end of wall 22 is formed with a beak-like portion or hook 24 with a dog 25 adapted to latch the swinging parts of the pressure-terminal T in wire connecting position, as will hereinafter be explained. The swinging parts of the pressure-terminal comprise a plate 26 formed with a radially extending solid, flat lug 27, and a second radially extending bifurcated lug 28 with arms 29 and 30. The plate 26 is pivotally connected to the upper part of the wall 23, which is apertured and notched to form an integral hinge pintle 31 about which the arms 29 and 30 of the bifurcated lug 28 are pinched to embrace the pintle 31, and are thus swingingly tethered thereto (Fig. 3).

The plate 26 is made with a centrally threaded opening for a wire connection member, such as a threaded bolt 32 and, as shown in Figures 3 and 4, this bolt swings with the pressure-terminal plate 26 to and from wire connecting positions.

Operation

The actual operation of the present device is believed clear from the foregoing description of the several parts. However, assuming the blank form shown in Figure 6 is folded in position and the several parts are assembled and the plate 26 with its bolt 32 are linked to the hinge pintle 31; and further assuming that the plate 26 is now at the full line position shown in Figure 2, a wire end 13 is rested upon the base of the wire channel over the ribs 20 and 21. Next the head of the bolt 32 is grasped between the fingers and the plate 26 is thus swung around the pintle 31, until the flat solid lug 27 is engaged under the hook 24 and retained thereunder in the wall 22 by the dog 25. Promptly upon being thus positioned the bolt 32 is advanced toward the wire end 13, and the wire becomes tightly gripped between the bolt end and the ribs 20 and 21 of the wire channel.

When it is desired to disconnect the wire end 13, the reverse action is followed. For example, the bolt 32 is threaded upward away from the wire 13 and the plate 26 slightly raised on the pintle 31, which pintle is slightly elongated with respect to the thickness of the plate to permit such raising adjustment, and the bolt and plate are swung to the non-connecting full line position shown in Figure 3.

Without further description, it is believed that the foregoing amply describes the present novel arrangement and combination of parts which make up the structure of the present invention, and it is to be expressly understood

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that various changes now likely to occur to others may be made without departing from the scope of this invention. Reference should be had to the appended claims to determine the scope of the invention.

I claim:

1. A solderless wire connector with a wire receiving channel open at each end and a pressure terminal, said channel having a bottom wall with an inner surface bounded on each side by upstanding walls vertically positioned above the bottom wall surface, means formed in the upper end of one of said walls pivotally mounting said pressure terminal of the connector, said pressure terminal comprising a plate mounted at one end on said vertically positioned means and being formed with a threaded opening, a screw threaded member carried by the plate in said opening having its lower end projecting into the said wire channel when said plate is swung in a horizontal plane around said vertically positioned means into a horizontal position between the said channel walls, and the upper end of the other upstanding wall opposite to said means being formed with a locking member adapted to hold the plate of the pressure terminal in horizontal position between the said channel walls and above the bottom wall surface, while the said screw threaded member is being manually adjusted in the plate, said locking means comprising a vertically positioned hook and a dog, said plate engaging behind said dog under the hook when horizontally positioned across and between said channel walls.

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2. A wire connector comprising a wire channel open at each end and having upstanding side walls and a bottom portion formed with rib members, a hinge pintle formed in one of said side walls extending substantially at right angles with respect to said bottom portion, a plate freely pivoted to said pintle adapted to swing laterally in a plane around the same at substantially right angles thereto and parallel with respect to said bottom portion, a wire contacting member threadable in said plate and carried thereby adapted to force a wire in the channel into pressure engagement with the ribs on the bottom of said wire channel, said plate including a lug radially extending from the axis of said wire contacting member, and the side wall of said wire channel being formed with a latch for receiving and latching said lug in connector position when the plate and said wire contacting member are swung over the bottom portion and between the side walls of said wire channel.

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