

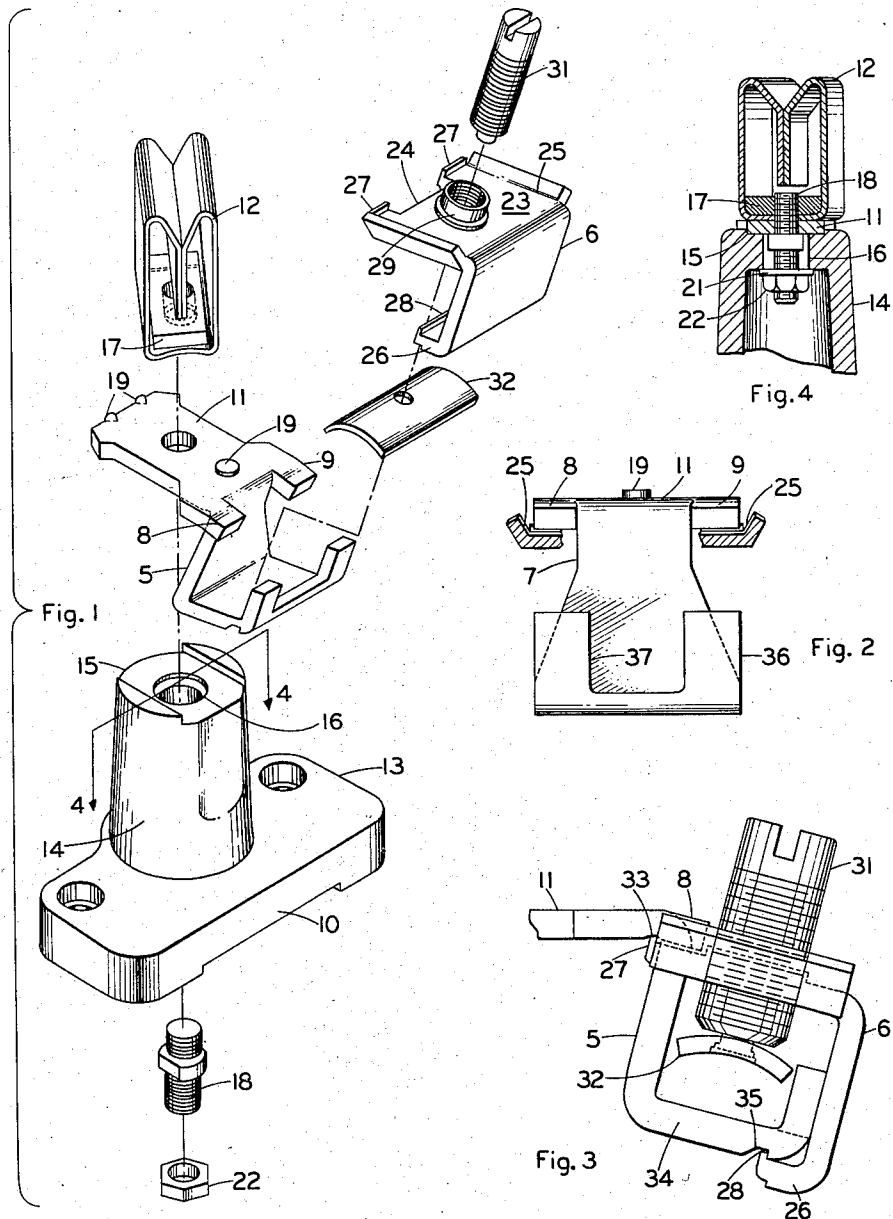
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J. J. KAZANOWSKI

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ELECTRICAL TERMINAL

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Inventor:

John J. Kazanowski

by *Richard E. Horley*
His Attorney

1

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ELECTRICAL TERMINAL

John J. Kazanowski, Gonic, N. H., assignor to General Electric Company, a corporation of New York

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4 Claims. (Cl. 339—272)

This invention relates generally to electrical terminals for making circuit connections and in particular to a heavy-duty terminal intended for use in a socket for a plug-in induction watt-hour meter.

The invention has for its object the provision of a rugged, reliable, low-cost terminal which is devised so that wiring of an associated meter socket is both simplified and facilitated.

In one aspect, the invention comprises a two-part assembly formed by a substantially J-shaped member and an inverted substantially L-shaped member, the two parts cooperating to form a receptacle for an electrical conductor. One of the parts carries a conventional terminal screw having a portion projecting into the receptacle to engage the conductor, and the parts fit together in interlocking relation, with the terminal screw being used to develop the necessary clamping forces required to securely unite the parts. The parts are separable to facilitate and simplify connections of conductors thereto and their interlocking relationship is such that it does not complicate or interfere with the wiring of an associated meter socket.

The objects and advantages of the invention will be apparent upon reference to the drawing annexed thereto, in which:

Figure 1 is an exploded perspective view of the novel terminal, together with certain other parts associated therewith when the terminal is used in meter socket;

Figure 2 is a front view in elevation of one part of the terminal, together with a partial sectional view of a portion of the other part of the terminal;

Figure 3 is an end view in elevation of the terminal assembly; and

Figure 4 is a partial sectional view illustrating the means for mounting the terminal assembly, taken generally along the lines 4—4 in Figure 1.

Referring first to Figure 1, there is shown a two-part terminal assembly constructed in accordance with this invention comprising a first part in the form of the substantially J-shaped member 5 and a second part in the form of the inverted substantially L-shaped member 6 which fit together to form a receptacle for an electrical conductor. The long leg of member 5 terminates in a section of reduced width, 7, lying between a pair of inwardly projecting ears 8, 9 with the ears being shown as an integral extension of the mounting flange 11 formed by turning outwardly the upper end of the section 7.

The terminal assembly formed by the parts 5 and 6 is particularly suitable for use in a socket for a plug-in watt-hour meter, such sockets being known in the art, an example of one being shown in the copending application of Schmidt and Hardy, Serial No. 548,830, filed November 23, 1955, and assigned to the same assignee to which the present invention is assigned. Such sockets are arranged to accommodate the conventional self-contained induction watt-hour meters, and among other features, include suitable resilient terminal jaws adapted to receive and hold the usual contact blades found in

2

the self-contained meters. The terminal jaws bring the line and load connections to the watt-hour meters and these jaws must in turn be connected to the conductors which form these lines.

In the arrangement shown herein, such a terminal jaw is shown at 12, with the two parts 5 and 6 forming the terminal which connects the jaw to the conducting lines, both the jaw and the two-part terminal being mounted on a common support member 13. The support member 13 may be molded from a suitable moldable insulating material and in the form shown includes a mounting base 10 and an upstanding post 14 provided with a channel 15 in its upper extremity and having an axial aperture 16 extending therethrough.

Jaw 12 holds a captive nut 17, which in combination with the threaded bolt 18, secures the jaw to the two-part terminal and holds both of these members on the support post 14. Thus, the flange 11 has several projections 19, which serve to properly position the jaw 12 thereon, with both the jaw and the flange being provided with suitable apertures through which the bolt 18 may pass. To clamp these members together, the bolt 18 is inserted through the flange and the jaw and screwed tightly into the nut 17. The assembled members are then mounted on the support post 14 with the flange 11 lying within channel 15, after which a washer 21 and lock nut 22 are run onto the inner end of bolt 18 to clamp the assembly securely on the post.

Turning now to the removably mounted L-shaped part 6, it is seen that its bottom section 23 has its outer edge in the form of a yoke 24 and its side edges turned outwardly to form a channel 25. The lower edge of the leg of part 6 is turned inwardly to form a mounting flange 26 and the upper edges of both the yoke 24 and flange 26 have ridges 27, 28 respectively, formed therealong. Base section 23 has a centrally located threaded aperture 29 through which passes the terminal screw 31 which in turn has the swivel mounted pressure foot 32 affixed to its inner extremity.

The J-shaped part has the under side of its ears 8, 9 grooved at 33 and the under side of its base section 34 grooved at 35. Its short leg 36 is cut away at 37 for convenience in manufacturing.

With the above in mind, and assuming that the J-shaped part is mounted on the support post 14, with the L-shaped part 6 separated therefrom, a conductor may be readily laid into the base of part 5 after which the part 6 may be mounted on part 5 by positioning the yoke 24 to straddle the section of reduced width 7 and working the flange 26 under the bottom section 34. With the parts so arranged, the pressure foot 32 is positioned against the conductor by turning the screw 31 inwardly, and as this screw is tightened in place, clamping forces will be developed which drive the yoke 24 against the ears 8, 9 and the flange 26 against the bottom section 34, with the ridges 27, 28 being driven into their corresponding grooves 33, 35. The entire terminal assembly will now be securely united and interlocked, with the conductor held securely within the receptacle provided by the interlocked parts.

All of the parts forming the terminal assembly may be constructed of heavy-gauge conducting material so that the resulting assembly is rugged and quite reliable in use. Moreover, the parts forming the assembly may be economically manufactured and the design of the interlocking parts is such that ease and facility of wiring is enhanced at no sacrifice to the achievement of excellent electrical contact and without compromising the strength and durability of the resulting wired assembly.

Therefore, while a particular embodiment of the subject invention has been shown and described herein, it is in the nature of description rather than limitation, and

3

it will occur to those skilled in the art that various changes, modifications, and combinations may be made within the province of the appended claims, and without departing either in spirit or scope from this invention in its broader aspects.

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

1. A two-part, heavy-duty electrical terminal for a meter socket comprising in combination: a first part in the form of a substantially J-shaped member having its long leg terminating in a section of reduced width lying between a pair of inwardly projecting ears the outer under-edge of the bottom section of said J-shaped member having a transverse groove therein, a support member, means for mounting said J-shaped member on said support member, a second part in the form of an inverted substantially L-shaped member removably mounted on said J-shaped member and forming therewith a receptacle for an electrical conductor, the bottom section of said L-shaped member having its outer edge in the form of a yoke and the leg of said L-shaped member being turned inwardly to form a mounting flange the upper edge of said flange having a transverse ridge thereon, said yoke straddling said section of reduced width and underlying said inwardly projecting ears and said mounting flange underlying the bottom section of said J-shaped member with said ridge fitting in locking relationship into said groove when said L-shaped member is mounted on said J-shaped member, and a terminal screw carried by said L-shaped member having a portion thereof projecting into said receptacle, said terminal screw developing clamping forces when screwed against a conductor within said receptacle, said clamping forces serving to securely unite said first and second parts.

2. A two-part, heavy-duty electrical terminal for a meter socket comprising in combination: a first part in the form of a substantially J-shaped member having its long leg terminating in a section of reduced width lying between a pair of inwardly projecting ears the outer under-edge of the bottom section of said J-shaped member having a transverse groove therein, a support member, means for mounting said J-shaped member on said support member, a second part in the form of an inverted substantially L-shaped member removably mounted on said J-shaped member and forming therewith a receptacle for an electrical conductor, the bottom section of said L-shaped member having its outer edge in the form of a yoke with the side edges thereof turned outwardly to form a channel section, the leg of said L-shaped member being turned inwardly to form a mounting flange the upper edge of said flange having a transverse ridge thereon, said yoke straddling said section of reduced width and underlying said inwardly projecting ears with said ears lying within said channel section and said mounting flange underlying the bottom section of said J-shaped member with said ridge fitting in locking relationship into said groove when said L-shaped member is mounted on said J-shaped member, and a terminal screw carried by said L-shaped member having a portion thereof projecting into said receptacle, said terminal screw developing clamping forces when screwed against a conductor within said receptacle, said clamping forces serving to securely unite said first and second parts.

3. A two-part, heavy-duty electrical terminal for a meter socket comprising in combination: a first part in the form of a substantially J-shaped member having its long leg terminating in a section of reduced width lying between a pair of inwardly projecting ears the outer

4

under-edge of the bottom section of said J-shaped member having a transverse groove therein, said section of reduced width being turned outwardly to form a first mounting flange having said ears as an integral part thereof, a support member, means for mounting said first flange on said support member, a second part in the form of an inverted substantially L-shaped member removably mounted on said J-shaped member and forming therewith a receptacle for an electrical conductor, the bottom section of said L-shaped member having its outer edge in the form of a yoke with the side edges thereof turned outwardly to form a channel section, the leg of said L-shaped member being turned inwardly to form a second mounting flange the upper edge of said second flange having a transverse ridge thereon, said yoke straddling said section of reduced width and underlying said inwardly projecting ears with said ears lying within said channel section and said second mounting flange underlying the bottom section of said J-shaped member with said ridge fitting in locking relationship into said groove when said L-shaped member is mounted on said J-shaped member, and a terminal screw carried by said L-shaped member having a portion thereof projecting into said receptacle, said terminal screw developing clamping forces when screwed against a conductor within said receptacle, said clamping forces serving to securely unite said first and second parts.

4. A two-part, heavy-duty electrical terminal for a meter socket comprising in combination: a first part in the form of a substantially J-shaped member having its long leg terminating in a section of reduced width lying between a pair of inwardly projecting ears, said section of reduced width being turned outwardly to form a first mounting flange having said ears as an integral part thereof, each of said ears having a first transverse groove in the underside thereof and the outer under-edge of the bottom section of said J-shaped member having a second transverse groove therein, a support member, means for mounting said first flange on said support member, a second part in the form of an inverted substantially L-shaped member removably mounted on said J-shaped member and forming therewith a receptacle for an electrical conductor, the bottom section of said L-shaped member having its outer edge in the form of a yoke with the side legs thereof turned outwardly to form a channel section, the upper outer edges of said yoke having first transverse ridges thereon, the leg of said L-shaped member being turned inwardly to form a second mounting flange, the upper edge of said second flange having a second transverse ridge thereon, said yoke straddling said section of reduced width and underlying said inwardly projecting ears with said ears lying within said channel section and said second mounting flange underlying the bottom section of said J-shaped member when said L-shaped member is mounted on said J-shaped member, said first and second ridges fitting in locking relationship into said first and second grooves, and a terminal screw carried by said L-shaped member having a portion thereof projecting into said receptacle, said terminal screw developing clamping forces when screwed against a conductor within said receptacle, said clamping forces serving to securely unite said first and second parts.

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