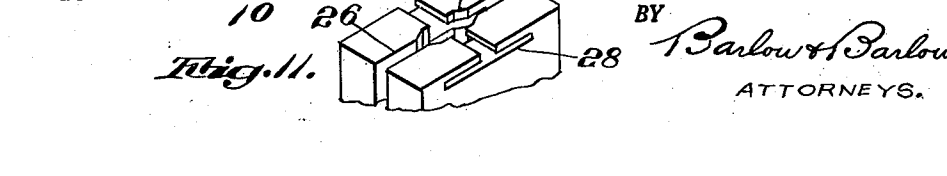
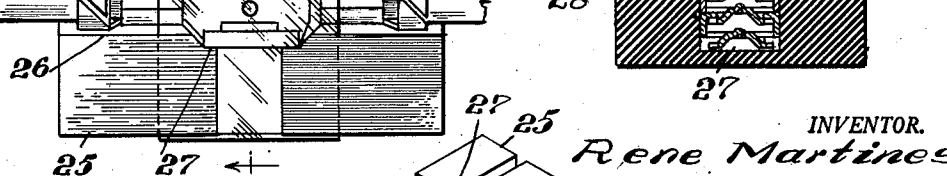
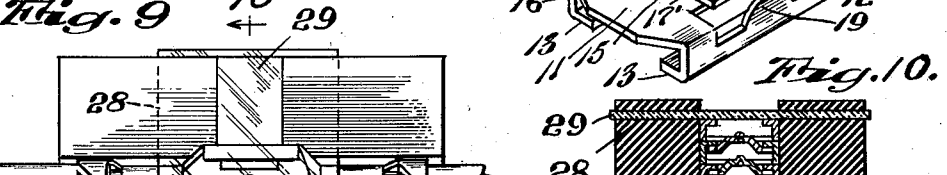
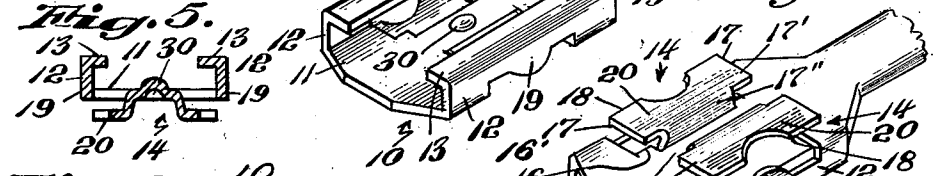
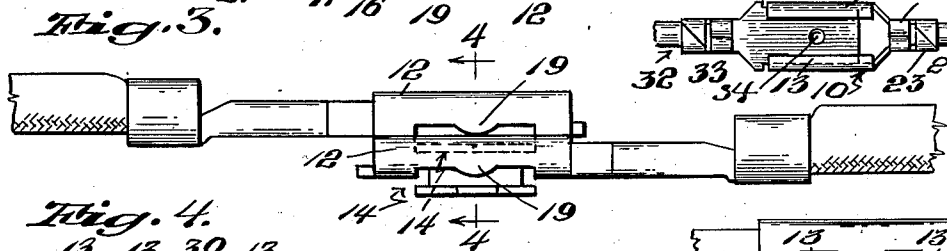
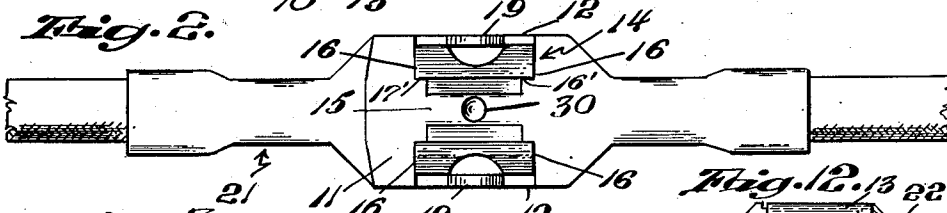
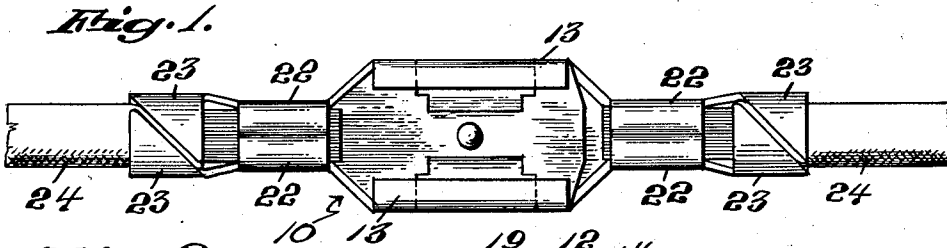


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R. MARTINES
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INVENTOR.
Rene Martines
BY *Barlow & Barlow*
ATTORNEYS.

1

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ELECTRIC CONNECTOR

Rene Martines, Warwick, R. I.

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8 Claims. (Cl. 339—258)

This invention relates to improvements in an electrical connector for a wire lead.

It is desirable in many instances to provide for detachably connecting two or more common leads together without the use of the usual terminal board which usually carries a number of interconnected male elements to provide the common connection (the terminal of the wire lead usually being of the socket type). Adapters are in some instances used for connecting two similar terminals. In other instances one of the terminals is of the socket or female type and the other of the blade or male type which may be interconnected one with the other. There is no single connector with which I am familiar so constructed which provides for detachably connecting more than two leads together for a common transfer of electrical energy.

An object of the invention is to provide a connector so constructed as to carry both a male and a female element.

Another object of the invention is to provide a connector so constructed as to carry both a male and a female element which may be interconnected in an end to end fashion or at right angles to each other.

Another object of the invention is to provide a connector which may be secured to another connector without a terminal board.

Another object of the invention is to provide a holder for receiving a plurality of superimposed connectors so as to secure the same against accidental disengagement.

Another object is to provide a connector so constructed as to be adapted to be joined with existing type of blade connector.

With these and other objects in view, the invention consists of certain novel features of construction as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a top plan view of a plurality of connectors embodying the invention;

Figure 2 is a bottom plan view of the connectors of Figure 1;

Figure 3 is a side elevational view of the connectors of Figure 1;

Figure 4 is a sectional view taken along line 4—4 of Figure 3;

Figure 5 is a similar sectional view of a single connector;

Figure 6 is a perspective view looking at the upper side of the connector;

Figure 7 is a similar view looking at the bottom side of the connector;

Figure 8 is an elevational view showing two of the connectors secured at right angles to each other;

Figure 9 is a top plan view of a holder for a stack of connectors;

Figure 10 is a sectional view along line 9—9 of Figure 8;

2

Figure 11 is a perspective view of a fragmentary portion of the block of Figure 9 on a reduced scale; and

Figure 12 is a top plan view of a connector of Figure 1 to which is connected the tongue portion of an existing blade type connector.

The electric connector according to the invention comprises a sheet metal body which is constructed in a manner to have a socket on one side thereof and a male element on the opposite side thereof. This provides a connector whereby two or more common wire leads may be detachably secured to each other to thereby eliminate the use of the usual terminal board and thus provide for economy in an electrical installation. The connector is provided with the usual extension having pairs of arms between which the prepared end portion of a lead wire is received and secured by wrapping and crimping the said arms thereon.

In the embodiment shown in Figures 1 to 7, the electric connector is made of suitable sheet metal and has a body of general channel shape having a bottom wall 11, side walls 12, and intumed flanges 13 which overhang portions of the wall 11. This forms the socket part of the connector.

The bottom wall 11 has oppositely laterally extending similar tongues 14 which are formed integrally with the body from the same material as the bottom wall by cutting through the bottom wall 11 in a lateral direction from adjacent the central portion 15 thereof outwardly for a short distance, then lengthwise of the connector as at 16, and then outwardly along spaced parallel lines 16' (see Figures 2 and 7) to extend into the lower edges of the side walls 12. These cuts define the side edges 17 of the tongues 14 (see Figure 7) and portions 17' extending on each side of the connecting web 17". A longitudinal cut is made through the lower edge of walls 12 between and joining the outer end extremities of the cuts defining the edges 17. The central portion of this longitudinal cut is made on a curvature of a radius extending into the tongue portions, these lateral cuts defining the outer edge 18 of the tongues 14 and providing a tab 19 on the side walls 12 centrally thereof and projecting beyond the lower edges thereof. The tongues 14 are similar to each other and are bent outwardly from the bottom wall. The longitudinal marginal edge portion 20 is bent to extend parallel to the bottom wall to overhang the same in spaced relation therewith. These tongues form the male part of the connector. The space between the tongues 14 and the bottom wall 11 is made slightly larger than the thickness of the flanges 13, and the distance between the edges 18 is made slightly less than the space between the side walls 12 whereby the tongues 14 may be received between the bottom wall 11 and flanges 13 in the lengthwise direction of the tongues. Each tongue 14 is made of a length slightly less than the spacing of the walls 12 and the web 17" is made of a width slightly less than the spacing between the inner edges of the flanges 13. Thus, the tongues 14 may be inserted in the lateral direction thereof between the wall 11 and flanges 13, which will position the connectors at right angles to each other, as shown in Figure 8.

The connector has an extension 21 (see Figures 1 to 3) provided with a pair of arms 22, 23 between which the prepared end portion of a wire conductor 24 is received to have the arms 22, 23 wrapped and crimped about the stripped end and adjacent insulation portion of the wire 24.

In connecting two of the above connectors together end to end, the same are positioned with their free ends toward each other and their sockets facing in the same direction. The tongue or male part of one connector is inserted into the socket or female part of the other con-

3

necter as indicated in Figure 4. This positions the flange 13 of one connector between the tabs 19 and tongues 14 of the other connector to be thereby held in frictional engagement. This superimposes one connector upon another and leaves the socket of one connector and the tongue of the other free for securing other similar connectors thereto. Thus, a plurality of common leads may be connected to each other. To connect the connectors at right angles to each other, the connectors are positioned at right angles to each other with their socket portions facing in the same direction and the tongues are inserted laterally thereof between the wall 11 and flanges 13. A protuberance 30 on the inner side of the bottom wall 11 is of a size and height to engage the webs 17 and frictionally hold the tongues 14 or male element against the said flanges 13.

It is desirable in many electrical installations to provide against accidental disengagement between attached connectors. To this end a generally rectangular block 25 (see Figures 9 to 11) of suitable insulating material is provided. A longitudinal slot 26 is cut centrally in the block to a required depth and of a width to loosely receive the extension 21 of a connector. The central portion of the slot 26 is enlarged as at 27 and shaped to a contour substantially that of the contour of the connector body. A T slot 28 is made in the upper part of the block to receive a transparent sheet or plate 29.

A stack of connected connectors (four being shown in Figure 10) are inserted in the slot 26 with the body of the connectors positioned in the enlarged portion 27 (see Figure 11) and with the wire leads of the respective connectors extend through the slot 26 at either side thereof. The plate 29 is next inserted and engages the uppermost connector with sufficient friction so as to secure itself and connectors against accidental disconnection. It will be apparent that the walls of the enlarged portion 27 will block disengagement of the connector by a pull on the wire leads 24.

In Figure 12 I have shown a connector 10 and an existing blade type connector 32 joined to each other. The connector 32 has a plain flat tongue 33 which is received between the flanges 13 of connector 10 and a recess 34 which receives the protuberance 30.

I claim:

1. An electric connector having a bottom wall and one

4

pair of opposite side walls with flanges overhanging said bottom wall, tongues fixed to and extending from the bottom wall and bent to underlie the bottom wall, at least two opposite edges of said tongues being spaced an amount substantially equal to the spacing between said side walls, said tongues being adapted to be received within the enclosure formed by the bottom and side walls of a similar connector.

2. An electric connector as in claim 1 wherein said tongues are struck from said bottom wall.

3. An electric connector as in claim 1 wherein said tongues have their edges disposed within a square configuration, each of said edges being substantially equally spaced from the bottom wall and having a portion thereof overhanging the planal extent of the bottom wall so that the overhanging portion may engage the flanges on a similar mating connector.

4. In combination a plurality of similar electric connectors, each connector having a female portion consisting of a bottom wall, a pair of opposite side walls and inward flanges along the top of the side walls overhanging the bottom wall, and a male portion consisting of a tongue having a rectangular outline depending from the bottom wall, said tongue being adapted to be received within the female portion of another of said connectors to interconnect the connectors one with another.

5. An electric connector according to claim 1 wherein each of said side walls has a tab projecting from the lower edge thereof beyond the bottom wall.

6. In combination as set forth in claim 4 wherein said female and male elements are interconnected in end to end relation.

7. In combination as set forth in claim 4 wherein said female and male elements are connected at right angles to each other.

8. In combination as set forth in claim 4 and a holder for receiving and securing a plurality of said interconnected connectors against accidental disengagement.

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