

Feb. 13, 1940.

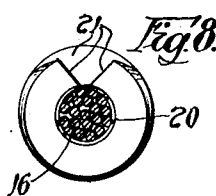
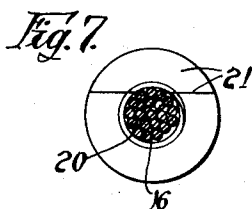
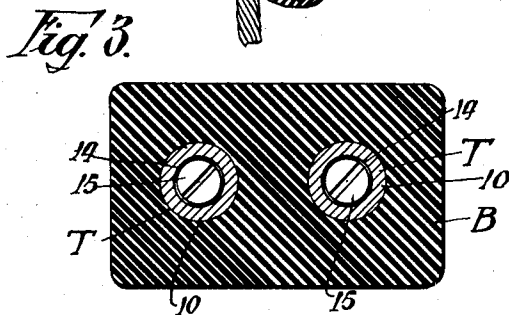
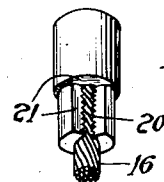
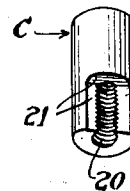
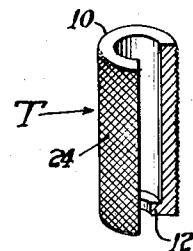
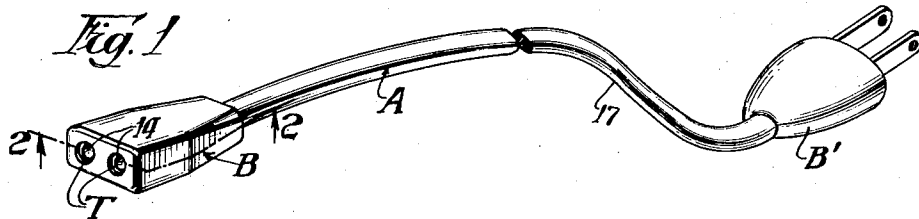
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2,190,363

ELECTRICAL FITTING FOR CORD SETS

Filed Jan. 10, 1938

2 Sheets-Sheet 1



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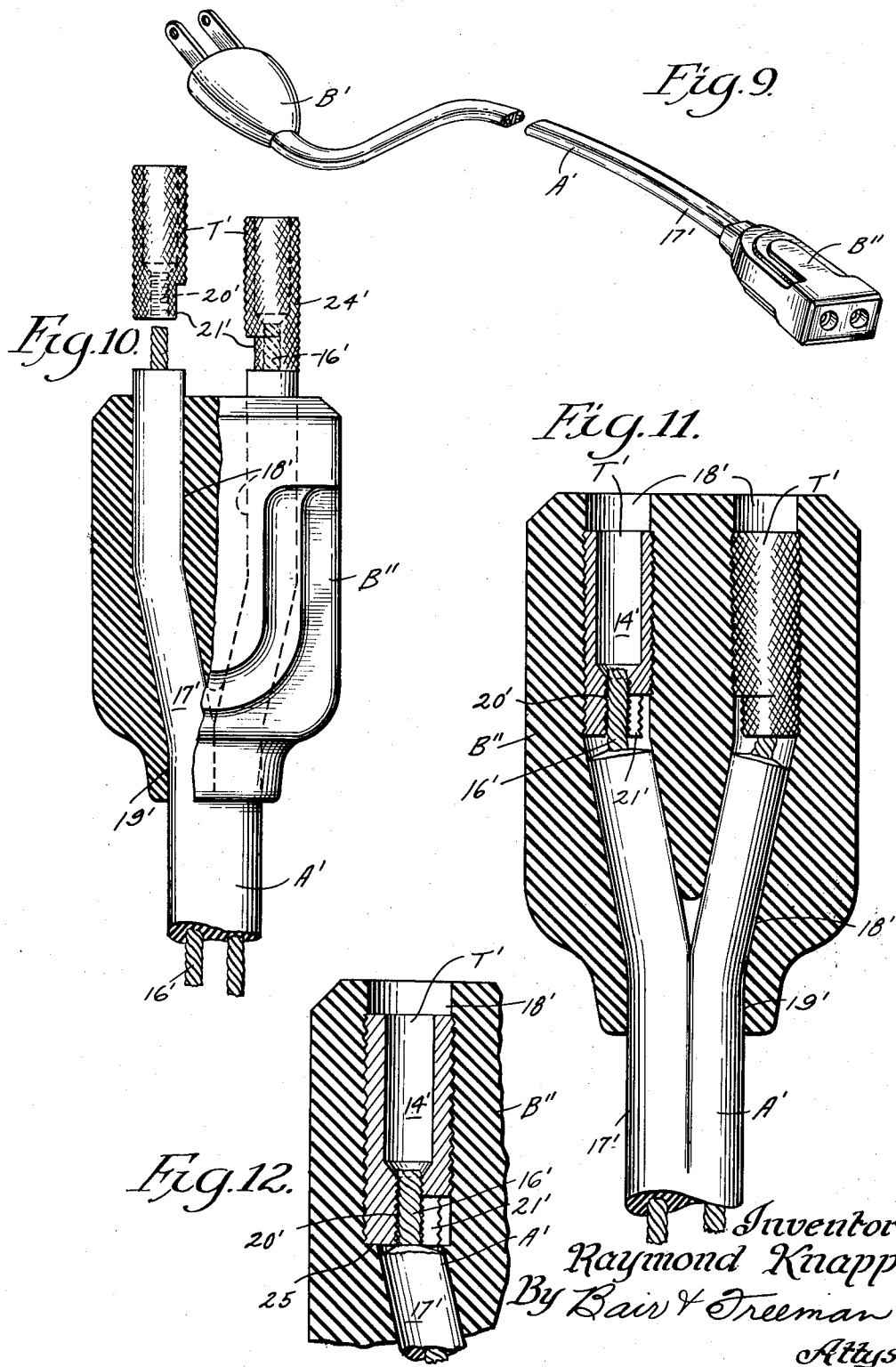
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ELECTRICAL FITTING FOR CORD SETS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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ELECTRICAL FITTING FOR CORD SETS

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Application January 10, 1938, Serial No. 184,272

5 Claims. (Cl. 173—332)

An object of my present invention is to provide an electric fitting for cord sets, particularly the female fitting thereof, which is comparatively simple to assemble and inexpensive to manufacture.

Another object is to provide an electrical fitting for cord sets wherein terminal sleeves are fully imbedded in a plug body of insulating material, such as rubber, and the electric wires of a supply cord may be quickly connected with the terminal sleeves in a novel manner and in a minimum of time.

Another object is to provide an electrical fitting having passageways through which connector elements connected with the ends of supply wires may be passed during assembly, the connector elements being aligned by the passageways with the terminal sleeves in the plug body, whereby they may thereafter be connected thereto by means of screws projected through perforations in the inner ends of the terminal sleeves and into the connector elements.

Still another object is to provide a connector element which has a threaded bore extending throughout its length to receive a connector screw in one end thereof and the end of a supply wire in the other end thereof, the wire being electrically and mechanically connected therewith by squeezing or contracting a portion of the connecting element on to the wire, whereby the threaded bore of the connector element so grips the wire that it is held against pulling out of the connector element.

A further object is to provide connector elements which may be readily replaced even though the connector elements themselves and the terminal sleeves are entirely imbedded in the plug body, the parts being so arranged that there is no possibility during normal use of the supply cord of loosening the connections as a result of pulling strains thereon.

Still another object is to provide a modified construction in which the terminal sleeves are connected directly to the supply wires after the wires are projected throughout the entire length of the plug body, the wire then being retracted and the terminal sleeves forced to an imbedded position in the plug body.

Still a further object is to provide a fitting comprising a plug body in which the terminal elements are completely imbedded or countersunk within the outline of the plug, yet connection of the wires of a supply cord therewith may be readily effected.

With these and other objects in view my in-

vention consists in the construction, arrangement and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of a supply cord showing an electrical fitting embodying my invention applied to one end thereof.

Figure 2 is an enlarged sectional view on the line 2—2 of Figure 1.

Figure 3 is a sectional view on the line 3—3 of Figure 2.

Figure 4 is a perspective view, partly in section, of one of the terminal sleeves of my electrical fitting.

Figure 5 is a perspective view of one of the connector elements thereof.

Figure 6 is a similar perspective view showing the connector element connected with one end of a supply wire.

Figure 7 is a bottom end elevation of one of the connector elements showing its initial shape.

Figure 8 is a similar view showing its shape after being deformed to grip the supply wire.

Figure 9 is a perspective view of a supply cord showing a modified form of my electrical fitting.

Figure 10 is an enlarged elevation thereof partly in section showing the parts in one position assumed during assembly.

Figure 11 is a similar view entirely in section showing the parts fully assembled; and

Figure 12 is a partial sectional view showing a further modification.

On the drawings accompanying my specification, I have used the reference character B to indicate generally a plug body. The body B may be formed of any suitable insulating material such as rubber or the like. A supply cord A has one end connected therewith and its other end connected with a plug B' which forms no part of my present invention but is shown merely by way of illustrating the complete cord set. The plug body B has imbedded therein a pair of terminal sleeves T. Each sleeve T comprises a tubular wall 10 and an inner transverse wall 12. The wall 12 is perforated as indicated at 13, the perforations being somewhat smaller than the bore 14 of the terminal element.

Connector elements C are connected with the terminal sleeves T by screws 15. The supply cord A includes a pair of supply wires 16 imbedded in an insulating cover 17, the wires 16 being connected with the connector elements C in a manner which will hereinafter be fully

described. The connector elements C are located in passageways 18. There are two of the passageways 18 which merge into a single passageway 19 adjacent the lower end of the plug body B, (considering the body in the position of Figure 2). The connector elements C are provided with threaded bores 20. The lower portion of each element C is cut away as indicated at 21.

Assembly of the parts of Figures 1 to 8

The terminal sleeves T are formed of brass or any suitable metal, their peripheries being knurled as indicated at 24. The sleeves T are molded in the plug body B. The knurling 24 affords an effective grip of the plug body on the terminal sleeves to prevent any possibility of pulling the sleeves out of the plug body as the parts are assembled or when the fitting is being transferred from one set of terminals to another. In Figure 2 I have shown by way of illustration a terminal 22 extending from a wall or the like 23 of insulation and into one of the terminal sleeves T. The terminal 22 may be connected with a dry shaver motor (not shown) or any device to be energized by electricity supplied by the cord A.

The terminal sleeves T and the plug body B form one unit of the assembly. Another suit thereof consists of the supply cord A and the connector elements C connected with the wires 16 thereof. Each connector element has a cylindrical shape as shown in Figures 5 and 7. After the wire 16 is inserted into the lower end thereof, such lower end is deformed to the position shown in Figures 6 and 8. Such deformation of the connector element is facilitated by the cut-away portion 21 thereof. The threaded bore 20 of the connector element extending throughout its length provides teeth which cut into the wire 16, thus effectively gripping it against any longitudinal movement caused by subsequent pulling strains on the wire relative to the connector element.

After the connector elements are connected with the supply wires 16 in the manner just described, they are pushed into the passageways 18 and are guided thereby to positions where the upper ends of their bores are in alignment with the perforations of the terminal sleeves T. Thereafter the screws 15 can be inserted and will properly coat with the threaded bores 20 when rotated by a screw-driver thrust into the bores of the terminal sleeves T. Since the sleeves and connector elements are substantially circular in cross section and the perforations 13 and the bore 20 are at substantially their centers, it is obvious that the parts will be properly aligned by the passageways 18 which of course are centered relative to the sleeves T. Accordingly it is a simple matter to assemble the supply cord relative to the plug body and its terminal T. It is also a simple matter to remove the connector elements C in the event that one of the wires 16 is broken loose therefrom or for any other reason.

Assembly of the parts of Figures 9 to 12

In Figures 9 to 12 I show modifications of my electrical fitting for cord sets in which parts corresponding to those in Figures 1 to 8 have been given the same reference numerals with the addition of prime ('). The plug body is indicated at B' and instead of having the terminal sleeves molded in it as in Figure 2, they are adapted to be secured directly to the supply wires and then pushed into the plug body. The terminals indicated at T' are sleeve-like and pro-

vided with bores 14' and are also provided with threaded portions 20' similar to the connector elements C in Figure 5. The terminals themselves are also provided with cut-away portions 21' so that when the wires 16' are forced into them, the lower ends of the terminal members T' may be clamped on to the wires 16' as described in connection with Figures 6 and 8.

The bores 18' of the plug B' merge into a single bore 19' and during assembly the wires of the cord A' are inserted through the bores from one end of the plug to the other, as shown in Figure 10, so that they extend beyond the upper end of the plug. The terminals T' are then mechanically and electrically connected with the wires 16' and thereafter the terminals forced back into the bores 18' of the plug body B' as the supply cord is retracted. The final position of the terminals is illustrated in Figure 11.

The periphery of the terminal T' may be knurled as indicated at 24' so that when it assumes its final position in the plug body, the knurling will project into the plug body adjacent the passageway 18' for thereafter preventing longitudinal movement of the terminal relative to the plug body during normal use of the cord set. As shown in Figure 12, additional means may be provided in the form of a shoulder 25 to prevent longitudinal movement of the terminal after it is once assembled in position. The shoulder acts as an abutment to prevent movement of the terminal T' into the plug body when pushing the terminal on to a terminal prong.

Some changes may be made in the construction and arrangement of the parts of my device without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents, which may be reasonably included within their scope.

I claim as my invention:

1. In an electrical fitting for cord sets, a plug body, a pair of terminals imbedded therein with their ends terminating between opposite ends thereon, passageways through said body having their inner ends terminating at the inner ends of said terminals, connector elements connected with the supply wires of a supply cord, said connector elements being positioned in said passageways and aligned thereby with said inner ends of said terminals and means for connecting said connector elements and terminals together, said means comprising screws through the terminals and threaded into said connector elements.

2. In a fitting for cord sets, a plug body, a pair of terminal sleeves therein, passageways in said body, connector elements connected with the supply wires of a supply cord, said connector elements being located in said passageways and guided thereby to a position aligned with said inner ends of said terminal sleeves, said connector elements being threaded to receive screws for connecting purposes, screws extending from said terminal sleeves and into said threaded connector elements for connecting them together with their adjacent ends in contact, the heads of said screws being accessible through the outer ends of said terminal sleeves, portions of said connector elements being contracted with their threads against said supply wires inserted therein.

3. In a fitting of the character described, a plug body, a terminal element imbedded therein, a passageway in said plug body beginning at one end thereof and terminating at said inner end of said terminal sleeve, a connector element slid-

able in said passageway and having a threaded bore aligned thereby with said terminal element, a connector screw through said terminal element and threaded into said bore for connecting said terminal element and one end of said connector element together and a supply wire extending into the other end of said bore, said connector element being contracted to grip said supply wire.

4. In an electrical fitting, a plug body, a terminal therein having a perforation therein, a passageway in said plug body beginning at one end thereof and terminating at said perforation, said passageway being centered relative to said perforation, a connector element slidable in said passageway and having a central threaded bore, a connector screw through said perforation and threaded into said bore for connecting said terminal element and one end of said connector ele-

ment together and a supply wire extended into the other end of said bore, said connector element having a sector thereof cut away and the remaining portion thereof being contracted whereby its threaded bore grips said wire to connect the wire and connector element together.

5. In an electrical fitting, an insulating body, a terminal mounted therein, a screw passing through said terminal, a connector element, a threaded bore through said element, said screw being received at one end of said bore, and a supply wire being received at the other end of said bore, said connector element being deformed adjacent the end thereof at which the supply wire is received, to cause tight engagement between the walls of said threaded bore and the supply wire.

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