J. BERG.

ELECTRIC CONNECTOR.

APPLICATION FILED DEC. 4, 1916.

1,249,711. Patented Dec. 11, 1917.

Fig. 1.

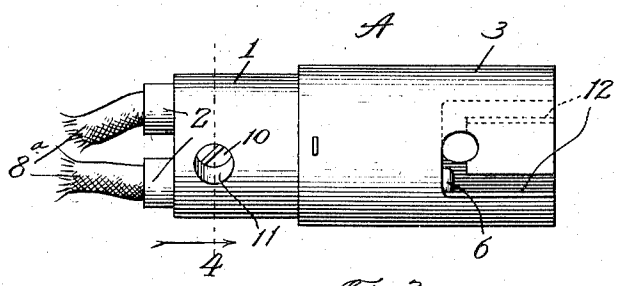


Fig. 2.

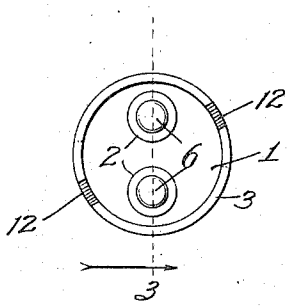


Fig. 3.

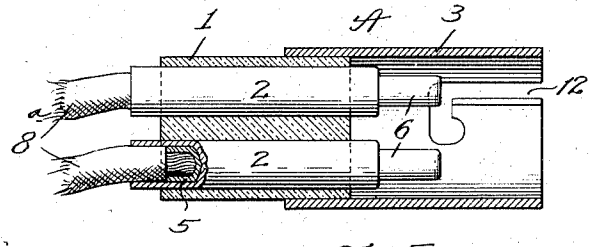


Fig. 4.

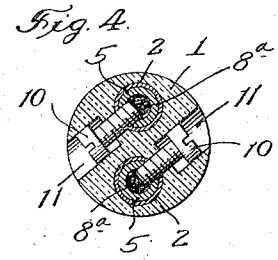


Fig. 5.

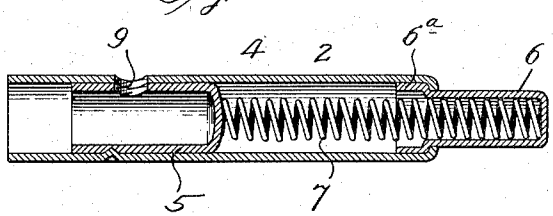


Fig. 7.

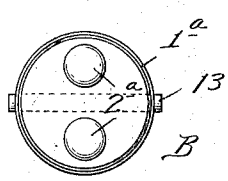


Fig. 6.

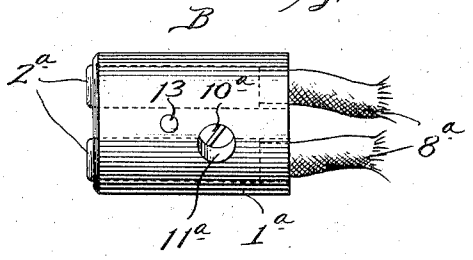
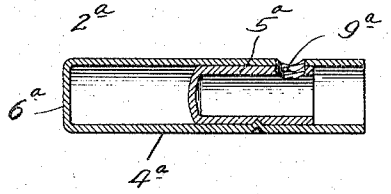


Fig. 8.



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UNITED STATES PATENT OFFICE.

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ELECTRIC CONNECTOR.

1,249,711. Specification of Letters Patent. Patented Dec. 11, 1917.

Application filed December 4, 1916. Serial No. 134,982.

To all whom it may concern:

Be it known that I, JOHN BERG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Electric Connectors, of which the following is a specification.

This invention relates particularly to electric connectors such as are used for connecting electric conductors together, or for connecting electric conductors to any electric device, such as an electric lamp, or other electric device.

The primary object of the invention is to provide an electric connector of improved and simplified construction. The invention is illustrated in its preferred embodiment in the accompanying drawings, in which—

Figure 1 represents a plan view of a socket-equipped connector constructed in accordance with my invention; Fig. 2, an end elevational view of the same; Fig. 3, a longitudinal sectional view taken as indicated at line 3 of Fig. 2; Fig. 4, a transverse sectional view taken as indicated at line 4 of Fig. 1; Fig. 5, an enlarged longitudinal sectional view of one of the terminals shown in the preceding figures; Fig. 6, a plan view of a connector plug constructed in accordance with the invention; Fig. 7, an end elevational view of the same; and Fig. 8, an enlarged sectional view of one of the terminals shown in Figs. 6 and 7.

In the construction illustrated, A represents a socket-equipped connector element; and B represents a companion connector element adapted to be entered in the socket of the element A.

The connector element A comprises a plug 1 of insulating material; terminals 2 extending through the plug 1; and a socket-shell 3 in which the terminal end of the plug 1 is entered and secured.

Each of the terminals 2 comprises a relatively large elongated outer shell 4; a relatively small elongated inner shell 5 fitted within the shell 4 at an intermediate point; a plunger-form contact-member 6 telescopically movable within one end of the shell 4; and a coil-spring 7 confined between the fixedly secured inner shell 5 and the movable contact-member 6.

The outer shell 4 may be drawn from a metal disk into the form of an elongated cup, the central portion of the bottom of the cup then being punched out to form an opening through which the plunger-form contact-member may protrude; or, if desired, the shell 4 may comprise a seamless tube having one end spun inwardly to form a flange 8.

The small inner shell 5 may be drawn conveniently from a metal disk which is stamped into elongated cup form. The bottom of the cup forms a seat or bearing for one end of the spring 7. The member 5 is forced into the open end of the tubular member 4 with a snug fit, and the open end of the member 5 is disposed a short distance inside of the open end of the member 4. Thus the bore of the member 5 is adapted to receive the naked wire portion of a conductor 8, while the insulation of the conductor is accommodated within the open end of the larger tube 4. One wall of the shells 4 and 5 is provided with a threaded perforation 9. The tapped perforations 9 are adapted to receive screws 10 which are inserted through lateral openings 11 with which the insulation plug 1 is provided. The screws 10 serve to secure the conductors in the socket-members 5 and at the same time firmly unite the socket-members 5 to the relatively large shells 4.

The yieldingly-held contact-members 6 are preferably elongated cup-shaped members stamped or drawn from metal disks. The members 6 have enlarged base portions 6^a which fit freely within the tubular members 4 and engage the inturned flanges 8 when the members are projected as shown in Fig. 5.

The socket-shell 3 is provided with bayonet slots 12 in the usual manner.

The connector element B comprises a plug 1^a of insulating material; and metal terminals 2^a extending through the plug 1^a. Each metal terminal 2^a comprises a relatively large elongated outer shell 4^a and a relatively small elongated inner shell 5^a which is fitted within or fixedly secured in the shell 4^a at an intermediate point. The members 4^a and 5^a are preferably drawn into elongated cup-form from metal disks. Thus the bottom of the cup which forms the member 4^a comprises a contact end 6^a; and the member 5^a affords a conductor socket adapted to receive the bared wire of the conductor 8^a, while the insulation of the conductor is accommodated by the open end of the ex-

ternal shell 4^a. The shells 4^a and 5^a are pierced by a threaded or tapped perforation 9^a. The conductors are secured in the conductor sockets 5^a by means of screws 10^a which are entered through lateral openings 11^a with which the insulation plug 1^a is provided. The plug 1^a is fitted with a transverse stud 13 adapted to engage the bayonet slots 12 of the socket-shell 3.

The connector elements A and B are united in the usual way, in making the connection, by entering the plug 1^a in the socket 3 and causing the stud 13 to interlockingly engage the bayonet slots of the shell 3.

The construction described is simple, cheap and durable. The terminals may be produced very cheaply, inasmuch as all screw machine work is dispensed with.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitation should be understood therefrom, but the appended claims should be construed as broadly as is permissible in view of the prior art.

What I claim as new and desire to secure by Letters Patent is—

1. In an electric connector, a plug of insulating material, a terminal in said plug comprising an elongated metal shell having an open end and provided at the opposite end with a contact-member, a smaller elongated shell fitted therein and having an open end spaced a distance from the open end of said first-named shell, an electric conductor received by said smaller shell, the opening of the larger shell being adapted to accommodate the insulation of said conductor, and a screw extending through a wall of said shells and engaging said conductor.

2. In an electric connector, a plug of insulating material, a pair of terminals in said plug, each comprising a pair of elongated shells one of which is fixedly secured within the other at an intermediate point, a plunger-form contact-member slidable in one end of the larger shell, a spring confined between said fixedly secured inner shell and said contact-member, a conductor having a bared extremity entered in the inner shell, the open end of the outer shell accommodating the insulation of said conductor, screws entered through lateral openings in said plug and passing through said shells and engaging said conductors, and a socket-shell fitted on said plug and housing the contact-members of said terminals.

JOHN BERG.