

March 9, 1926.

S. McCLATCHIE
ELECTRICAL CONNECTER
Filed July 26, 1923

1,576,241

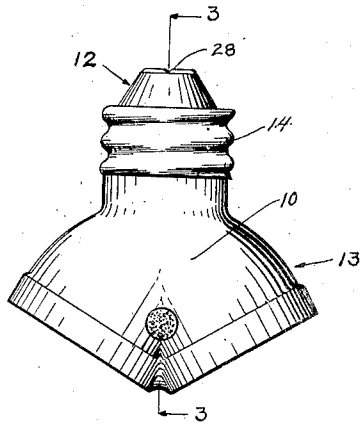


Fig. 1

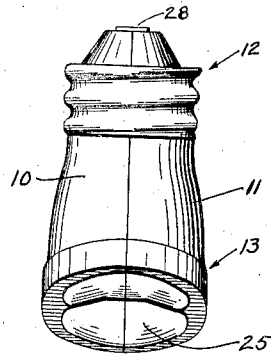


Fig. 2

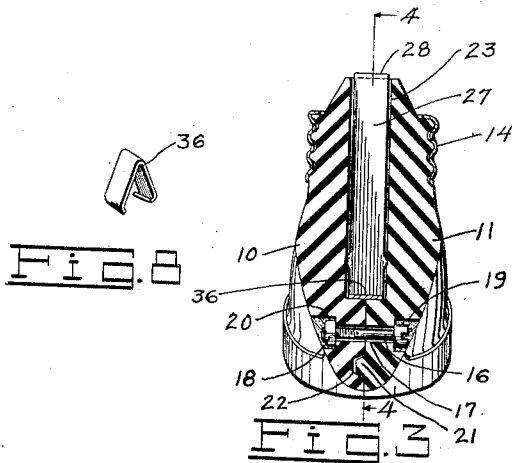


Fig. 3

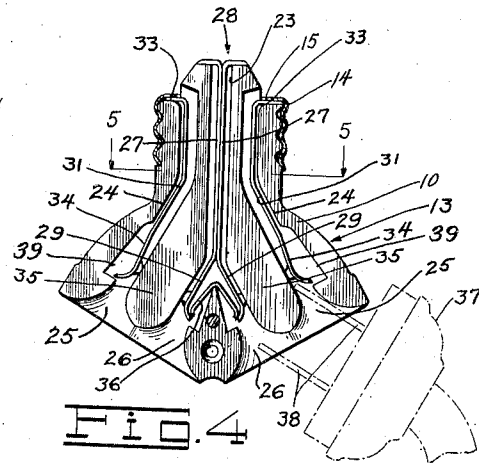


Fig. 4

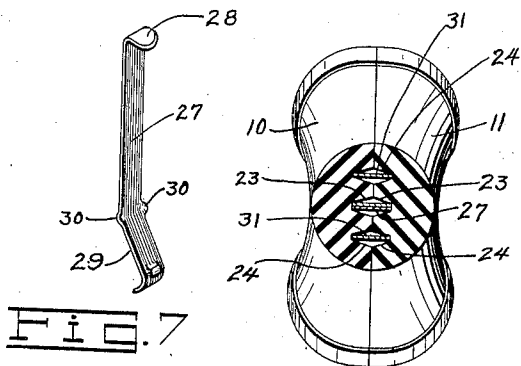


Fig. 5

Fig. 7

Fig. 6

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UNITED STATES PATENT OFFICE.

STANLEY McCLATCHIE, OF STUTTGART, GERMANY, ASSIGNOR TO BENJAMIN ELECTRIC MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ELECTRICAL CONNECTER.

Application filed July 26, 1923. Serial No. 653,861.

To all whom it may concern:

Be it known that I, STANLEY McCLATCHIE, a citizen of the United States, residing at Stuttgart, State of Wurttemberg, Germany, have invented new and useful Improvements in Electrical Connecters, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to electrical connectors and more particularly to plural receptacle plugs and it has for one of its objects to provide a plug connector having a plurality of receptacles arranged to receive the blades of the electrical connector caps and to provide electrical connection therewith.

Another object of my invention is to provide a plural plug having blade contacting members therein and arranged to receive the blades of the connector caps and in which provision is made for the angular separation of the blades from the receptacles.

Another object of my invention is to provide an electrical connector of few parts and which will be easy to assemble, efficient and durable in use and cheap to manufacture.

Further objects will appear from the detailed description to follow and from the appended claims.

In the drawings in which an embodiment of my invention is shown:

Figure 1 is an elevation of my improved electrical connector;

Fig. 2 is a side view of the device as illustrated in Fig. 1;

Fig. 3 is a vertical transverse section taken on line 3—3 of Fig. 1;

Fig. 4 is a sectional view taken on line 4—4 of Fig. 3, the electrical conducting members being shown in full lines and an attachment plug cap being shown in dotted lines and in angular relation to the receptacle opening;

Fig. 5 is a horizontal transverse section taken on line 5—5 of Fig. 4;

Fig. 6 is a perspective view of one of the side electrical conducting members;

Fig. 7 is a perspective view of one of the center electrical conducting members; and

Fig. 8 is a perspective view of the spring member shown in Fig. 4.

Referring now to the drawings in detail, in my invention as illustrated I provide an

insulating base made of two substantially similar halves 10 and 11 which may be formed of any suitable insulating material and which, when secured together, form a plug portion 12 and a receptacle portion 13, each half of the plug portion being provided with cooperating threads on which is threaded the shell contact 14, the shell contact 14 thus serving to hold the two halves together. The two halves are also secured together by means of the screw 16 extending through the opening 17 and provided with the nut 18. The openings 19 and 20 are arranged to receive the head of the screw and the nut respectively and are preferably filled with cement after the two halves are secured together.

A locating lug 21 on the portion 11 is arranged to cooperate with the depression 22 when the parts are secured together to hold them in alignment with each other.

The inner surfaces of the halves 10 and 11 are provided with centrally located longitudinal Y-shaped grooves 23 and are also provided on either side of the central grooves 23 with angular grooves 24, the grooves in the two halves being held in registration or juxtaposition with each other when the halves are secured together.

Bell-shaped or funneled receptacle openings 25 and 26 are provided for each receptacle in the receptacle portion, these bell-shaped openings 25 and 26 communicate with the grooves 23 and 24 respectively when the two halves are secured together. Similar electrical conducting members 27—27 are supported in the grooves 23, the ends of the conducting members 27 being formed to provide a center contact 28 and resting against the plug portion of the insulating base as shown in Fig. 4. The lower ends of the conducting members 27 are formed to provide the blade-engaging portions 29—29 adjacent the bell-shaped openings 26 in the receptacle portion. The conducting members 27 are provided with positioning lugs 30 arranged to furnish a lateral support for the conducting members and to allow the ends of the conductors a limited movement in the grooves. The electrical conducting member 31—31 are supported in the grooves 24—24 in a similar manner and are also provided with the positioning lugs 32.

The ends 33 are formed to engage the plug portion of the base and are clamped

thereon by means of the flange 15 on the threaded shell 14 and make electrical contact therewith. These conducting members are also provided with blade-engaging portions 34 extending into the receptacle portion 13 as shown in Fig. 4.

The conducting members 27 and 31 are preferably formed of spring material and arranged to press against the wall 35 between the grooves. A supplementary spring 36 may be provided in the central groove 23 to provide additional pressure against the walls, or against the blades when they are inserted in the receptacle portion.

In the device as shown in Fig. 4 I have illustrated in dotted lines an attachment plug cap 37 provided with the usual blades 38 and it will be noted that the blades may be inserted or removed from the receptacle by an angular pull on the cap 37. This is possible on account of the bell-shaped openings 25 and 26 allowing considerable lateral movement of the blades 38, the ends of the conducting members 27 and 31 being curved as shown to allow the blades 30 to be easily inserted or removed by either a straight or angular movement.

The grooves 24 are enlarged at 39 to permit the full movement of the ends 34 of the conducting members 31.

While I have shown but one embodiment of my invention, it is obvious that it may be embodied in other forms as outlined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. An electrical connector comprising two substantially similar halves, each half including a plug portion and receptacle portions, said receptacle portions having openings to receive connector blades, a shell contact threaded on said plug portions and se-

curing the two halves together, a center contact on said plug portion, the inner surfaces of each of said halves having grooves therein extending through said plug portion and into said receptacle portions, electrical conducting members in a plurality of said grooves electrically connected with said shell contact and extending into said receptacle portions, and electrical conducting members in one of said grooves and electrically connected with said center contact, said connector having substantially bell-shaped openings communicating with said grooves to allow electrical connector blades to enter therein and to form a contact with said electrical conducting members.

2. A two-way plug receptacle having a plug portion and two receptacle portions comprising a two part insulating base separable on an axial plane through both receptacle portions and through the plug portion, said base being provided with an axial groove and two tortuous side grooves, said side grooves being exposed when the base parts are separated, threaded shell and center contact members on said plug portion, two flat conductor strips lying edge-wise in said tortuous groove, respectively, and bent to conform to the tortuous shape thereof, each strip comprising a blade engaging contact portion lying in the receptacle part of the base and a conductor portion lying in the plug part of the base, electrically connecting the blade portion with the threaded shell contact, other blade engaging contacts in said receptacle portion, and a conductor in said axial groove leading from said center contact to said other blade engaging contacts.

In witness whereof, I have hereunto subscribed my name.

STANLEY McCLATCHIE.