

F. C. DE REAMER.  
SEPARABLE ELECTRIC CONNECTOR.  
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921,678.

Patented May 18, 1909.

Fig. 2.

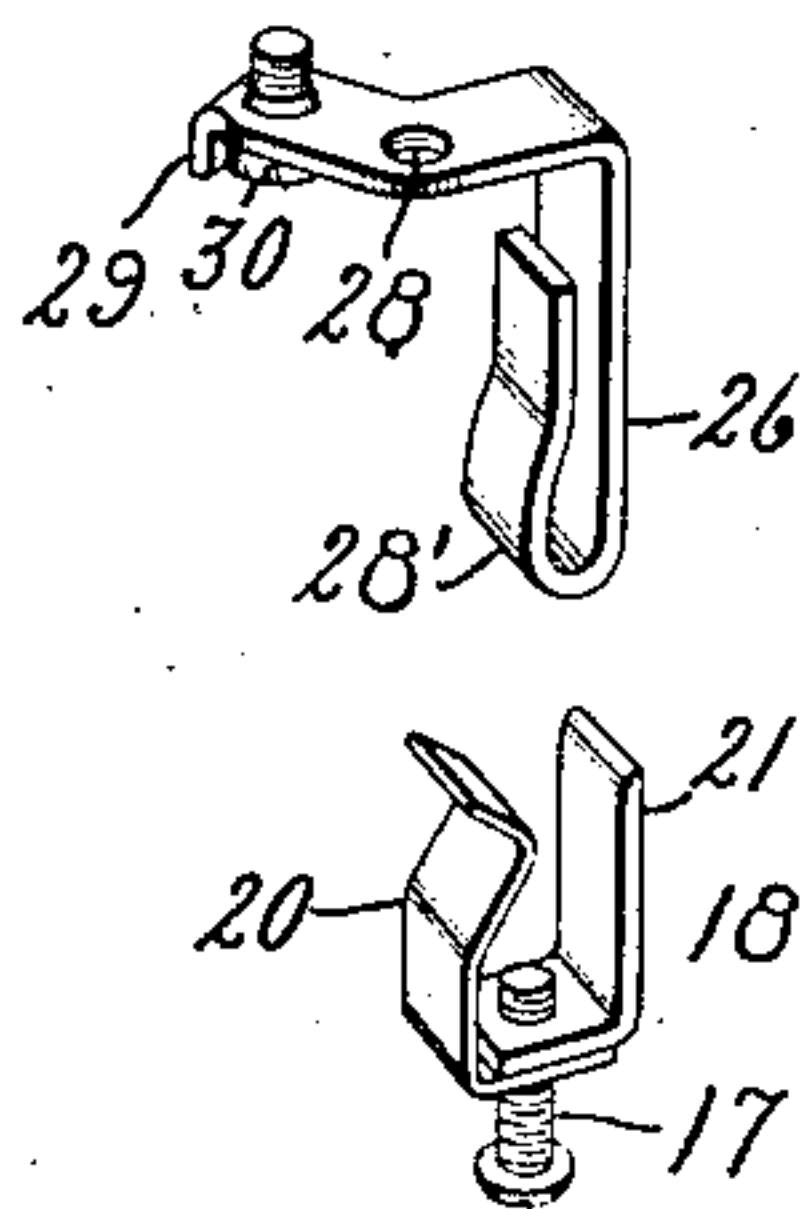


Fig. 1.

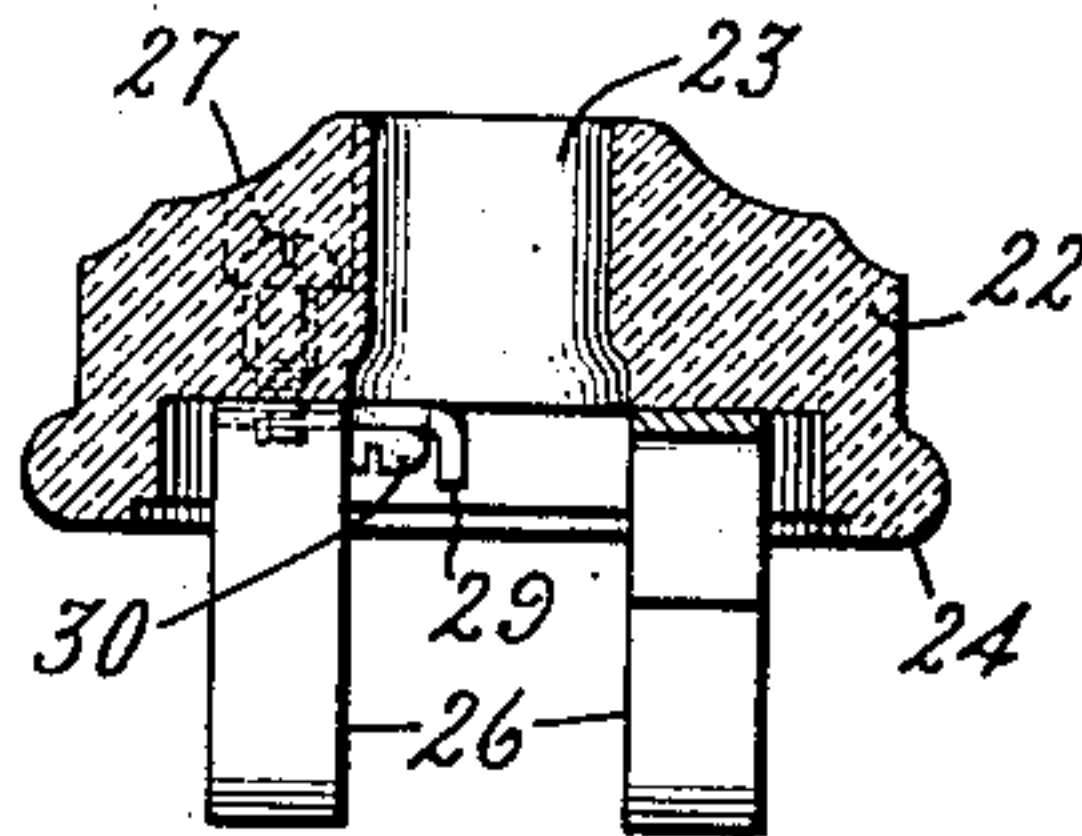


Fig. 3.

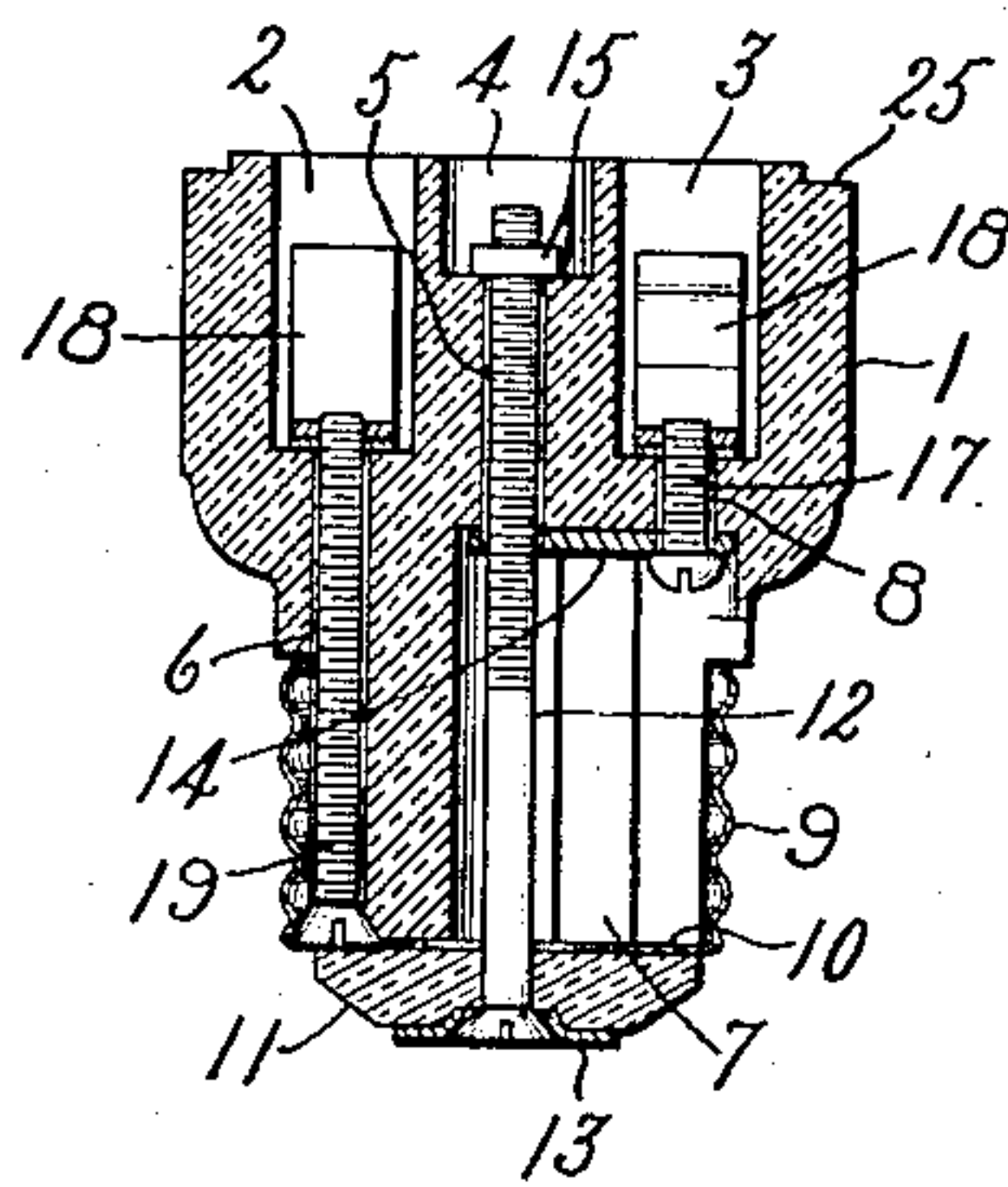
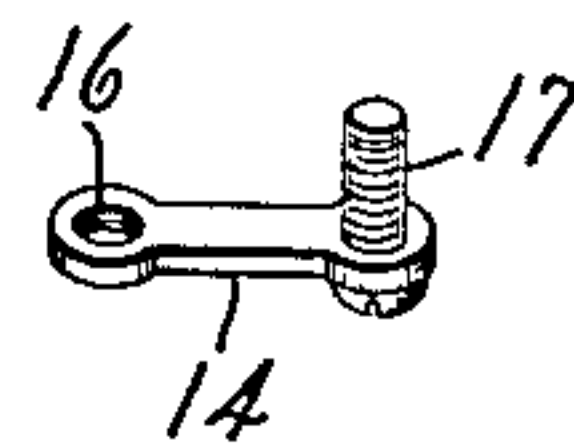


Fig. 4.

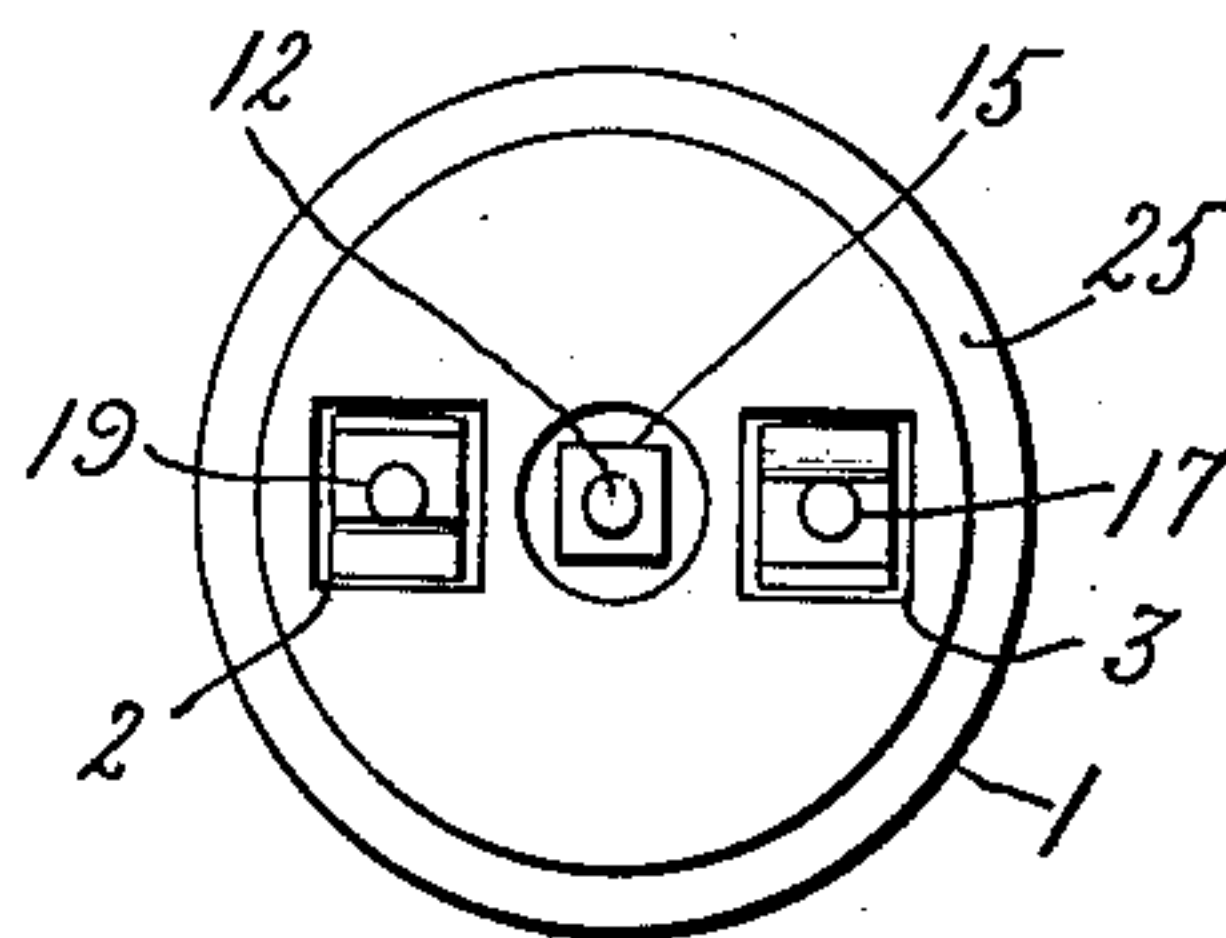
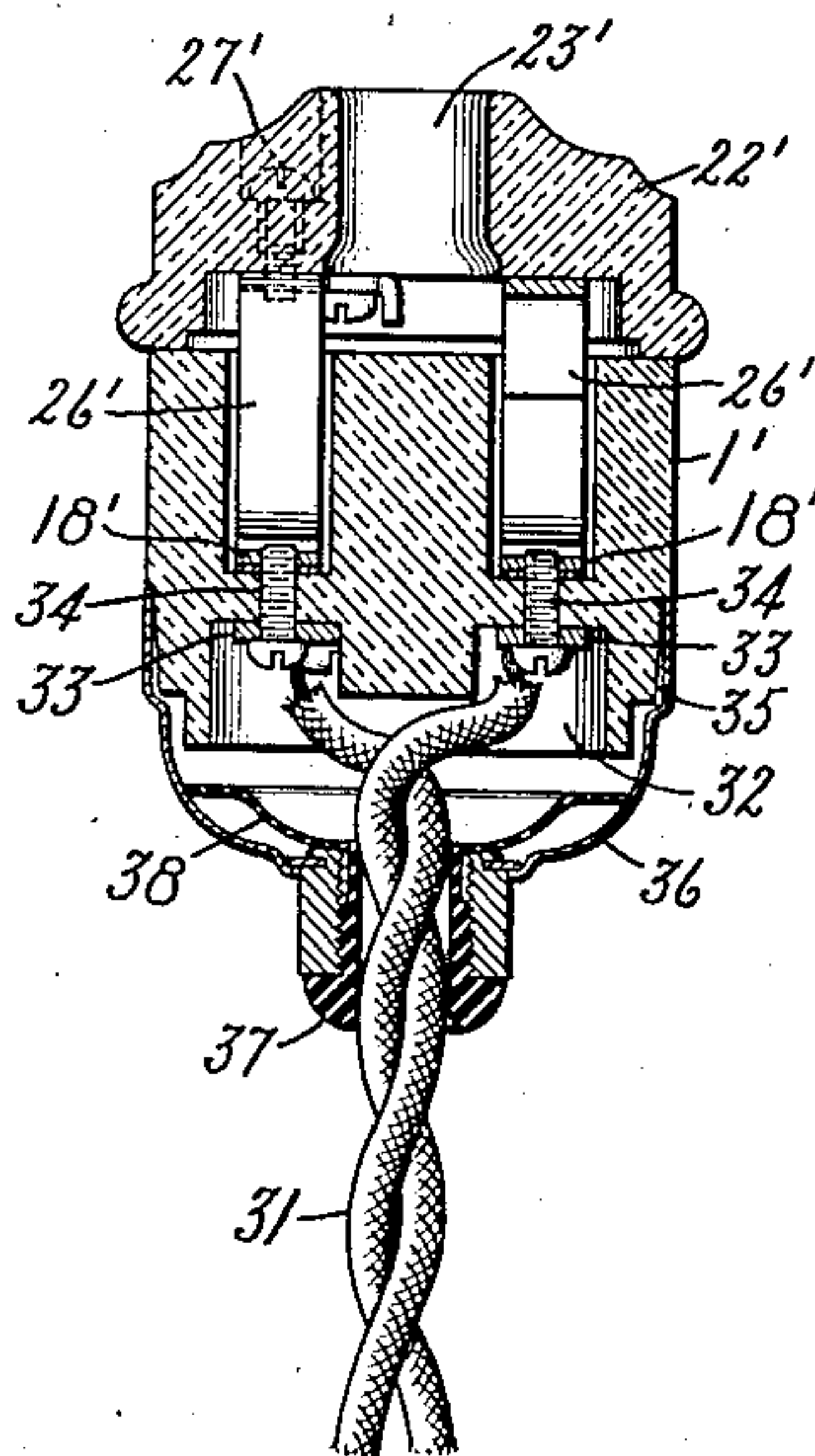


Fig. 5.



Witnesses:

*George W. Tilden.*  
*J. Ellis Chen.*

Inventor:

Frank C. DeReamer,  
by *Alfred H. Davis*  
Att'y.



# UNITED STATES PATENT OFFICE.

FRANK C. DE REAMER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

## SEPARABLE ELECTRIC CONNECTOR.

No. 921,678.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed December 7, 1906. Serial No. 346,719.

*To all whom it may concern:*

Be it known that I, FRANK C. DE REAMER, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Separable Electric Connectors, of which the following is a specification.

The present invention relates to electric distribution and more especially to connecting devices whereby a branch circuit may readily be connected with or disconnected from a main supply circuit.

The object of my invention is to provide a separable connecting device which will effectually protect against electrical contact with the person of the user and in which the refractory insulating material shall be better adapted to withstand rough usage than the connecting devices heretofore in use.

In carrying out my invention I provide a massive base portion of insulating material having at one end recesses or cells for the reception of electric contacts and made sufficiently small to prevent the tips of the fingers of the user being inserted so as to come into engagement with the contacts therein, and at the opposite end of the base portion are arranged the contacts for engaging the terminals of the supply circuit and having electrical connection with the contacts in the recesses or cells at the front end. The detachable portion of the connecting device has metallic fingers adapted to make frictional engagement with the electrical contacts in the front end of the base portion and provided with means for engaging the respective ends of the branch circuit conductors.

For a more complete understanding of the invention, reference may be had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a vertical section of an attaching plug with the parts detached; Figs. 2 and 3 are perspective views of details; Fig. 4 is a top plan of the base portion; and Fig. 5 is a vertical section of a pendent connecting device with the parts in engaged position.

The attaching plug shown in Figs. 1 and 4 has a base 1 of porcelain formed of two integral cylindrical portions of different diameters. In the upper or larger end are formed two relatively deep recesses 2 and 3 of rectangular section and a center recess 4

which connects with an axial passageway 5. In the lower or small end are formed a side passageway 6 extending up into the recess 2 and a radial recess 7 extending across the axis in a direction opposite to the location of passage 6 and upwardly about half the length of the base. At the upper end the recess 7 meets the axial passageway 5, and a short passageway 8 is extended upwardly into the lower end of recess 3. The lower or smaller cylindrical portion of the base is surrounded by a threaded shell contact 9 having an intumed flange 10 seated against the end of the base and securely held against dislodgment by a porcelain washer 11 which is clamped thereto by an axial screw 12 which passes through a center contact disk 13 and extends upwardly through radial recess 7, a connecting piece 14, and axial passageway 5 to the center recess 4 where it engages a nut 15. The connecting piece 14 is shown detached in Fig. 3 and is made with a tapped hole 16 at one end to closely engage the threads of the center screw 12, and at the other end is a punched hole through which passes a screw 17 which extends through passageway 8 into recess 3 where it engages a contact clip 18 in recess 3. A screw 19 passes through a countersunk hole in the flange 10 of the screw shell contact 9, extends upwardly through the passageway 6, and engages a contact clip 18 in recess 2. The clips 18 each comprise a phosphor-bronze spring member 20 and a stiff angle member 21. The spring member has an inwardly projecting kink in its vertical section and a punched hole in its foot section through which the screw 17 or 19 passes freely, and the angle member has a plane chafing surface on its vertical section and a tapped hole in its foot section. The foot section of the angle member 21 is arranged on top of the foot section of the spring member 20, so that upon turning home of the respective screw 17 or 19, the latter is clamped between the bottom of its recess 2 or 3 and the foot section of the angle member. The vertical sections of the clips are made short, whereby their outer ends will be a considerable distance below the outer ends of the recesses 2 and 3 so that no part of the person of the user may come into engagement therewith.

The detachable member of the connecting device comprises a circular cap 22 of por-



celain with a central aperture 23 for the passage of the conductor wires (not shown), and at its lower end is a depending peripheral flange 24 adapted to seat against a rabbet 25 on the end of the base 1. On opposite sides of the central aperture 23 are contact fingers 26 secured to the underside of the cap 22 by screws 27 engaging tapped holes 28. The contact fingers each comprise a single punching of sheet metal having one end bent down at right angles and folded back to form an enlarged holding end 28' adapted to be forced between the members of the contact clips 18 to make frictional and electrical contact therewith, and the other end of the punching is provided with a bent wire holding lug 29 and a binding screw 30.

The pendent connecting device shown in Fig. 5 has a cap 22', contact fingers 26', and clips 18', like the attaching plug above described, but the base 1' is made different at its lower end in order to connect the pendent conductor wires 31 direct therewith. In the lower end is formed an annular recess 32 for the reception of binding plates 33 which are respectively connected with the contact clips 18' by screws 34, and the lower outer corner of the base 1' is peripherally rabbeted at 35 to receive the flange of a metallic cover 36 which has an insulating bushing 37 and a disk 38 of fibrous insulating material.

I do not desire to restrict myself to the particular form or arrangement of parts herein shown and described, since it is apparent that they may be changed and modified without departing from my invention.

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

40 1. In an electric connector, the combination of a base of insulating material having like recesses in its upper end symmetrically arranged on opposite sides of the axis and a cylindrical projection on its lower end, a screw shell contact surrounding said pro-

jection and having a flange engaging the end thereof, a washer of insulating material engaging the lower side of said flange, a conductor rod extending axially through said washer and said base and operating to hold said parts in fixed relation, contact clips seated at the bottoms of said recesses, a screw connecting the flange of said screw shell with one of said clips, a second screw engaging the other clip, and a radial connection between said second screw and said axial rod.

2. In an electrical connector, the combination of a base of insulating material having two recesses in the upper end and a radial recess in the lower end, center and side contacts mounted on the lower end of the base, contact clips in the recesses at the upper end, one of which is connected to the side contact, a conductor extending from the center contact axially through the base, and a connector located in said radial recess and connected to the second contact clip and to said conductor.

3. In an electrical connector, the combination of a base of insulating material having cylindrical end portions with two symmetrical recesses in the upper end and a radial recess in the lower end, contact clips in said upper recesses, a flanged contact shell surrounding the lower end and joined by a conductor to one of said contact clips, an insulating washer carrying a center contact and held against the flange of the contact shell by a screw extending axially through the base, and a conductor located in the radial recess and connected at its ends with said screw and the second contact clip.

In witness whereof, I have hereunto set my hand this 5th day of December, 1906.

FRANK C. DE REAMER.

Witnesses:

BENJAMIN B. HULL,  
HELEN ORFORD.