

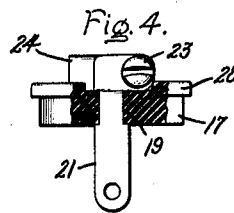
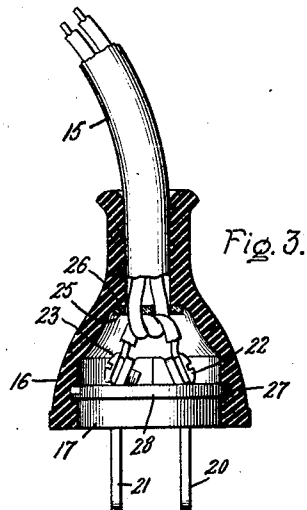
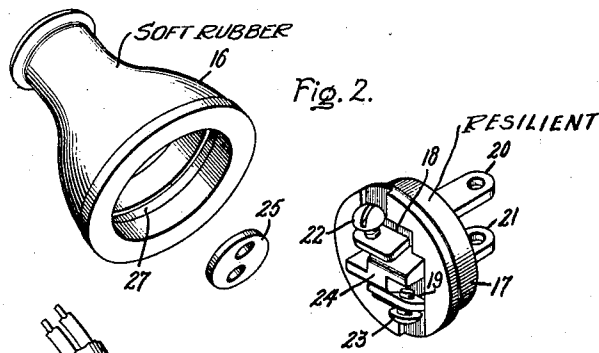
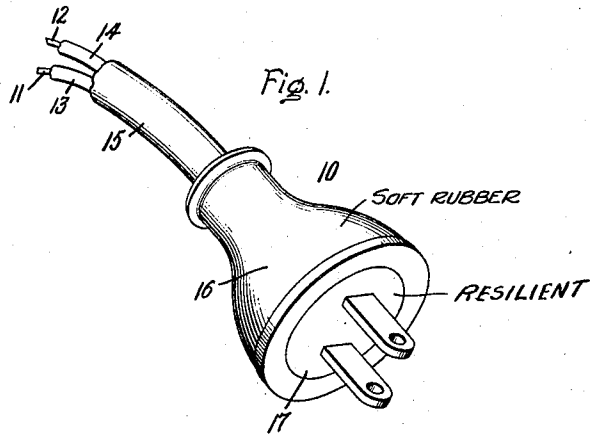
Sept. 18, 1934.

G. B. BENANDER

1,974,297

ATTACHMENT PLUG CAP

Filed Nov. 25, 1931



Inventor:  
George B. Benander,  
by *Charles E. Muller*  
His Attorney.

# UNITED STATES PATENT OFFICE

1,974,297

## ATTACHMENT PLUG CAP

George B. Benander, Yalesville, Conn., assignor to Monowatt Electric Corporation, Bridgeport, Conn., a corporation of Connecticut

Application November 25, 1931, Serial No. 577,307

3 Claims. (Cl. 173—361)

The present invention relates to attachment plug caps.

An object of my invention is to provide an attachment plug cap which is adapted to relieve the conductors from any strain at the point of their connection to the cap and in addition will provide a moisture-proof terminal for the conductors. Another object of my invention is to provide a separable attachment cap which will consist of a minimum of parts of simple construction and will be of low cost of manufacture.

What I consider to be novel and my invention will be better understood by reference to the following specification and appended claims when considered in connection with the accompanying drawing.

In the drawing Fig. 1 is a perspective view of the attachment cap connected to electrical conductors; Fig. 2 is a perspective view of the attachment cap with the base and strain reliever separated from the cap; Fig. 3 is a sectional view of the attachment cap assembled and connected to electrical conductors; Fig. 4 is a side view of the base with a portion cut away to expose a contact blade.

Referring to the drawing, 10 indicates the attachment cap which is shown in Fig. 1 connected to electric conductors 11 and 12 provided with individual rubber insulation 13 and 14 respectively and covered with a combined rubber insulation 15. Attachment cap 10 consists of a shell 16 of soft rubber and a base 17 which is also of a resilient rubber composition. Base 17 is provided with slots 18 and 19 through which contact blades 20 and 21 are adapted to pass. As better indicated in Fig. 4 the width of slots 18 and 19 is less than the width of contact blades 20 and 21 except for short portions of contact blades 20 and 21 of reduced section which are of the same width as the slots 18 and 19. Thus when the contact blades 20 and 21 are forced through the slots 18 and 19, the base 17 being of rubber extends into the reduced portions and the shoulders at either end abut the opposite faces of the base and prevent the accidental removal of the contact blades from position in the base 17. Contact blades 20 and 21 are provided with enlarged heads having threaded apertures for the reception of binding screws 22 and 23 respectively to provide terminals for electric conductors. The enlarged heads of contact blades 20 and 21 are bent at an angle to the remainder of the blade to convert any force which may be exerted by the conductors to an angular pull on the blades instead of a longi-

tudinal pull. This reduces the possibility of the contact blades being pulled out of the base 17. Base 17 is provided with an inwardly extending integral portion 24 with inclined faces against which the heads of the contact blades 20 and 21 are adapted to rest to insulate the contacts from each other and to prevent undue lateral movement of the contact blades. This arrangement of a base of rubber and contact blades passing through the base is advantageous in that the parts are of simple construction and easy to assemble. Also the terminals for the conductors are located on the opposite side of the base from the projecting contact blades which makes it possible totally to enclose the conductors at their point of connection to the attachment cap. This is an important feature of the invention because it frequently happens that an attachment cap will be separated from a convenience outlet while energy is being supplied to the translating device to which it is connected and an arc will be drawn which may jump to the conductors connected to the attachment cap and burn the insulation on the ends of the conductors. This may start a fire immediately or reduce the insulation on the conductors to such an extent that on a subsequent connection of the attachment cap a short circuit may develop and cause a fire or blow the fuses in the circuit.

To prevent any direct strain being placed on the conductors at their point of connection to the binding screws 22 and 23, a disc 25 is provided and has openings through which the conductors are adapted to be passed and knotted on the inner side. As best indicated in Fig. 3, disc 25 rests against shoulder 26 adjacent the opening through which the conductors extend into the shell 16. Shell 16 is provided with a groove 27 to receive the shoulder 28 of the base 17.

When the conductors are connected to the attachment cap 10 the base 17 and disc 25 are separated from the shell 16. The conductors are then threaded through the small opening of the shell 16 and a portion of the outer insulation removed. The insulation on the individual conductors is stripped a short distance from the end and the conductors are threaded through the openings in disc 25 and knotted adjacent thereto. The bare ends of the conductors are connected by means of binding screws 22 and 23 to the contact blades 20 and 21. The base member 17 is then inserted in position in the shell 16 by first placing the shoulder of one side of the base into the groove 27 and then expanding the shell and forcing the base member home until its shoulder

is seated in the undercut groove 27. It may be desired to seal the attachment cap at the point of entrance of the conductors. This may be done by placing some cement over the end of the conductors before they are inserted in the attachment cap or by placing some cement over the conductors at their point of entrance into the attachment cap. Even without the special cementing of the conductors to the attachment cap it is relatively moisture-proof. The small end of the shell 16 is of such a diameter that it will ordinarily engage the surface of the insulation of the conductors connected to the attachment cap. The base 17 completely closes the large end of the shell 16 and seals it from any possible seepage of moisture. The shoulder 26 of shell 16, disc 25, and the knot provided in conductors 11 and 12 combine to form a strain relief for the conductors which prevents the conductors from being broken at the point of connection to the contact blades or at the point of entrance of the conductors into the attachment cap 10. The shell 16 being of soft rubber is extremely flexible and the base 17 is also flexible but of a somewhat lesser degree. The arrangement of a shell 16 with a separable base 17 makes it possible for one to connect the attachment cap 10 to electrical conductors with facility and insures a moisture-proof attachment cap of unusual flexibility. From the foregoing it will be seen that I have provided an attachment cap of simple construction consisting of a few parts which may be readily assembled and connected by an unskilled person at the same time insuring the desired characteristics of flexibility, exclusion of moisture, and safety.

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

1. An attachment plug cap comprising a shell of soft rubber having thin walls and consisting

of a tubular portion connected to an enlarged head, a groove near the end of the enlarged head of said shell, a base of resilient rubber having a shoulder seated in said groove and slots extending through the base, and contact blades passing through said slots having reduced portions with adjacent shoulders abutting the opposite faces of the base to prevent removal of the contact blades.

2. An attachment plug cap comprising a shell of soft rubber having thin walls and consisting of a tubular portion connected to an enlarged head, a groove near the opening of the enlarged head of said shell, a base of resilient rubber having a shoulder seated in said groove and slots extending through the base, contact blades passing through said slots having reduced portions with adjacent shoulders abutting the opposite faces of the base to prevent removal of the contact blades, and enlarged heads with threaded apertures to receive binding screws located on the opposite side of the base from the projecting portion of the contact blades.

3. An attachment plug cap comprising a shell of soft rubber consisting of a tubular portion connected to an enlarged head, a disc abutting the shoulder between the tubular portion and enlarged head of the shell to relieve the strain on conductors knotted on the inner side of the disc and passing through openings therein, a base of resilient rubber having a shoulder seated in a groove near the opening of the enlarged end of said shell and slots extending through the base, and contact blades passing through said slots having reduced portions with adjacent shoulders abutting the faces of the base to prevent removal of the contact blades and enlarged heads with threaded apertures engaged by binding screws located adjacent the inner face of the base.

GEORGE B. BENANDER.

40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150