A. H. NERO.

ATTACHMENT PLUG RECEPTACLE.

APPLICATION FILED MAR. 22, 1917.

1,231,417. Patented June 26, 1917.

Fig. 1.

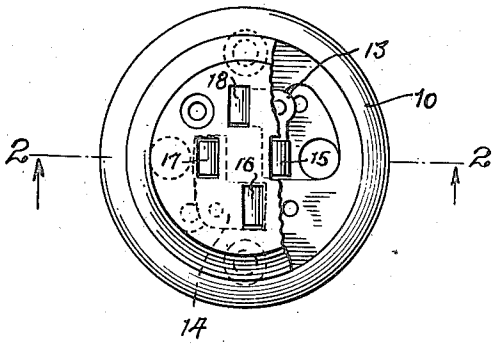


Fig. 2.

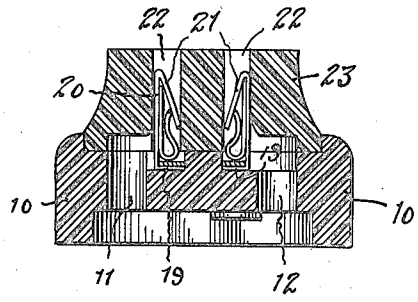


Fig. 3.

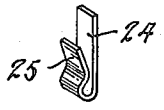


Fig. 4.

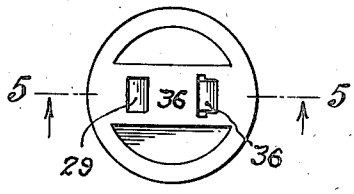


Fig. 5.

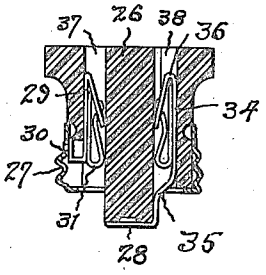
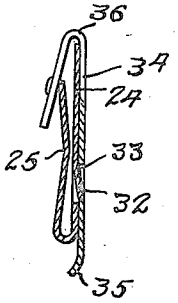


Fig. 6.



Inventor

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By his Attorneys

Strong and Strong

UNITED STATES PATENT OFFICE.

ARVID H. NERO, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE ARROW ELECTRIC COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

ATTACHMENT-PLUG RECEPTACLE.

1,231,417. Specification of Letters Patent. Patented June 26, 1917.

Application filed March 22, 1917. Serial No. 156,633.

To all whom it may concern:

Be it known that I, ARVID H. NERO, a citizen of the United States of America, and residing in New Britain, in the county of Hartford and State of Connecticut, have invented a certain new and Improved Attachment-Plug Receptacle, of which the following is a specification.

My invention relates to attachment plug receptacles and particularly to the contacts thereof, the object of my invention being to strengthen the latter so that they will withstand, without injury, careless manipulation of the coöperating attachment plug.

In the accompanying drawings,

Figure 1 is a broken plan of a flush receptacle in which my invention is embodied in one form;

Fig. 2 is a vertical section therethrough on the line 2—2, Fig. 1;

Fig. 3 is a perspective of the reinforcing spring;

Fig. 4 is a plan of the base of a separable attachment plug;

Fig. 5 is a vertical section therethrough on the line 5—5, Fig. 4; and

Fig. 6 is an elevation partially in section through one of the terminals of the latter.

The receptacles here shown are of standard type, except for the improvement hereinafter mentioned, and their details need not be gone into except as relates to said improvement. It suffices to indicate the insulating base 10, perforated at 11 and 12 to afford leading-in channels for the wires which are secured to the base plates 13 and 14 which carry the several receptacle terminals 15, 16, 17 and 18. These terminals are formed from sheet metal straps each having a foot piece 19, a standard 20, and a recurved contact brush 21. The standards and brush enter slots 22 formed in the cover piece 23 which fits upon the base 10. In order to reinforce these contact brushes against possible permanent deformation, as a result of excessive strains imparted to the terminals by the jacks of a carelessly handled plug, I propose to reinforce them by means of suitable springs. In the form shown in Figs. 1, 2 and 3, each spring comprises a plate 24 of a length approximating that of the standard 20, and having at one end a recurved spring arm 25 adapted to bear against the free end of the brush 21 and maintain the latter in proper position.

I am aware that it has already been proposed to reinforce a terminal of this character by means of a spring bearing against the brush. Heretofore, however, this reinforcing spring has been permanently attached to the terminal, as by riveting. This operation is a difficult one to perform under the conditions in which it has to be accomplished and necessitates an operation which adds to the expense of the device. The present spring is merely slipped into the position indicated in Fig. 2 so that its plate 24 lies against the standard 20 of the terminal, while its recurved spring end 25 bears against the brush 21. The friction between the parts is sufficient to maintain the spring in position until the cap 23 is placed upon the base. When this has been done it is impossible for the spring straps 24 to escape the terminals since the slots 22 so approach the sides of the terminals that the spring straps 24 could not possibly escape the latter. To insure this the straps are made of substantially the same width as the terminal itself.

In a construction such as shown in Figs. 4 and 5 the attachment plug base 26 carries a screw shell 27 and a center contact 28 adapted to engage the terminals of an ordinary lamp socket. In this case the receptacle terminal 29 has its offset lower end angled outward into contact with the screw shell 27 and secured thereto by a rivet 30. This leaves the space beneath the brush completely open and it is impossible therefore to support the reinforcing spring 31 by resting it against the base of the terminal as in the construction first described. To meet this situation I provide the strap 24 of the spring with a tongue 32 struck therefrom and adapted to enter a hole 33 in the standard 29 of the terminal when the spring is placed in position. This does not involve an additional expense inasmuch as the terminal is already perforated at this point to permit the riveting operation at 30 to be performed. While the terminal 34 is angled across the bottom of the slot in which it lies in order to take position as the center contact 28 at its lower end, the distance between the lower bend 35 and the upper bend 36 is too great to accommodate a spring plate of the same size as that used for the other terminal, and inasmuch as it is desirable to have the springs uniform for both terminals,

I adopt the same practice for the terminal 34 as in that just described for terminal 29, namely, perforate standard at 33 and form a tongue 32 on the plate of the spring 24 which enters the hole 33 and supports the spring in proper position to reinforce the brush.

It is obvious that the spring in this case is placed in position with practically as little trouble as in the construction first described and that it is maintained in position in the same way by the sides of the slots 37 and 38 which prevent the lateral escape of the spring from the terminals.

I do not limit my invention to the precise form of reinforcing spring shown or to the particular methods described for holding it in position with relation to the terminal. These may all be varied in different ways without departing from what I claim as my invention.

I claim:—

1. An attachment plug receptacle having an insulating body apertured to form a contact chamber, a contact arranged in said chamber and having a brush portion to engage the jack of a coöperating plug, in combination with an independent, brush-reinforcing spring freely supported by said contact.

2. An attachment plug receptacle having an insulating body apertured to form a contact chamber, a contact arranged in said chamber and having a brush portion to engage the jack of a coöperating plug, in combination with an independent, brush-reinforcing spring freely supported by said contact and restrained from escaping said brush by the walls of the contact chamber.

3. An attachment plug receptacle having an insulating body apertured to form a contact chamber, an apertured contact arranged in said chamber and having a brush portion to engage the jack of a coöperating plug, in combination with an independent, brush-reinforcing spring having a tongue freely engaging in the aperture of said contact to support said spring therefrom.

4. An attachment plug receptacle having a receptacle contact comprising a standard recurved inward to form a contact brush, in combination with a spring freely slip-jointed therewith and comprising a plate lying against the standard and recurved outward into engagement with the brush to reinforce the latter.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

ARVID H. NERO.

Witnesses:
FRED. P. GATES,
L. SHINE.