

Sept. 15, 1925.

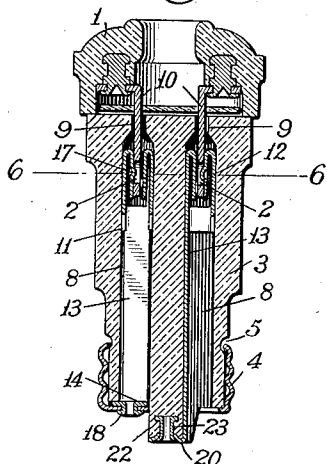
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A. H. NERO

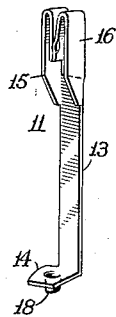
ATTACHMENT PLUG

Filed Feb. 10, 1922

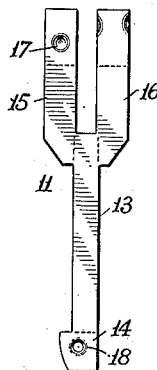
*Fig. 1.*



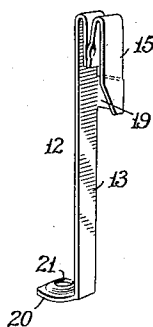
*Fig. 2.*



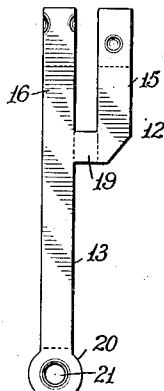
*Fig. 3.*



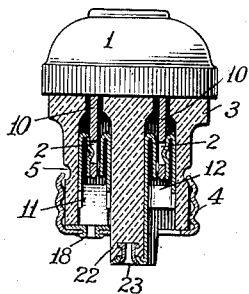
*Fig. 4.*



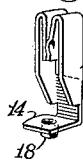
*Fig. 5.*



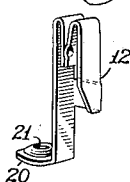
*Fig. 7.*



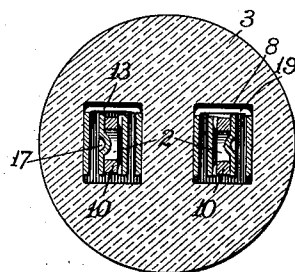
*Fig. 8.*



*Fig. 9.*



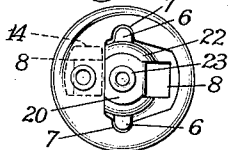
*Fig. 6.*



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*Fig. 10.*



## 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.

Application filed February 10, 1922. Serial No. 535,590.

*To all whom it may concern:*

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

My invention relates to separable attachment plugs, the object of my invention being to provide a simple, strong and efficient plug of this type.

In the accompanying drawings—

Fig. 1 is a vertical section through a plug embodying my invention;

Fig. 2 is a perspective view of the contact for the screw shell;

Fig. 3 is a plan of the blank from which the contact shown in Fig. 2 is formed;

Fig. 4 is a perspective view of the center contact;

Fig. 5 is a plan of the blank from which the contact shown in Fig. 4 is formed;

Fig. 6 is a horizontal section on an enlarged scale on line 6—6 of Fig. 1;

Fig. 7 is an elevation of another form of plug embodying my invention, the body of the plug being shown in section;

Figs. 8 and 9 are perspective views of the contacts for the form of plug shown in Fig. 7;

Fig. 10 is a plan of the bottom of the plug.

The cap 1, (shown in Figs. 1 and 7), has contact blades 10 mounted on it, preferably with holes 2 punched through the blades near their outer end. The base portion of the plug has a one-piece insulating body 3. A screw shell 4 is fitted on the smaller end of the base partially covering the bottom of the latter as shown in Figs. 1, 7 and 10, and being held on by the annular groove 5 into which the upper edge of the screw shell is spun. Rotation of the screw shell on the body 3 is prevented by two ears 6 (Fig. 10) projecting from the end of the plug and fitting into notches 7 in the screw shell. In the body 3 and extending throughout its length, are two rectilinear slots 8 having restricted openings 9 at the larger end of the body adapted to receive the blades 10 of the cap 1. In these slots 8 are located contact elements 11 and 12.

The contact elements 11 and 12 are formed from flat metal blanks. Each con-

sists of a shank 13, a foot (14 and 20 respectively) and two parallel arms 15 and 16 on the other end of the shank the lengthwise axes of the shank and contacts being parallel. From these two arms of the blank, in two operations, I form a double spring contact adapted to grip the cap blade on both sides. These two operations are simply doubling each arm over on itself and turning the arms to face each other. In the case of the element 11 the arms are made to face each other by turning each at right angles to the shank on the line of the joint with the shank. In the element 12 however, the arm 16 is merely an extension of the shank and the arm 15 is fastened to the shank by a strap 19. In forming up this element I turn the arms face to face by forming right angles on lines parallel to the shank between the strap and the arm 15 and the strap and the shank itself. This forms a contact similar to that of the element 11 but parallel to the shank rather than at right angles therewith. When the base is assembled the shanks will therefore be at right angles to each other.

To improve the contact and grip between each cap blade and double spring contact I form a projection 17 on one engaging face of the contact so that it will rest in the hole 2 of the cap blade, and I also burr each edge of the opposite contact face at one point. The relation of the cap blade to the contact element is shown in Figs 1, 6 and 7.

The foot 14 of the contact element 11 is wider than the shank and partly overlies one end of the body 3 of the base, underneath the screw shell. A tubular rivet 18 is formed on this foot 14 as a means of securing the contact to the screw shell (Figs. 1 and 7).

The foot 20 of the contact element 12 has a hole 21 countersunk in it and is bent back at right angles on the side opposite to the spring fingers. A reduced extension 22 of the end of the base projects through the bottom of the screw shell 4 and supports the foot 20 of the contact element 12. This foot 20 is the center contact of the base and is held in place by a tubular anchor 23 embedded in the body 3 of the base and headed over in the countersunk hole 21 on the foot 20 (Fig. 1).

By these means all possibility of loose connections is eliminated, and electrical and

mechanical efficiency is obtained. It will be apparent that when the plug is screwed into a socket all the parts are tightened together against the body 3, assuring good  
5 contacts. When the plug is being withdrawn the strain is referred directly to the composition.

In Fig. 7 I show my form of construction adapted to a slightly different style of plug and in Figs. 8 and 9 I show the contacts adapted to this type. The only difference between this type and that shown in the previous figures lies in the length of the body 3 and the shanks 13 of the contact  
10 elements.

I claim:—

1. In a wiring device, a one-piece contact element comprising a shank in combination with two contacts each doubled over on it-  
20 self and the doubled portions facing each other, the shank and contacts being integrally connected along lengthwise edges, and the lengthwise axes of the shank and contacts being parallel.

25 2. In an attachment plug base having two slots a one-piece contact element in each slot comprising a shank in combination with two contacts, each contact doubled over

on itself, the doubled portions facing each other and the other portions being in con- 30 tact with opposing walls of the slot, the shank and the contacts being integrally connected along lengthwise edges, and the lengths of the shank and the contacts being parallel to the length of the slot. 35

3. In a wiring device having two slots, a one-piece contact element in each slot comprising a shank in combination with two contacts all lying against walls of the slot, each contact doubled over on itself and the 40 doubled portions facing each other, the shank and the contacts being integrally connected along lengthwise edges, one contact being an extension of and lying against the same wall of the slot as the shank, sub- 45 stantially as described.

4. In a wiring device, a one-piece contact element comprising a shank and two con- 50 tacts, each contact being integral on one lengthwise edge with the shank and each contact being doubled over on itself and said doubled portions facing each other.

In testimony whereof I have signed my name to this specification.

ARVID H. NERO.