G. C. KNAUFF.

TERMINAL FOR ELECTRIC WIRES.

APPLICATION FILED OCT. 16, 1911.

1,018,570. Patented Feb. 27, 1912.

Fig. 1.

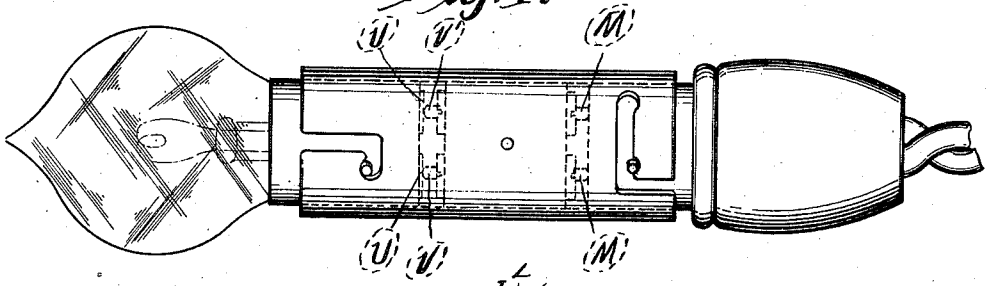


Fig. 2.

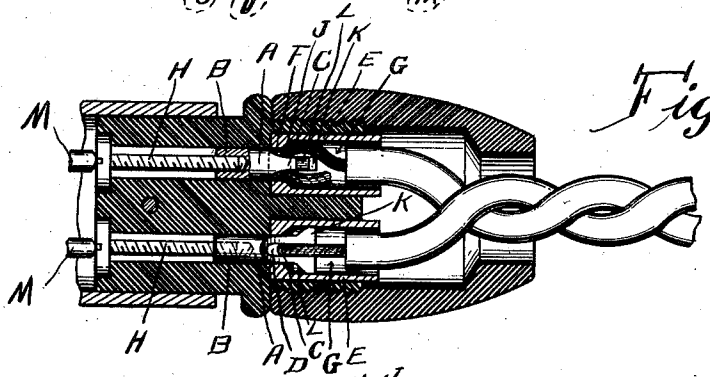


Fig. 3.

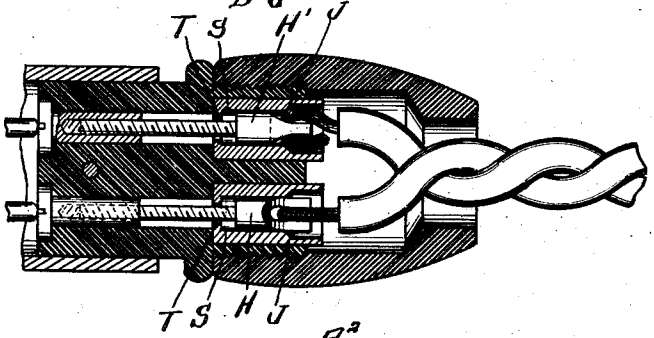
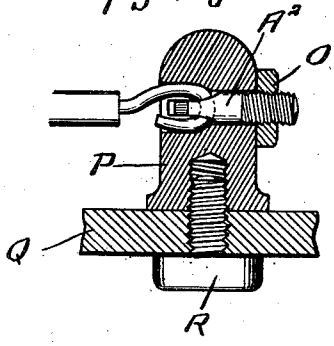


Fig. 4.



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UNITED STATES PATENT OFFICE.

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TERMINAL FOR ELECTRIC WIRES.

1,018,570. Specification of Letters Patent. Patented Feb. 27, 1912.

Application filed October 16, 1911. Serial No. 655,048.

To all whom it may concern:

Be it known that I, GEORGE C. KNAUFF, a citizen of the United States, residing at the city of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Terminals for Electric Wires, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to binding posts or terminals for electric wires such as are used in the contact parts of rheostats or plug connectors, and consists of a simple and inexpensive arrangement of parts, whereby the ends of a wire may be firmly secured to the terminal or post without the use of solder and without danger of damage to the wire.

My invention is particularly applicable to miniature lamp sockets and stage connectors, in which it has heretofore been difficult to obtain both a firm grip on the wire or to secure good conductivity at the connection without the risk of damaging either the wire or the insulating parts which support the terminals to which the wires are fastened. I have found that when wires are soldered to the terminals of small connectors or sockets having rubber or fiber as the insulating materials the insulation is often softened or otherwise damaged by the heat of the soldering iron. If the connection is made by slipping the end of the wire through a perforation and clamping it with a screw inserted through a transverse perforation, the screw is apt to jar loose and also to cut the wire. Likewise, if the wire is fastened by being wrapped under the head of a screw, the edges of the screw head are apt to nick the wire and the screw itself will often jar loose, thus causing a defective contact.

My invention consists of a novel method of clamping the ends of the wire between the terminal screw and the socket, thereby obtaining a good contact which is not readily loosened by jarring, and also of limiting the amount of pressure on the wire so that the parts will not damage the same if the user should attempt to draw them up too tightly. I attain these objects by the mechanism shown in the accompanying drawing, in which—

Figure 1 is a side elevation of a lamp-socket fitted with the wire terminals of my invention. Fig. 2 is a longitudinal section of the plug end of said socket; Fig. 3 is a similar section showing an alternative arrangement of parts; Fig. 4 is a section of a contact button for rheostats as fitted with the wire terminals of my invention.

In the preferred form of my invention A (Fig. 2) is a member having an internally threaded shank B at one end and a flattened portion C at the other end. This flattened portion has a perforation D, through which the end of the wire may be hooked, thus making the member A a screw-eye.

E is a casing or socket having a bore F through which the shank or threaded end of the screw-eye or wire-hooking member A will readily pass. This bore is enlarged at one end to form a chamber G large enough to admit the eye-end of the screw-eye A when this has the wire hooked into it.

H is a screw threaded to fit the shank B of the screw-eye A and thereby adapted to draw the hooked portion of the wire tightly against the wall of the socket E at the point where this is reduced in bore. If this screw H were drawn up too forcibly the edges of the eye A and of the bore at J would be apt to cut into the wire and damage the same. I therefore provide a stop to limit the extent to which the eye member can be drawn toward the smaller bored end of the socket. This stop consists preferably of an enlarged end K on the screw-eye A, having shoulders L which will bottom in the enlarged bore of the socket by striking the portion J so as to check the travel of the screw-eye before damage can come to the wire. The screw or tightening member H may itself constitute one of the contacts on the device for which my invention is used, as in Figs. 1 and 2, where the heads of these tightening screws H H impinge on the ends of contact members M M through which the current is transmitted to the terminals U U of the lamp N by contact members V V′; the arrangement of these contact members being set forth in detail in my application of even date for a patent on a socket for electric lamps, Serial No. 655,049.

Instead of having an internally threaded screw-eye, the shank of the latter may be threaded externally and the tightening member threaded internally as in Fig. 3 where the contact member M′ consists of an internally threaded screw. Fig. 4 shows an allied construction, with an external thread on the shank of the wire-hooking

member A_2, which member is drawn up by a nut O on one side of the post P, which is held on the front of the insulation Q by a shank on the contact button R.

Fig. 3 also shows an alternative form of stop, this being provided by a further reduction in the bore of the socket at S forming an annular stop T against which a shoulder on the shank H′ of the screw-eye impinges.

While I have only shown the preferred forms of my invention, I do not wish to be limited to the particular types shown, as is is obvious that numerous modifications may be made in the same without departing from the spirit of my invention.

What I claim as new and desire to cover by Letters Patent is—

1. In a terminal for electric wires, a socket having a tapered bore, a member having a shank at one end adapted to slip through the smaller end of the tapered bore of the socket, the said member having an eye at the end opposite the shank, into which eye the end of the wire is hooked, and means for drawing the said wire-hooking member into the tapered bore of the socket, thereby compressing the hooked end of the wire between the said member and the said socket.

2. In a fastening for electric wires, a socket member having a bore enlarged at one end, a screw-eye having a shank adapted to slip into the smaller end of the bore of the socket member, the other end of the bore of said socket being large enough to admit the eye end of the screw-eye with the end of a wire hooked into the eye of the same, in combination with a tightening member threaded to match the thread of the screw-eye, portions of the said screw-eye and said socket member being adapted to engage each other so as to limit the action of the tightening member.

3. In a contact terminal for electric wires, a contact member having a threaded shank, a screw-eye threaded to fit the said shank, a socket having a bore into which the threaded portion of the screw-eye may pass, the said bore being enlarged at one end to admit the eye of the screw-eye, the said contact member being adapted to draw the screw-eye into the socket so as to compress the ends of a wire hooked into the eye of the said screw-eye.

4. In a terminal for electric wires, a socket having a tapered bore, a member having a shank at one end adapted to slip through the smaller end of the tapered bore of the socket, the said member having an eye at the end opposite the shank, into which the end of the wire is hooked, and means for drawing the said wire-hooking member into the tapered bore of the socket, thereby compressing the hooked end of the wire between the said member and the said socket, in combination with a stop for limiting the travel of the wire-hooking member into the socket.

5. In a fastening for electric wires, a socket having a bore enlarged at one end, a screw-eye having a shank adapted to slip into the smaller end of the bore of the socket member, the other end of the bore of said socket being large enough to admit the eye end of the screw-eye with the end of a wire hooked into the eye of the same, in combination with a tightening member threaded to match the thread of the screw-eye, and a stop for limiting the motion affected by said tightening member.

6. In a contact terminal for electric wires, a contact member having a threaded shank, a screw-eye threaded to fit the said shank, a socket having a bore into which the threaded portion of the screw-eye may pass, the said bore being enlarged at one end to admit the eye of the screw-eye, the said contact member being adapted to draw the screw-eye into the socket so as to compress the ends of a wire hooked into the eye of the said screw-eye, and a stop for limiting the distance to which the said screw-eye is drawn into the said socket.

In witness whereof, I have hereunto set my hand, this fifth day of October A. D. 1911, in the presence of two subscribing witnesses.

GEORGE C. KNAUFF.

Witnesses:

M. MENDELSON,

A. S. PHILLIPS.