

G. C. KNAUFF.
WIRE TERMINAL.
APPLICATION FILED FEB. 21, 1913.

1,114,366.

Patented Oct. 20, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

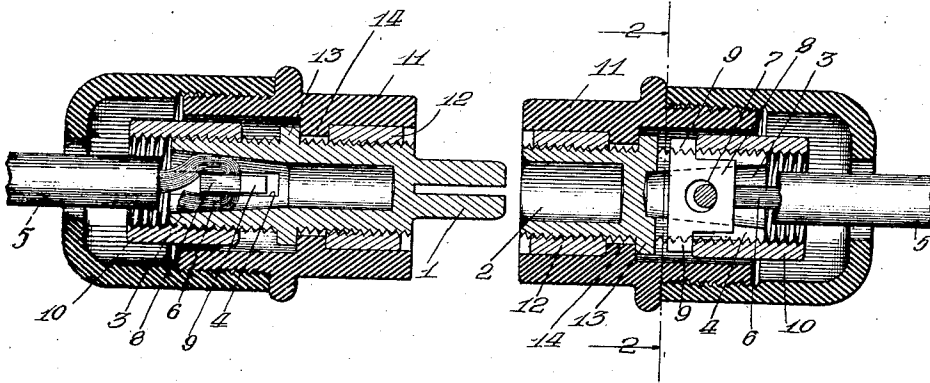


Fig. 2.

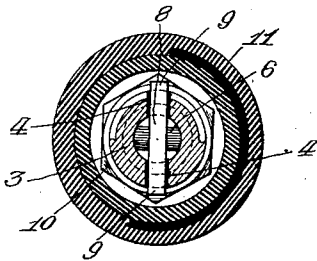


Fig. 3.

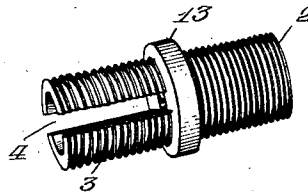
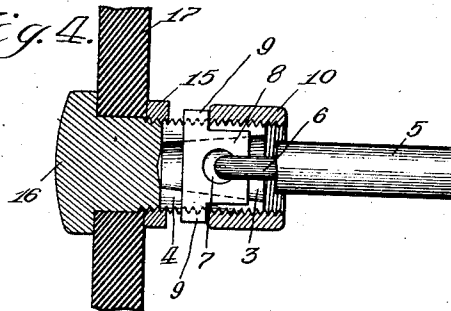


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

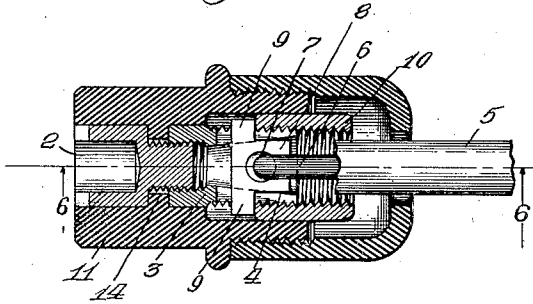


Fig. 6.

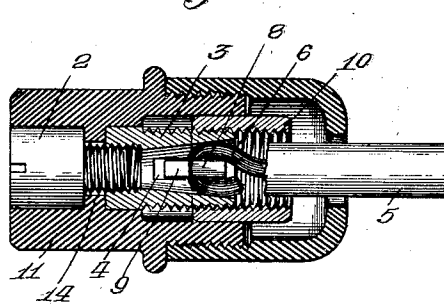


Fig. 7.

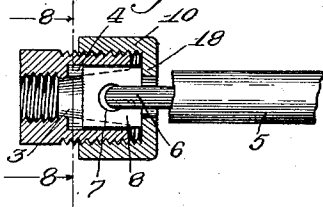


Fig. 8.

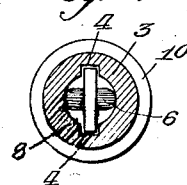


Fig. 9.

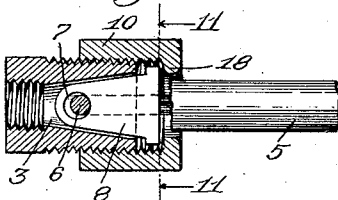


Fig. 10.

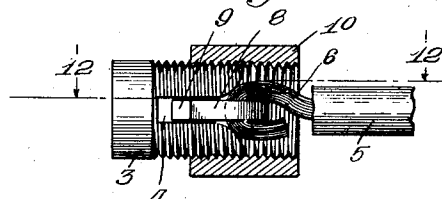


Fig. 11.

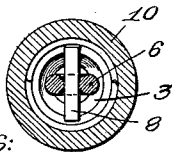
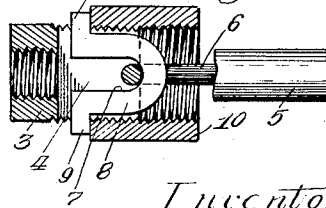


Fig. 12.



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UNITED STATES PATENT OFFICE.

GEORGE C. KNAUFF, OF CHICAGO, ILLINOIS.

WIRE-TERMINAL.

1,114,366.

Specification of Letters Patent.

Patented Oct. 20, 1914.

Application filed February 21, 1913. Serial No. 749,793.

To all whom it may concern:

Be it known that I, GEORGE C. KNAUFF, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Wire-Terminals; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to wire terminals or binding posts for fastening the ends of wires to the conducting parts of electric appliances, and more particularly to the contact portions of such devices as rheostats or the connectors and sockets used on automobile lighting circuits.

The prime object of my invention is to provide a simple, easily tightened and inexpensive arrangement whereby the end of the wire may be firmly secured to or detached from, the terminal or contact member without affecting the connection between the said terminal or member and its support; also whereby the members affecting the said fastening will frictionally interlock to prevent the fastening from working loose in case the appliances carrying the same is subjected to jarring.

A further object is to provide a wire-wedging terminal in which the locking member may be manipulated from the same direction in which the wire is attached to the said terminal.

The wire fastening appliance of my invention is particularly adapted for use on rheostats and on manually operable connectors as used on the light circuits of automobiles and is shown in embodiments suited to this purpose in the accompanying drawings, in which:

Figure —1— is a longitudinal section of the two separable members of a connector having each member fitted with the wire fastening appliance of my invention. Fig. —2— is a transverse section through Fig. —1—, along the line 2—2. Fig. —3— is a perspective view of the contracting member of the right hand portion of Fig. —1— with the other two portions of the wire fastening appliances of this member detached therefrom. Fig. —4— is a section through a portion of a rheostat, showing a constant button fitted with the device of my invention. Fig. —5— shows a connector member fitted

with an embodiment of my invention alternate of the right hand portion of Fig. —1—. Fig. —6— is a longitudinal section through the device of Fig. —5—, along the transverse plane 6—6. Figs. —7—, —9— and —10— show alternative embodiments of my invention. Figs. —8—, —11— and —12—, are sections through Figs. —7—, —9— and —10— respectively, along the lines 8, 11 and 12.

In its preferred embodiment the device of my invention consists of three portions, namely a body or socket member which may also serve as a contact member of the appliance upon which my invention is used, an intermediary member adapted to receive one end of the wire, and a locking member rotatably mounted upon the first named member and adapted to move the intermediary member toward the first-named member. In the embodiment of Fig. —1—, the male and female contacting portions 1 and 2 of the connector each have tapered socket portions 3 at their other farther ends, each of these interiorly tapered portions 3 having a transverse slot 4 dividing the said tapered ends into two portions adapted to be flexed outwardly upon the application of an outwardly directed pressure to the interior of the socket. Each wire 5 has its bared end 6 bent into a loop, the said looped end being poked through a perforation 7 in a flat metal punching 8 adapted to enter the bore of the socket 3 and having lugs or ears 9 projecting into the slots 4 of the said socket or body member. The bifurcated and internally tapered portion 3 of this body member is threaded to match the inner threads upon a sleeve 10, which sleeve preferably has a hexagonal exterior by which the same may readily be grasped for rotating it with reference to the body or socket member, and one end of which sleeve is adapted to impinge against the projections 9 on the intermediary member 8 so as to move this intermediary-member with reference to the body member when the sleeve 10 is rotated with reference to the latter. Consequently, when the members are assembled as shown in Fig. —1—, and the sleeve 10 is rotated in the proper direction, the looped end 6 of the wire will be drawn into the tapered bore of the socket member, so that longitudinally separated portions of the wire will be wedged between the sides of the eye-member 8 and the inner walls of the said socket or

body member. In being thus wedged, the wire will coact with the eye receiving the same to force the bifurcated portions of the socket member outwardly thereby flexing them with increasing pressure against the threaded interior of the sleeve 10. By continuing the rotation of the sleeve or supplemental member 10 upon the main or body member until this flexing of the forked portion of the socket member against the sleeve makes it difficult to rotate the latter, the sleeve will be frictionally interlocked with the socket so that it will not be loosened by any jarring to which the appliance may be subjected in ordinary practice and consequently the wire will remain firmly fastened until the sleeve 10 is rotated in the opposite direction by means of a suitable tool.

In Fig. —1— the contacting body members 1 and 2 are shown as fastened to the insulating casings 11 by means of locking rings 12, there being projecting flanges 13 and 14 upon the said body members and casings respectively, adapted to coact with the said locking rings 12 for securing the body members to the casings. Instead of applying the locking ring 12 to the same side of the insulation piece with the contacting part of the device the locking ring may be adjacent to the socket portion thereof, as in the case of the ring 15 in Fig. —4—, which secures the contact member 16 to the insulating face 17 of a rheostat.

While I preferably form the socket or body portion of my terminal directly upon the contact member of the device to which my invention is applied, the contacting portion may be formed of a separate member threadedly connected to the body member of my terminal, as shown in Figs. —5— and —6—. Instead of having the slots 4 extend entirely through the lateral walls of the socket upon the body member, they may enter the same only part way, as in Figs. —7— and —8—, in which case the wire-receiving member 8 may be formed without the lateral projections or lugs, the sleeve 10 having at its outer end an inwardly directed flange 18 adapted to engage the outer end of the said wire-receiving member.

While I preferably mount the wire-receiving member nonrotatably upon the body member, I do not wish to be limited to this arrangement, as the looped end 6 of the wire will itself tend to keep the intermediary member from rotating, so that the terminal of my invention may be arranged without any slotting of the body member, as shown in Figs. —9— and —11—. Likewise, I do not wish to be limited to an eye-form of the intermediary member as other forms may be devised for interengaging the wire with the member interposed between the body of the terminal and the sleeve rotatably mounted thereon; for example, the wire-hooking

member may be made in the form of a loop, as shown in Figs. —10— and —12—. So also, the body member of the terminal may be formed with only a slight endward recess, as in Fig. —10—, without having a bore into which any considerable portion of the wire is adapted to be drawn.

I claim as my invention:

1. A contact terminal for electric wires comprising a contact member having a threaded shank, a rotatable sleeve threadedly mounted thereon and an intermediary member interposed between the said contact member and the said sleeve and abutting against a portion of the latter, the said intermediary member having a perforation adapted to receive the end of a wire; the threaded connection between the sleeve and the contact member causing the sleeve to move longitudinally of the contact member when rotated with respect thereto, the wire-receiving portion of the intermediary member so shaped with respect to an adjacent portion of the contact member as to decrease the distance therebetween upon relative longitudinal motion thereon in one direction, thereby clamping the said end of the wire therebetween; the said abutting of the intermediary member against a portion of the sleeve causing the latter when longitudinally moved to move the intermediary member to effect the said clamping.

2. A wire terminal comprising a socket member having a threaded end equipped with a longitudinal slot; a sleeve member threadedly mounted upon the said slotted end of the socket member, and an intermediary member interposed between the socket and sleeve members and abutting against a portion of the latter, the intermediary member having an eye adapted to receive an end of a wire and having a portion slidably engaging the slotted portion of the socket member; the wire-receiving portion of the intermediary member and a portion of the socket member adjacent thereto being relatively so shaped and disposed as to decrease the distance therebetween when the intermediary member is slidably moved with respect to the contact member in one direction, thereby clamping the said end of the wire therebetween; the threaded mounting of the sleeve member upon the socket member causing the former upon relative rotation of the said members to move longitudinally with respect to the latter, the abutting of the intermediary member against the sleeve member causing the latter upon such longitudinal motion with respect to the socket member to move the intermediary member to effect the said clamping of the wire.

3. A wire terminal comprising a socket member having a threaded end equipped with a longitudinal slot, a sleeve threadedly mounted upon the said slotted end of the

socket member, and an intermediary member interposed between the socket and sleeve members and slidably engaging the slotted portion of the former, the intermediary member having an eye adapted to receive the end of the wire and having a portion projecting through the said slot in the socket member and beyond the latter, the sleeve abutting against the said projecting portion of the intermediary member; the wire-receiving portion of the intermediary member and a portion of the socket member adjacent thereto being relatively so shaped and disposed as to decrease the distance therebetween when the intermediary member is slidably moved with respect to the contact member in one direction, thereby clamping the said end of the wire therebetween; the threaded mounting of the sleeve member upon the socket member causing the former upon relative rotation of said members to move longitudinally with respect to the latter, the abutting of the intermediary member against the sleeve member causing the latter upon such longitudinal motion with respect to the socket member to move the intermediary member to effect the said clamping of the wire.

4. In a wire terminal, a slotted socket member having a tapering bore, the portions of the said member at opposite sides of the slot therein being adapted to be flexed outwardly; an eye member slidably mounted in the said slot of the socket member, the eye of the eye member adapted to receive the end of a wire; the said eye member adapted, when slid relative to the socket member, to draw the said wire toward the smaller end of the bore of the socket, the taper of the bore coacting with the said relative sliding motion to cause the wire to be clamped between the eye member and the socket member; and a clamping member rotatably mounted upon the socket member and engaging the eye member, the said clamping member adapted, when rotated, to slide the eye member to effect the said clamping of the wire; the taper of the bore coacting with the said eye member and the said wire to flex the said socket member portions outwardly when the eye member is slid to effect the said clamping of the wire.

5. A wire-fastening comprising a wire; a male member and a female member, the said

male member equipped with a perforation housing a portion of said wire; and means rotatable relatively to the male member and having threaded connection with the female member, for forcing said male member to enter said female member; portions of the said wire at opposite ends of the said perforation being disposed between and contacting with the said male and female members, the said disposition thereof coacting with the said entry of the male member into the female member to clamp the said wire portions therebetween.

6. A wire-fastening comprising a wire; a male member equipped with a perforation housing a portion of said wire; a female member adapted to be entered by the said male member, portions of the said wire at opposite ends of the said perforation being disposed between and contacting with the said male and female members; and means threaded upon the female member for forcing the male member to enter the said female member, the said entry of the female member by the male member coacting with the aforesaid disposition of the said wire portions to effect a clamping of the latter between the said members.

7. A wire terminal comprising a main member having a perforation therein, a supplemental member, and an intermediary member therebetween, the latter having an eye for receiving the end of a wire and having a portion entering the said perforation; the said portion and the adjacent part of the perforated member being relatively tapered, thereby reducing the distance between the main and the intermediary members upon relative motion thereof in one direction; the supplemental member having a portion threaded upon the main member and another portion abutting against the intermediary member, the said threading and abutting coacting upon rotation of the supplemental member with respect to the main member to move the said intermediary member in the said direction.

In testimony whereof I have signed my name in presence of two subscribing witnesses.

GEORGE C. KNAUFF.

Witnesses:

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ALBERT SCHEIBLE.