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G. H. GLADE, JR

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ELECTRICAL CONDUCTOR TERMINAL CAP

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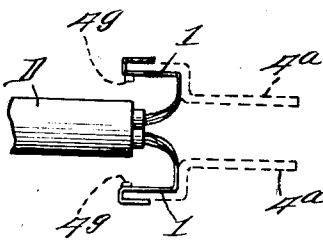
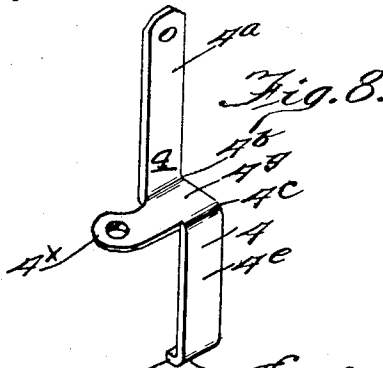
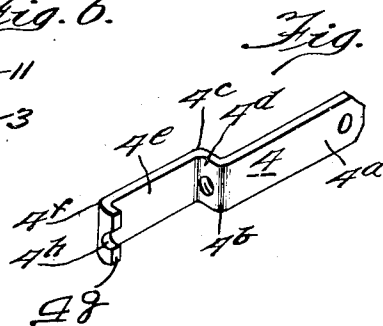
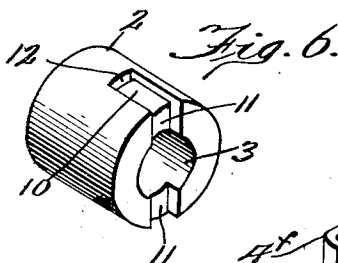
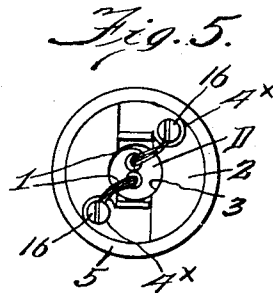
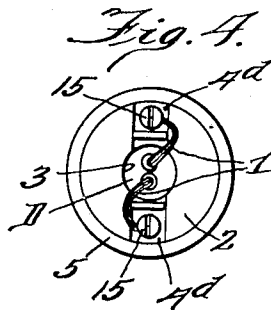
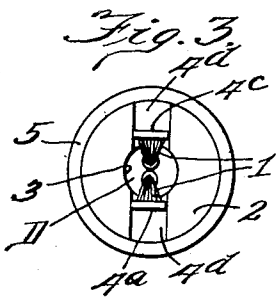
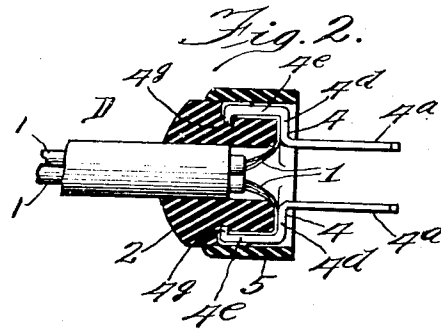
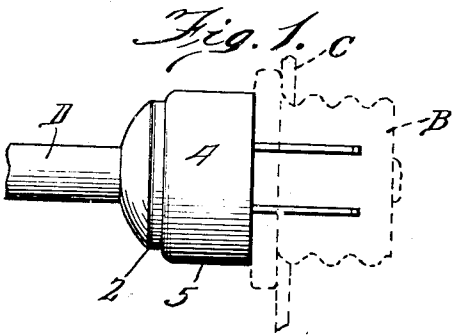


Fig. 9

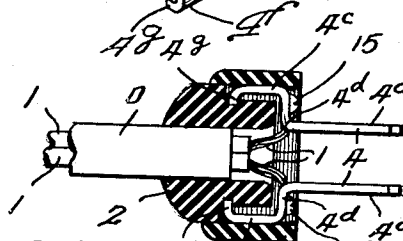


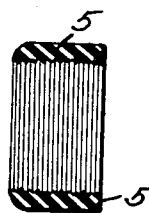
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Att'y.

Fig. 10.



UNITED STATES PATENT OFFICE

1,988,725

ELECTRICAL CONDUCTOR TERMINAL CAP

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Application August 5, 1929, Serial No. 383,526

19 Claims. (Cl. 173—361)

This invention relates to electric conductor terminal caps, particularly of the type used in making connections for electric utility devices such as floor lamps, washing machines, toasters and other portable devices.

One of the objects of the invention is to produce a terminal cap consisting of few parts.

Another object of the invention is to produce a terminal cap of simple design.

Another object of the invention is to produce a terminal cap of sturdy construction,

Another object of the invention is to produce a terminal cap that permits of the wire ends being connected thereto in a secure and reliable manner.

Another object of the invention is to produce a terminal cap having the blades projecting therefrom that will provide for a substantial and reliable connection of these blades to the cap members.

A further object of the invention is to produce a plug and cord connection, having such a secure fastening therebetween and between the wires and the blades that the cable may be grasped either adjacent the cap or a greater distance therefrom for removing the same from a socket and in either case no damage will result to the cap, the cable, the wires or the blades from repeated removals in this manner.

Another object of the invention is to attain those ends and other objects, which will be pointed out in the claims.

In the drawing:—

Fig. 1 is a side elevation of the device.

Fig. 2 is an axial section.

Fig. 3 is an end view thereof.

Fig. 4 is a view similar to Fig. 3 and showing the wires attached in a different manner.

Fig. 5 is a view similar to Fig. 3 and indicating still another way of securing the wires to the blades.

Fig. 6 is a view in perspective of the core.

Fig. 7 is a perspective view of one of the blades.

Fig. 8 is a perspective view of a blade of slightly different form.

Fig. 9 is a view of the cable showing how the wire ends are bent when in assembled position in the cap.

Fig. 10 is a view of a detail of construction; and

Fig. 11 is a cross-section of the device as shown in Fig. 4.

In Fig. 1 the cap A is shown as attached to a cooperating plug B which has screw thread connections with a socket or outlet C, which may

be understood as indicating a source of electric current to be conducted by the cable D.

The cable D consists of the two usual wires 1—1, which are first passed through the bore 3 in the core 2. The wire ends, it will be understood, are bared for contact with the two blades 4—4 so as to transmit current thereto.

The parts 4^a—4^a of the blades 4 are parallel and extend from the cap for the purpose of connection with the part B in a well understood manner.

It is common practice to mount blades of this kind to a cap member by merely bending them in such a way as to allow of a rivet or screw being passed through the bent portion, and thus securing it to the cap body; this practice has its faults, and to overcome the undesirable results of such a mounting the present blades are formed so as to interlock with grooves and indentations formed on the outer surface of the core 2, and are held in position by a collet whose interior surface is serrated and which is forced on to the core 2 and held in place thereon by friction.

Each blade, as seen in Figs. 2 and 7, is bent at 4^b and 4^c and the portion 4^d between these bends forms a right angle with the protruding portion 4^a; a portion 4^e continues from the bend 4^c in a plane parallel to the portion 4^a. A further right angle bend at 4^f forms a hook 4^g which provides means for locking the blade against displacement. A notch 4^h is formed in the end of the hook 4^g to accommodate the wire 1 in a manner which will be further described.

The core 2 has the peripheral grooves 10—10 previously referred to for accommodating the portions 4^e of the blades, and the end grooves 11—11 to accommodate the portion 4^d. At the extremity of the peripheral grooves 10—10 are the sockets 12—12 for receiving the hook portion 4^g.

The wires 1—1, after being introduced through the bore 3 of the core 2 are led away from each other, and from the center of the core, and laid along the grooves 11—11, and then bent to follow into the peripheral paraxial grooves 10—10. The part 4^g of each blade is then inserted into the cavity or socket 12 and the notch 4^h is occupied by the wire 1 and holds it against lateral displacement, while the collet 5 is pressed on in position, carrying the remaining end thereof toward the bend 4^c; the wires when so held assume the form shown as indicated in Fig. 9. The collet when so assembled, it will be seen, frictionally holds the wires securely in

position as well as operating to securely retain the blades against all movement. In connection with the forcing of the collet on the core 2 and holding the same in place by friction as hereinbefore mentioned, this frictional gripping effect is or may preferably be secured by sliding or driving the collet lengthwise over the core so as to make a driving or driven fit which would hold the parts firmly and securely together merely by the friction of their contacting surfaces.

In the form of blades shown in Figs. 4 and 5, the collet functions in the same way for securing them in their relative positions with the core 2, but the wires, instead of being held by the collet, are laid under screw heads 15—15 in the part 4^d of the form shown in Fig. 4, and under screw heads 16—16 which are secured to the offset portion 4^e of the blade member, as shown in Fig. 8, formed as projecting laterally from the portions 4^e—4^e which correspond to the portions 4^d in the form shown in Fig. 7. This expedient last described for securing the wires, is desirable in the event that the wire ends, as assembled in the factory by pressing on the collet 5, become displaced or damaged, and a new connection or new cable end is desirable to be introduced; the wire ends 1—1 may then be passed through the bore 3 as at first, but instead of being held in position by the collet as first described, they may be wound round the screws 15 or 16 and held in place thereby. It will be seen that in Figs. 4, 5 and 11 the prongs are frictionally held in place by the collet by clamping the prongs to the core by the driven fit of the core and collet. The prongs may be held in place however merely by the cooperation of the hooks 4^e with the core, the collet merely preventing lateral movement of the prongs.

The core 2 and collet 5 are made of any suitable insulating material such as semi-hard rubber, Bakelite, fibre or any other substance that will readily occur to the minds of those skilled in the art, the core being preferably made of semi-hard rubber and the collet being preferably made of hard fiber.

It will be understood that many changes and modifications may be made without departing from the spirit of this invention.

I claim:

1. In a device of the character described having a set of blades and a semi-hard core, means comprising cooperating hooks and cavities for fitting the blades to the core, and means cooperating with said blades and core frictionally retaining said blades in position, said means including a hard collet in the form of a cylindrical shell arranged to surround the said core.

2. In a device of the character described having a hard collet in the form of a cylindrical shell, a set of blades and a semi-hard core, means for fitting the blades to the core, and means for mechanically retaining them in position, said fitting means including a hook on each blade and cavities in the core for receiving the said hooks, and the collet surrounding the same and contacting the blades and holding the hooks on the blades in said cavities in the core.

3. In a device of the character described having a semi-hard core and a set of blades associated therewith, lead wires from said blades and a hard collet in the form of a cylindrical shell, said collet adapted to be slipped over the core and blades and hold the blades in position

by contacting therewith and thereby retain the entire assembly in proper cooperative position.

4. In a device of the character described having a semi-hard core and a set of blades associated therewith, lead wires from said blades and a hard collet in the form of a cylindrical shell, peripheral grooves in said core for receiving the said blades, and said collet adapted to be slipped over the core and blades to retain the said blades in the said grooves by being pressed over the core and forming an encircling member thereabout.

5. In a device of the character described, including a cylindrically shaped core, a set of blades having hooked ends associated therewith, a peripheral groove in the core for each blade, an end groove connecting with each peripheral groove for retaining the hooked ends of said blades in proper position, and a collet in the form of a cylindrical shell arranged to frictionally engage the core and hold the hooked ends of the blades in said end grooves.

6. In a device of the character described, comprising a semi-hard cylindrically shaped core, a set of blades and a hard collet in the form of an open-ended cylindrical shell, said blades each having one end thereof intruded in the said core, said collet surrounding the said semi-hard core and adapted to be slipped over the core and blades to frictionally hold the said blades in position.

7. In a device of the character described, including a set of blades, a semi-hard cylindrically shaped core and a hard cylindrically shaped open-end collet, means for fitting the blades to the core and means for frictionally retaining them in position, said frictional means being the said collet which surrounds and frictionally engages the core and holds the blades in position.

8. In a device of the character described, including a hard open-ended cylindrically shaped collet, a set of blades and a semi-hard core, means for fitting the blades to the core and means for removably securing them in position; a hook on each blade, cavities in the core to receive the said hooks, the said collet arranged to surround and be frictionally held on the said core for retaining the hooks in the said core cavities.

9. In a device of the character described, including an open-ended cylindrically shaped collet and a core, and a set of blades; a peripheral groove in the core for each blade and grooves at the end of the core communicating with the peripheral grooves adapted to receive the blades, the said collet arranged to be frictionally held on the core and retain said blades in position in the said grooves by contact with said blades.

10. A device of the class specified having a core provided with blades, the blades having laterally bent portions to provide hooks and the core having shoulders to engage said hooks and hold the blades against outward movement, lead wires extending lengthwise of portions of the blades and in contact therewith, the ends of said lead wires being doubled back so that their end portions extend backwardly on the opposite sides of said blade portions and in contact therewith, and a device encircling the core and said blade portions and contacting the backwardly extending portions of the lead wires so as to hold the same in contact with the blades and also to hold the blades in positions to engage the core shoulders, said device having a driven

fit with the core so as to hold the parts in assembled relation by the friction thereof.

11. A device of the class specified comprising a core provided with blades, the blades being bent laterally outward and then extending lengthwise of the core and then being bent laterally inward at their ends to form end hooks or shoulders, lead wires lying between the lengthwise portions of the blades and the core and extending around the ends of the blades and thence backwardly on the outer sides of said lengthwise blade portions, and a collet surrounding the core and contacting with said outside portions of the lead wires and holding the lead wires in contact with the blades and also holding the blades in position against removal from the core, said collet having a driven fit with the core and the parts being held in assembled relation by the friction of such fit.

12. A device of the class specified, comprising a core and a sleeve-like collet surrounding the core and substantially enclosing the outer end portion of the same, said collet having a driven fit with the core to hold the two together frictionally and contact blades held in position in the device by the driven fit of the collet and core and having protruding ends adapted to serve as contacts for plug sockets.

13. A device of the class specified comprising a core and a sleeve-like collet surrounding the core and having a driven fit with the same, said collet substantially enclosing the outer end portion of the core and contact blades having longitudinally extending portions inserted in the device, and held in position by the driving fit of the collet over the core, said blades having protruding ends to serve as contacts for plug sockets.

14. A device of the class specified, comprising a core and a sleeve-like collet surrounding the core and substantially enclosing the outer end portion of the same, said collet having a driven fit with the core to hold the two together frictionally and contact blades having longitudinally extending portions interposed between the core and collet and frictionally held in position by the tightness of the close fit of the collet on the core, said blades having protruding ends adapted to serve as contacts for plug sockets.

15. A device of the class specified, comprising a core and a sleeve-like collet surrounding the core and substantially enclosing the outer end portion of the same, said collet having a driven fit with the core to hold the two together frictionally and contact blades having longitudinally extending portions interposed between the core and collet and held in position by the tightness of the close fit of the collet on the core, said

blades having protruding ends adapted to serve as contacts for plug sockets, and lead-in wires frictionally held by said collet extended lengthwise of the portions of the contact blades associated with the core so as to make contact with said portions.

16. A device of the class specified, comprising a core and a sleeve-like collet surrounding the core and substantially enclosing the outer end portion of the same, said collet having a driven fit with the core to hold the two together frictionally and contact blades carried by the device and having protruding ends adapted to serve as contacts for plug sockets and lead-in wires extended along and in contact with portions of said blades frictionally held by said collet against the blades to make electrical connection therewith.

17. A device of the class specified comprising a core and a sleeve-like collet surrounding the core and having a driven fit therewith and contact blades having longitudinally extending portions arranged between the collet and core and frictionally held in position by the same, said blades also having transversely extending portions fitting against the end of the core and also having other longitudinally extending portions which project outwardly from the core and form contacts for plug sockets.

18. A device of the class specified comprising a core and a sleeve-like collet surrounding the core and having a driven fit therewith and contact blades having longitudinally extending portions arranged between the collet and core and held in position by the same, said blades also having transversely extending portions fitting against the end of the core and also having other longitudinally extending portions which project outwardly from the core and form contacts for plug sockets, and lead-in wires arranged lengthwise of and in contact with the first-mentioned longitudinally extending portions of said blades and the transverse portions thereof, frictionally held in place by said collet.

19. A device of the class specified comprising a core and a sleeve-like collet surrounding the core and substantially enclosing the contact end making portion thereof, said collet and core being secured and held together merely by frictional gripping of surfaces which extend longitudinally in a substantially straight manner and contact blades inserted in the device and frictionally held in place by the collet and core and having protruding ends adapted to serve as contacts for plug sockets.

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