Aug. 22, 1939. C. G. WIRTH 2,170,359

ELECTRICAL CONNECTOR

Filed July 26, 1937

Fig. 1.

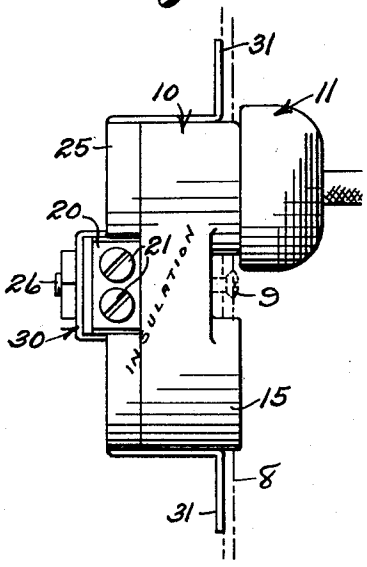


Fig. 2.

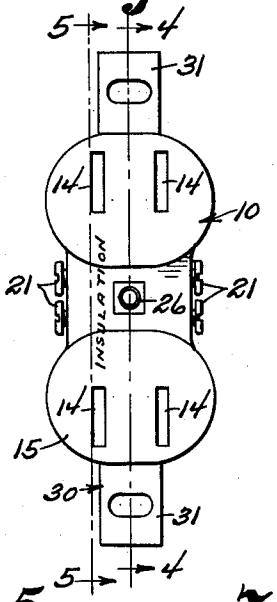


Fig. 3.

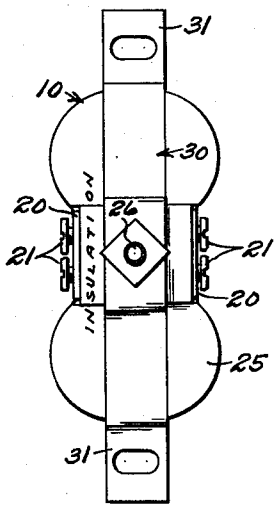


Fig. 4.

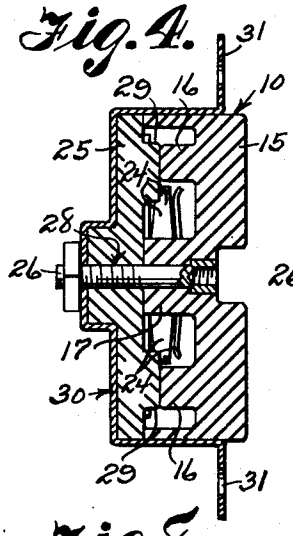


Fig. 5.

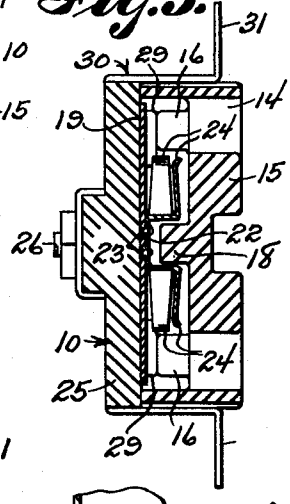


Fig. 6.

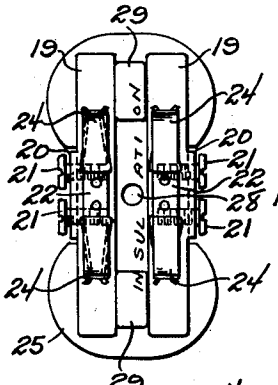


Fig. 7.

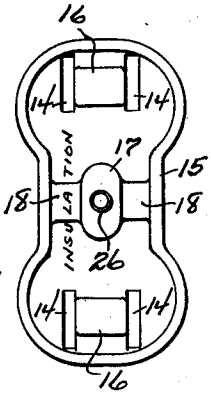
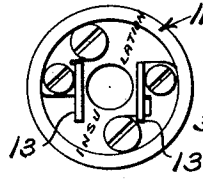


Fig. 8.



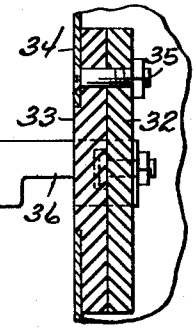


Fig. 10.

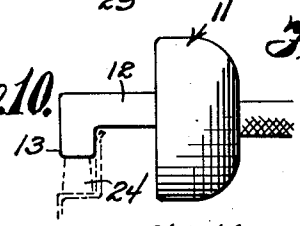


Fig. 9.

Charles G. Wirth INVENTOR

BY Victor J. Evans & Co.

ATTORNEYS

Patented Aug. 22, 1939 2,170,359

UNITED STATES PATENT OFFICE

2,170,359

ELECTRICAL CONNECTOR

Charles G. Wirth, Fair Oaks, Pa.

Application July 26, 1937, Serial No. 155,800

1 Claim. (Cl. 173—330)

This invention relates to electrical connectors and has for an object to provide a device of this character by means of which an electric clock may be hung and all of the wires concealed.

A further object is to provide a novel cap having the terminals provided with laterally directed hooks adapted to hook underneath the spring jaws of a socket member for securely anchoring the cord of a smoothing iron or sweeper or other untensil in place against dislodgment.

A further object is to provide a socket member having novel jaws adapted to slidably receive the hooked ends of the cap terminals and hold the terminals releasably latched in place until the cap is slid away from the jaws.

A further object is to provide a separable electric connector of this type which will be formed of a few strong simple and durable parts, which will be inexpensive to manufacture, and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claim without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming part of this specification:

Figure 1 is a side elevation of the socket member and the cap member of a separable electrical connector constructed in accordance with the invention.

Figure 2 is a front elevation of the socket member.

Figure 3 is a rear elevation of the socket member.

Figure 4 is a longitudinal sectional view of the socket member taken on the line 4—4 of Figure 2.

Figure 5 is a longitudinal sectional view of the socket member taken on the line 5—5 of Figure 2.

Figure 6 is a front elevation of the socket member with the cover plate removed from the shell to expose the jaws and terminals for attaching circuit wires.

Figure 7 is a front elevation of the shell of the socket member.

Figure 8 is an end elevation of the cap member looking toward the hook shaped prong terminals.

Figure 9 is a side elevation of the cap member and showing diagrammatically how the prongs engage the spring jaws when the cap is slid bodily toward the jaws on the socket member.

Figure 10 is a fragmentary view showing an electric clock plug member provided with terminals having hooks on the tips for engagement with the socket member.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 designates the socket member and 11 the plug member of a separable electrical connector. As best shown in Figures 8 and 9 the cap member is provided with a pair of prongs 12 forming terminals for electric circuit wires, each prong being provided with a lateral extension 13 at the tip forming a hook adapted to be received in spring jaws in the socket member 10 when the prongs 12 are inserted in slots 14 in the socket member and slid laterally toward the jaws, the slots being of about twice the width of the shanks of the prongs to permit such sliding movement.

As best shown in Figure 7 the socket member 10 comprises a shell 15 formed of insulating material and preferably shaped to receive two cap members of the type shown in Figure 9. The shell is provided between its pairs of spaced slots 14, with separating blocks 16 of insulating material and at the center of the shell an integral insulating block 17 is provided with short lateral arms 18 which form seats for spaced parallel metal bars 19, which, as shown by Figures 4 to 7, are secured to a cover plate 25 later described. The bars carry spring clamping jaws as will now be described. Each bar 19 is provided at one longitudinal edge with a flange 20 which is equipped with screws 21 for receiving a circuit wire. Upon the opposite face of the bar a single length of spring metal 22 is riveted to the bar, as shown at 23. On each side of the rivets the metal is deformed and slit to provide three spring jaws 24 arranged perpendicular to each other to releasably engage the hooked tip 13 of a cap prong, as best shown diagrammatically in Figure 9.

The bars 19 are secured to a cover plate 25 formed of insulating material and having openings in the sides to receive screws 21 which, it will be seen, attach the bars 19 to the cover plate.

The cover plate is secured to the shell by a bolt 26 which is passed through an opening 27 in the stud 17, shown in Figure 7, and through an opening 28, formed in the cover plate, as best shown in Figure 4. The bolt is provided with a screw 9 for attaching the escutcheon plate 8.

The cover plate is provided with spaced studs

28, of insulating material which bear upon the studs 16 of the shell so that the two plates 19 are thoroughly and completely insulated from each other.

An attaching bracket 30 is secured to the cover plate by a bolt 26 and is provided with perforated terminals 31 to receive mounting screws of a conventional wall box.

In operation the pronged tips 13 of the cap member are passed endwise into the slots 14 and thereupon the cap member 11 may be slid bodily in the slots toward the spring jaws 24 in which position of the parts the cap member cannot become accidentally dislodged from the socket member. To remove the cap member it is simply necessary to reverse the movements just described.

In Figure 10 there is shown an electric clock plug member comprising spaced plates of insulating material 32 and 33 which are bolted to the clock 34 by bolts 35 and are equipped with spaced terminals 36 having laterally extending hooks 37 at the tips to engage with the spring jaws 24 of the socket member as above described so that all of the wires are concealed.

It will be here pointed out that the device can be used as a polarity plug for direct current connections because the prongs can be inserted in one position only.

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

An electric plug connector comprising a shell of insulating material having pairs of spaced slots, separating blocks of insulating material between the slots, an insulating block at the center of the shell provided with short lateral arms forming seats, a cover plate, metal bars secured to the cover plate, said bars extending longitudinally of the shell across said seats, each bar being provided at one longitudinal edge with a flange for receiving terminal wire securing screws, a single conductor of spring metal riveted at the center to the center of each bar, the conductor being deformed on each end and slit to provide three spring jaws arranged at an angle to each other, said cover plate having openings in the sides receiving said circuit wire receiving screws, a bolt passed through the cover plate, the insulating block and the shell for securing the cover plate to the shell, spaced studs of insulating material projecting from the cover plate and bearing upon said separating blocks of the shell for insulating said metal bars and their respective conductors from each other, and cap members each provided with a pair of prongs forming terminals for electric circuit wires, each prong being provided with a lateral extension at the tip forming a hook adapted to be received in respective spring jaws of the conductors by movement of the cap member longitudinally of the shell after the prongs have been inserted in a respective pair of said slots.

CHARLES G. WIRTH.