Nov. 29, 1938. H. R. ELLIS 2,138,735

ATTACHING DEVICE

Filed Nov. 19, 1937

Fig. 1.

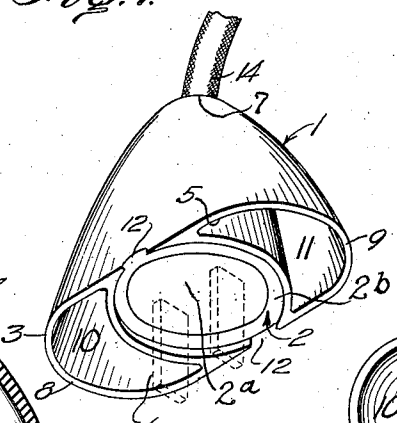


Fig. 2.

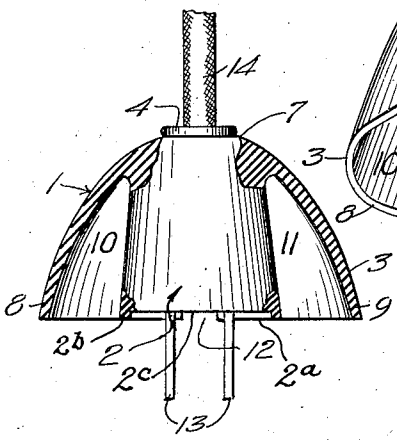
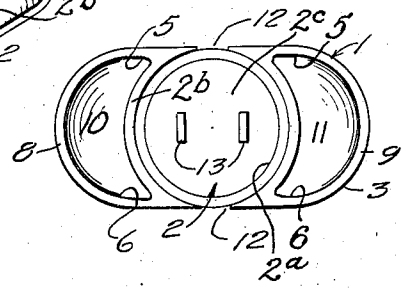


Fig. 3.



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Patented Nov. 29, 1938 2,138,735

UNITED STATES PATENT OFFICE

2,138,735

ATTACHING DEVICE

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Application November 19, 1937, Serial No. 175,517

4 Claims. (Cl. 173—361)

This invention relates to an electrical plug, more particularly to the male or plug section of electrical connections, and the invention has for its object to provide, in a manner as hereinafter set forth a plug of the type referred to, including means for firmly attaching it to the support for an electrical outlet or output used in dwellings, offices, etc., and with the plug so formed to quickly remove it from attaching position when desired.

The invention further aims to provide, in a manner as hereinafter set forth, a plug of the type referred to including means to constitute a pair of independent suction chambers functioning to securely connect the plug in relation to a support for the female or socket section of such connection.

A further object of the invention is to provide, in a manner as hereinafter set forth, a plug of the type referred to including means independent of the prongs thereof for automatically securing it in attached relation with respect to the female section of an electrical connection.

Further objects of the invention are to provide, in a manner as hereinafter set forth, an electrical plug for the purpose referred to which is simple in its construction, strong, durable, thoroughly efficient in use, conveniently applied in attaching position, and inexpensive to manufacture.

To the above ends essentially and to others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be more specifically referred to and illustrated in the accompanying drawing wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawing wherein like reference characters denote corresponding parts throughout the several views:

Figure 1 is a perspective view of an electrical plug constructed in accordance with this invention, and with the contact prongs thereof shown in dotted lines,

Figure 2 is a view of the plug partly in side elevation and partly in vertical section, partly broken away, and

Figure 3 is an inverted plan of the plug.

With reference to Figures 1, 2 and 3, the plug generally indicated at 1 includes a resilient one-piece body part formed of a substantially solid centrally disposed head or inner portion 2 of circular cross section having a circular recess 2^a at its inner end, and a carrier or hollow outer portion 3 substantially of semi-ovoidal contour having an opening centrally of its outer end and an integral flange 4 which registers with said opening. The portion 3 is compressible and extendible relative to portion 2 when the device is to be attached to the support having the electrical outlet or output.

The carrier 3 includes a front wall 5, a rear wall 6, an outer end 7 merging into the walls 5, 6, and a pair of rounded side walls 8, 9, merging into the walls 5, 6. The flange 4 is formed on the end 7. The inner faces of the walls 5, 6, intermediate their ends merge into opposite sides of the head 2. The walls 5, 6, are extended laterally in opposite directions with respect to the head 2. The end 7 is integral with the outer end of head 2. The walls 8, 9 are spaced from the opposite sides of the head 2 which are not integral with the walls 5, 6. The portions of the walls 5, 6, which are not integral with the head 2, the sides of the head 2 which are not integral with the walls 5, 6, and the walls 8, 9, coact to provide a pair of spaced independent suction or vacuum chambers 10, 11 of segmental contour, opening at their inner ends at the inner end of the device and which gradually increase in area from the outer to the inner end of the device. To facilitate the compressible and extendible action of the carrier 3 on the application of the device, the latter is formed, at the transverse center of its inner end, with a pair of spaced aligned notches 12 extending through the walls 5, 6, and the wall 2^b of the circular recess 2^a. The contact prongs of the device are indicated at 13, and which project from the base 2^c of recess 2^a to beyond the inner end of the head 2.

When the plug 1 is employed, the prongs 13 of the plug are engaged in the female section of the connection. The circuit connections 14 extend through the opening in the end wall 7. After the plug is arranged in the manner as stated, the outer portion 3 of the device is compressed against the support for the female section and then released whereby the chambers 10, 11 will provide a suction action thereby creating a vacuum and detachably securing the plug to the support aforesaid thereby preventing the separation of the male section from the female section of the electrical connection until the vacuum is broken.

The body part in side elevation is semi-ovoidal in contour and oval contour in transverse sections. The front and rear walls of the carrier are of semi-ovoidal contour. The side walls of the carrier in cross section are upon the segment of a

circle. The outer end wall of the carrier in lengthwise section is of arcuate contour.

What I claim is:

1. An electrical plug including a resilient one-piece body part formed of a substantially solid centrally disposed head and a hollow carrier having an outer end, and front, rear, and side walls, said walls including inner and outer faces, said side walls merging into said front and rear walls, a pair of opposed sides of said head merging into the inner faces of the front and rear walls intermediate the ends of the latter, the side walls of the carrier being spaced from the other pair of opposed sides of the head, said side walls in connection with the said other pair of opposed sides of the head and the remaining portions of the said front, rear and outer end walls of the carrier providing a pair of suction creating chambers closed at the outer end and opening at the inner end of said body part, said chambers being spaced from each other by said head and providing for connecting said body part to a support for an electrical output at opposite sides of the output, said body part being of semi-ovoidal contour in side elevation and oval contour in transverse section.

2. An electrical plug including a resilient one-piece body part formed of a substantially solid centrally disposed head and a hollow carrier having an outer end, and front, rear, and side walls, said walls including inner and outer faces, said side walls merging into said front and rear walls, a pair of opposed sides of said head merging into the inner faces of the front and rear walls intermediate the ends of the latter, the side walls of the carrier being spaced from the other pair of opposed sides of the head, said side walls in connection with the said other pair of opposed sides of the head and the remaining portions of the said front, rear and outer end walls of the carrier providing a pair of suction creating chambers closed at the outer end and opening at the inner end of said body part, said chambers being spaced from each other by said head and providing for connecting said body part to a support for an electrical output at opposite sides of the output, said head being formed with a recess in its inner end, said body part being provided at its inner end on its transverse median with a pair of spaced aligned notches extending through the inner ends of said front and rear walls and the wall of said recess, circuit connections extending through said outer end wall into said head, and contact prongs projecting from the base of said recess beyond the inner end of said body part.

3. An electrical plug including a resilient one-piece body part formed of a substantially solid centrally disposed head and a hollow carrier having an outer end, and front, rear, and side walls, said walls including inner and outer faces, said side walls merging into said front and rear walls, a pair of opposed sides of said head merging into the inner faces of the front and rear walls intermediate the ends of the latter, the side walls of the carrier being spaced from the other pair of opposed sides of the head, said side walls in connection with the said other pair of opposed sides of the head and the remaining portions of the said front, rear and outer end walls of the carrier providing a pair of suction creating chambers closed at the outer end and opening at the inner end of said body part, said chambers being spaced from each other by said head and providing for connecting said body part to a support for an electrical output at opposite sides of the output, said head being formed with a recess in its inner end, said body part being provided at its inner end on its transverse median with a pair of spaced aligned notches extending through the inner ends of said front and rear walls and the wall of said recess, circuit connections extending through said outer end wall into said head, and contact prongs projecting from the base of said recess beyond the inner end of said body part, said body part being of semi-ovoidal contour in side elevation and oval contour in transverse section.

4. An electrical plug including a resilient one-piece body part formed of a substantially solid centrally disposed head and a hollow carrier having an outer end, and front, rear, and side walls, said walls including inner and outer faces, said side walls merging into said front and rear walls, a pair of opposed sides of said head merging into the inner faces of the front and rear walls intermediate the ends of the latter, the side walls of the carrier being spaced from the other pair of opposed sides of the head, said side walls in connection with the said other pair of opposed sides of the head and the remaining portions of the said front, rear and outer end walls of the carrier providing a pair of suction creating chambers closed at the outer end and opening at the inner end of said body part, said chambers being spaced from each other by said head and providing for connecting said body part to a support for an electrical output at opposite sides of the output, said head being tapered and of circular cross section, said front and rear walls being of semi-ovoidal contour, said side walls in cross section being upon the segment of a circle, and said outer end in lengthwise section being of arcuate contour.

HORACE R. ELLIS.