Oct. 26, 1937. A. W. SCHANK 2,097,257

ELECTRICAL APPLIANCE

Filed March 19, 1935

Fig. 1.

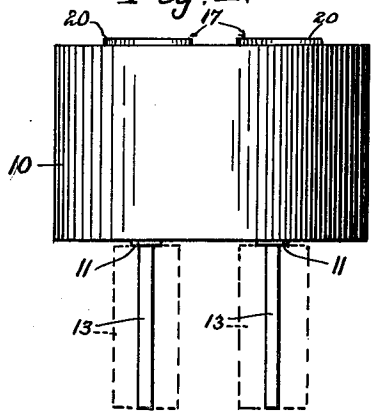


Fig. 2.

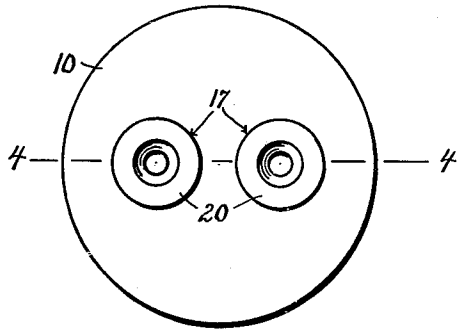


Fig. 3.

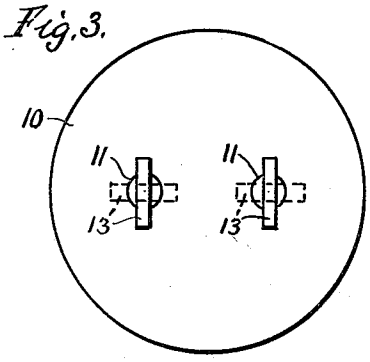


Fig. 4.

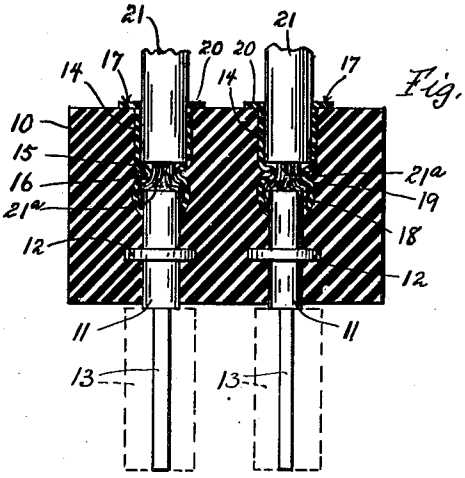


Fig. 5.

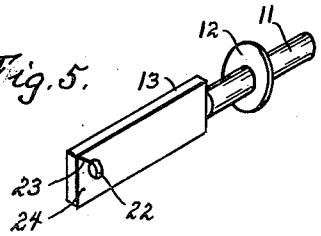
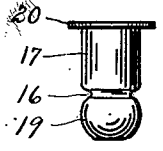


Fig. 6.



INVENTOR

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By W. W. Williamson Atty.

Patented Oct. 26, 1937 2,097,257

UNITED STATES PATENT OFFICE

2,097,257

ELECTRICAL APPLIANCE

Arthur W. Schank, Hammonton, N. J., assignor of one-third to Jules Press, Hammonton, N. J.

Application March 19, 1935, Serial No. 11,754

3 Claims. (Cl. 173—361)

My invention relates to new and useful improvements in an electrical appliance, and has for one of its objects to construct a device of this character, such as a connecter, plug, jack and the like, having rotatably adjustable blades, prongs or contact members.

Another object of my invention is to provide an electrical connecter wherein the blades or contact members thereof are rotatably adjustable whereby it is possible to position such blades in parallelism or in sidewise alignment, especially without the use of tools, so they may be inserted in the apertures of sockets, outlets, companion connecter members, and the like, which apertures are variously arranged.

Another object of the present invention is to produce an electrical connecter including a compressible or deformable body of soft rubber whereby pressure suitably applied to the proper regions of said body will cause the outer ends of the blades or contact members to converge or diverge to assist in inserting the blades in the apertures of a socket or similar article.

Another object of this invention is to provide a unique means for binding the ends of the conductors to the connecter through the use of the blades or contact members and companion sleeves.

A further object of this invention is to provide sleeves removably mounted in the body of the connecter and of a length sufficient to telescope over the inner ends of the contact members or blades and so fashioned as to provide shoulders between which and the inner ends of the blades, the conductors may be clamped.

A still further object of my invention is to provide an electrical connecter which will positively prevent short-circuits within the body thereof.

With these and other objects in view, this invention consists of the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction in detail, referring by numerals to the accompanying drawing, in which:—

Fig. 1 is a side elevation of an electrical appliance embodying my invention, particularly illustrated as a connecter plug and showing one position of the blades in elevation and another position thereof in dotted lines.

Fig. 2 is a top plan view of the same.

Fig. 3 is a bottom plan view thereof.

Fig. 4 is a section on the line 4—4 of Fig. 2.

Fig. 5 is a perspective view of one of the blades or contact members, and

Fig. 6 is a side elevation of one of the sleeves.

In carrying out my invention as herein embodied 10 represents the body of the electrical connecter which is made from a suitable resilient material having high electrical resistant properties, preferably soft rubber and in this body are molded the shanks 11 and collars 12 of the blades or contact members 13. The shanks 11 are round in cross section and have smooth surfaces and likewise the collars 12, which are fixed to the shanks, are smooth and round.

The shanks and their collars while being embedded in the body material are capable of being rotated on their axes but, for all intents and purposes, cannot be moved longitudinally due to the collars and therefore cannot be detached from the body.

The inner ends of the blade shanks 11 project into the inner ends of the holes or apertures 14 which are in endwise alignment with said blade shanks and these holes have, intermediate their ends, ribs 15 which register with the exterior grooves 16 intermediate the ends of the sleeves 17 for temporarily holding said sleeves in the body 10.

These sleeves 17 may be of any suitable substantially rigid material, preferably hard rubber or some composition such as a phenol condensate or the like. On the inside of the sleeves, intermediate the ends thereof, are provided shoulders 18 which may be produced by the formation of the grooves during manufacture of said sleeves.

The inner ends of the sleeves 17 are of curved formation, both inside and outside, as shown at 19, the inside curvature assists in deflecting the ends of conductor wires or the strands thereof so as to be positioned in back of the shoulders 18, while the outside curvature permits said inner ends of the sleeves to be readily forced past the ribs 15 to cause the latter to register with the grooves 16 for holding the sleeves in the holes 14. The outer ends of the sleeves 17 are provided with flanges 20 which may be engaged by a suitable instrument or a person's fingernail when it is desired to remove either or both of said sleeves.

The sleeves 17 are open from end to end so that conductors may be inserted from the outer ends and the inner ends telescoped over the inner ends of the blade shanks which project into the holes 14. The relation of the assembled

sleeves to the blade shanks is such that the inner termini of the latter will be very close to the shoulders 18 in order to clamp conductors between said shoulders and the blade shanks and any extra thickness of the conductors will be taken care of by the resiliency or elasticity of the body.

The conductors 21, here shown as insulated wires, have the insulation removed at the ends to expose the bare wires 21a and these make contact with the blade shanks as illustrated in Fig. 4. It will be obvious that since the bare parts of the wires are deep within the body and completely insulated from each other by a substantial area of the body material without any communicating passageways between them, said wires cannot become short-circuited.

A hole 22 is formed in each blade adjacent its outer end and from said hole to a contiguous corner of the blade extends a diagonal slit 23 thereby providing a flexible tongue 24 which will ride over any irregularities on the contact springs of a companion socket member to insure positive engagement between the contact elements.

To connect the conductors 21 to the appliance, the sleeves are removed from the body and the ends of said conductors are inserted in the outer ends of the sleeves and pushed forward until the bared portions 21a enter the curved parts of said sleeves beyond the shoulders where said bared portions will be curled up. Then the sleeves are inserted in the holes 14 in the body until the inner ends of said sleeves telescope over the inner ends of the blade shanks which will clamp the conductors between said blade shanks and the shoulders to prevent accidental displacement of the conductors. As the sleeves are moved into their positions the ribs 15 will enter the grooves 16 and temporarily hold the sleeves in place.

If the exposed outer ends of the blades are not aligned for entrance into the apertures of the socket, the body may be squeezed adjacent the outer ends of the blade shanks to cause the blades to converge or squeezed in the region of the inner ends of said blade shanks to cause the blades to diverge.

In order to position the blades so that they will enter apertures either in sidewise alignment or in parallelism, said blades may be rotated on their axes to turn them into the desired positions as suggested by the dotted lines in several of the views illustrating the invention.

Of course I do not wish to be limited to the exact details of construction herein shown and described as these may be varied within the scope of the appended claims without departing from the spirit of my invention.

Having thus fully described my invention what I claim as new and useful is:—

1. In a device of the character stated, a resilient body produced from material having the general characteristics of rubber, metallic contact blades, shanks carried by the blades, said shanks being round in cross section with smooth exterior surfaces, and smooth round collars fixed on said shanks, the shanks and their collars being molded in the body and capable of rotation axially for adjusting the positions of the blades.

2. The structure in claim 1, in combination with sleeves of insulating material removably mounted in the body from the end opposite the blades and telescoping over the inner ends of the blade shanks, and shoulders on the interiors of the sleeves for coaction with the blade shanks to clamp conductors in place in engagement with the blade shanks.

3. A short-circuit proof connecter comprising a body of soft rubber having two separated parallel holes extending into the interior from one end and terminating short of the opposite end, ribs formed from the body material within the holes intermediate the ends thereof, a pair of contact blades having round smooth shanks, collars fixed to said shanks intermediate the ends thereof, said shanks and their collars mounted in the body for rotary movement and held from withdrawal by the collars, the inner ends of said shanks projecting into the inner ends of the holes and the blades protruding from the end of the body opposite said holes, conductor receiving sleeves of substantially rigid insulating material removably mounted in the body holes with their inner ends telescoping over the portions of the blade shanks which are within said body holes, said sleeves having exterior grooves for registration with the ribs, shoulders on the interiors of said sleeves for coaction with the inner ends of the blade shanks to clamp the bare ends of conductors between said shanks and the shoulders, and flanges on the outer ends of the sleeves.

ARTHUR W. SCHANK.