April 29, 1924. 1,492,532

W. A. PHILLIPS

SWIVEL ATTACHMENT PLUG

Filed Oct. 31, 1921

Fig. 1.

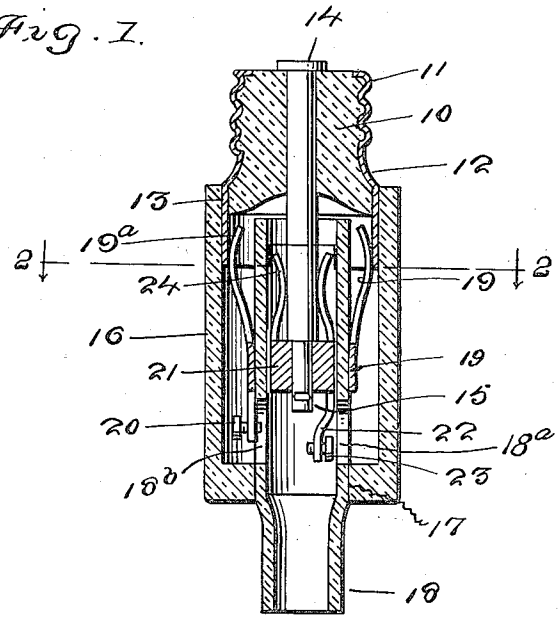
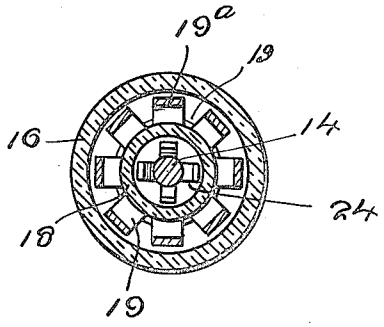



Fig. 2.




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WITNESS:

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# UNITED STATES PATENT OFFICE.

WILBER A. PHILLIPS, OF MUSKEGON, MICHIGAN.

## SWIVEL ATTACHMENT PLUG.

Application filed October 31, 1921. Serial No. 511,956.

*To all whom it may concern:*

Be it known that I, WILBER A. PHILLIPS, a citizen of the United States, residing at Muskegon, in the county of Muskegon and State of Michigan, have invented new and useful Improvements in Swivel Attachment Plugs, of which the following is a specification.

This invention relates to electrical connectors, particularly to devices for connecting current conducting wires with a socket, and has for its object the provision of a novel connector plug which is so constructed that there is a rotary or swiveling action permitting freedom of movement so that the continuity of the current will be insured, the device being further so formed that engagement and disengagement may be readily effected at the will of the operator with the utmost ease.

Another object is the provision of a connector of this character in which screwing into the socket will be facilitated owing to the length of the device, another advantage being that the device may be screwed in without removing a shade or globe on the socket.

An additional object is the provision of a device of this character which will be very simple and inexpensive in manufacture, easy to install and use, highly efficient in operation, durable in service and a general improvement in the art.

With the above and other objects and advantages in view, the invention consists in the details of construction to be hereinafter more fully described and claimed and illustrated in the accompanying drawings, in which,

Figure 1 is a longitudinal sectional view through my device assembled, and

Figure 2 is a cross sectional view on the line 2—2 of Figure 1.

Referring more particularly to the drawings I have shown my device as comprising a male member 10 which is formed as a suitably shaped block or body of insulating material provided externally with the usual screw threaded shell 11 which constitutes the outer contact member and which is provided with an integral extension 12 formed as a ring member. This member 10 is of course designed to be screwed into the usual socket, not shown, and is provided with a central contact member 14 which is formed with a reduced end 15 as clearly shown.

The outer or female member comprises a shell 16 of insulating material which has its open end designed for engagement externally upon the ring member 13, as clearly shown, and which has its other end closed except for a central hole 17 through which extends a tube 18 of insulating material designed to receive the central contact member 14 of the male member. Secured externally upon the tube 18 is a metal ring 19 carrying or formed with spring contacts $19^a$ which are spaced at equal intervals about the periphery and which have their ends adapted for engagement against the inner periphery of the ring member 13. Associated with one of these spring contacts $19^a$ is a suitable binding screw 20 by means of which a current carrying wire may be connected to the device, it being noted that the tube 18 is formed with an opening $18^b$ for the passage of such a wire.

Secured within the tubular member 18 is a metal ring 21 which carries an extension 22 into which is screwed a binding screw 23 for the purpose of connecting the other current carrying wire. The member 18 is provided with an opening $18^a$ permitting access to this screw. Formed or secured upon this ring 21 are curved spring contacts 24 which are designed to engage against the outside of the central contact member 14 as clearly shown whereby to complete the circuit.

In the use of the device it will be seen that the male member is secured into an ordinary socket in the usual manner and the female member is then placed in position by slipping onto the male member with the spring contacts $19^a$ engaging the inner periphery of the ring 13 and with the spring contacts 24 engaging the outer periphery of the central contact member 14. In this way it will be seen that current passing from the socket will be transmitted through whatever wires are connected with the binding screws 20 and 23. It will also be observed that the device is easily assembled or disassembled merely by pushing the parts together instead of there being a screwing action as is ordinarily the case. It will also be observed that the device is so constructed as to eliminate the small pins or metal strips which are commonly provided in devices of this character and it will consequently be seen that my structure is much stronger and should have a much longer life in every

way. The most important feature is the fact that there is a swivelling action between the parts which will permit rotary action and positively prevent twisting of wires leading to a portable appliance such as a drill, vacuum cleaner or the like.

While I have shown and described the preferred embodiment of the invention, it is of course to be understood that I reserve the right to make such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim;

1. A connector of the character described comprising a male member consisting of a body of insulating material carrying a central contact projecting therebeyond, a metallic shell secured externally upon said body and adapted for engagement within a socket, said shell projecting beyond the body to define a contact ring, and a female member consisting of an outer shell of insulating material adapted to receive the projecting portion of said metallic shell, said female member further including a tube of insulating material extending centrally therethrough, a plurality of curved contact fingers within said tube adapted to frictionally engage said central contact, one of said fingers being prolonged and provided with a binding screw, and a plurality of curved contact fingers mounted externally upon the tube and adapted to frictionally engage within the projecting portion of said metallic shell.

2. A connector of the character described comprising a male member consisting of a body of insulating material carrying a central contact projecting therebeyond, a metallic shell secured externally upon said body and adapted for engagement within a socket, said shell projecting beyond the body to define a contact ring, and a female member consisting of an outer shell of insulating material adapted to receive the projecting portion of said metallic shell, said female member further including a tube of insulating material extending centrally therethrough, a plurality of curved contact fingers within said tube adapted to frictionally engage said central contact, one of said fingers being prolonged and provided with a binding screw, and a plurality of curved contact fingers mounted externally upon the tube and adapted to frictionally engage within the projecting portion of said metallic shell, said second named contact fingers projecting from a band encircling the tube, and a lug on said band carrying a binding screw, said tube being provided within the insulating shell with openings opposite said binding screws.

In testimony whereof I affix my signature.

WILBER A. PHILLIPS.