

F. L. SIMMONS.
CONNECTOR PLUG.
APPLICATION FILED FEB. 1, 1918.

1,374,529.

Patented Apr. 12, 1921.

Fig. 1.

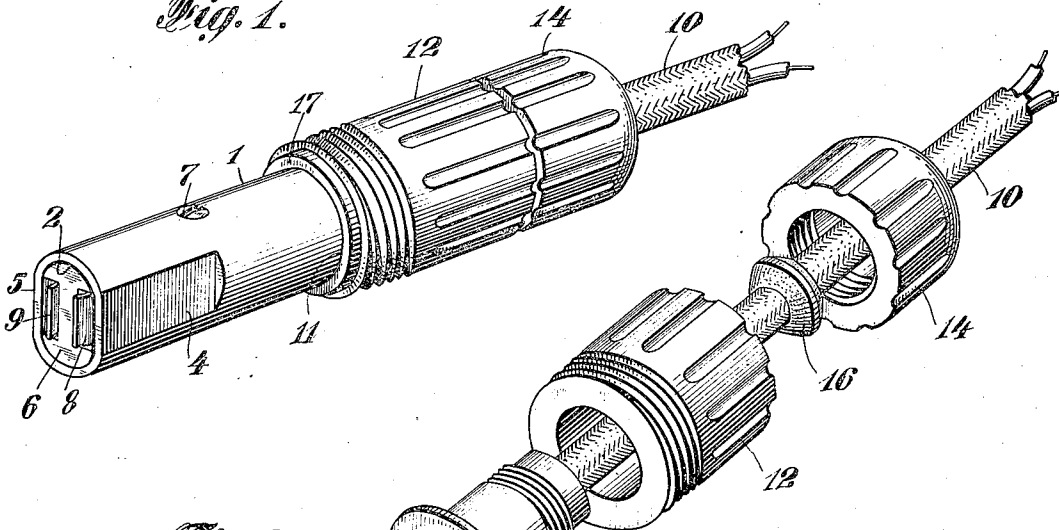


Fig. 2.

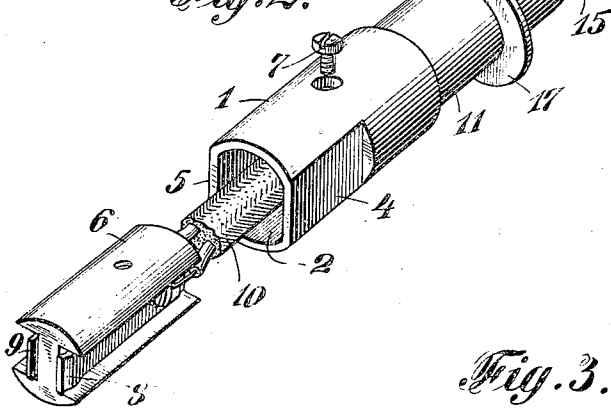
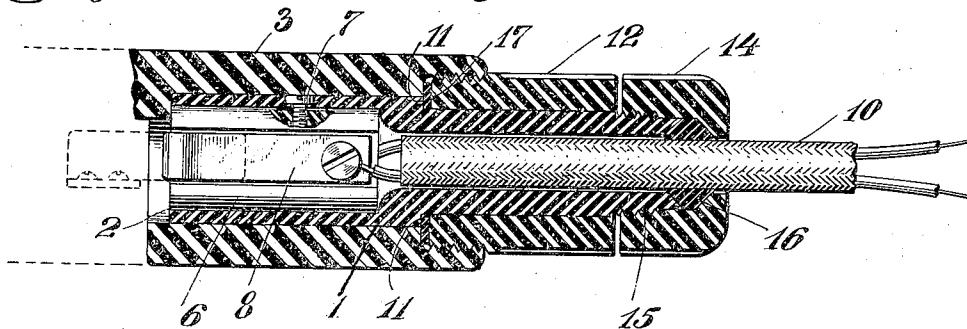


Fig. 3.



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CONNECTOR-PLUG.

1,374,529.

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To all whom it may concern:

Be it known that I, FRANK L. SIMMONS, a citizen of the United States, residing at Woonsocket, county of Providence, State of Rhode Island, have invented certain new and useful Improvements in Connector-Plugs, of which the following is a specification.

This invention relates broadly to electrical apparatus, and more particularly to a connector plug adapted for use with magnetic chucks and the like.

The principal object of the present invention is to provide a connector plug of the character specified adaptable for use on magnetic chucks to form a waterproof joint with a suitable housing.

A further object of the present invention is a connector plug of the character specified wherein a non-rotatable blade carrying portion is adapted to be connected to a suitable housing by a rotatable plug which is constructed to form a waterproof joint between the body portion and the housing.

A still further object of the present invention is the provision of a connector plug of the character specified wherein the elongated body portion carries a hood which is adapted to compress a suitable gasket around a suitable waterproof cable to form a waterproof joint where the cable enters the plug.

Another and more particular object of the present invention comprises a connector plug of the character specified wherein the plug is characterized by an elongated body portion carrying a removable blade holder, at one end, and a hood at the other end, with a rotatable securing nut between the hood and the shoulder on the body portion whereby a water-tight joint is formed between the body portion and the housing into which the plug is adapted to be inserted.

Other and further objects of the present invention will in part be obvious and will in part be pointed out in the specification hereinafter following by reference to the accompanying drawings wherein like parts are represented by like characters throughout the several figures thereof.

Figure 1 is a perspective view of the plug in assembled relation.

Fig. 2 is a perspective view with the parts separated and in extended relation.

Fig. 3 is a sectional view of the plug.

Heretofore in the art it has been customary to provide connector plugs of various characters wherein usually the plug is a relatively short member with the screw threaded portion comprising one contact member and a central portion comprising the other contact member. Such plugs are more especially adaptable for insertion in light or lamp sockets and one type is constructed with both terminals rotative; the other type is constructed with the end terminal stationary and the screw threaded portion rotatable. The first mentioned type usually comprises a separable part connected to the cable so that the plug may be inserted without twisting the cable. So far as applicant is aware neither of these types of constructions have been made to form waterproof connections.

While the present invention may have a general application as a connector plug, it is more particularly designed for use with magnetic chucks which frequently are used to hold work which is being wet ground and the chuck and its various connections must be waterproof. To this end the connector plug comprising the present invention more particularly is designed to be waterproof both as to its inherent structure and as to its cooperation with a suitable housing.

A preferred form comprising an embodiment of this invention consists in an elongated body portion having a hollow front end adapted to carry a blade block on which are provided the connector blades that are electrically connected to the conductors in a suitable waterproof cable which extends through an opening in the body portion. Preferably the end carrying the blade block is flattened so that when this end is inserted in a suitable housing the body portion is prevented from rotating. The body portion adjacent the blade carrying end is provided with a shoulder from which the body portion continues as a hollow cylinder which is screw threaded at its outer end and recessed to provide a receptacle for a gasket. A hood is screw threaded to fit upon the body portion and compress a suitable gasket tightly around the waterproof cable to form a waterproof joint where the cable enters the body portion. A rotatable nut is mounted on the body portion between the hood and

the shoulder with a gasket between the end of the nut and the shoulder, and with the gasket and also the nut extending outwardly beyond the shoulder so that when the body portion is inserted in a suitable housing with the end of the body portion in contact with an abutment in the housing the nut seats the gasket on the shoulder of the body portion and also on the shoulder in the housing whereby a complete waterproof joint is formed at this juncture.

Referring now more particularly to the drawings, the preferred embodiment of the connector plug comprises a body portion 1 having the front end thereof formed hollow, as at 2, and provided with flat portions 4 and 5 which are adapted to cooperate with flat sides in the opening of a suitable housing 3, with which the plug is intended to be operative. The hollow portion 2 is constructed to carry a blade block 6 which is secured in position, if desired, by a stub screw 7. The blade block 6 carries blades 8 and 9, preferably of spring material, that are adapted to contact with suitable terminal clips when the plug is in operation. The remainder of the body portion 1 is provided with a cylindrical opening forming a passageway for the waterproof cable 10. A shoulder 11 is formed on the body portion to comprise a seat to retain the screw threaded rotatable thumbnut 12 in position on the body portion, when the hood 14 is mounted on the screw thread 15 on the outer end of the body portion. A gasket 16 is provided under the hood 14 and against the end of the body portion 1 in such manner that when the hood is tightened on the screw threads 15 the gasket is expanded inwardly around the cable 10 to form a water-tight joint. A gasket 17 is also provided adjacent the shoulder 11 whereby when the thumbnut 12 is screwed into a proper housing and the end of the body portion contacts with the housing the gasket 17 may be seated against the body portion and also against the shoulder in the housing 3 to form a water-tight

joint. Preferably all parts of the connector other than the screws and the electrical portions are made of insulating material such as compressed fiber, bakelite, or any other approved insulating material of sufficient strength.

Realizing that my invention may be embodied in structures other than the specific disclosure herewith, I desire it to be understood that the said disclosure is illustrative and not to be taken in the limiting sense.

Having thus described my invention what I claim is:

1. As an article of manufacture, a connector plug for magnetic chucks and the like, comprising a body portion formed of an elongated member having a cylindrical portion and a non-cylindrical end, said non-cylindrical end being hollow, a blade block adapted to fit within said hollow non-cylindrical end, a pair of contact blades mounted on said block and on each side thereof, said body portion being provided with a passageway leading to said hollow portion and forming a conduit for a suitable waterproof cable, a rotatable screw threaded member mounted on said cylindrical portion, and provided on its inner end with a gasket, a hood mounted on the outer end of said body portion and adapted to compress a gasket around a waterproof cable whereby a waterproof joint is formed between the plug and said cable.

2. As an article of manufacture, a connector plug, comprising a body portion, a blade block removably mounted within said body portion, blades upon said blade block, an electric cable extending through said body portion and operatively connected with said blades, a rotating screw threaded sleeve carried by said body portion and provided with a waterproof gasket at its inner end, a hood carried by said body portion and adapted to compress a gasket around the said cable to form a waterproof joint between said cable and said plug.

FRANK L. SIMMONS.