

C. L. SHEPPY.
ELECTRICAL CONNECTOR.
APPLICATION FILED APR. 23, 1913.

1,153,581.

Patented Sept. 14, 1915.

Fig. 1.

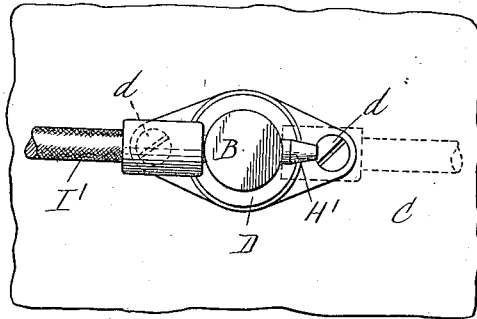


Fig. 2.

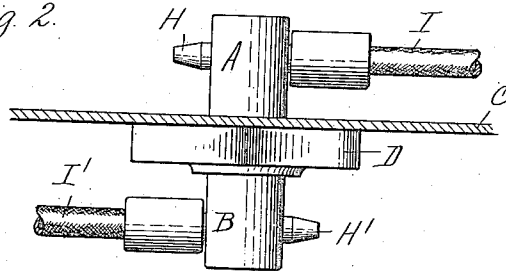


Fig. 4.

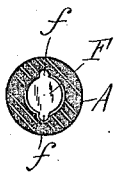


Fig. 5.

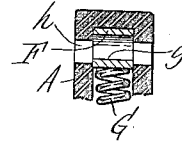
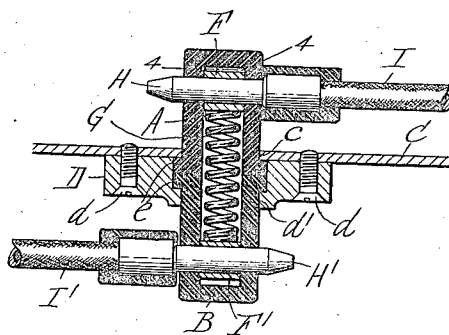


Fig. 3.



Witnesses:—

A. Bokenhagen.
Emil H. Messick

Inventor

Charles L. Sheppy
by Wilhelm H. Messick
Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES L. SHEPPY, OF BUFFALO, NEW YORK, ASSIGNOR TO THE PIERCE-ARROW
MOTOR CAR COMPANY, OF BUFFALO, NEW YORK.

ELECTRICAL CONNECTOR.

1,153,581.

Specification of Letters Patent.

Patented Sept. 14, 1915.

Application filed April 23, 1913. Serial No. 762,982.

To all whom it may concern:

Be it known that I, CHARLES L. SHEPPY, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Electrical Connectors, of which the following is a specification.

This invention relates to connectors or contact devices for detachably connecting electrical conductors, and more especially to connectors suitable for use on automobiles for detachably connecting the flexible conductor of an electric tail lamp, or other lamp, to a conductor of the electric lighting system on the automobile.

The objects of the invention are to produce a practical and desirable connector of simple and compact construction and neat appearance which will insure a reliable electrical connection of the conductors and which is adjustable so as to allow the conductors to be arranged to extend in one or another direction from the connector without being bent or twisted.

In the accompanying drawings: Figure 1 is a front elevation of a connector embodying the invention, and a portion of the support therefor. Fig. 2 is a plan view, partly in section, thereof. Fig. 3 is a horizontal section thereof. Fig. 4 is a transverse section of the connector in line 4-4, Fig. 3. Fig. 5 is a fragmentary longitudinal section of one of the connector shells showing the position of the contact piece when the conductor plug is removed.

Like reference characters refer to like parts in the several figures.

A and B represent two hollow shells or cup-shaped bodies of some suitable hard insulating material, such, for instance, as vulcanite, which are open at one end and are oppositely arranged with the open ends thereof abutting or facing each other so as to form a casing which is closed at its opposite ends. These shells are preferably of like size and shape so as to be interchangeable. One shell A extends loosely through a circular opening *c* in a support C, which may be one of the walls of an automobile body, and the two shells are secured on the support C and held in place end to end by a fastening plate or block D which is secured by screws *d*, or otherwise, on the support C and has a circular opening *d'* through which the other or outer shell B loosely ex-

tends. The open inner ends of the shells are provided with marginal flanges or lips *e* which are confined between the support C and the securing plate D in a counterbored or enlarged portion of the opening *d'* of the plate, whereby the shells are held in place end to end on the support. The depth of the counterbored portion of the opening in the securing plate D relative to the width of the flanges *e* is such as to hold the shells firmly in place end to end and prevent any looseness or play between the same and yet permit either shell to be turned axially to any desired position. The shells are retained by friction in any position to which they may be adjusted.

F F' represent contact pieces located in the opposite closed end portions of the shells A and B. A coil spring G inclosed in the shells between the contact pieces F F' tends to force the latter away from each other against the closed ends of the shells. The contact pieces F F' shown and the shells A and B are provided with transverse holes *g* and *h*, respectively, into which contact plugs H H' secured to the ends of electric conductors I, I' are adapted to be inserted. Any suitable means may be employed for preventing the contact pieces F F' from turning in the shells so as to throw the holes in the contact pieces out of line with those in the shells and thus prevent the ready insertion of the plugs. For this purpose the contact pieces are provided with side projections *f*, Fig. 4, which extend into longitudinal grooves in the wall of the shells at opposite sides thereof. In the normal position of the contact pieces F F', that is before the plugs I, I' are inserted, the spring holds the contact pieces in the extreme outer ends of the shells A, B with the holes *g* of the contact pieces slightly out of register with the holes *h* in the shells, as shown in Fig. 5. The plugs H, H' are made of a diameter to substantially fill the holes *g* and *h* and are provided with tapering or pointed ends, so that when they are inserted in the holes they wedge the contact pieces F, F' toward each other and compress the spring G. The spring, therefore, presses the contact pieces firmly against the inner or adjacent faces of the plugs and thus insures an efficient electrical contact between the contact pieces and the plugs. The friction between the contact pieces and the

plugs H, H' also holds the plugs firmly in place in the connector. The contact pieces F, F' are preferably provided with transverse holes, as shown, and these holes and the holes h in the shells are preferably made to substantially fit the plugs, but this construction is not absolutely essential, since any formation of the parts, whereby the insertion of the plugs will force the contact pieces toward each other so as to compress the spring, will produce more or less satisfactory results. The plugs H, H' can be of any suitable construction and attached to the conductors in any convenient way.

By the described construction of the connector, the spring G constitutes the conductor for the electrical current from one contact piece to the other and the single spring presses both contact pieces against the plugs H, H' and maintains the electrical contact at both plugs. The connector is of exceedingly simple construction, involving only a very few parts which can be readily made and assembled. Since only one shell B and the attaching plate D are exposed to view at the outside of the support C, and these parts are small and of neat appearance the connector is desirable for use in exposed positions on high grade automobiles. The adjustability of the shells enables them to be turned to whatever positions are most convenient for the attachment of the conductors I, I'. Manifestly the ends of the conductors themselves could be inserted in the shells in contact with the contact pieces, in so far as the construction of the connector is concerned. This connector is especially suited for detachably connecting the flexible conductor for the tail lamp of an automobile with a conductor of a single wire lighting system located inside of the body or frame of the car, but it is not restricted to this use.

I claim as my invention:

1. In an electrical connector, the combination with conductors, of two shells of insulating material having open ends facing each other, outwardly projecting flanges on said shells, securing means loosely embracing said flanges and permitting said shells to turn relatively to each other, said shells having holes for the insertion of said con-

ductors, and an electrical connection in said shells between said conductors which connects said conductors in all positions of said shells.

2. In an electrical connector, the combination with conductors, of two shells of insulating material having open ends facing each other, outwardly projecting flanges on said shells, securing means loosely embracing said flanges and permitting said shells to turn relatively to each other, said shells having holes for the insertion of said conductors, and a spring in said shells connecting said conductors in all positions of said shells.

3. In an electrical connector, the combination with conductors, of two shells of insulating material having open ends facing each other, outwardly projecting flanges on said shells, securing means loosely embracing said flanges to permit the adjustment of one shell relatively to the other, said shells having holes for the insertion of said conductors, movable contact pieces in said shells adapted to be engaged by said conductors when inserted through said holes in the shells, and a spring in said shells which engages said contact pieces for pressing the same into engagement with the conductors and which forms an electrical connection between said contact pieces.

4. The combination of two shells of insulating material having open ends facing each other, a support having an opening for the passage of one of said shells, a securing plate attached to said support and having an opening for the passage of said other shell, the open ends of said shells being secured between said securing plate and said support, said shells having holes for the insertion of conductors, contact pieces in said shells, and a spring in said shells for pressing said contact pieces against said conductors, substantially as set forth.

Witness my hand, this 18th day of April, 1913.

CHARLES L. SHEPPY.

Witnesses:

W. J. CREAMER,
WILLIAM H. LOCKE.