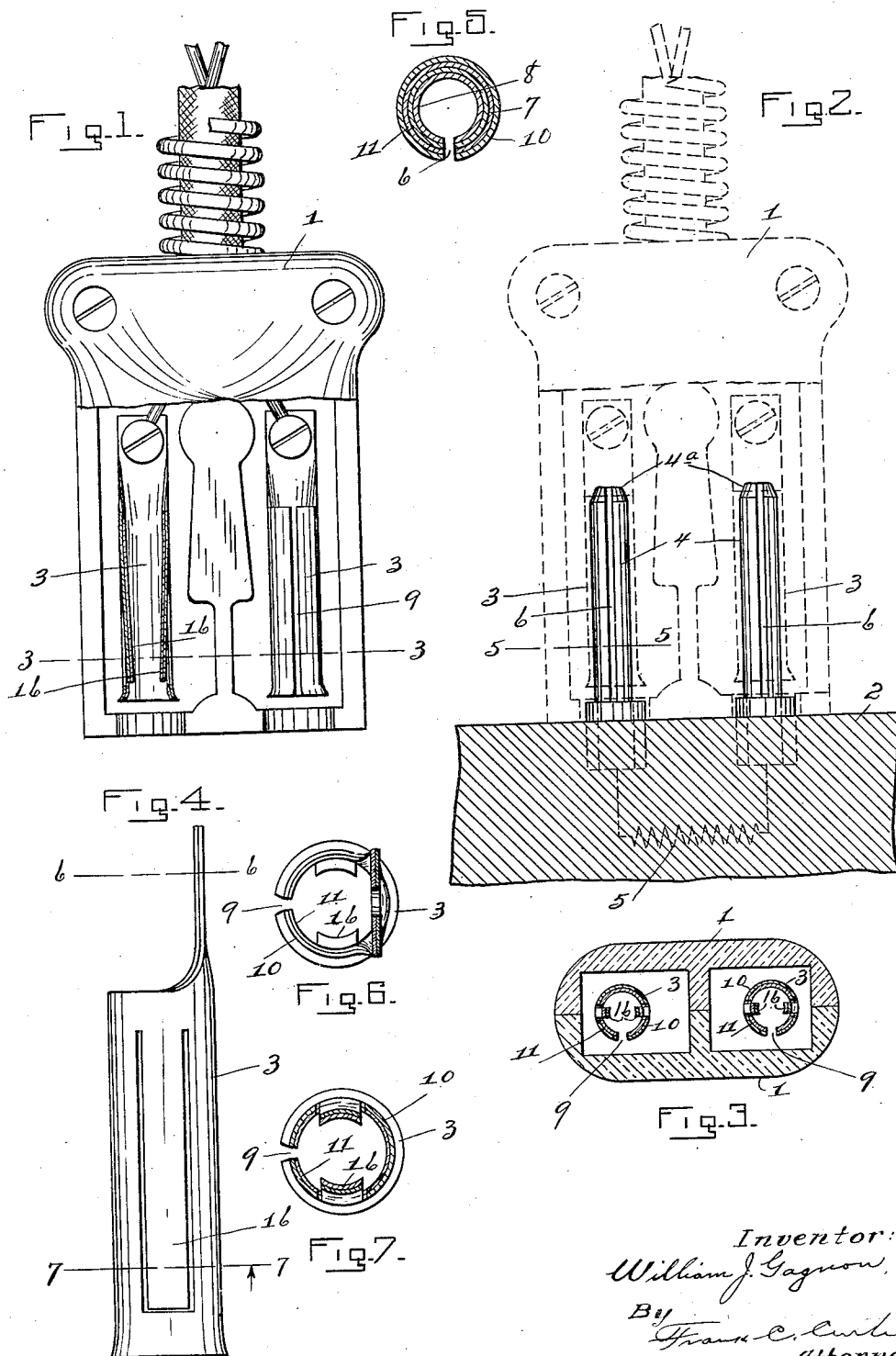


July 12, 1927.

1,635,831

W. J. GAGNON
ELECTRICAL CONNECTER
Filed Sept. 18, 1925



Inventor:
William J. Gagnon,
By
Francis C. Curtis
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM J. GAGNON, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE BEAD CHAIN MANUFACTURING COMPANY, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF CONNECTICUT.

ELECTRICAL CONNECTER.

Original application filed February 29, 1924, Serial No. 695,972. Divided and this application filed September 18, 1925. Serial No. 57,101.

Reference may be had to the accompanying drawings, and the reference characters marked thereon, which form a part of this specification. Similar characters refer to similar parts in the several figures therein.

This application is a division of an application filed by me February 29, 1924, Serial No. 695,972, for electrical connectors.

The principal object of the invention is to obtain a more effective engagement between the cooperating contact portions of the connector.

Other objects will appear in connection with the following description.

Fig. 1 of the drawings is a view in side elevation of a socket-member of an electrical connector with the housing partly broken-away to expose to view the two contact-sockets which are made in accordance with my invention.

Fig. 2 is a vertical cross-section of a broken-away portion of the plug-member of the connector, showing in side elevation the two plugs, and illustrating diagrammatically a resistance included in the circuit between the plugs.

Fig. 3 is a horizontal section of the socket-member taken on the broken line 3—3 in Fig. 1.

Fig. 4 is a view in side elevation on an enlarged scale of one of the contact sockets as shown in Fig. 1.

Fig. 5 is a horizontal section on an enlarged scale taken on the broken line 5—5 in Fig. 2, through one of the contact-plugs and the plug enclosing contact-socket.

Figs. 6 and 7 are further views of the socket device.

Referring to the drawings wherein the invention is shown in preferred form, I have shown the socket-member, 1, provided with two contact-sockets, 3, and the plug-member, 2, provided with two plugs, 4, although my invention is equally applicable to a single contact-socket, 3, and a single plug, 4.

In the drawings I have shown the invention applied to an electrical connector as used for ordinary household devices such as toasters, coffee percolators, electric flat-irons and the like, in which case a plurality of contact-sockets and plugs are employed, the plug-member, 2, being the device to be heated

by means of a resistance, 5, included in the circuit between the plugs, 4.

I preferably make the plug in the form of a hollow post, split longitudinally along one side as shown at 6; and form the wall of the plug of two metals, 7 and 8, of split cylindrical form welded or otherwise secured together, the inner member, 8, having a higher coefficient of expansion than the outer member, 7, whereby under the action of heat the post tends to expand or increase in diameter. The plug may be made solid if preferred.

In applying my invention to the contact-socket, 3, the socket is split longitudinally as shown at 9, and the wall of the socket is formed of two metals, 10 and 11, of split cylindrical form, the outer metal, 10, having a higher coefficient of expansion than the inner metal, 11, the two members 10 and 11, being secured together by welding or in any other known manner.

The socket wall is formed on one or each side of the split with an integral inwardly projecting spring-tongue, 16, which facilitates the insertion of the plug into the socket.

These tongues yield to receive a plug of approximately the internal diameter of the body of the socket, and under the action of heat the body of the socket as well as the tongues are caused to make tight contact with the plug.

When a plurality of tongues, 16, are employed they are preferably located diametrically opposite each other on opposite sides of the split as shown.

The upper end of the plug is preferably tapered as shown at 4^a, to facilitate entrance of the plug between the tongues, 16.

A plug, 4, is inserted in a socket, 3, they being made to approximately fit together with the socket of normal diameter. When the electric current is transmitted between the contact-socket, 3, and the plug, 4, if the plug does not fit sufficiently tightly within the contact-socket, the socket and plug become heated, causing the plug to tend to expand and the contact-socket with its tongues, 16, to tend to contract, due to their respective thermostatic constructions.

The split portion of the wall of the plug thus tends to move under the action of heat

toward the wall of the cooperative contact-socket; and in a similar manner the split portion of the wall of the contact-socket and its tongues, 16, under the action of heat tends to move toward the cooperative contact-plug.

Any looseness in the fitting of the plug within the contact-socket is thus automatically corrected in the operation of the device.

I do not wish to be limited to the constructions shown and above described, as, for certain purposes of the invention, various changes may be made in the form and arrangement of various parts of the device without departing from the spirit of the invention.

What I claim as new and desire to secure by Letters Patent, is:

1. A connector for electrical conductors including a longitudinally split socket formed with an inwardly projecting plug-engaging resilient contact-tongue at one side of the split, and having a thermostatic element tending under the action of heat to contract the body of the socket.

2. A connector for electrical conductors including a substantially cylindrical split contact-socket formed of inner and outer metal elements, the outer element having a higher coefficient of expansion than the inner element, and having an inwardly projecting plug-engaging spring-tongue.

3. A connector for electrical conductors including a contact-plug having a tapered end, and a split contact-socket having a thermostatic element tending under the action of heat to contract the socket, and

inwardly projecting plug-engaging spring-tongues on opposite sides of the split.

4. A connector for electrical conductors including a longitudinally split contact-plug having a thermostatic element tending under the action of heat to expand the plug, and a longitudinally split substantially cylindrical socket having a thermostatic element tending under the action of heat to contract the socket, and having inwardly projecting plug-engaging spring-tongues on opposite sides of the split.

5. A separable connector for electrical conductors comprising a pair of mating contact elements, one of said elements having a thermostatic tongue tending under the influence of heat to approach the other of said elements.

6. A separable connector for electrical conductors comprising a socket, and a thermostatic tongue carried by said socket and tending under the influence of heat to approach a co-operating plug element.

7. A separable connector for electrical conductors comprising a socket having a slot therein, and a thermostatic tongue carried by said socket in said slot and tending under the influence of heat to approach a co-operating plug element.

8. A separable connector for electric conductors comprising a socket having a slot therein, and a thermostatic tongue in said slot and integral with said socket, said tongue tending under the influence of heat to approach a co-operating plug element.

In testimony whereof, I have hereunto set my hand this 4th day of September, 1925.

WILLIAM J. GAGNON.