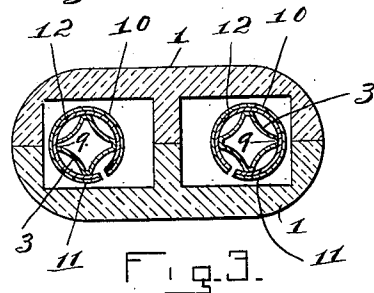
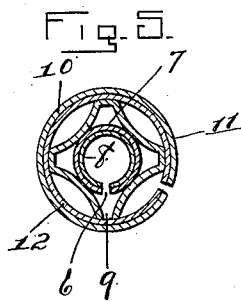
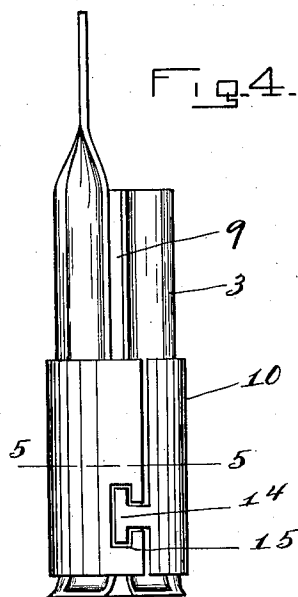
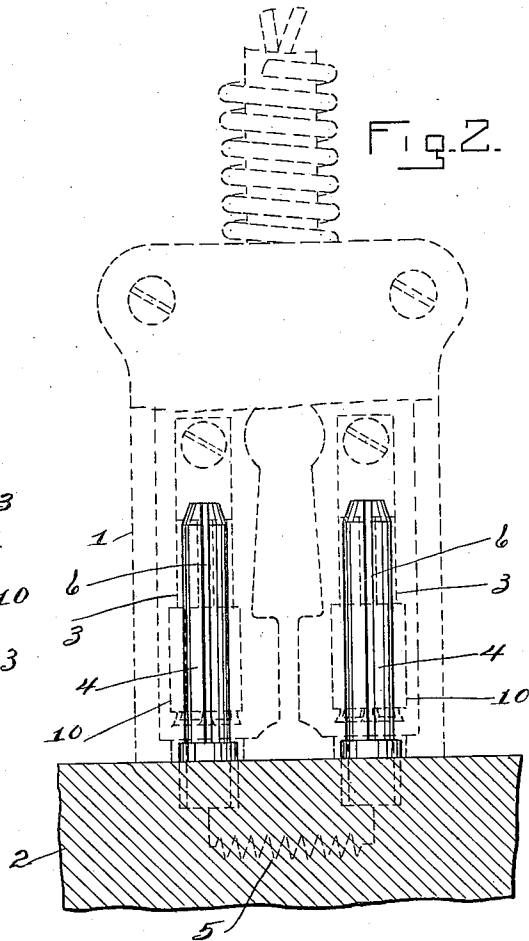
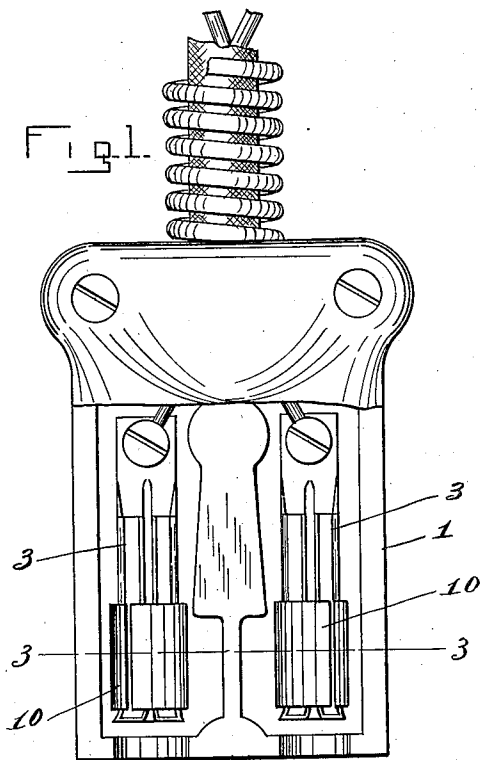


July 12, 1927.

1,635,832

W. J. GAGNON
ELECTRICAL CONNECTER

Filed Oct. 1, 1925



Inventor:
William J. Gagnon,
By
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UNITED STATES PATENT OFFICE.

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ELECTRICAL CONNECTER.

Original application filed February 29, 1924, Serial No. 695,972. Divided and this application filed October 1, 1925. Serial No. 59,835.

Reference may be had to the accompanying drawings, and the reference characters marked thereon, which form a part of this specification. Similar characters refer
5 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
10 to obtain a more effective engagement between the cooperating contact portions of the connector.

Other objects will appear in connection with the following description.

15 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
20 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
25 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.

30 Fig. 4 is a view in elevation on an enlarged scale of one of the contact-sockets as shown in Fig. 1, showing a modified form of thermostatic ring.

Fig. 5 is a horizontal section on an enlarged scale taken on the broken line 5—5 in Fig. 4, through one of the contact-plugs inserted in a socket.

Referring to the drawings wherein the invention is shown in preferred form, I have
40 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.

45 In the drawings I have shown the invention as 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
50 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
55 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
60 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-
65 socket, 3, the socket is split longitudinally as shown at 9, and is enclosed by a thermostatic split ring or band, 10, formed of two thicknesses of metal, 11 and 12, welded or
70 otherwise secured together, the outer thickness, 11, of metal having a higher coefficient of expansion than the inner thickness, 12.

The ring or band thus tends to contract under the influence of heat, and to thus compress and contract the split socket, 3.
75

The operation of the device is as follows:

A plug, 4, is inserted in a socket, 3, they being made to approximately fit together, and the band or ring, 10, being made to closely surround the socket, 3.
80

When the electric current is transmitted between the contact-socket, 3, and the contact-plug, 4, if the plug does not fit sufficiently tightly in the socket, the plug socket and socket-enclosing band, 10, become heated,
85 causing the plug to expand, and the socket to be contracted by the contraction of the band, 10, due to the thermostatic construction of the plug and band.

The split portion of the wall of the plug
90 thus tends to move under the action of heat toward the wall of the cooperative contact-socket; and the split portion of the wall of the contact-socket under the action of heat upon the band, 10, tends to move toward
95 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.
100

In order to prevent undue or injurious expansion or displacement of the walls of

the contact-socket by careless insertion of a plug into the socket, I provide the band, 10, with means for limiting the expansion of the band and thereby limiting the expansion
5 of the socket.

This expansion-limiting means is in the form of a T-shaped tongue, 14, projecting from one edge of the split wall of the band, 10, and occupying a similarly shaped opening, 15, in the wall of the band on the opposite side of the split, with provision for
10 sufficient lost motion to permit limited expansion of the socket and band.

The head on the tongue, 14, may be offset
15 in any desired form, whereby by engagement with the opening in the opposite wall of the band, the movement of expansion of the socket is limited for the purpose of this invention.

20 When the socket is employed with a thermostatically expansible plug, as shown in the drawings, the expansion-limiting means make it possible to make the socket sufficiently yielding to readily receive the plug, and
25 then by preventing further expansion to resist the expansive force of the plug to approximately the same extent as though the socket were not split.

I do not wish to be limited to the constructions shown and above described, as,
30 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.

35

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

1. A connector for electrical conductors including a polygonal contact socket of sheet material, said socket being longitudi-
40 nally corrugated, and a thermostatic element in connection with said socket and tending under the influence of heat to contract the latter.

2. A connector for electrical conductors
45 including a contact shell of polygonal cross section, said shell being longitudinally corrugated, and a thermostatic element in connection with said shell and tending under the influence of heat to distort the latter to
50 force it into contact with a mating contact element.

3. A connector for electrical conductors including a polygonal contact socket of sheet material, said socket having inwardly con-
55 vexed sides, and a thermostatic element in connection with said socket and tending under the influence of heat to contract the latter.

In testimony whereof, I have hereunto set
60 my hand this 28th day of September, 1925.

WILLIAM J. GAGNON.