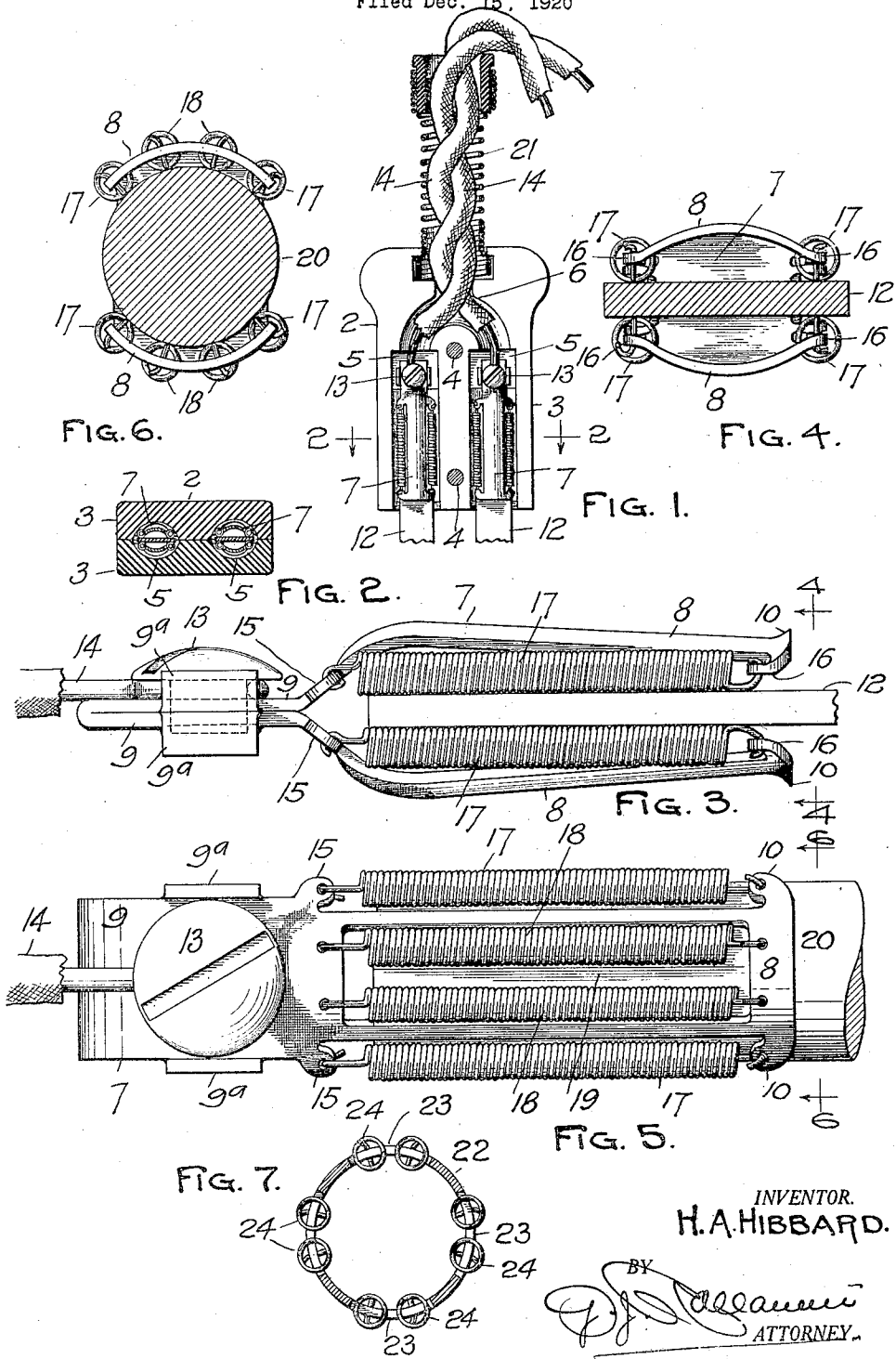


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H. A. HIBBARD
ELECTRICAL CONNECTER
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ELECTRICAL CONNECTER.

Application filed December 15, 1920. Serial No. 430,930.

To all whom it may concern:

Be it known that I, HERMON ALEXANDER HIBBARD, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Electrical Connecters, of which the following is a specification.

This invention relates to electrical connectors and more particularly to improvements in socket members of electrical couplings of the type used in connecting a lamp, sad iron, toaster or other electric heating device in an electric circuit.

It is the principal object of the present invention to provide in association with the female contact member of a connector of the type above referred to, one or more springs which yieldingly engage a male member placed in operative relation thereto and thereby insure a strong wiping contact between them.

With the above and other objects in view, all of which will fully appear in the course of the following description, my invention consists in the construction and arrangements of parts shown in the accompanying drawings in the various views of which like parts are similarly designated, and in which—

Figure 1 represents a top view of one of the halves of a female connector of the type commonly used in connection with sad irons, heaters and other portable electrical devices.

Figure 2, a section through the two halves of the connector in their assembled relation, taken on the line 2—2, Figure 1;

Figure 3, a side elevation of one of the contact members of the connector in its co-operative relation to a male contact member of a correlative connector, drawn to an exaggerated scale;

Figure 4, a section on the line 4—4, Figure 3;

Figure 5, a top view of a contact member of modified construction together with a round male member, likewise drawn to an exaggerated scale;

Figure 6, a section taken on the line 6—6, Figure 5, and

Figure 7, a sectional view of the contact element of a wall socket showing the application of my invention thereto.

Referring more specifically to the drawings the reference numeral 2 designates the insulating body of the connector, which as usual is composed of two complementary halves 3 rigidly connected by screws 4.

Each half has in its inner face two parallel depressions open at their outer ends and connected at their opposite ends to a forked central depression.

When the two halves of the connector are fastened together, their depressions form two recesses 5 to receive the female contact members 7 of my invention, and a passage 6 for the wires by which said members are connected either to an electric heating device or to a plug for connecting the same in an electric lighting circuit.

Each contact member is composed of two jaws 8 of rounded section connected at one of their ends by adjoiningly placed shanks 9 and having at their opposite ends outwardly turned lips 10 to facilitate the entrance of a male member 12 between them.

The two jaws and their shanks are preferably formed integrally of a single piece of metal and the jaws extend convergently in spaced relation to each other to conjointly provide a tapering socket for the accommodation of a male contact member of suitable cross-sectional size and form.

A binding screw 13 fitted in axially aligned threaded apertures of the integrally connected shanks of the member serves for its connection to a wire 14, and lips 9^a formed at opposite sides of the shanks function to confine the strands of the wire engaged by the screw.

Referring first to the form of my invention shown in Figures 3 and 4, the jaws of the female contact member have outwardly projecting ears 15 and 16 at opposite ends of their longitudinal edges for the attachment of coiled metal springs 17 which, extending inwardly from said edges, yieldingly engage the opposite sides of the flat male contact member 12 placed between the jaws.

The ears are relatively positioned on the converging jaws so that the springs attached between them extend further inwardly at the connected ends of the jaws to evenly engage the male contact member along their entire extent as clearly shown in Figure 3 of the drawings.

The form of my invention illustrated in Figures 5 and 6, is more particularly adapted to accommodate male contact members of round, diamond-shaped or polygonal cross-section.

Coiled springs 18 additional to those extending along the longitudinal edges of the jaws, are arranged in longitudinal slots 19 of the same so as to project downwardly of their inner surface to yieldingly engage a contact member 20 inserted in the socket of the jaws.

The contact member of my invention normally occupies one of the recesses 5 of the body of the connector as shown in Figures 1 and 2 with its lipped extremity adjoining the open end thereof, it being understood that the recesses are sufficiently wide to permit of an expansive movement of the jaws when a male member of the coupling enters between them.

The two contact members of the connector are attached by means of their binding screws to the ends of a pair of insulated electric wires which enter the body through its passage 6 and are as usual protected against breakage by a wire guard 21 applied exteriorly of the same.

In the operation of the invention the male contact members of a correlative of the above described connector are inserted into the recesses and entering between the jaws of the female contact members thereof, are yieldingly engaged by the coiled springs.

A strong frictional contact of the conductive parts is thus effected, with the result that a constant and steady flow of electric current between them, is obtained.

It will be understood that the object of the convergence of the two jaws of the contact members illustrated in Figure 3, is to accommodate round, square or diamond-shaped male contact members as well as members of the flat form shown in the illustration and that by relatively reducing the convergence of the springs at the longitudinal edges of the jaws the springs when the jaws are spread apart by the insertion of the male contact member between them, will evenly engage the opposite surfaces of the same along their entire extent.

In Figure 7 of the drawings has been shown the application of my invention to a cylindrical contact member 22 of a wall socket.

The member is provided with a plurality of longitudinal slots 23 in which the coiled springs 24 may be arranged either singly or in pairs.

It will be seen that the springs projecting within the cylindrical member will yieldingly engage a male member inserted

thereinto and thereby insure a firm frictional contact therewith.

Having thus described my invention what I claim and desire to secure by Letters-Patent is:

1. In an electrical connector, a female contact member composed of a pair of yieldingly connected jaws, and coiled springs extending along the longitudinal edges of the jaws to yieldingly engage a male contact member entered between them.

2. In an electrical connector, a female contact member composed of a pair of yieldingly connected jaws, coiled springs extending along the longitudinal edges thereof, and coiled springs extending longitudinally of the jaws intermediate of said edges, the springs protruding inwardly of the jaws to yieldingly engage a male contact member entered between them.

3. In an electrical connector, a female member having yieldingly mounted jaws and a coiled spring arranged on one of said jaws and extending inwardly thereof to engage with a male contact member entered between the jaws.

4. In an electrical connector, a female member having yieldingly mounted jaws and coiled springs arranged on said jaws and extending inwardly thereof to engage with a male contact member entered between the jaws.

5. In an electrical connector, a socketed contact-member, and a plurality of coiled springs connected at their ends to said member and projecting circumferentially inside the socket thereof to yieldingly engage with a male contact member inserted in the socket.

6. In an electrical connector, a female contact member comprising yieldingly connected jaws conjointly providing a socket for the insertion of a male contact member, and coiled springs extending longitudinally of the edges of the jaws and circumferentially inwardly of the same to yieldingly engage with a male contact member inserted in the socket.

7. In an electrical connector, a female contact member comprising a pair of separably mounted converging jaws conjointly forming a tapering socket for the insertion of a male contact member, and coiled springs fastened at their ends in angular relation to the longitudinal edges of the jaws and extending inwardly of the same to evenly engage with a male contact member inserted in the socket.

In testimony whereof I have affixed my signature.

HERMON ALEXANDER HIBBARD.