

B. RAETTIG.
PLUG AND SOCKET CONTACT.
APPLICATION FILED SEPT. 17, 1921.

1,418,171.

Patented May 30, 1922.

Fig. 1.

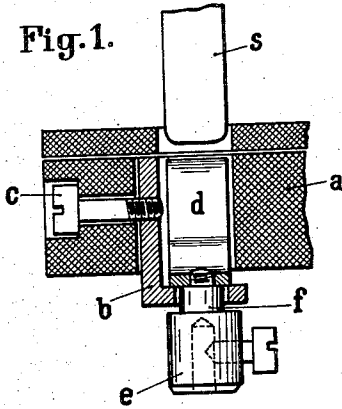


Fig. 2.

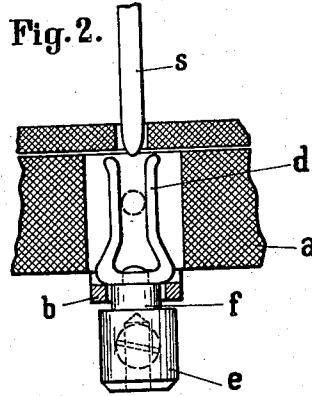


Fig. 3.

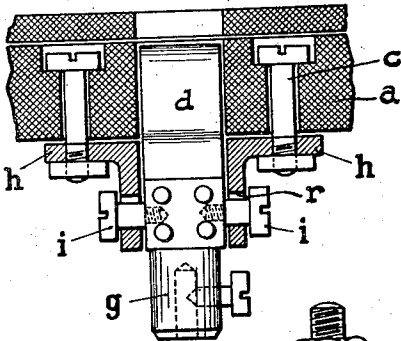


Fig. 4.

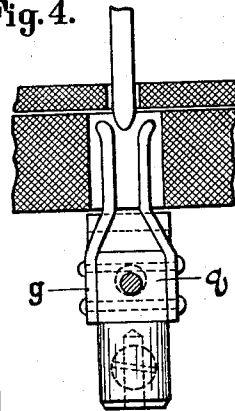


Fig. 5.

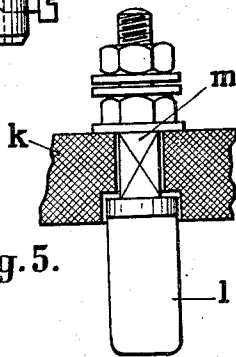
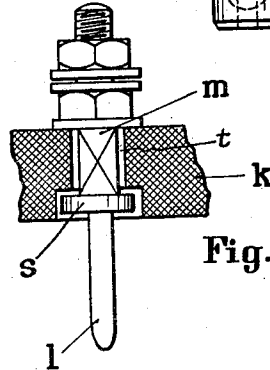


Fig. 6.



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PLUG AND SOCKET CONTACT.

1,418,171.

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To all whom it may concern:

Be it known that I, BRUNO RAETTIG, residing at Bachemerstr. 31, Cologne-Lindenthal, Germany, have invented certain new and useful Improvements in Plug and Socket Contacts, (for which I have filed an application in Germany July 15th, 1919,) of which the following is a specification.

This invention relates more particularly to plug and socket contacts for electric currents of high intensity, as required for power connections, which contacts even when new, and particularly after wear, usually do not fit accurately and frequently form faulty connections. In order to avoid this difficulty it has been suggested to mount at least one contact so that it is capable of angular adjustment.

In a flat plug and socket contact according to the invention either the plug or the socket, or both of them are capable, not only of angular adjustment, but also of adjustment or movement sufficient to bring the two contacts in proper parallel relation, for instance one contact at least is capable of adjustment or movement in a plane perpendicular to the flat contact faces, so that the two contacts can be brought automatically into correct relative position to bring the contact surfaces closely together, in other words so that the plug and the socket, which is usually springy, can fit accurately one in the other with their contact surfaces in intimate contact over their whole length.

In the drawings:

Figures 1 and 2 are sectional elevations of one form of plug and socket contact according to the invention, the sections being taken at right angles to one another and only part of the plug contact being shown and in position ready to enter the socket contact.

Figures 3 and 4 are sectional elevations of another form, the sections also being taken at right angles to one another. In both of these forms the socket contact is adjustable.

Figures 5 and 6 are sectional elevations of an adjustable plug contact the sections being taken at right angles to one another.

In the form of the invention illustrated in Figures 1 and 2 a contact carrier *b*, is secured to the insulator *a*, by a screw *c*. A spring socket contact *d* is freely mounted on the carrier *b*. A terminal *e* has a screw threaded stem *n* which is screwed into the socket *d* and is riveted over so that the socket

d, and the terminal *e*, are rigidly secured together.

The terminal *e* has a reduced portion or neck *f* which passes through and is guided vertically in a hole *o* in the carrier *b*, which is large enough to allow of free angular movement between the neck *f* and the carrier *b*, and also of lateral or tilting movement so that the spring socket contact *d* can move in a plane perpendicular to its flat contact surfaces.

Consequently when a plug contact *s* is inserted, if the spring contact socket be not in the correct relative position, the socket is moved into the proper position and the contact surfaces of the plug and socket make proper intimate contact.

The opening *p* in the insulator is of such shape and size as to prevent excessive movement of the socket *d*.

In the form shown in Figures 3 and 4 the spring contacts *d* of the socket are riveted on a block *q* which is pivotally mounted on screws *i* which are supported in holes *r* in carriers *h*, secured to the insulator *a* by bolts *c*. The block *q* is extended to form the terminal *g*.

The holes *r* are large enough to allow for ample play for the screws *i*, and there is ample clearance for the socket contact *d* in the opening *p* in the insulator, to allow the spring socket contact *d* to tilt or move laterally and thereby to adjust itself to the plug *s*, when inserted therein, to ensure that the flat contact surfaces thereof engage intimately and correctly with those of the spring socket contact *d*.

Instead of the socket contact being adjustable as above described, or in addition thereto, the plug contact may be adjustably mounted. An adjustably mounted plug is shown in Figures 5 and 6. The plug contact *l* has a cylindrical collar *s* and a stem *m* of rectangular cross section.

The stem *m* is mounted in an opening *t* in the insulator *k* which is also of rectangular cross-section but large enough to permit of limited angular and lateral movement of the plug contact *l*, sufficient to allow it to adjust itself effectively as regards inclination and angular position to the contact socket.

In the form according to Figures 1 and 2 the hole *o* in the carrier *b* may be substituted by a slit arranged lengthwise in the carrier-branch and being open at the end of the

branch. In this case both the socket *d* and the plug contact *s* is advantageously arranged crosswise to the position represented in Figures 1 and 2. In a such form of the device the socket *d* with his terminal *e* may be made in one piece as this piece may be inserted in the slit of the carrier from the open side of this slit. The insertion must take place before introducing the carrier in the insulator.

I claim:

1. In an electrical connector, a contact member, an insulating support for said contact member formed with an opening to permit of limited angular movement of said contact in said support, an L-shaped carrier supported within said opening with one of its arms disposed transversely to the axis of said opening, said arm being apertured, a terminal member formed with a neck screw-threadedly engaging said contact, said neck passing loosely through said aperture for displaceably supporting said contact member.
2. In an electrical connector, a contact member, an insulating support formed with an opening for permitting a limited angular movement of said contact, an L-shaped carrier, one arm of said carrier being disposed within said opening and secured therein, the other arm of said carrier being disposed transversely to the axis of said opening, said last mentioned carrier arm being apertured, a terminal member formed with a reduced neck portion, means disengageably securing said terminal member to said contact member, said terminal member loosely engaging

said aperture with its reduced neck portion for displaceably supporting said contact member.

3. In an electrical connection a spring socket contact adapted to receive a flat plug contact, an insulating support for and having an opening to receive said socket contact, a carrier secured to said support and provided with an aperture, a socket-terminal member formed with a neck portion loosely engaging said aperture and providing a loose pivotal connection between said socket contact and carrier adapted to permit of limited inclination of the socket contact in a plane perpendicular to the contact surfaces thereof.

4. An electrical connection comprising a spring socket contact adapted to receive a flat plug contact, an insulating support formed with an opening to receive said socket contact with sufficient play to permit of limited rotation and inclination thereof in a plane perpendicular to the contact surfaces of said socket, an apertured carrier secured to said insulating support and a terminal having a stem rigidly secured to said socket, said stem passing freely through the aperture in said carrier.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BRUNO RAETTIG.

Witnesses:

J. KEMPF,

M. HOLMHEID.