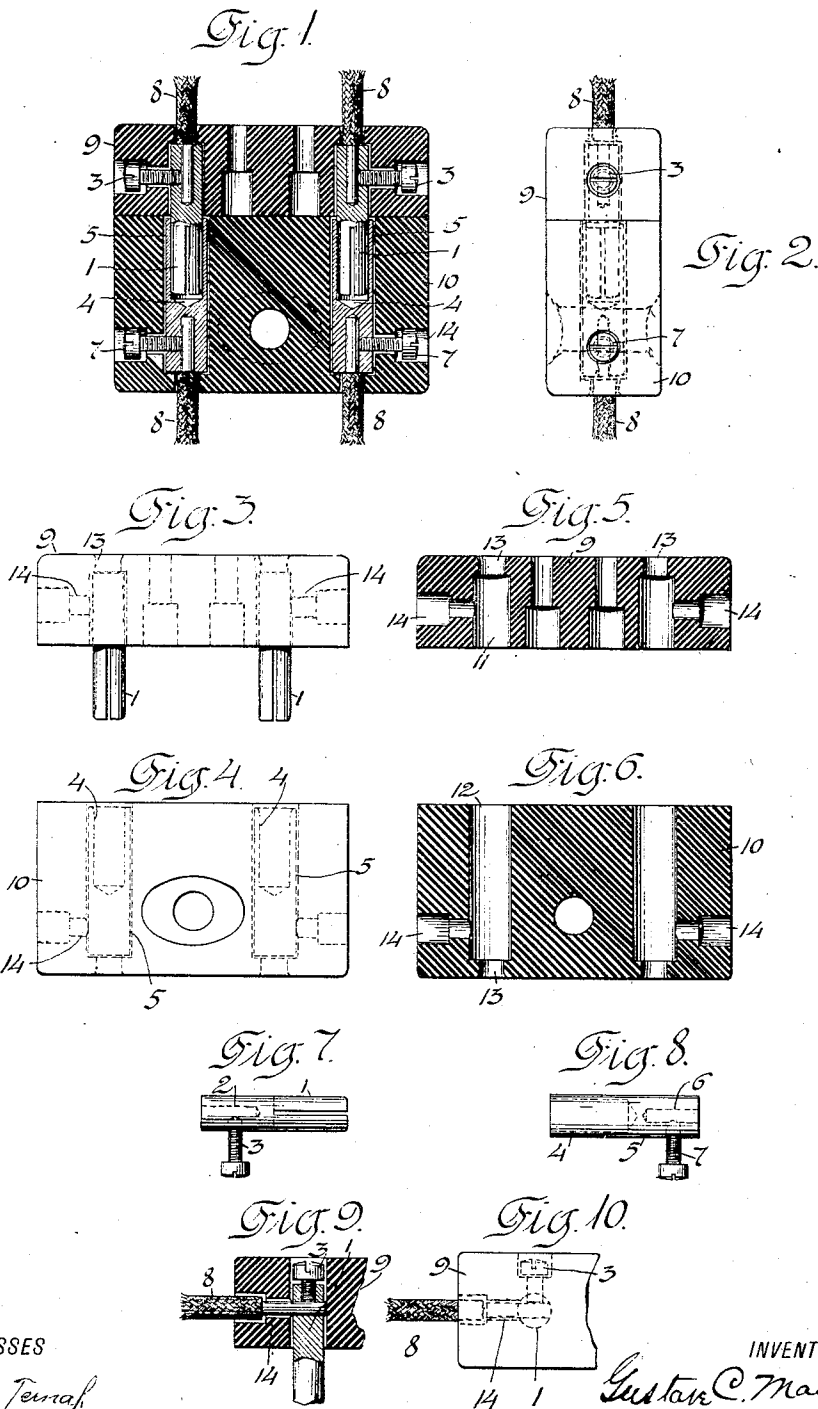


G. C. MARX.
 ELECTRICAL ATTACHMENT PLUG.
 APPLICATION FILED SEPT. 28, 1906.

1,000,101.

Patented Aug. 8, 1911.



WITNESSES

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ELECTRICAL ATTACHMENT-PLUG.

1,000,101.

Specification of Letters Patent.

Patented Aug. 8, 1911.

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To all whom it may concern:

Be it known that I, GUSTAVE C. MARX, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented a certain new and useful Improvement in Electrical Attachment-Plugs, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to that class of electrical connectors in which the detachable metallic contact members are housed or incased in insulating blocks of moldable insulating material such as porcelain.

In accordance with the present invention the blocks of insulating material are molded with sockets and apertures for the metallic parts which they are designed to receive which, although fitted loosely thereto, are of sufficiently larger dimension to enable the metallic connecting members incased therein to have a slight lateral play to enable them to accommodate themselves to each other without straining the housing blocks, while permitting the adjacent faces of the latter to be firmly seated upon each other to exclude foreign matter from the metallic connections within the same. The metallic connecting members are preferably locked loosely in their respective housing blocks by means of the binding screws by which the terminal conducting wires are secured thereto.

The invention will be more fully understood by reference to the drawings annexed, in which—

Figure 1 is a longitudinal sectional elevation and Fig. 2 an end elevation of an attachment plug or connector embodying the present invention. Figs. 3 and 4 are detached side elevations of the two parts of the connector. Figs. 5 and 6 are longitudinal sectional elevations of the two insulating blocks composing the housing for the connecting members, but with the latter removed. Figs. 7 and 8 are detached side views of the split plug and socket constituting the connecting members. Figs. 9 and 10 are detail views showing modifications of the fastening means by which the metallic connecting members are loosely locked within the insulating housing blocks.

The connecting members are represented in Figs. 1 to 8 inclusive as of the usual form, comprising a cylindrical plug 1, having a

split inner end and a longitudinal hole 2 in its opposite end intersected by a transverse hole which is entered by a binding screw 3, the split elastic inner end of the plug 1 being fitted to the longitudinal socket 4 in the adjacent end of the socket member 5 having in its opposite end the longitudinal hole 6 intersected by a lateral threaded hole entered by the binding screw 7, the longitudinal holes 2 and 6 each receiving the end of a conductor wire 8 secured therein by means of the respective binding screws.

The insulating housing blocks 9 and 10, respectively, are shown formed with substantially parallel cylindrical sockets 11 and 12, respectively, in their adjacent portions, and with angularly disposed holes 13 and 14 arranged, respectively, in a line with and laterally of the sockets 11 and 12, and adapted to register with the intersecting holes of the plug 1 and socket-piece 5 when in position therein. The sockets 11 and 12 and the holes 13 and 14 are materially larger than parts 1, 3, 5, 7 and 8 which they are designed to receive, whereby such parts are loosely embraced thereby and have sufficient clearance therein to have a slight movement in order that the plug 1 and socket-piece 5 may adjust themselves to each other when the circuit carried by the conductor wires 8 is to be closed by bringing the two sections of the connector into operative relation.

From the above description, it will be observed that the insulating blocks 9 and 10 do not closely embrace the parts for which they are designed to afford protection, and are not permanently connected therewith, but serve merely as housings for the metallic connections of the conductor wire terminals, which may be readily detached therefrom by the mere removal of the binding screws 3 and 7, thus unlocking the plugs and socket-pieces 1 and 5 for removal of the latter. This detachable feature of the insulating block 6 enables them to be readily replaced in case they become accidentally chipped or otherwise damaged when in use, without disturbing the other parts of the connector.

While I consider it advisable, as a matter of convenience, to provide longitudinal holes to receive the ends of the conductor wires and to lock the connecting members in place by means of the binding screws, as represented in Fig. 1, it will be observed that such arrangement is not a necessary part of the

improvement, as will be apparent from a reference to Figs. 9 and 10, in the former of which the conductor wire end is represented as inserted in a transverse hole in the plug 1 and the binding screw as entering an intersecting threaded longitudinal hole in such part, the wire 8 in this instance serving to lock the plug in its socket or recess in the block 9; while in the latter figure, the intersecting holes for the conductor wire end and its binding screw are represented as both entering the plug 1 laterally, so as to both serve in locking the plug within its insulating block 9.

While I have herein represented the connecting members as arranged in pairs in their respective insulating housing blocks, it is evident that the present improvement is equally applicable to such connectors as are designed to establish and interrupt electrical connection between the adjacent ends of a single conductor wire, the play between the insulating blocks and the respective metallic connecting members insuring a close fit of the adjacent faces of the insulating block 8 when they are placed in operative relation, while affording ready means of renewal of any of the component parts of the connector, as before described.

From the foregoing description it is evident that the present improvement is susceptible of considerable modification without affecting its essential feature, and it is therefore to be understood that the invention is not limited to the particular embodiments herein shown and described.

Having thus set forth the nature of the invention, what I claim herein is:—

1. An electrical connector composed of metallic connecting members comprising a plug and a socket closely fitted thereto, said members being formed with relatively yielding interengaging parts by which they are frictionally secured in operative contact relation, and each being provided with angularly arranged apertures extending inwardly from the surface, and of which the one is to afford a fastening for the end of a conductor wire and the other to receive a locking screw therefor, and an insulating housing composed of separable sections each formed with a socket loosely embracing one of said connecting members and an intersecting aperture loosely embracing said screw by which

said member is locked within the housing section.

2. An electrical connector composed of metallic connecting members comprising a split cylindrical plug and a socket fitted thereto, each having a pair of intersecting holes, interengaging parts entering the intersecting holes of each member comprising an end of a conductor wire and a binding screw projecting laterally from the respective member and adapted to secure the said wire in place, and molded housing blocks of insulating material provided in adjacent portions with recesses loosely fitted to and adapted to receive and embrace said connecting members and providing clearance for their lateral movement therein, and also affording angularly disposed holes for the conductor wire ends and their respective binding screws, whereby one of the interengaging parts of each pair serves to lock loosely within its respective block the connecting member to which it is attached while the separable housing blocks are frictionally held together by said plug and socket and are adapted to be freely detached by the disconnection of said connecting members.

3. An electrical connector comprising a pair of separable insulating blocks each having a plurality of parallel sockets extending entirely through the same and each socket having an intersecting aperture extending thereto from the exterior of its respective block, a metallic terminal connecting member loosely embraced by each of the sockets in one of said insulating blocks and adapted to effect with a correspondingly disposed connecting member of the other insulating block a yielding frictional engagement, and a clamp-screw entering the intersecting aperture of each block and tapped into its respective contact member for both securing thereto a conductor terminal wire and locking the terminal connecting member in position while permitting the latter's free lateral movement in said block.

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

GUSTAVE C. MARX.

Witnesses:

HENRY J. MILLER,
HENRY A. KORNE MANN.