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A. H. WRIGHT
ELECTRICAL CONNECTOR

2,281,739

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Fig-1-

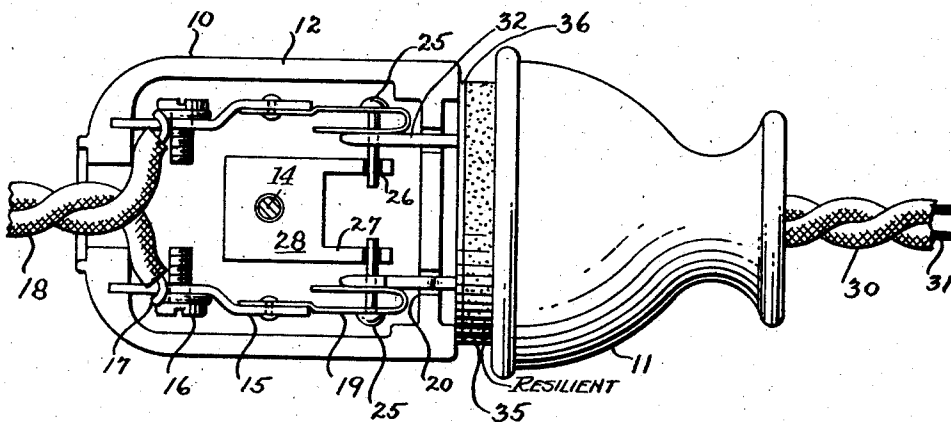


Fig-2-

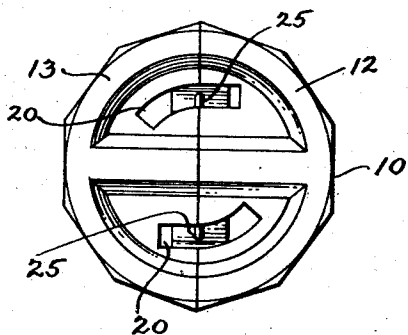


Fig-3-

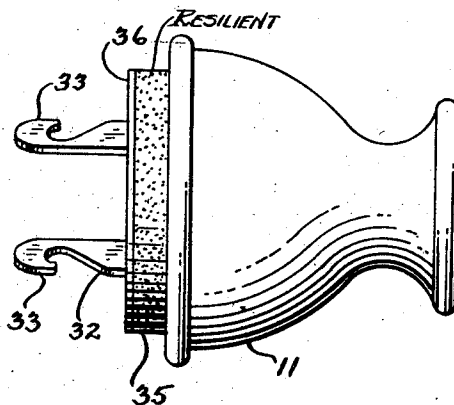
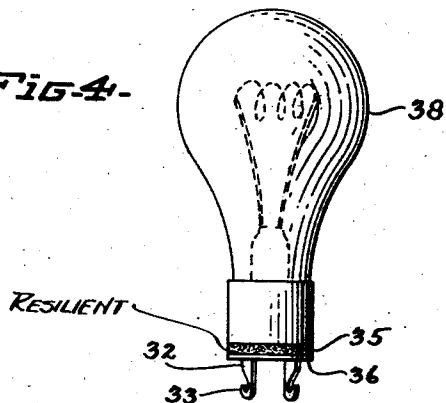


Fig-4-



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ELECTRICAL CONNECTOR

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7 Claims. (Cl. 173-328)

This invention relates to electric connectors of the separable type in which a plug member is provided with projecting terminals adapted to be received in openings in a base member.

It is an object of the present invention to provide a connector of the class referred to, the separable members of which are provided with means whereby they may be interlocked against accidental disconnection.

Another object of the present invention is to provide a device of the class described, the separable parts of which may be positively interlocked by an extremely simple operation. Additionally, it is an object of this invention to provide a connector of simplified construction and which will be relatively inexpensive to manufacture.

These and other objects of the invention, which will be made apparent as this specification proceeds, are accomplished by fashioning the projecting terminals of the conventional plug member into a pair of hooks and providing pins in the female or base member with which the said hooks are adapted to engage. Additionally, there is provided a cap of sponge rubber or the equivalent for the plug member and through which the hooked terminals project, it being the function of the rubber cap to bear against the face of the female or base member to yieldably urge the said hooked terminals into engagement with the pins in the base member.

In the accompanying drawing wherein there are shown two exemplifications of the invention,

Fig. 1 is an assembly view of the plug and base members, with one half of the latter removed for sake of clarity,

Fig. 2 is an elevation showing the face of the base member,

Fig. 3 is a side elevation of the plug member, and

Fig. 4 is a side elevation of an electric lamp embodying the principles of the invention.

The numeral 10 designates a female member with which a plug member 11 is adapted to be interconnected, as in Fig. 1. The member 10 is of a well-known type to the extent that it is of molded insulating material and formed of the matching, separable halves 12 and 13, held together by the conventional screw 14. Additionally, the member 10 is provided with the usual posts 15, embedded or otherwise secured in one of the halves thereof, carrying binding screws 16 for connecting the leads 17 of the flexible cables 18 leading to a source of electric current. The usual spring contacts 19 are riv-

eted or otherwise secured to the opposite ends of the posts 15 and one wing of each of them is normally adapted to lie in the path of terminals inserted through the openings 20 in face of the member 10 (see Fig. 2).

The novelty of the modification of the above described base member for the purposes of this invention, resides in the provision of the pins 25. These pins, it will be noted from Fig. 1, are thrust through the two wings of the spring contacts and the inner ends thereof are loosely received in the notches 26 cut in the legs 27 of the medially disposed reinforcing or separator block 28, the latter being formed as an integral part of that half of the member 10 shown in Fig. 1. Thus the free ends of the pins 25 are anchored against displacement by the male members received by the base member.

The plug member 11 is of conventional type in so far as it includes the customary flexible cables 30 having leads 31 for connection to any suitable electrical device to which transmission of power is desired. Additionally, the plug 11 includes suitable internal support for the projecting terminals 32 and binding screws by which the leads 31 are connected thereto (not shown).

The terminals 32 of this invention are provided with the hooked ends 33, the hook openings facing in opposite directions, and here shown as being adapted for interconnection with the pins 25 by a partial right-hand turn (looking at Fig. 2).

In place of the usual disc of insulating material, I have provided a cap 35 of sponge rubber which is seated in the plug 11 surrounding the terminals, and projects outwardly therefrom to form a spring means bearing against the face of the base member 10 to yieldably urge the hooked terminals 32 into engagement with pins 25.

In the form illustrated, I have provided a facing disc 36 of insulating paper board or the like for the sponge rubber cap 35, to present a smooth surface to bear against the face of the base member 10, but it will be appreciated that this may be dispensed with, if desired, without impairing the efficacy of the invention.

The openings 20 in the present invention are necessarily longer than those of the conventional socket member of this class, to provide for insertion and partial turning of the terminals 32 to engage the pins 25. In Fig. 2 it will be noted that the openings 20 are of an arcuate shape at the ends into which the terminals are inserted,

to provide for rotative engagement of the members 10 and 11.

The interlocking of the members thus described is effected by simply inserting the hooked terminals 32 into the curved ends (left, upper and right, lower) of the openings 20 (looking at Fig. 2), then pressing the members 10 and 11 together to compress the sponge rubber cap 35 and position the hook of the terminals and by then giving the plug 11 a partial turn to engage the hook on the pins 26. When thus connected the members 10 and 11 are held secure in their relation against accidental disengagement, and at the same time there is a degree of flexibility in the connection resulting from the use of the sponge rubber cap 35 between the two members.

In Fig. 4 there is shown an incandescent lamp 38 to the butt end of which the principle of this invention has been applied. In place of the conventional threaded end the lamp is provided with the hooked terminals 32, the sponge rubber cap 35 and a facing disc 36 of insulating paper board or the like. The lamp 38 is, obviously, adapted to be connected to the base member 10 in the same manner as a plug 11 of this invention.

It should be noted that one of the desirable attributes of the present invention lies in the fact that the plug 11 is susceptible for use in conventional electrical receptacles as well as with the base member 10 of this invention. This permits a convenient change from conventional equipment to adoption of the electrical connector forming the subject-matter hereof.

It will be understood that the invention disclosed in this application may take forms other than those illustrated and described without departing from the spirit hereof, and thus the elements shown should be deemed illustrative only. For instance, it may be found desirable to substitute for the sponge rubber cap 35 an equivalent, such as a conventional spring or the like. This can, of course, be done without deviating from the principles of this invention.

The invention claimed is:

1. In an electrical connector, the combination of a plug member having hooked terminals projecting therefrom, a base member having apertures in one face thereof through which the said hooked terminals are adapted to be inserted, said base member having a pair of spring contacts therein, each of said spring contacts carrying a pin adapted to be engaged by the said hooked terminals and an anchorage in said base member for the free ends of said pins.

2. In an electrical connector, the combination of a plug member having hooked terminals projecting therefrom, a base member having apertures in one face thereof through which the said hooked terminals are adapted to be inserted, said base member having a pair of spring contacts therein, each of said spring contacts having a pin projecting laterally therefrom, which pins are adapted to be engaged by the said hooked terminals and an anchorage in said base member for the free ends of said pins.

3. In an electrical connector, the combination of a plug member having hooked terminals projecting therefrom, a base member having apertures in one face thereof through which the said hooked terminals are adapted to be inserted, a pair of spring contacts within the base member,

each of said spring contacts having a pin projecting laterally therefrom for engagement by said hooked terminals, an anchorage in said base member for the free ends of said pins, yieldable means on said plug adapted to lie between said plug and said base member when they are interconnected and normally urging said members apart against the connection of said hooked terminals and the pins engaged thereby in said base member.

4. In an electrical connector, the combination of a plug member having hooked terminals projecting therefrom, a base member having apertures in one face thereof through which the said hooked terminals are adapted to be inserted, a pair of spring contacts within the base member, each of said spring contacts having a pin projecting laterally therefrom for engagement by the said hooked terminals, an anchorage in said base member for the free ends of said pins and yieldable means carried by said plug and projecting therefrom in the plane of said hooked terminals, said yieldable means being adapted to lie between said plug and said base member when they are interconnected.

5. In an electrical connector, the combination of a plug member having hooked terminals projecting therefrom, a base member having apertures in one face thereof through which the said hooked terminals are adapted to be inserted, a pair of spring contacts within the base member, each of said spring contacts having a pin projecting laterally therefrom for engagement by the said hooked terminals, an anchorage in said base member for the free ends of said pins, yieldable means carried by said plug and projecting therefrom in the plane of said hooked terminals, said yieldable means being adapted to lie between said plug and said base member when they are interconnected, and a facing disc of insulating material on said yieldable means.

6. In an electrical connector, the combination of a plug member having hooked terminals projecting therefrom, a base member having apertures in one face thereof through which the said hooked terminals are adapted to be inserted, a pair of spring contacts within said base member each having a pin projecting laterally therefrom for engagement by the said hooked terminals, an anchorage in said base member for the free ends of said pins, a sponge rubber cap seated in said plug and projecting therefrom in the plane of said hooked terminals, said terminals projecting beyond the outer surface of said cap.

7. In an electrical connector, the combination of a plug member having hooked terminals projecting therefrom, a base member having apertures in one face thereof through which the said hooked terminals are adapted to be inserted, a pair of spring contacts within said base member each having a pin projecting laterally therefrom for engagement by the said hooked terminals, an anchorage within the base member for the free ends of said pins, a sponge rubber cap seated in said plug and projecting therefrom in the plane of said hooked terminals, said terminals projecting beyond the outer surface of said cap, and a facing disc of insulating material on said sponge rubber cap.

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