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E. P. BRUS

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ELECTRICAL PLUG AND RECEPTACLE

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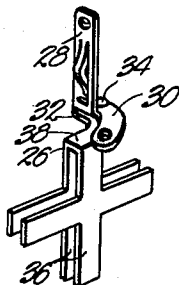
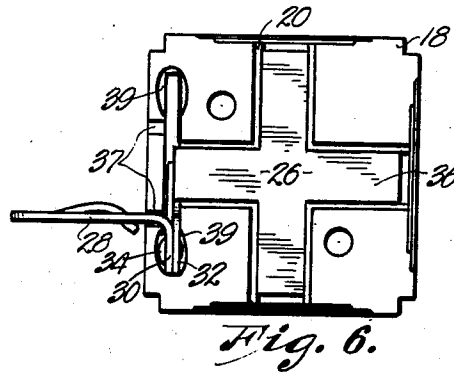
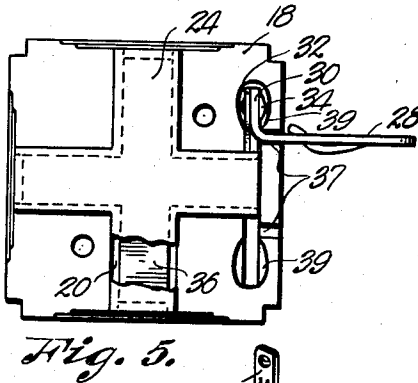
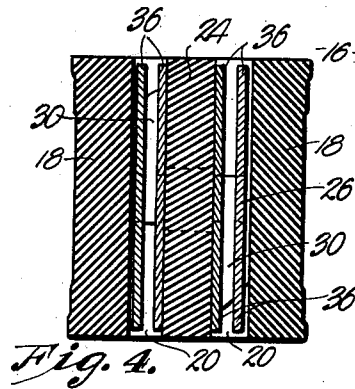
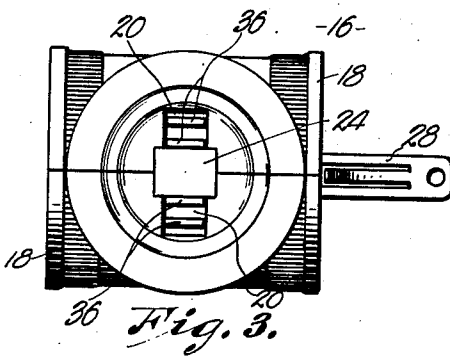
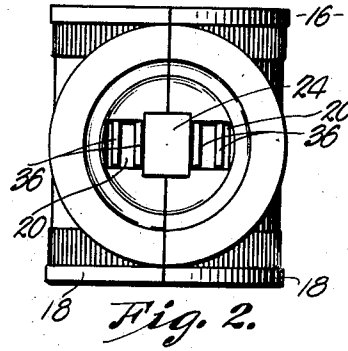
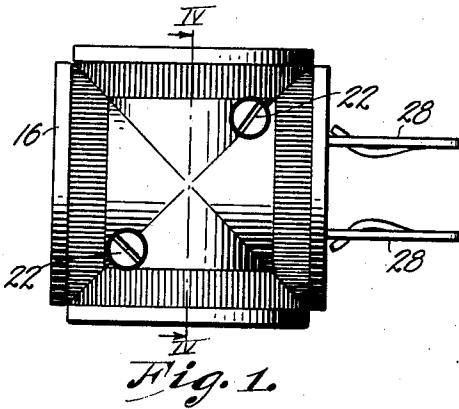


Fig. 7.

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UNITED STATES PATENT OFFICE

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ELECTRICAL PLUG AND RECEPTACLE

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2 Claims. (Cl. 173-334)

This invention relates to electrical connectors and particularly receptacles and plugs usable with conventional outlets and with the well-known extension cords, and the primary aim is the provision of such units that have a minimum number of parts and that may be made by employing a prong such as shown and described in my co-pending application for United States Letters Patent, Serial No. 259,350, filed March 2, 1939, now Patent No. 2,238,099, issued April 15, 1941, and relating to improvements in Electric plug.

A further aim of the instant invention is to provide in an electrical plug and receptacle, a body of resilient insulating material, which body cooperates with specially formed blades in maintaining the legs of the blades in position against an inserted prong so that a good contact is established.

A further aim of this invention is to provide an electrical receptacle and plug wherein the blades and outwardly extending prongs are unitary and may be assembled with the body of aforementioned character, after the blades and prongs are riveted together, said prongs and blades having laterally extending portions that engage a surface on the body and through which, in some instances, a fastening element may be passed to hold the parts together.

This invention has for an even further aim, the provision of a specially formed body for electrical plugs or receptacles, which body has a cavity extending inwardly from one side thereof that is divided into two parts by a partition of resilient substance, which partition serves to exert a pressure against one of the legs of the contact blades when the plug or receptacle is in use.

Other objects of the invention include simplicity of construction, cheapness of manufacture, and exceptional durability by virtue of a minimum number of parts.

One form of receptacle and a single type of plug are shown in the accompanying drawing, wherein:

Figure 1 is a side elevational view of an electrical receptacle made in accordance with the present invention.

Fig. 2 is an end view of the same.

Fig. 3 is an edge elevational view of the receptacle.

Fig. 4 is a cross sectional view through the receptacle taken on line IV-IV of Fig. 1.

Figs. 5 and 6 are plan views of the sections forming the body of the receptacle showing the same parted.

Fig. 7 is a perspective view of the combined contact blade and prong which is used in the receptacle shown in Figs. 1 to 6 inclusive.

From the following specification, it will become clear to one skilled in the art that the broad concepts of this invention might be used in constructing electrical connectors of the specific type shown in either Figs. 1 to 7 inclusive, or Figs. 8 to 13, inclusive.

The receptacle commonly referred to in the trade as "three-way" has a body of insulating material, generally designated by the numeral 16. This body comprises two substantially identical sections 18, each of which has a cavity 20 extending inwardly from a side of body 16. Cavities 20 extend inwardly from three sides of body 16 when the receptacle is assembled as in Figs. 1 to 3 inclusive.

When sections 18 are secured together by rivets or analogous means 22, cavities 20 are in register and the parts thereof in each section 18 are segregated through the employment of a partition 24 constructed of resilient insulating material. This partition 24 is separately molded from rubber or the like, and serves a distinct purpose, as will be more fully hereinafter set down.

Each part of cavity 20 has a combined contact blade and prong, shown in Fig. 7. The contact blade 26 is rigidly secured to prong 28 before the parts are assembled and such construction allows the use of a standard prong that is made in accordance with the invention disclosed in my aforesaid co-pending application.

Prong 28 has a laterally extending arm 30 at one end thereof which lies against the laterally extending portion 32 of blades 26. A rivet 34 secured together parts 30 and 32 of prong 28 and blade 26 respectively, and when the combined contact blade and prong are in place, the laterally projecting parts will set against one face of body 16.

The laterally extending arm and portion 30 and 32 respectively, lie in a chamber 39 which opens inwardly from the abutting faces of sections 18. A notch 37 in each section 18 receives a portion of prong 28 so that when sections 18 are together, notches 37 become long enough to receive prong 28. Thus, assembly becomes easy because each prong 28 lies in a notch in each section 18.

Any force exerted longitudinally on prongs 28 will be overcome by laterally extending arm 30 striking either the upper surface of body 16 formed by chamber 39, or by laterally extending portion 32 striking the lower surface of body 16

within chamber 39. Thus, when prongs 23 are forced into a conventional receptacle or when prongs from an extension are moved into cavities 20 between legs 36, the normally destructive pressure is absorbed within the body and is not harmful to the relatively thin material from which legs 36 are constructed.

Blade 26 is formed of a single sheet of resilient metal to provide a pair of legs 36 and a bight 38. Blades 26 are in the form of a cross, as seen in Fig. 7, and the receiving cavity 20 is likewise so formed so that a blade 26 and associated prong 28 may be fitted into each section 18 of body 16.

After the blades are positioned, partition 24 is introduced into cavity 20 to electrically isolate the two blades and their associated prongs 28. The rivet or similar member 22 will hold together the sections of body 16 and partition 24 will bear against proximal legs 36 of the two sets of blades 26.

When a prong of a conventional electrical extension cord is forced into cavity 20 between legs 36 of blades 26, legs 36 will tightly grip the prong and be assisted in their gripping action by the inherent resiliency of partition 24 which lies in the related position shown in Fig. 4.

The three-way receptacle illustrated in Figs. 1 to 6 inclusive and described hereinabove, comprises a relatively low number of parts and when the two-part body is fastened together, no additional securing means other than the integral members of the combined prong and blade need be used to hold the entire receptacle assembly in operative condition.

Sections 18 of body 16 are molded, and the combined contact blades and prongs, shown in Fig. 7, are associated with the body through the

employment of but two rivets or screws in each instance. The resulting article is obviously advantageous from the standpoint of a less complicated electrical connector, and while the preferred form of the invention has been illustrated, it is desired to be limited only by the spirit of the invention and scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a device of the character described, a split body of insulating material comprising mating sections, each section having a cavity extending inwardly from one side thereof, a pair of spaced apart contact blades in each cavity, a prong rigid with each of said pairs of blades, means for securing said sections together with the cavities in registering relation, and a resilient partition between said pairs of contact blades to urge a blade of each pair toward its corresponding blade when a prong of an extension is inserted therebetween.

2. In a device of the character described, a split body of insulating material comprising mating sections, each section having a cross-shaped cavity extending inwardly from one side thereof, a pair of spaced-apart, cross-shaped contact blades in each cavity, a prong rigid with each of said pairs of blades, means for securing said sections together with said cavities in registering relation, and a cross-shaped resilient partition between said pairs of contact blades to urge a blade of each pair toward its corresponding blade when a prong of an extension is inserted therebetween.

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