Nov. 10, 1936. L. POLLOCK 2,060,115

ELECTRICAL CONNECTER

Filed Dec. 17, 1934

Fig. 1.

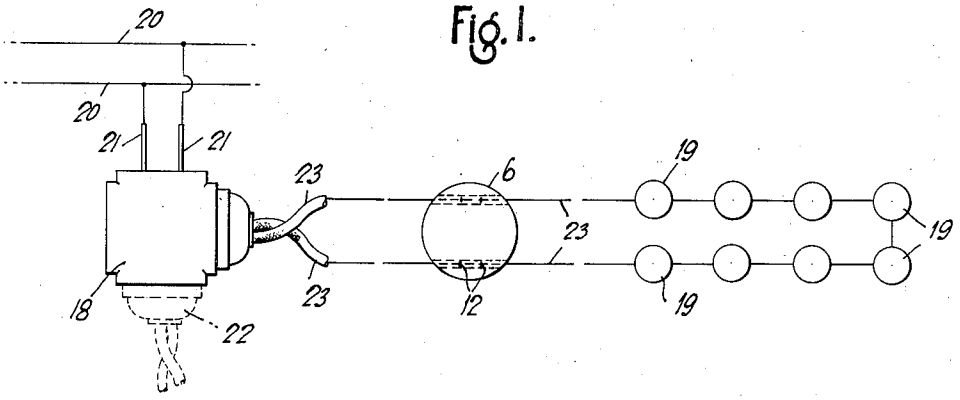


Fig. 2.

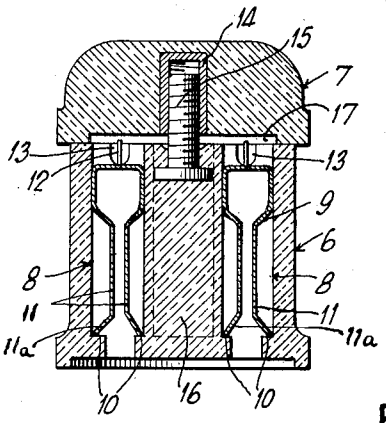


Fig. 3.

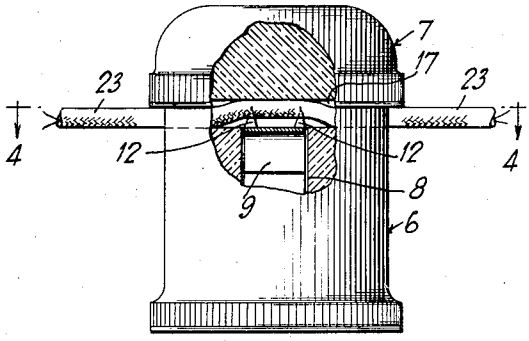
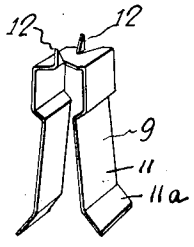
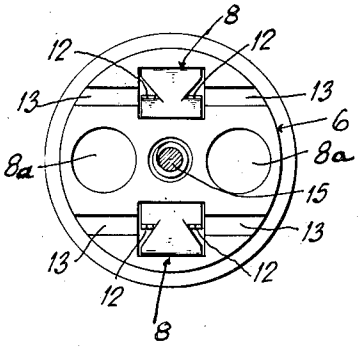


Fig. 4.

Fig. 5.





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ELECTRICAL CONNECTER

Leopold Pollock, New York, N. Y.

Application December 17, 1934, Serial No. 757,820

1 Claim. (Cl. 173—340)

This invention relates to an improved electrical system and to an improved electrical connecter which is particularly adapted for use in this and other systems to increase the use and flexibility of the system.

When several electrical devices, each of which is designed to operate on given voltage, are to be used together they are commonly connected in parallel across the mains of a lighting circuit by plugging into suitable sockets, each of which is connected across the mains. It is common knowledge that by employing a double or multiple plug two or more such devices may be connected in parallel through the same socket. Instead of connecting the second device in parallel across the mains right at the socket, the connection may obviously be made at any suitable point along the wires which lead to one of the devices. However, in the past such connection has customarily been made permanent at a fixed point, by first removing or destroying the insulation of the wires at the point of connection, and then splicing or attaching the lead wires of one device to the lead wires of the other device in multiple or parallel.

A feature of the present invention resides in the provision of a simple, inexpensive and safe connecter which can be attached to the lead wires of a given device at any desired point between the socket and said device, and which can be moved to any other such point at will, all without removing the insulation from the lead wires.

The present device is especially useful for coupling in parallel two series of little Christmas tree lights. The present system enables the connecter to be attached at any convenient point without destroying the insulation on the wires, thus achieving maximum flexibility. However, each such series is a unitary device operating on the voltage of the mains, so the invention in its broader aspects is not limited to series of Christmas tree lights.

Other features, objects and advantages of the present invention will be in part pointed out and in part apparent from the following detailed description of an illustrative embodiment of the invention, reference being had to the accompanying drawing wherein:

Fig. 1 is a diagrammatic view of one illustrative form of system;

Fig. 2 is a central, vertical section, on enlarged scale, taken through one form of construction in accordance with the invention;

Fig. 3 is a side elevation, partly broken away, of the construction shown in Fig. 2, taken at right angles thereto;

Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 3, looking in the direction of the arrows; and

Fig. 5 is a perspective view of a detail.

With reference to the drawing, the connecter shown may comprise a base portion 6 and a cap portion 7, each formed of any suitable insulating material such as hard rubber, "Bakelite", or the like. The base member may be formed with a pair of hollow recesses 8 for receiving U-shaped elements 9 of any suitable conducting material such as copper or copper alloy. The lower ends of the U-shaped elements may be seated on shoulders 10 formed on member 6, and these elements may have off-set, opposed yielding portions 11 adapted to be engaged by the contacts of a connecter plug of convenient or standard design, when these contacts are inserted into the recesses 8 through the bottom of the base member.

A detailed feature of the present device resides in the construction of the U-shaped elements 9. As best shown in Fig. 5, each of these elements may be formed of resilient material and may advantageously be adapted to spring outwardly so that when they are inserted into the base member 6 from the top thereof, by merely pushing them into the recesses 8, their lower ends bear against the side walls of the recesses and tend to prevent them from being pulled out of the recesses, for instance when a given set of wires is to be removed from the prongs (hereafter described). The inwardly off-set, opposed portions 11 of each U-shaped element are advantageously of such length and are so spaced that when the flat contact members of an electrical plug connecter are inserted between the arms of the respective U-shaped elements, the tendency is to spread slightly the portions 11. Since the lower ends 11a of the U-shaped members (which may advantageously be inclined outwardly) bear against the shoulders 10 and since the lead wires are held firmly upon the prongs on the U-shaped members, as hereinafter described, the result is a good contact not only with the contacts of the plug but also with the lead wires.

The recesses 8 may preferably be of generally rectangular shape for snugly receiving the U-shaped elements 9, and if desired, other suitable recesses 8a may be formed in the base in order to save material.

One or more (preferably two) stiff prongs 12

may be struck up from the tops of each of the U-shaped elements so that they stand upright in the middle of a pair of generally parallel channels 13 which extend from one side of the base member to the other, these channels being adapted snugly to receive a pair of lead wires 23.

The cap 7 may be provided with an internally threaded sleeve 14 secured therein in any convenient manner, and the base member 6 may have a threaded post 15 likewise secured in its central portion 16, and extending above the top of the base. The cap member may have a suitable recess 17 formed in its upper side above the ends of the prongs, so that when the wires are laid in the channels 13 and the cap is screwed down the prongs will be forced into the wires a sufficient distance to make a good contact, without extending through the wires enough to be blunted by the cap. It will be understood that the wires 23 and their insulation are formed sufficiently soft to enable the prongs to penetrate them to the desired extent.

It will thus be seen that there is provided a simple and inexpensive construction which can be attached to leads at any convenient point between a plug 18 and a bulb or series of bulbs 19, so that a second series of bulbs may be attached by plugging into the base 6, as described. Flexibility in arranging the second series is thus achieved, and at the same time the connecter is easy to assemble and may be moved at will. Thus, a second series of little Christmas tree bulbs can be attached at any suitable point between one set and a plug, without removing insulation from the wires, and can be moved at will. Moreover, the wires are housed within the connecter at the points where the prongs enter them so that danger of a short circuit is avoided. The plug 18, which has contacts 21 or other usual means for insertion into a socket connected across mains 20 may, of course, be a double or multiple plug so that one or more additional circuit 22 may be attached if desired.

The terms and expressions which have been employed are used as terms of description and not of limitation, and there is no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described, or portions thereof, but it is recognized that various modifications are possible within the scope of the invention claimed.

I claim:

In a detachable wire tap device consisting of a base member, a top member adapted to be detachably affixed to the top of said base member, said base member being provided with spaced relatively shallow grooves formed in its top surface to receive electrical conductors, said base member also being provided with recesses extending from said grooves down through said base, shoulders formed in said recesses near the bottom thereof, U-shaped conductor members adapted to be mounted in said recesses and to have the ends of the U-shaped members seated on said shoulders, said U-shaped conductors formed to have substantially parallel inwardly off-set central portions positioned closer together than the closed end of the U-shaped member, said central portions adapted to engage opposite sides of a contact carried by a plug connecter when said plug is inserted in said base member, the free ends of each U-shaped member flaring outward from the central portion to thereby seat on the shoulders of said recesses, prong members forming a part of and extending outwardly from the closed end of each of said U-shaped members into one of said shallow grooves to engage the electrical conductor and puncture the insulation thereof, each of said U-shaped members adapted to have its free ends forced against the shoulders in the base when said top member is firmly affixed to the base member forcing said prongs into electrical engagement with said electrical conductor and tending to compress said U-shaped member.

LEOPOLD POLLOCK.