April 13, 1954 F. KLUMPP, JR 2,675,529

ELECTRICAL PLUG CONSTRUCTION

Filed Dec. 12, 1949

Fig. 4

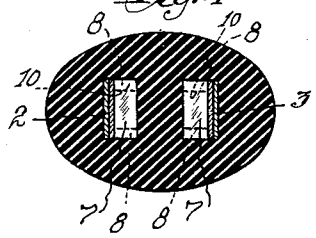


Fig. 1

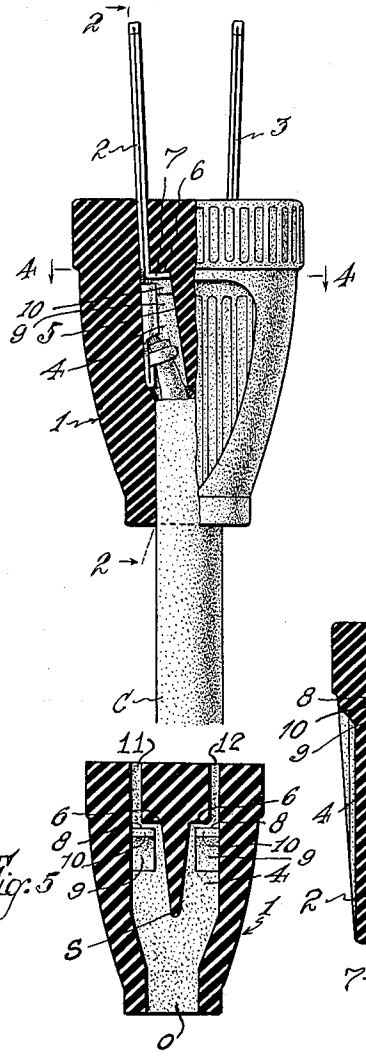


Fig. 2

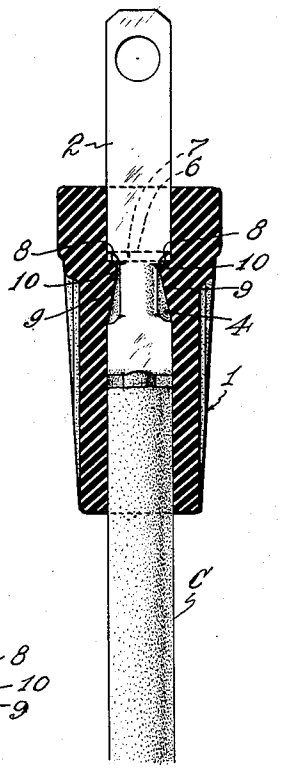


Fig. 3

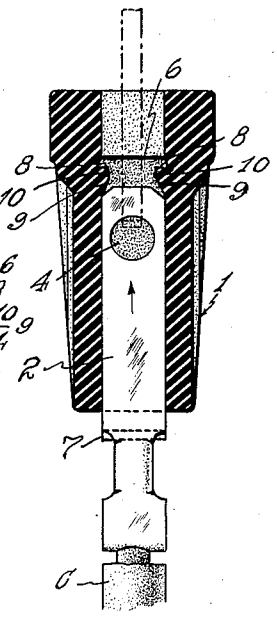


Fig. 5

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ELECTRICAL PLUG CONSTRUCTION

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5 Claims. (Cl. 339—62)

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This invention is directed to the construction of an electrical plug used for various purposes especially in connection with household articles such as flat irons, curling irons, soldering irons, washing machines, toasters, chafing dishes etc.

In the use of these devices the operator many times takes hold of the cord and gives it a pull or yank to disconnect the device being used, but even if the operator takes hold of the plug itself the strain applied may sometimes displace the blades of the plug as usually made and my new design is directed to overcoming these difficulties hence.

The object of this invention is to provide a plug construction such that the terminals or contact blades with the cable conductors attached thereto may be pulled into the plug and securely locked in place so that any pull thereafter on the cable or plug itself will not displace the terminals from their operative position.

In my patent, 2,476,738, I have shown and described an excellent way of attaching the conductors to the plug blades without soldering but in such a way that the conductor cannot be pulled loose from the blade and I have found by trial that the combination of the patented idea with my present improvement produces an arrangement which I consider to be without faults; at least I have not been able to detect any.

My improved plug is shown in the annexed drawing on a scale about twice the size of a working device and wherein

Figure 1 is a part quarter section and part elevational view of a completely assembled plug and cable;

Figure 2 is a view on the line 2—2 of Figure 1;

Figure 3 is a view similar to Figure 2 but showing the plug blades with the conductors attached thereto being pulled into the plug body;

Figure 4 is a view on the line 4—4 of Figure 1;

Figure 5 is a section through the plug without the cable and blades.

In the various views wherein like members refer to corresponding parts, 1 is a plug body of resilient insulating material such as rubber vulcanized only enough to allow the material to stretch sufficiently to allow the blades 2 and 3 to be drawn thereinto along with its cable C. The conductors of the cable C are fastened to their respective blades in any satisfactory manner but I prefer the solderless way to which reference has been made.

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The interior part of the plug body 1 has an opening O for the cable C and the inner part only of this opening is divided by a single piece centrally located integral stud S extending toward the cable opening O thereby dividing the same into two conductor channels only one of which 4 is shown in Figure 1, the inner and dividing wall of the stud S being shown at 5.

Each channel terminates in a rectangular slot to receive the blades 2 and 3. The inner end of each slot 11 and 12 has a shoulder 6 against which one side of the positioning flange 7 engages, while the other side of the flange 7 rests against oppositely disposed heads 8 of half wedge shaped or inwardly tapering surfaces 9 which are integral with the side walls of the plug body 1 and spaced from the stud S so when the blades are pulled into the final position, they are securely locked in the plug body against strains in any direction. These tapered surfaces 9 assist in the assembly of the blades into the body 1. As shown, I prefer to have the ends of the tapered surfaces 9 adjacent the flanges 7 terminate in surfaces 10 parallel with the longitudinal axis of the plug so the blades will come into their locked position in a somewhat easier manner.

Having thus described my invention what I claim is:

1. A single piece electrical plug body of suitable flexible or resilient insulating material and having channels terminating in slots to receive the conductors of an electrical cable and their plug in terminals or blades having positioning ledges which are assembled to the plug body by pulling them into the body; means integral within the plug body for assisting the assembly of the blades and securely holding them in place in the body against any longitudinal pull on the cable or plug body, said means comprising a single piece integral stud located within the plug body so as to form said channels and wedge shaped portions located at least one in each conductor channel and being integral with the plug body and spaced adjacent opposite sides of said stud with the heads of the wedges extending completely across the width of the exit slots that receive the blades but the heads being spaced inwardly from the blade slots a distance sufficient to receive the positioning ledge of the blade.

2. An electrical plug construction as set forth in claim 1 further defined in that the wedge in each conductor channel is divided into two-spaced portions whereby when the blades are

drawn into the plug body, the edges of each blade run between and up the inclined surfaces on opposite sides of the plug body and are forced by the resilience of the plug material into operative position with both ends of each blade positioning ledge becoming locked between their respective wedge heads and the adjacent shoulders on the plug body.

3. A single piece electrical plug body of suitable flexible or resilient insulating material and having channels terminating in slots to receive the conductor of an electrical cable and their plug in terminals or blades having positioning ledges which are assembled to the plug body by pulling them into the body; means integral within the plug body for assisting the assembly of the blades and securely holding them in place in the body against any longitudinal pull on the cable or plug body, said means comprising a one piece stud located within the plug body so as to form said channels and wedge shaped portions located one in each conductor channel and located directly on the plug body across the channel from the adjacent side of said plug with the heads of the wedges located in complete overlapping relationship with the slots that receive the blades but the heads being spaced a slight distance inwardly from their respective blade slots so as to firmly receive the positioning ledge of the blades.

4. A single piece electrical plug body of suitable flexible or resilient insulating material and having channels terminating in slots to receive the conductor of an electrical cable and their plug in terminals or blades having positioning ledges which are assembled to the plug body by

pulling them into the body; means integral within the plug body for assisting the assembly of the blades and securely holding them in place in the body against any longitudinal pull on the cable or plug body, said means comprising a centrally located stud tapering uniformly toward the cable end of the plug body and forming said channels and oppositely disposed integral portions located on the plug body channel walls adjacent said stud and each portion having a head and sloping part, the head being adjacent each terminal blade slot with the sloping part extending from the heads toward the incoming cable end of the conductor channels, said portions being spaced from the inner ends of said slots a distance to allow the blade ledges to be located in the spaced parts between the inner wall ends of the said slots and the head ends of the sloping portions.

5. An electrical plug construction as set forth in claim 4 further defined in that the heads on said portion are flat and extend transversely in a direction across their respective blade channel and act to engage the inner surface of a positioning ledge on the plug blade.

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