

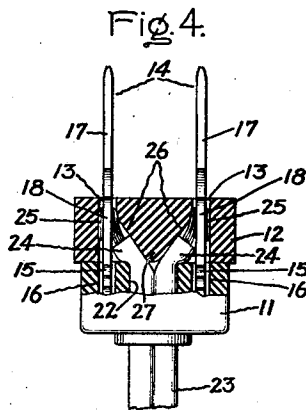
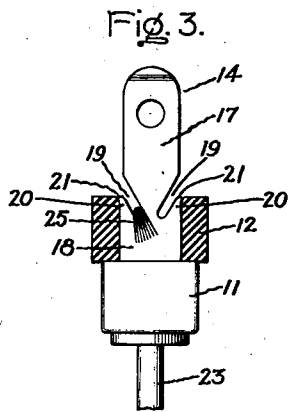
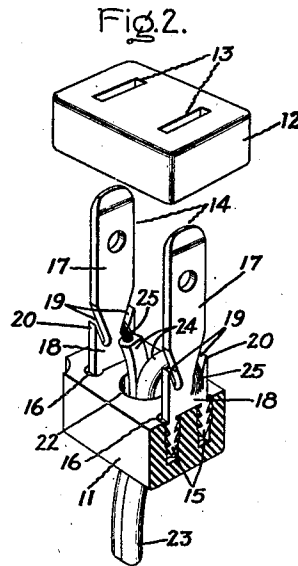
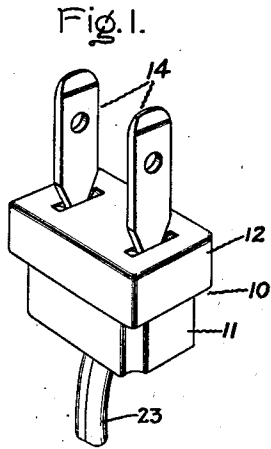
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2,211,591

ATTACHMENT PLUG CAP

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UNITED STATES PATENT OFFICE

2,211,591

ATTACHMENT PLUG CAP

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9 Claims. (Cl. 173—361)

The present invention relates to electrical connectors, and more particularly to attachment plug caps which may, for example, be used on cord sets.

5 It is an object of this invention to provide a rugged and simplified plug cap construction which may be manufactured at low cost.

10 It is another object of this invention to provide a plug cap in which the circuit wires are held in engagement with the contact blades by a clamping member without the use of screws or other securing means.

15 It is a further object of this invention to provide a plug cap with a single member for providing a strain relief and for clamping the circuit wires to the contact blades.

20 Further objects and advantages of the present invention will become apparent as the following description proceeds, reference being made to the accompanying drawing, in which Fig. 1 is a perspective view of a plug cap assembly embodying my invention; Fig. 2 is a perspective view partially in section of an incompletely assembled plug cap; Fig. 3 is an end elevational view partially in section; and Fig. 4 is a front elevational view also partially in section to show more clearly the details of the invention.

25 The plug cap comprises a two-part body portion of insulating material illustrated generally by the numeral 10. The body portion is made up of a base 11 and a clamping block or member 12 having openings 13 spaced to receive a pair of contact blades 14. The blades which may be of sheet metal are securely fastened to the base 30 11 of the plug cap by longitudinally extending legs 15 having serrated edges which engage the walls of suitable openings 16 in the base of the plug cap. The feature of securing contact members to an insulating body in this manner is more particularly described in my Patent No. 2,099,555, dated November 16, 1937.

35 The blades 14 are divided into a contact portion 17 and a base portion 18 by slots or notches 19 formed on either edge of the blades. The slots are arranged to receive the bared ends of the circuit wires which are to be connected to the blades 14. The slots 19 are preferably formed with their axes extending diagonally with respect to the axes of the blades 14, so that a securing point or prong 20 is formed on each edge of the blades adjacent the slots. The prongs are adapted to be peened or swaged over against the upper face of the member 12 as shown at 21 in Fig. 3 to secure it against the face of the body 40 member 11. As illustrated the contact portions

17 of the blades 14 are slightly narrower than the base portions 18 so that the bending over of the securing prongs 20 is facilitated.

A bore 22 is provided in the base 11 for the reception of a cord 23 comprising the flexible insulated conductors 24 having bared ends 25 which are positioned in the slots or notches 19 of the contact blades.

5 In the present construction the clamping member 12 provides a strain relief and also serves to hold the conductor ends in firm engagement with the contact blades 14. As clearly shown in Fig. 4 the openings 13 are tapered for a substantial part of the thickness of the clamping member 12, the taper being determined by the sloping walls 15 26 which converge to form a wedge-shaped portion 27 on the lower face of the clamping member. With this arrangement the contact blades 14 extend through the spaced openings 13, the walls of which engage the conductor ends to hold them in firm engagement with the blades. The tapered openings facilitate assembly of the clamping member on the blades and serve to wedge the conductor ends thereagainst, as the plug cap is assembled. In order to provide a contact surface of considerable extent between 20 the contact blades and the conductor ends, it is desirable to so arrange the slots 19 of the contact blades with respect to the tapered portions of the opening 13 that the conductor ends will be engaged by the parallel walls of the upper portions of the opening 13 when the plug cap is assembled. The wedge-shaped face portion of the clamping member 12 engages the flexible conductors 24 and forces them against the face of the base 11 as they emerge from the bore 22 25 to form an effective strain relief.

30 In assembling the plug cap described above, the contact blades 14 are first secured to the base 11. The flexible conductors 24 are then passed through the bore 22 and the bared ends 25 placed in the slots or notches 19 of the contact blades. The contact blades are next passed through the openings 13 in the clamping member 12. As the clamping member is assembled 35 on the base of the plug the sloping walls 26 guide the conductor ends into the restricted portion of the openings 13 where they are firmly clamped against the contact blades. The wedge-shaped portion on the face of the member 12 separates the flexible conductors 24 as they emerge from the bore 22 and forces them against the upper surface of the base at the edge of the bore. The prongs 20 are swaged over to secure the clamping 40 45 50 55

member in its assembled position against the face of the base 11.

The present invention provides a rugged plug cap construction using relatively few parts which are economical to manufacture and readily assembled.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In an electrical connector, a two-part body, a pair of flat contact blades secured to one of said body parts in fixed relation thereto, said blades each having a slot formed therein and extending inwardly from one edge thereof for the reception of conductor ends, the other of said body parts having spaced openings through which said blades extend, the walls of said openings being so spaced from said blades as to engage conductor ends received in said slots to hold them in engagement with said blades to form electrical connections therewith, and bendable fastening means forming a part of said blades for securing said body parts together with the walls of said openings in wedging engagement with conductor ends received in said slots.
2. In an electrical connector, a base, a pair of flat contact blades secured in fixed relation thereto, conductors arranged in contact with the opposite sides of said blades, a clamping member having spaced openings through which said blades extend, the walls of said openings engaging said conductors to hold them in engagement with said blades, and an integral projection extending from an edge of each of said blades for securing said member against said base.
3. In an electrical connector, a base having a bore, contact blades secured thereto, a cord including a pair of flexible conductors positioned in said bore and having bared ends secured to said contact blades, a clamping member having spaced openings through which said blades extend, the walls of said openings forming a wedge-shaped portion on said clamping member engaging said conductors to hold them against said base, and an integral projection on each of said blades and engaging an outer surface of said clamping member to hold it against said base.
4. In an attachment plug cap, a two-part body including a base having a bore therethrough and a clamping member, contact blades secured in fixed relation to said base, a cord including electrical conductors positioned in said bore and having the ends thereof electrically connected with said blades, said clamping member having spaced openings through which said blades extend, and bendable projections extending from said blades and engaging said clamping member to hold it assembled on said base and in engagement with said conductors to hold said cord in fixed relation to said body.
5. In an electrical connector, a base, contact blades secured thereto, said blades having diagonally extending slots for receiving circuit wires, a clamping member having openings spaced to receive said contact blades, the walls of said openings being adapted to engage circuit wires

to hold them in said slots in engagement with said blades, and prongs on said blades formed by one wall of said diagonally extending slots for holding said clamping member against said base.

6. In an attachment plug cap, a base of insulating material, contact blades secured to said base in fixed relation thereto, said contact blades having slots therein for the reception of conductor ends and a clamping member having spaced openings therein, said openings being tapered for at least a part of the thickness of said member, the walls of said openings being so spaced from said blades as to engage conductor ends located in said slots to hold them in engagement with said blades, the walls of the tapered portions of said openings forming a wedge-shaped face on said clamping member cooperating with said base to form a strain relief.

7. In an attachment plug cap, a base having a bore, contact blades secured to said base in fixed relation thereto, conductors extending through said bore and having bared ends arranged in contact with said blades, and a clamping member having spaced openings therein through which said blades extend, said openings being tapered for at least a part of the thickness of said member, the walls of said openings engaging the bared ends of said conductors to hold them in engagement with said blades, the walls of the tapered portions of said openings forming a wedge-shaped face on said clamping member engaging said conductors to clamp them against said base.

8. In an electrical connector, a base having a bore for the reception of circuit wires, contact blades secured to said base in fixed relation thereto, a clamping member having spaced openings through which said blades extend, the walls of said openings being so spaced from said blades as to engage the ends of the circuit wires arranged between said blades and said walls and to press them against said blades to form an electrical connection therewith, the walls of said openings also forming a wedge-shaped portion on said clamping member for engaging the circuit wires to clamp them against said base, and integral securing means extending from each of said blades for holding said clamping member against the face of said base.

9. In combination, a cord including a plurality of insulated conductors having bared ends, a base having a bore for the reception of said conductors, contact blades secured to said base, diagonally extending slots in said contact blades for receiving the bared ends of said conductors, a clamping member having spaced openings, the walls of which engage and press firmly together the bared ends of said conductors and said blades, prongs forming a part of said blades adjacent said slots for holding said member against said base, the walls of said openings also forming a wedge-shaped face on said clamping member for engaging said insulated conductors to hold them against said base.

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