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2,125,713

ELECTRICAL TERMINAL PRONG WITH INTEGRAL LUG

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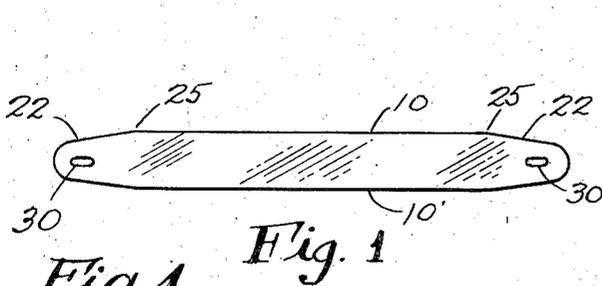


Fig. 1

Fig. 4.

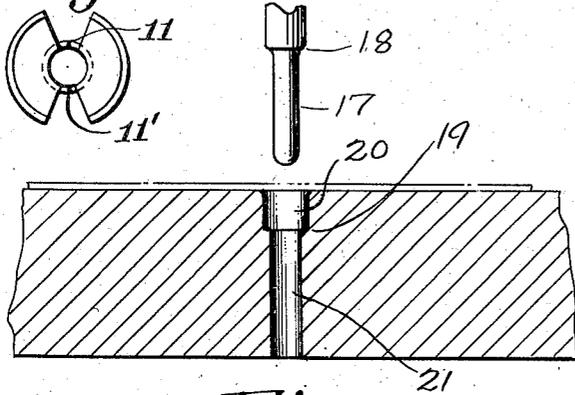


Fig. 2

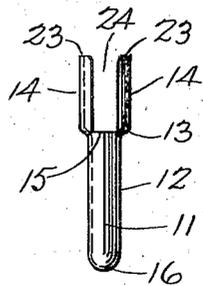


Fig. 3

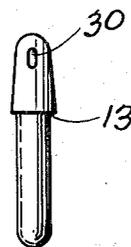


Fig. 5

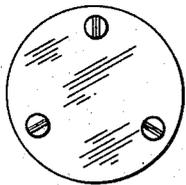


Fig. 10

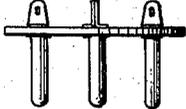


Fig. 11

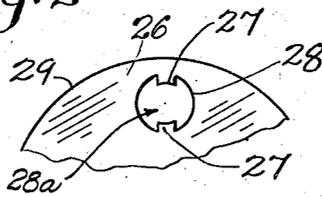


Fig. 6

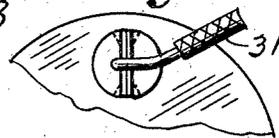


Fig. 9

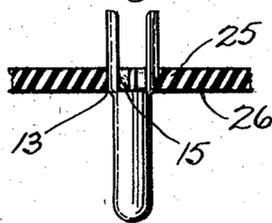


Fig. 7

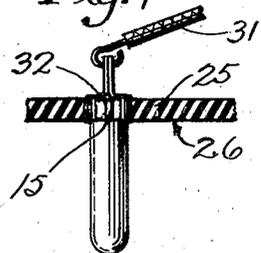


Fig. 8

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ELECTRICAL TERMINAL PRONG WITH INTEGRAL LUG

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Application February 18, 1936, Serial No. 64,481

2 Claims. (Cl. 173-361)

My invention relates to improvements in an electrical terminal prong with an integral lug, and more particularly to a terminal prong with an integral lug formed and drawn from strip or sheet metal.

Heretofore electrical plug-in devices using a terminal prong in combination with a separate soldering lug have been found costly to manufacture due to the assembly and riveting operations, also to the cost of the parts, and furthermore defective electrical connections have resulted from poor riveting of the lug to the prong.

One object of my invention is to provide a tubular terminal prong and soldering lug in one integral unit.

A further object is to provide a tubular terminal prong with a lug of uniform shape and maximum strength at low cost.

A further object is to provide a tubular terminal prong with a lug made from sheet metal in one stamping and drawing operation.

A further purpose is to provide an abutment shoulder on the prong portion at its open end.

A further purpose is to provide a lateral offset of the sidewall extensions at the termination of the tubular prong's open end providing means for forming said sidewall extensions into a soldering lug.

A further purpose is to provide sidewall extensions at the termination of the tubular section of the prong to form means for rigidly fastening the prong and the lug to an insulating base member.

A further object is to provide an integral terminal prong and lug in combination with an electrical plug-in device.

A still further purpose is to provide an insulating base having suitably formed apertures to receive and hold a drawn metal prong with an integral lug.

With the foregoing and other objects in view I have devised an improved construction and method of fabricating from sheet metal an integral terminal prong and soldering lug, and my invention lies in the structure and features hereinafter described and claimed.

Referring to the drawing:

Fig. 1 shows a metal strip with the ends tapered and punched to form an integral soldering lug prior to drawing and forming operation.

Fig. 2 shows a punch and a cross section thru a die for drawing and forming a tubular prong with an integral lug according to my invention.

Fig. 3 shows a front elevation of the prong and lug also showing one of the two fold seams

in the body of the tubular prong, sidewall offsets from the abutment shoulders, and the sidewall extensions to form the soldering lug.

Fig. 4 shows a top view of Fig. 3.

Fig. 5 shows a side elevation of Fig. 3.

Fig. 6 shows an aperture in an insulating base adapted to receive the prong sidewall extensions.

Fig. 7 shows a front elevation of a prong with sidewall extensions inserted in an aperture, the insulating base being shown in section.

Fig. 8 shows a view similar to Fig. 7, but after the sidewall extensions have been folded in and pressed together, providing clamping means and a soldering lug.

Fig. 9 is a top view of Fig. 8.

Fig. 10 is a top view of an insulating base showing the integral lug of a prong after the assembly and clamping operations.

Fig. 11 is a side elevation of Fig. 10.

Referring to the drawing like numerals refer to like parts in the figures where they appear.

To produce a tubular prong, seamed and with uniformly true sidewalls, having the same extended and providing means for forming a soldering lug, and also means for anchoring the prong with the lug unit in an apertured base, I provide a ductile strip or flat sheet of metal of correct uniform width so that when the prongs are formed by the drawing and folding method, 10 and 10' become seams 11 and 11' of the tubular body portion 12 when the blank is forced into the cavity 21 and the remaining portion of the blank is forced into the cavity 20, being confined inside and out by punch and die so that when the shoulder 13 of the punch enters the cavity 20 of the die, the tapered end portions 22 of the blank are pressed outwardly and form the shoulder 13, and the parallel sidewall extensions 14 are formed when the aforementioned shoulder 13 of the punch presses outwardly and down on the strip of sheet metal, seating the same on the shoulder 13 of the die. This shoulder may be formed at any point intermediate the rounded closed end 16 and the ends of the sidewall extensions 23. By increasing the diameter of the die cavity 20 over that of the cavity 21 and employing a blank of uniform width as between points 25 of the blank shown in Fig. 1, an abutment shoulder 15 is formed, separating the sidewall extensions 14 with clearance space 24 between the same. Tapered end portions 22 of the blank shown in Fig. 1 are pierced at 30 and a common lug is formed after mounting the prong on the insulating base, providing means for attaching a wire terminal 31, as shown in Fig. 8. An insulating base 26. Fig. 55

10, is apertured as shown in Fig. 6 thru which prong sidewall extension pieces 14 are inserted as shown in Fig. 7. A portion of said extension pieces 14 extends thru and past the top surface 5 25 of the aforesaid base and after the abutment shoulder 15 of the tubular prong 12 is firmly seated against the under side of the base projections 27 in the aperture, and the projecting portions of the said extension pieces 14 are then 10 folded over and pressed inwardly until both of aforesaid sidewall extensions are pressed together as at 32, forming a common soldering lug and also providing means for clamping the prong and lug unit securely in the aperture of the 15 insulating base.

An aperture 29a in an insulating base member 28 to receive and hold a prong with a lug member is shown in Fig. 6 in which 29 shows the edge of said base, the aperture is generally circular in 20 form, its diameter being slightly larger than the overall dimensions of the prong at the shoulder 13, the base projections 27 extend inwardly from the circumferential edge 28 of the aforesaid aperture providing means for preventing turning of 25 the prong with its integral lug and also providing means for seating the prong abutment shoulder 15 and for folding over of the sidewall extensions 14 at 32, as previously stated.

Having thus set forth the nature of my invention, what I claim is:

1. In combination, a base member of insulating material having an aperture therethrough, the aperture being generally circular and the wall thereof being provided with a plurality of inwardly extending projections, and a generally tubular terminal prong secured in said aperture, the said prong having upwardly extending sidewall extensions, the diametral distance between 10 the sidewall extensions being greater than the diameter of the prong proper and the projections in the aperture extending into the spaces between the said projections whereby the prong is prevented from rotation. 15

2. A plug-in device comprising a base member having an aperture therethrough, the wall of the aperture being provided with a plurality of inwardly extending projections, a terminal prong, 20 generally tubular in configuration and provided at one end with a plurality of axially extending lugs offset radially therefrom, the said lugs being spaced apart circumferentially of the prong a distance substantially equal to the width of the aperture wall projections and the said lugs being 25 so disposed in the aperture that the said projections are interposed between them, whereby the prong is prevented from rotation.

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