Jan. 26, 1943. A. C. GROHSGAL 2,309,311

CONTACT BLADE

Filed Aug. 13, 1941

Fig. 1.

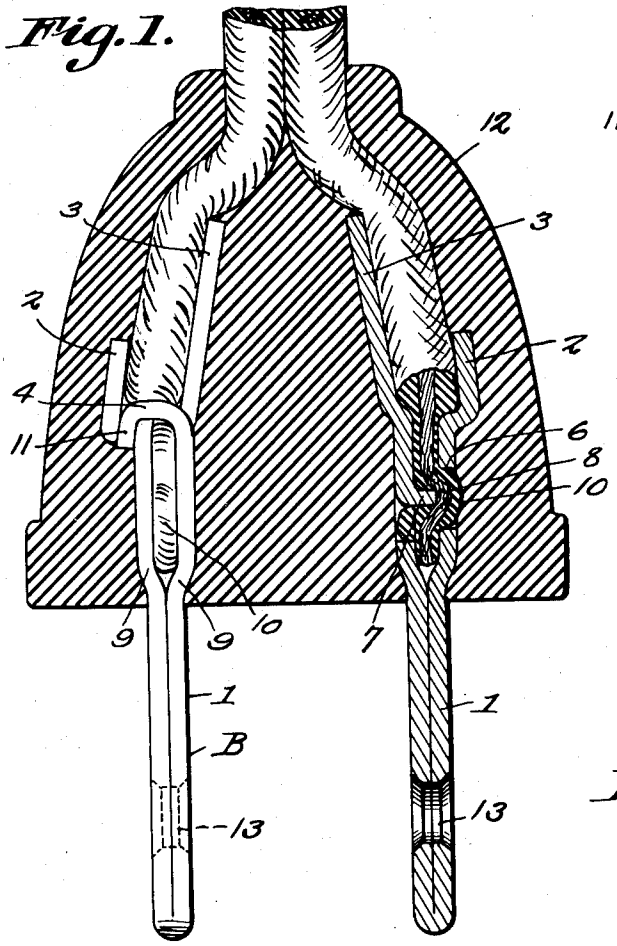


Fig. 2.

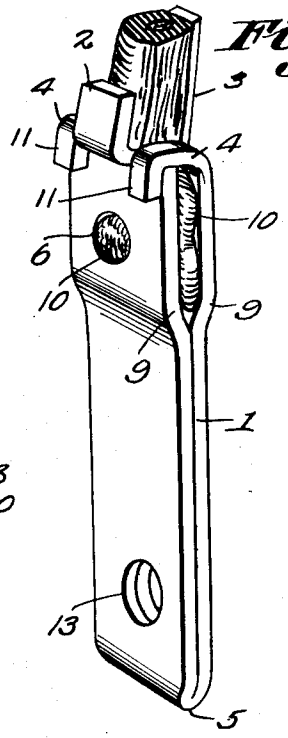
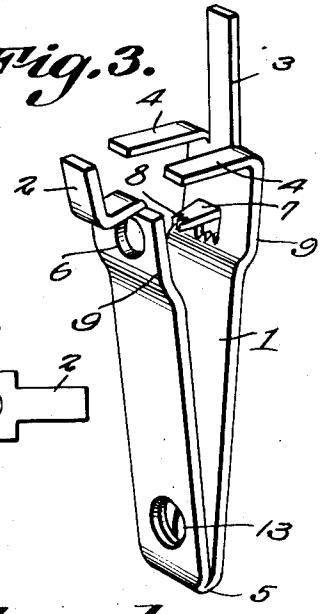


Fig. 3.



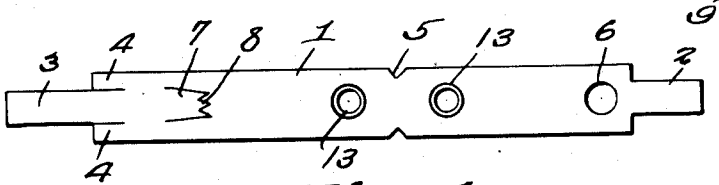


Fig. 4.

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UNITED STATES PATENT OFFICE

2,309,311

CONTACT BLADE

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Application August 13, 1941, Serial No. 406,691

1 Claim. (Cl. 173—361)

This invention relates to a contact blade designed primarily for use as a terminal for an insulated wire and while the blade is especially suited for use as a terminal of a service plug, it can be attached to the end of an insulated wire whether or not combined with a plug and so as to constitute a terminal for the wire.

An object of the invention is to provide a simple and inexpensive device of this character in the form of a clip of new and novel construction which can be quickly and easily applied to an end portion of an insulated wire and, when placed in proper position, will make intimate contact with the wire surrounded by the insulation and be held securely in such position so as to insure an electrical connection between the wire and the blade.

A further object is to provide a blade which can be stamped readily from sheet metal, easily bent to proper form, and thereafter quickly applied and secured in applied position.

A still further object is to provide a device of this character which requires no soldering, uses no terminal screws, and will not require stripping of wire to which it is applied.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawing the preferred form of the invention has been shown.

In said drawing

Figure 1 is a section through the insulating body of a service plug equipped with two blades such as constitutes the present invention, one of the blades being shown in elevation and the other in section and both blades being joined to the terminals of the respective wires in the plug.

Figure 2 is a perspective view of one of the blades applied to a wire terminal.

Figure 3 is a perspective view showing the blade in its open position preparatory to being placed on a wire.

Figure 4 is a plan view of a blank from which a blade is to be produced.

Referring to the figures by characters of reference, 1 designates an elongated blank of suitable highly conductive material, such as brass and extending from the respective ends of the blank are tongues 2 and 3 preferably of different lengths. At the sides of the long tongue 3, which is coaxial with the thickness of the blade from which it is extended, there are formed lugs 4. The side edges of the blank are preferably cut out adjacent to the center thereof as indicated at 5 so as to weaken the blank at this point in order to facilitate bending. Adjacent to the base of tongue 2 there is provided an opening 6 while adjacent to the base of tongue 3 a jaw 7 is provided by cutting through the blank, the free end of the jaw being formed with teeth 8 as shown.

After the blank has been shaped as shown in Figure 4 it is folded at 5 to form a blade B formed of the two thicknesses of metal and the free end portions of the blade are offset as indicated at 9 so that they can receive between them the end portion 10 of an insulated wire. The jaw 7 is bent to position substantially at right angles to the adjacent portion of the blank as shown, for example, in Figures 1 and 3 so that the teeth 8 will be extended toward the opening 6 in the opposed portion of the blank. Tongue 2 is offset as shown in Figures 1 and 3 so as to assume an angular or L-shape while the lugs 4 are bent at right angles to the adjacent portion of the blank so as to extend toward tongue 2 so as to extend across that end of the blade at the sides of tongue 2.

With the parts shaped as shown in Figure 3, the insulated end of a wire to be coupled to the blade is inserted between the offset portions 9 of the blank. Said portions are then pressed tightly toward each other, thereby causing the teeth 8 to bite through the insulation on the wire and to come into intimate contact with the metal surrounded by the insulation. When thus pressed into the insulation the jaw 7 will offset the wire so that it will be forced into the opening 6 as shown particularly in Figures 1 and 2. The lugs 4 will be caused to project across the end of the opposed portion of the blank and after the parts have been pressed toward each other as tightly as possible, the free ends of the lugs, which are extended past opposite sides of tongue 2, are bent, as shown at 11, so as to lap the adjacent portion of the blank and hold the blank in gripping position on the cord or wire and hold the wire centered and against lateral displacement between the offset portion 9 of the blade.

It will be noted that the free end portions of the tongues 2 and 3 will extend along a portion of the insulated wire so as to reenforce it. This is especially advantageous in a structure such as shown in Figure 1 where two spaced blades are mounted in and projected from the body or cap 12 of a service plug into which sep-

arate wires are extended to the respective blades. In a construction such as shown in Figure 1 the longer tongues 3 are located between the two wires and serve to hold them properly spaced in the body 12 which can be of soft rubber.

Importance is attached to the fact that by using a blade such as herein described it becomes unnecessary to use solder or screws. Not only can each blade be manufactured cheaply but it can also be applied readily and when it is once positioned on an insulated wire it will not tend to strip the wire but will always remain in intimate contact with the core thereof.

Each blade can of course be provided with the usual opening 13 to insure intimate engagement with a contact in a receptacle.

What is claimed is:

A contact blade for use in a connector plug, said blade consisting of a flat strip of conducting metal folded to provide a flat blade of double thickness, the two thicknesses of the blade being offset near one end to provide substantially parallel portions defining a wire-receiving space therebetween, a tongue extending straight from one end of and coaxial with one thickness of the blade, an offset tongue extending from the corresponding end of the other thickness of the blade and spaced inwardly from the side edges of said thickness thereby to provide end shoulders at the sides of the offset tongue, lugs at the sides of the coaxial tongue and straddling the respective end shoulders thereby to hold the flat thicknesses of the blade together and center an inserted wire between the offset end portions of the blade and between the tongues, and a toothed wire-penetrating jaw extending from one offset portion of the blade toward the other offset portion thereof, said latter offset portion having an aperture opposite to the jaw.

ALEXIS C. GROHSGAL.