

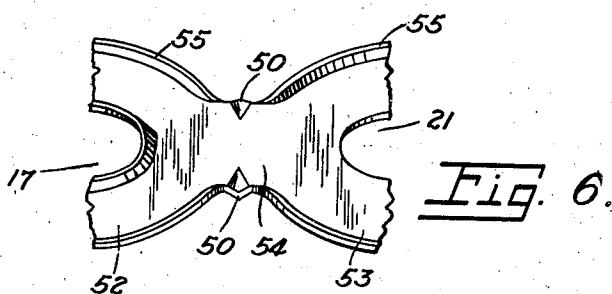
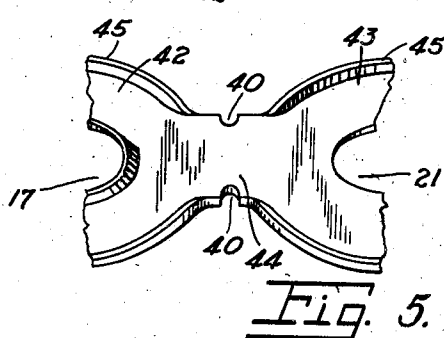
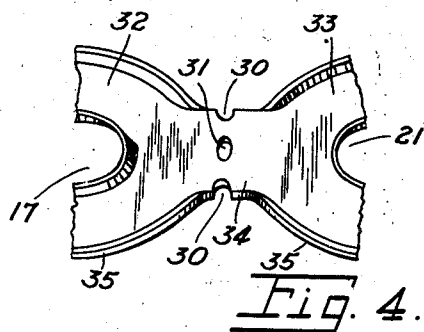
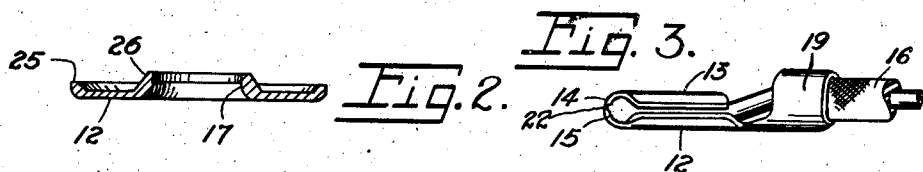
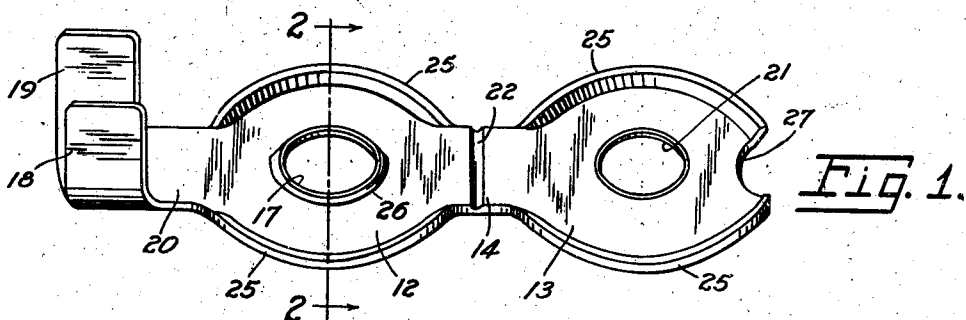
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WASHER LUG

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UNITED STATES PATENT OFFICE

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WASHER LUG

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2 Claims. (Cl. 173—269)

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This invention relates to improvements in washer lugs, such as are applicable to the ends or terminal portions of wires or the like, to facilitate and expedite anchoring of said ends or terminal portions to a fastener. Washer lugs are most commonly used in the electrical field, for establishing electrical connection of a conductor to a binding post, contact screw, or the like.

An object of the invention is to provide a washer lug having an improved form of folding double head, including simple and effective means to ensure accurate registry of the head elements and of their respective binding post or screw apertures, as the head elements are folded onto a conductor embraced thereby.

Another object is to provide a washer lug of the character stated, into which the improvement of the invention may be embodied without expense additional to that required for manufacture of the washer lug without the improvement incorporated therein.

Another object is to furnish an improved washer lug so constructed that no difficulty will ever be encountered in applying it to a binding screw or post, subsequently to making a wire connection to the lug.

The foregoing and other objects are attained by the means described herein and disclosed in the accompanying drawing, in which:

Fig. 1 is an enlarged perspective view of the improved washer lug as furnished for use.

Fig. 2 is a cross-sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a perspective view showing the washer lug of Fig. 1 applied to the bared terminal end of an insulated electric conductor.

Figs. 4, 5 and 6 are fragmental perspective views showing three modifications of the Fig. 1 washer lug.

The device of the invention, in all forms thereof illustrated by the drawing, comprises a single piece of electricity conductive metal shaped to provide a pair of cooperative head elements 12 and 13, connected by an intermediate bendable hinge portion 14. The piece may be bent at the hinge portion 14, to cause one of the head elements to overlie the other, as shown by Fig. 3, after the bare terminal end of a wire or conductor 16 has been formed into a substantially circular loop 15 about the opening 17, or about a screw or binding post extended through said opening.

If desired, one of the head elements such as 12, may be provided with an insulation grip or clamp of any suitable type, the grip or clamp herein

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shown by way of example comprising a pair of bendable ears 18 and 19, formed upon a shank 20 integrally with the head element. By placing the insulated portion of the conductor between the ears 18—19, and then bending the ears together, the conductor may be securely clamped to the washer lug, with the bared terminal end of the conductor definitely located relative to the head element 12. Thereafter, the other head element 13 may be folded over or bent to covering relationship with respect to head element 12.

In order to ensure accurate registry of the head elements and their screw or binding post receptive apertures 17 and 21, during the folding or bending operation, suitable means may be provided for localizing or pre-determining the line of bending. In Figs. 1 and 3, said means is in the form of a linear score or nick 22 extending transversely across the intermediate head connecting portion 14 of the device. The score or nick may be produced in any suitable manner, such as by pressing or cutting the material of the connecting portion. Displacement of metal by pressing is the preferred procedure, as it may be accomplished in the same press operation that blanks out and forms the washer lug. The nick or score is at right angles to the major axis of the blank, and will preferably be formed in the inside face of the lug, so that the bending operation will contract the width of the nick or score.

In Fig. 4 is shown a modification, wherein the head elements 32 and 33 correspond to the head elements 12 and 13, and the connecting portion 34 is notched and perforated as at 30 and 31 respectively, to localize or predetermine the line of bending transversely of the major axis of the blank. The notches and perforations are arranged in a straight line at right angles to the major axis, and will therefore determine the line of bending.

In Fig. 5 is illustrated another modification, wherein head elements 42 and 43 correspond to the head elements 32 and 33 of Fig. 4. In the Fig. 5 modification, the notches 40—40 are depended upon to localize or predetermine the line of bending of the intermediate portion 44, in order that registry of the head apertures 17 and 21 is assured.

In the Fig. 6 modification, the head elements 52 and 53 correspond to the previously indicated head elements, and the intermediate connecting portion 54 is nicked as at 50—50, with partial cuts or triangular depressions, to localize or predetermine the line of bending transversely of the major axis of the blank. The pointed opposed ends of the nicks 50—50 extend toward one an-

other, and are located upon a transverse line spaced equidistantly from the centers of the apertures 17 and 21. In fact, in all forms of the invention the bend-localizing means is equally spaced from the apertures of the head elements.

The modifications described will doubtless suggest other combinations of cuts, scores, apertures or depressions, that may be adopted for the purpose of localizing or predetermining the line of bending necessary to assure proper registry of the heads and their binding post apertures. For this reason, the structures herein disclosed are to be considered as examples only, and are not intended to limit the scope of the claims to the exact disclosures presented in the accompanying drawing.

Likewise, the cup shape of the head elements, as shown, is not intended as a necessary limitation. The head elements may be formed substantially flat, instead of having the marginal co-operative flanges illustrated as serving to enclose the bared end of the conductor. The flanges referred to are indicated by the characters 25, 35, 45 and 55. The apertures may be embossed inwardly as shown at 26 of Fig. 1, as may be necessary or desirable, although omission of the embossing obviously will not render the device inoperative.

Various other modifications and changes in structural details may be made, within the scope of the appended claims, without departing from the spirit of the invention.

In conclusion, it may be noted that the provision of the herein disclosed means in washer lugs for localizing or predetermining the line of bending, obviates the troublesome condition that heretofore resulted from overlapping the head elements carelessly or inaccurately, with the result that the head apertures failed to register properly to receive a binding post or contact screw. With the head apertures misaligned, considerable difficulty and waste of time were experienced in establishing electrical connections; however, with

the present invention incorporated therein, every washer lug will bend at the proper location to accurately align the apertures for immediate reception of binding posts or contact screws. The improvement referred to adds nothing to the cost of manufacture, as previously stated.

What is claimed is:

1. As a new article of manufacture, a washer lug comprising a pair of head elements each having an aperture therein to receive a fastener, a flexible elongated connecting neck portion joining the head elements and adapted for bending transversely thereof in folding one head element over the other into substantial parallel adjacency, the neck portion being sufficiently long to impart uncertainty as to the location of the line of bending when one head element is folded over the other as stated, said neck portion being transversely weakened to establish a definite line of bending and thereby obviating the uncertainty aforesaid, so that the head apertures are induced to align for reception of a fastener without the exercise of special care in performing the bending operation.

2. As a new article of manufacture, a washer lug comprising a pair of head elements each having an aperture therein to receive a fastener, a flexible elongated connecting neck portion joining the head elements and adapted for bending transversely thereof in folding one head element over the other into substantial parallel adjacency, the neck portion being sufficiently long with a uniformity of width to impart uncertainty as to the location of the line of bending when one head element is folded over the other as stated, said neck portion being transversely weakened to establish a definite line of bending and thereby obviating the uncertainty aforesaid, so that the head apertures are induced to align for reception of a fastener without the exercise of special care in performing the bending operation.

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