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SOLDERING LUG

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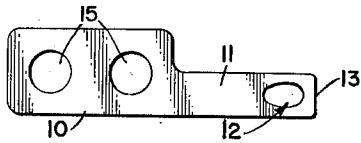


FIG. 1

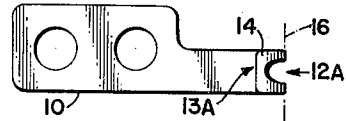


FIG. 2

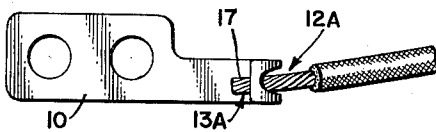


FIG. 3

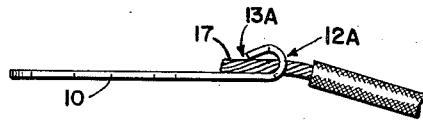


FIG. 4

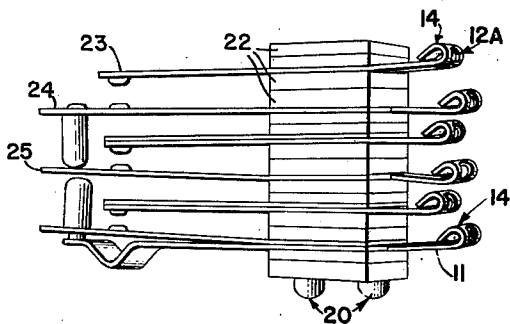


FIG. 5

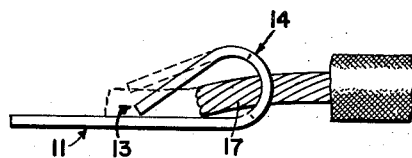


FIG. 6

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2,800,637

SOLDERING LUG

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2 Claims. (Cl. 339—275)

This invention provides an improved soldering lug or terminal of the type adapted to grip a conductor temporarily to facilitate application of solder thereto in making a permanent joint.

Numerous wire-terminals and connecting devices involving spring jaws and hold-down principles have been devised heretofore, the soldering lug herein disclosed being characterized mainly by the fact that it is in effect, self-opening, and is very simple in use and construction and inexpensive to manufacture.

Prior devices of this class have employed spring-clip principles requiring the user to flex the holding part open to admit the wire; and still others have employed deformable constructions requiring a part to be bent-over, crimped, twisted, or depressed.

The present construction is quicker and easier to use in that it requires only one hand to hold the conductor and push the same into the lug opening against an especially pitched and yieldable loop part to cam the latter open so that it can close down upon the wire after the same has been fully inserted.

The detailed construction and advantages of the new lug will become more apparent as the following description proceeds in view of the annexed drawing in which:

Fig. 1 is a plan view of the die punching for one of the lugs before forming;

Fig. 2 is a plan view of the lug punching fully formed up;

Fig. 3 is a top plan view of the completed lug with a wire gripped thereby preparatory to application of solder;

Fig. 4 is a side elevation of the lug and wire of Fig. 3;

Fig. 5 is a perspective of a stack switch utilizing a plurality of the lugs;

Fig. 6 is a magnified fragmentary side-elevational detail of the recurved gripping loop.

Referring to Fig. 1, the new lug is made from thin metal of suitable spring-hardness, such as electrical Phosphor bronze, by stamping or punching therefrom a desired shape 10 including especially a narrow extension or lug portion 11 having a hole 12 punched close to a free edge or terminal margin 13 thereof. The lug in Fig. 1 being intended for use in a conventional stack switch, such as shown in Fig. 5, it includes suitable holes 15 for the usual insulating sleeves 20 employed in assembling such switches.

In this connection, it will be understood that a multitude of forms other than the shape 10 may be produced depending upon the use to which the lug will be put, the essential feature being the inclusion or provision of the lug or tail extension 11 with a marginally located hole 12 for purposes now to appear.

A suitable punching 10—11 of the sort shown in Fig. 1 having been blanked out of the metal stock, marginal tail portion near extremity 13 is formed-up or turned over along a transverse line 16 (Fig. 2), which passes about diametrically across the hole 12 so as to locate the free or gripping edge 13 now in the position at 13A in Fig. 2 with the hole 12A at the bight of the bend to pro-

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vide an entrance passage for the end 17 of a conductor passed through the hole 13A in the spring loop 14, as in Figs. 3 and 4.

The marginally turned-over bight-forming tail portion 5 defines a spring loop 14 which renders the reentrant part and gripping edge 13A thereof automatically yieldable to the entering force exerted thereon by the end 17 of an inserted wire, as illustrated in Fig. 6.

Thus, for soldering and assembly operations, the operative merely jabs the end 17 of the wire into the hole 12A and against the inside of the looped-over part 14 to force said end of the wire beneath the gripping edge 13A, and the wire will remain in this position if not unduly abused, until solder can be applied to the loop or bight 15 portion.

The applied solder properly applied will flow freely and promptly into the hole 12A and about and beneath the gripping edge 13A to secure the wire end 17 firmly to the lug, both of the operative's hands being left free 20 for the soldering operation and not handicapped by having to hold the wire in position with one hand and applying the solder with the remaining hand.

The disclosed lug is obviously simple and consists essentially in the part 11 having the marginally located 25 hole 12 and the free edge 13 turned back to form the spring loop 14 with the hole 12A as a wire entrance through the bend or bight, and the reentrant free gripping edge 13A of the spring loop disposed to overlie and press down upon the end of a wire passed through the bight hole, the spring loop 14 being pitched as shown so 30 as to be cammed upwardly and outwardly by the entering end of the wire.

Thus, no hooking members or other holes, projections, or punched formations are required in the punching, the 35 spring loop being self-opening in a manner of speaking in the sense that it will be cammed open and spread by the thrust of the end of the entering wire to admit the latter (as illustrated in Fig. 6), and will bear down upon the wire to hold it sufficiently secure for the usual soldering 40 operations. An angle of about 45° is satisfactory for the yieldable camming portion of the loop.

The operative may hold the soldering tool in one hand while jabbing the wire into position in the lug where it will remain; thus at once freeing the other hand so as not 45 to obstruct the lug in close quarters, or for employment in other activity such as positioning of the solder on the work.

As previously alluded to, a great practical advantage of the terminal or connector resides in the fact that it is 50 of such simple structural and functional character as permits it being formed as an integral part of a variety of shapes and parts.

I claim:

1. A soldering lug suitable for single-handed manipulation and comprising a narrow strip of thin conductive 55 spring metal having a free end portion with an oblate hole close to the margin thereof and the long axis of said hole extending lengthwise of said strip, said free end portion being turned back reentrantly upon itself along a transverse line which extends across said hole close to the center and lateral axis thereof to form a spring loop, the terminal portions of the reentrant part of said loop beyond said transverse line being pitched at an angle of about 45° to afford a cam surface against which the entering 60 end of a wire inserted through said hole can bear to spring the loop open sufficiently to permit said wire end to pass the free-end margin, the latter bearing upon said wire end sufficiently to clamp the latter and hold the same in the lug until a soldered joint therewith can be 65 made.

2. A wire-seizing soldering lug comprising a formed-up strip of thin, springy, conductive metal having a par-

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ticular endwise portion bent back upon itself to provide
 a hold-down finger having a free end portion situated on
 one side of the bend and bearing angularly downward
 toward and close to the underlying surface of the rem-
 nant strip portion lying on the other side of the bend, 5
 for the purpose of seizing and holding a wire there-
 beneath, said bend having an oblate wire-entrance hole
 substantially at the middle thereof with the greater length
 of the hole extending in a direction toward the ends of
 the strip; said finger making an acute angle in the neigh-
 borhood of 45° with the underlying remnant surface por-
 tion of the strip to present a cam face to an entering wire
 thrust through said hole thereagainst whereby to enable

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springing said finger aside sufficiently for the wire to pass
 beneath the same and be seized thereby until a solder
 joint can be made.

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