No. 860,889. PATENTED JULY 23, 1907.

G. A. TOWER.

METHOD OF MAKING ELECTRICAL LUGS.

APPLICATION FILED SEPT. 13, 1906

Fig. 1.

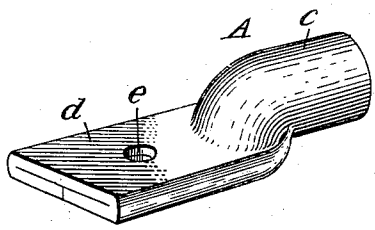


Fig. 2.

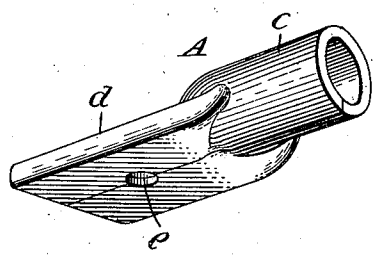


Fig. 3.

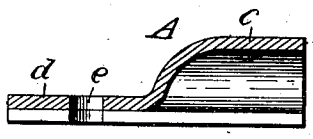


Fig. 4.

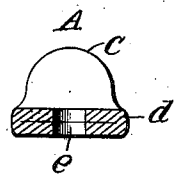


Fig. 5.

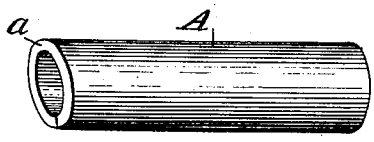
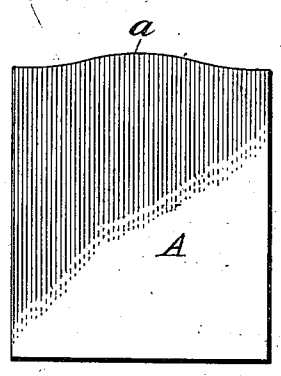


Fig. 6.



WITNESSES:

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METHOD OF MAKING ELECTRICAL LUGS.

No. 860,889. Specification of Letters Patent. Patented July 23, 1907.

Application filed September 13, 1906. Serial No. 334,480.

To all whom it may concern:

Be it known that I, GEORGE ARMS TOWER, a citizen of the United States of America, and a resident of Richmond, county of Henrico, State of Virginia, have invented certain new and useful Improvements in Methods of Making Electrical Lugs, of which the following is a full and clear specification, reference being had to the accompanying drawing, in which—

Figures 1 and 2 are perspective views of the completed lug, showing a preferred form; Fig. 3 a vertical longitudinal section thereof taken centrally through the longitudinal seam or joint running along the under side of the lug; Fig. 4 a vertical transverse section taken through the tail piece of the lug; Fig. 5 a perspective view showing the lug partly formed; and Fig. 6 a plan view of the preferred form of blank out of which the lug is bent up.

The object of this invention is to provide a method of making a strong and simple terminal which shall materially cheapen the cost of manufacture without militating against the conductive capacity of the lug, as more fully hereinafter set forth.

In manufacturing the lug a flat sheet A of copper is employed, this sheet being approximately rectangular in shape except that its forward edge is provided with a central rounded swell or projection *a*. The first operation is to curl the plate into a tube, the two side edges abutting closely in contact so as to close the tube along its under side. Then the rear end of the tube is flattened down to make a flat tail piece *d* at one end and leave the tube the same shape and diameter at its forward end to form the wire-receiving barrel *c*. The flattening of the rear end of the tube brings the opposite interior walls of the tube closely together without opening the seam along the under side of the lug, thus forming a solid tail piece double the thickness of the wall of the barrel or socket *c*. A hole *e* is formed in the tail piece for the passage of the fastening bolt or screw.

The tail piece is so formed that its under side is in the same plane with the under side of the socket, and in flattening down the tube the metal along the upper part of the wall of the socket is drawn rearwardly and downwardly to avoid thinning or rupturing the rounded rear end-wall of the socket, it being the function of the wave-like extension *a* at the front end of the sheet to supply this metal and thus avoid leaving the front edge of the completed lug in a distorted shape. Experiment has readily determined the amount of metal necessary in the extension *a* to leave the front edge of the socket straight and at right angles to the under surface thereof, so that subsequent sawing off or otherwise finishing the front end of the socket is rendered unnecessary.

I have heretofore obtained a patent (No. 783333 February 21, 1905) for a sheet metal wire terminal. In this patented lug it has been found in making these lugs up commercially workmen through carelessness do not always close the wings down hard enough to close the transverse seams, so that if the lug were used the solder would run out through these open seams. This entails considerable loss through cutting out defective lugs. In my present construction I have dispensed with these transverse slots and now employ but a single seam running along the under side of the lug which seam can be tightly closed without difficulty. Furthermore, it is not necessary to have as thick metal for the wall of the barrel as is necessary in the tail piece as the socket becomes a solid mass with the end of the wire inserted therein when the solder is poured in, thereby affording ample cross-section of conducting material, while in the tail the entire current has to pass through the metal provided in the lug proper. In the smaller sized lugs this has not been an objection as the necessary metal for mechanical strength of barrel provides ample conductivity for the tail but in the larger sizes there is considerable waste of metal due to giving an unnecessarily heavy wall to the barrel in order to obtain sufficient thickness for the tail. In this new lug I can so proportion the metal used in making the lug as to have just sufficient metal for both the tail and the barrel.

I am aware of Patent No. 631,970 dated August 29, 1899, to F. Schwedtmann, in which a lug is shown and described which is constructed of a length of seamless tubing flattened at one end to form a double-thickness tail piece which lies in a plane coinciding with the center of the socket or barrel section. The objection to this lug is that it is manufactured from seamless tubing which renders it much more expensive than my lug which is constructed entirely of sheet metal. Another objection to this Schwedtmann lug is that it is impossible to vary the relative size of barrel to the width of tail piece, whereas with my new lug and process I can vary within reasonable limits the relative size of barrel to tail-piece. Again the drawing back of the metal which occurs when the tube is flattened will distort the front edge of the socket and require that it be filed or sawed off if a nice-looking lug is to be provided. Furthermore, it is very difficult to obtain tubing exactly the dimension to produce a tail of any desired width, it being required that the tails of these lugs shall necessarily be of the same width as the piece to which the tail is clamped when in use; whereas in making my lug I simply have to secure metal of proper thickness and punch out blanks of such size and shape as will produce the desired results.

Having thus fully described my invention, what I claim and desire to secure by Letters Patent, is:—

The method herein described of constructing an electrical lug consisting in employing a sheet of metal ap-

proximately rectangular in shape except that the center portion of its forward edge is extended forwardly into a rounded swell, curling this sheet longitudinally until the opposite side edges of the plate abut against each other and thus form a tube, and then flattening the rear end of the tube to form a tail-piece lying in approximately the same plane as the under side of the tube, thus flattening the tube serving to draw down the metal from the upper wall of the tube sufficiently to close the rear end wall of the socket, the metal thus drawn down being drawn rearwardly from the upper part of the tube so as to draw in the forwardly extending rounded swell.

In testimony whereof I hereunto affix my signature in the presence of two witnesses this 4th day of Sept., 1906.

GEORGE ARMS TOWER.

Witnesses:

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