

May 8, 1951

R. J. KUECK

2,551,844

TERMINAL HAVING A RESILIENT, WIRE ENGAGING TONGUE

Filed May 17, 1948

FIG. 1



FIG. 2

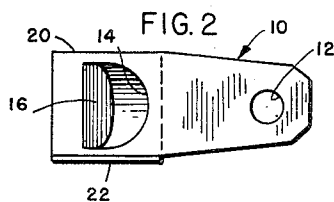


FIG. 3

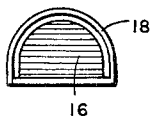


FIG. 4

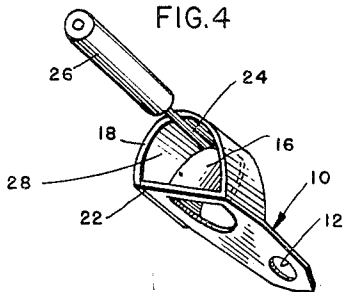


FIG. 5

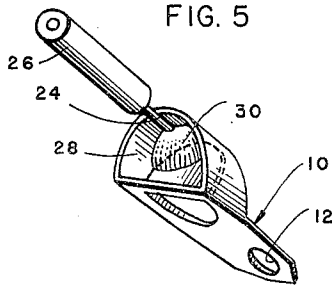
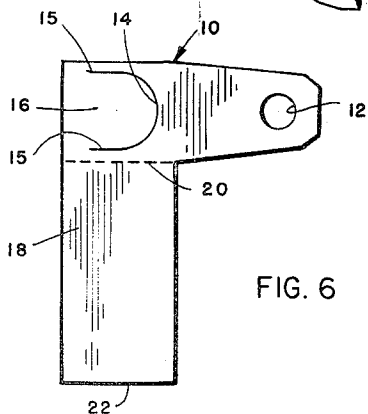


FIG. 6



INVENTOR:

RUSSELL J. KUECK

BY

Kent W. Russell

ATT'Y

UNITED STATES PATENT OFFICE

2,551,844

TERMINAL HAVING A RESILIENT, WIRE ENGAGING TONGUE

Russell J. Kueck, Milwaukee, Wis.

Application May 17, 1948, Serial No. 27,561

6 Claims. (Cl. 173-269)

1

This invention relates to a terminal and a connector for electric wires, and it is more particularly described as a terminal in the shape of a lug formed of sheet metal adapted to grip a wire and to be easily soldered thereto, if desired.

An important object of the invention is to provide a wire connecting terminal which is made of conducting sheet metal stamped and formed to grip the extremity of a wire inserted therein.

A further object of the invention is to provide a sheet metal wire terminal in which the extremity of a wire may be inserted and gripped and having means for receiving solder in contact with the wire to form a permanent electrical connection therewith.

A further object of the invention is to provide a gripping wire terminal made of sheet metal and formed to provide a gripper for the end of a wire and a socket in which the wire is inserted for receiving solder.

Still a further object of the invention is to provide a sheet metal wire terminal and connector having an attachment portion with a spring tongue extending therefrom and a socket extending around the tongue and providing means for gripping the end of a wire and for receiving solder therein to hold the spring tongue, the wire, and the surrounding portion of the terminal together.

Other objects of the invention will appear in the specification and will be apparent from the accompanying drawing in which:

Fig. 1 is a side elevation of a terminal constructed in accordance with this invention;

Fig. 2 is a back or rear elevation of the terminal shown in Fig. 1;

Fig. 3 is an end view of the terminal looking at the bottom thereof;

Fig. 4 is a perspective view of the terminal with the extremity of a conductor wire inserted therein;

Fig. 5 is a perspective view similar to Fig. 4 showing the application of solder in the socket of the terminal; and

Fig. 6 is a plan view of a blank from which the terminal is made.

In making terminal connections for conductor wires particularly for radio, switchboard, television and telephone, a great deal of time is required for making reliable, permanent electrical joints, and the present invention provides a simple, effective, and efficient means not only for gripping the extremity of a conductor wire and clamping it firmly to the terminal, but also providing a socket into which a drop or small amount of solder may be inserted in electrically

2

connecting the gripped wire to the terminal and also providing means for attaching the terminal to a suitable fastening.

The present invention accomplishes these results with a simple inexpensive sheet metal terminal which is formed of a flat blank of sheet metal as shown in Fig. 6 having a back portion 10 with a perforation 12 at one end and a circular cut 14 with straight ends 15 and comprising more than a semi-circle adjacent the other end which is bendable to form a tongue 16 extending outwardly from the back 10. At one side of the end adjacent the tongue 16 is a lateral projection 18 of sufficient length so that when bent upon a fold line 20 and formed circularly, it will extend around the tongue 16 in the outwardly bent position of the tongue, and the outer extremity 22 of the projection 18 will be substantially flush with the back portion 10 of the terminal.

When the terminal is thus formed, the tongue 16 is inclined away from the adjacent end of the terminal and is resiliently disposed with respect to the circular covering portion formed by the projection 18 so that the extremity of a conductor 24 which may be either bare or covered except at the end with insulation 26 may have its extremity inserted within a socket 28 formed by the tongue 16 and the circular projection 18, the extremity of the wire being resiliently inserted between the tongue 16 and the rounded projection 18 and gripped yieldingly thereby to make a proper engaging electrical connection even without the addition of solder or any other contacting means. The sharpness of the edges of the tongue will cause the wire to be scratched or scarred and thus resiliently engaged between it and the projection 18. If an attempt is then made to withdraw the wire from the terminal, the tongue 16 will be bent outwardly in tighter engagement with the wire.

The socket 28 provides a receptacle for receiving a small amount of solder 30 which is dropped therein in contact with the conductor and engages also the tongue 16 and the adjacent inner surface of the circular surrounding projection 18 so that all of these parts are secured tightly together making a permanent electrical connection.

If a terminal of this kind is to be attached to some other conductor, the opening 12 or some similar opening is provided for the insertion of a bolt, screw, or other fastening device by means of which the terminal is attached to the desired conductor.

With this construction, it is not necessary to lace a wire through an opening or around a post

or to wrap it around a screw or any other part forming a terminal or a connector, it is necessary only to insert the wire in the terminal engaging the spring tongue, and to solder it in place if desired. Even if pulled outwardly in engagement with the tongue, a firm and proper electrical connection will be made, in the quickest possible time and in a most efficient manner.

This terminal may be used in a variety of ways either by attaching the terminals first to a fixed support and then inserting the wires, or by inserting the wire first in the terminal and then applying the terminal to a fixed support. In either manner of use, a permanent electrical connection may be made by the addition of solder in the terminal socket by turning the socket upwardly either when the wire is attached or by turning the part to which the terminal is attached in such a direction that the socket will be uppermost.

While a preferred form of the invention is thus described in detail, it should be regarded by way of illustration and example and not as a restriction or limitation, as various changes may be made in the construction, combination and arrangement of the parts without departing from the spirit and scope of the invention.

I claim:

1. A wire terminal, comprising a flat back of sheet metal having a tongue with a rounded outer end cut and extending outwardly therefrom, and a lateral projecting portion of the same sheet folded over the rounded end of the tongue and providing therewith a rounded socket and a resilient means for engaging the extremity of a wire between the tongue and the projection.

2. A wire terminal, comprising a back portion, a resilient tongue having a rounded outer edge extending outwardly from the back, a cover portion secured to the back and extending from one side around the outer edge of the tongue to provide therewith a socket into which the end of a conductor may be inserted and gripped between the edge of the tongue and the inner surface of the cover.

3. A sheet metal wire terminal, comprising a back portion with a tongue adjacent one end having a rounded outer extremity to extend angularly outward from the back, and a lateral extension of the same sheet from the back at one side of the tongue folded transversely over the tongue and forming with the back and the tongue a rounded socket into which the extremity of a wire may be inserted and resiliently gripped between the tongue and the projection.

4. The combination with a conductor wire, of a terminal for resiliently engaging the wire com-

prising a unitary back with a semi-circular spring tongue extending outwardly therefrom and a cover of the same material folded from the back transversely over the tongue to provide a semi-circular socket for inserting the wire between the edge of the tongue and the inner surface of the socket, and solder inserted in the socket uniting the cover, the end of the wire, and the tongue in a permanent electrical connection.

5. The combination with a conductor having a back extremity, of a sheet metal terminal therefor formed of one piece of sheet material and comprising a back with a semi-circular resilient tongue extending angularly outward therefrom and a lateral projection of the back at one side of the tongue folded resiliently over the tongue and forming therewith a socket semi-circular in cross section into which the extremity of the conductor is inserted and gripped between the tongue and the inner surface of the projection, and another portion of the back having means by which it is attached to a suitable support.

6. The combination with a conductor, of a sheet metal terminal therefor formed of a single piece of material having a back with a semi-circular spring tongue extending angularly outward therefrom and a lateral projection at the side of the tongue folded transversely over the outer end of the tongue to provide a resilient substantially semi-circular socket, the extremity of the conductor being inserted into the socket and deflecting the tongue to grip the conductor between the edge of the tongue and the inner edge of the surrounding projection, solder applied in the socket in contact with the tongue, the inner surface of the projection, and the inserted end of the conductor, uniting them all together in a firm electrical contact.

RUSSELL J. KUECK.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,917,683	Anderson	July 11, 1933
1,946,713	Rowley	Feb. 13, 1934
2,175,251	Carson	Oct. 10, 1939
2,223,469	Tulchin	Dec. 3, 1940
2,503,559	Miloché	Apr. 11, 1950

FOREIGN PATENTS

Number	Country	Date
216,289	Great Britain	May 29, 1924