Oct. 8, 1963 W. I. WEISS 3,106,436

ELECTRICAL TERMINAL AND METHOD OF MAKING SAME

Filed Sept. 6, 1961

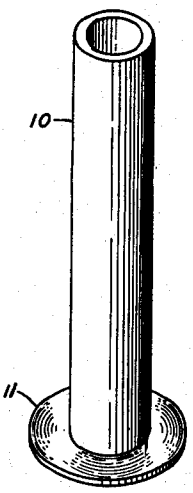


Fig-1

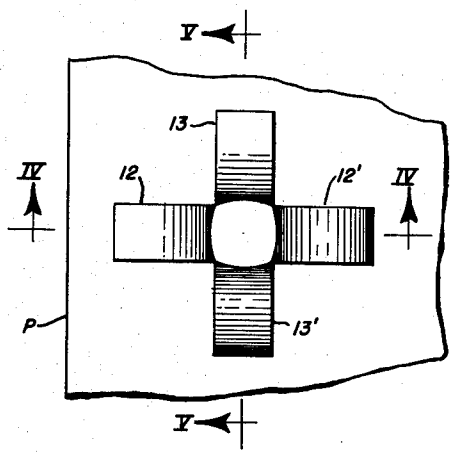


Fig-2

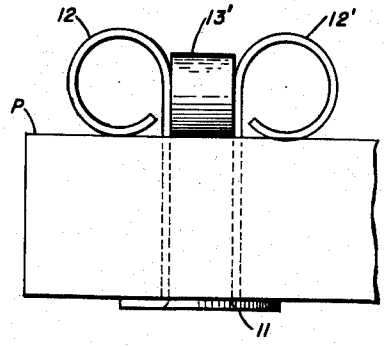


Fig-3

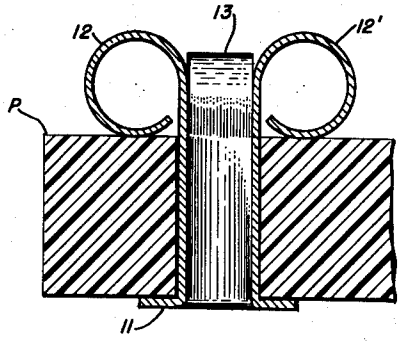


Fig-4

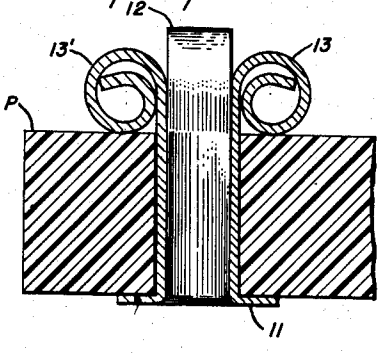


Fig-5

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United States Patent Office 3,106,436 Patented Oct. 8, 1963

3,106,436

ELECTRICAL TERMINAL AND METHOD OF MAKING SAME

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Filed Sept. 6, 1961, Ser. No. 136,277
1 Claim. (Cl. 339—220)

This invention relates to electrical terminals of the type used for securing electrical components and the like to a mounting panel, and more particularly to a terminal of novel construction which includes integral means to facilitate the soldering of lead wires thereto and to a method of making same.

In the manufacture of electronic apparatus, it is customary to secure individual components in proper relative orientation on a panel of insulating material and thereafter electrically connect the components with wires to form an operative circuit. Alternatively, the circuit wiring can be formed on the panel by printed circuit techniques, or by soldering the connection wires to properly-located terminals which are secured to the panel and thereafter solder the individual components to selected such terminals.

An object of this invention is the provision of a novel electrical terminal secured to a panel, which terminal includes a plurality of integral means for accommodating the ends of lead wires which are to be soldered thereto.

An object of this invention is the provision of a hollow terminal for connecting electrical components and the like to a panel, which terminal has a shank passing through a hole in the panel, a head abutting one surface of the panel and a plurality of integral ears formed on the other end, said ears serving to secure the terminal to the board and for accommodating the ends of lead wires to facilitate soldering same to the terminal.

These and other objects and advantages will become apparent from the following description when taken with the accompanying drawings. It will be understood, however, that the drawings are for purposes of illustration and are not to be construed as defining the scope or limits of the invention, reference being had for the latter purpose to the claim appended hereto.

In the drawings wherein like reference characters denote like parts in the several views:

FIGURE 1 is an isometric view of the eyelet used to form the terminal;

FIGURE 2 is a top plan view showing the terminal secured to a panel;

FIGURE 3 is a similar side elevational view;

FIGURE 4 is a cross-sectional view taken along the line IV—IV of FIGURE 2; and

FIGURE 5 is a cross-sectional view taken along the line V—V of FIGURE 2.

FIGURE 1 shows the eyelet having a shank **10** terminating in a head **11**. The eyelet is made of suitable material, such as brass, and is tinned, or plated, to facilitate making solder connections thereto. The shank length exceeds the thickness of the panel, to which the terminal is to be secured, by a predetermined amount.

As shown in FIGURES 2–5, the terminal is inserted with a snug fit in a hole formed in the panel P and is staked thereto by means of a suitable tool in a press. Such tool simultaneously forms four longitudinal slits in the protruding shank end and flares the resulting tabs

outwardly. In the specific embodiment shown in the drawings, four such slits are formed 90 degrees apart. As the tool continues its movement toward the panel, two diametrically-opposed tabs **12**, **12'** are curled over forming single-convolution loops while the other two tabs **13**, **13'** each are curled under and forced against the surface of the panel to form loops each having more than one convolution. The multi-turn tabs **13**, **13'** offer an increased resistance to deformation and serve primarily to secure the terminal securely to the panel. Although the relatively-larger tabs **12**, **12'** also serve to prevent movement of the terminal relative to the panel, they are primarily useful for receiving wires which are to be soldered thereto.

In practice, the panel serves as a support for various electrical components which include leads for connecting the particular component into an electrical circuit. An end of the component lead may be inserted into the axial hole of the terminal or into one of the loops **12**, **12'** for soldering purposes. In any event, three wires can be soldered to each terminal with a maximum facility, since each lead is retained in soldering position by the loops **12**, **12'** or the axial hole in the terminal. One practical advantage of the terminals resides in the fact that all components and connection wires of a circuit can be properly positioned in the loops or axial holes of a plurality of terminals, staked in predetermined positions on the panel and, thereafter, all solder connections can be made in a continuous operation.

As shown in the drawings, the terminal serves merely as a means for soldering components thereto. It will be apparent, however, that the terminal may also be used to mechanically secure a component, or part, to the panel. In such case, the part would be provided with a hole which is aligned with a hole in the panel. The terminal shank is passed through the aligned holes in the part and the panel and thereafter staked into position.

Although the terminals shown in the drawings have four tabs, it will be apparent that the number of tabs may be greater or less, depending upon the size of the terminal and the specific use to be made thereof.

Having described my invention, what I desire to protect by Letters Patent of the United States is now set forth in the following claim.

I claim:

An electrical terminal of the class comprising a metal eyelet having a head abutting one surface of a panel and a shank protruding from a hole formed in the panel, with the protruding portion of the shank flared outwardly to secure the terminal to the panel, characterized in that the protruding shank is formed into a plurality of outwardly extending tabs formed into closed loops, wherein some of the tabs are formed into substantially single turn loops for accommodating lead wires and the other tabs are formed into loops of more than one turn and in firm engagement with the surface of the panel for the purpose of securing the terminal to said panel.

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