

Feb. 24, 1948.

W. J. LARKIN

2,436,756

SOLDERING POST FOR ELECTRONIC EQUIPMENT

Filed June 7, 1945

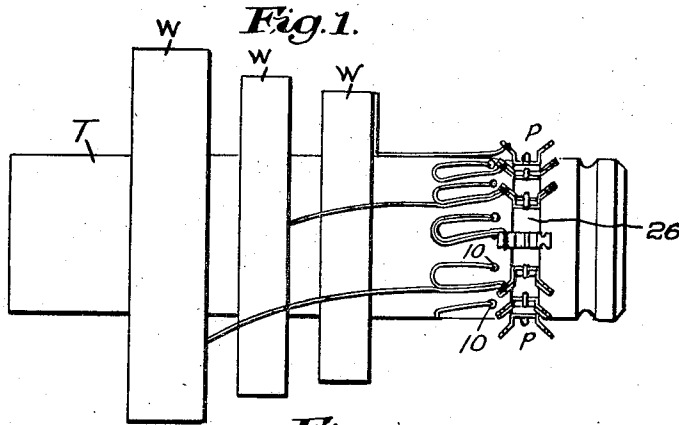


Fig. 1.

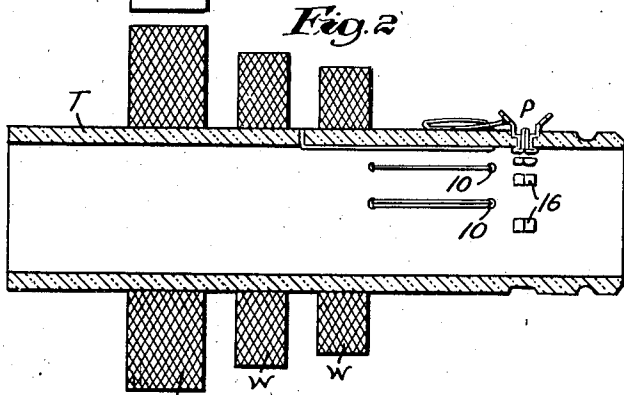


Fig. 2.

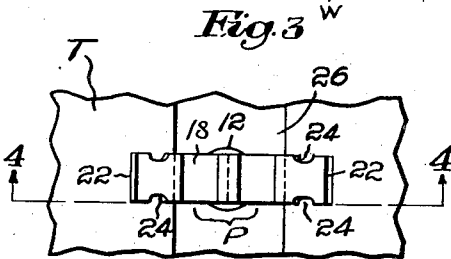


Fig. 3.

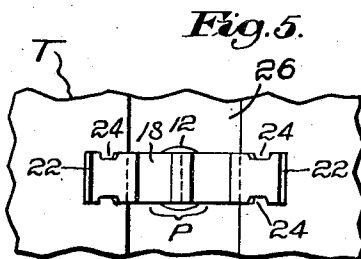
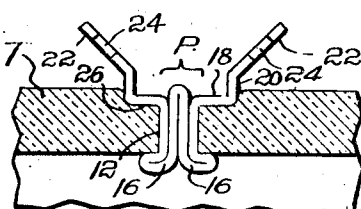
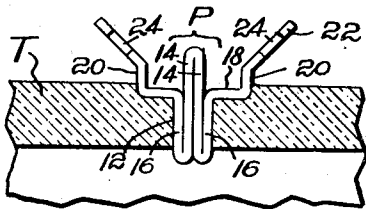


Fig. 5.

Fig. 4.

Fig. 6.



Inventors,  
William J. Larkin

by Emery, Booth, Townsend, Miller & Weidner

Attys

# UNITED STATES PATENT OFFICE

2,436,756

## SOLDERING POST FOR ELECTRONIC EQUIPMENT

William J. Larkin, Lynnfield, Mass., assignor to National Company, Inc., Malden, Mass., a corporation of Massachusetts

Application June 7, 1945, Serial No. 598,049

2 Claims. (Cl. 173—324)

1

This invention relates to soldering posts for use in electronic systems and similar electric wiring assemblages, and the object is to provide a device which may be readily anchored to a support and serve as a connection by which leads from different parts of the apparatus may be joined by securing them thereto. Because of its simple and compact construction it is particularly useful in places where a number of such connections are closely grouped or where such connection must be made in a restricted space and interference, mechanical or electrical, with adjacent parts must be avoided.

The invention will be well understood by reference to the following description taken in connection with the accompanying drawings, wherein—

Fig. 1 is an elevation of a coil of a kind used in radio showing the leads from the various windings thereof connected to posts illustrative of my invention, to which posts in turn may be connected leads (not shown) from cooperating parts of the apparatus;

Fig. 2 is a section therethrough;

Fig. 3 is a plan view of an enlarged scale showing one of the posts assembled with a supporting part and ready to be secured to such part;

Fig. 4 is a section on the line 4—4 of Fig. 3; and

Figs. 5 and 6 are views similar to Figs. 3 and 4 showing the device secured.

In Figs. 1 and 2 there is illustrated a coil of a kind known in radio apparatus comprising a supporting cylindrical tube T of insulating material, such as a ceramic tube, having several windings W mounted thereon at different points along its length, these windings being of different electrical characteristics. To connect these appropriately into the apparatus as a whole it is convenient and desirable to connect the leads therefrom to posts, designated as a whole by the letter P, secured to the tube and from which in turn leads are taken to cooperating parts of the radio apparatus. Thus at the right of Figs. 1 and 2 there is illustrated a series of seven posts grouped circumferentially around one end of the tube. Certain of the leads, as best seen in Fig. 2, may be threaded through holes adjacent their windings into the interior of the tube and brought out through holes 10 of a series paralleling the group of posts P to permit soldering of these to the posts from the outside of the tube T.

This coil consisting of the tube with the windings thereon is an example of a device wherein a number of connecting posts are closely grouped.

2

It is important that the leads be kept separate and particularly that in making the soldered connections the possibility of an accidental cross-connection shall be easy to avoid. Also the tube illustrated is of restricted dimension, representing an actual tube about one inch in interior diameter and it is desirable to secure the posts thereto by manipulations effected from the exterior only. Otherwise expressed, the application shown is illustrative of one wherein it is desirable to mount the posts in a blind hole.

I will now describe the formation of the post and the manner in which it may be secured to a support such as the tube T, referring more particularly to Figs. 3 through 6. The device may be formed from a blank consisting of a single strip of flat metal. While the exact dimensions are not important and will be varied for different applications, it may be helpful at this point to say that the drawings illustrate an actual commercial device as made from round edged soft brass wire about  $\frac{1}{4}$  of an inch thick and about  $\frac{3}{2}$  of an inch wide, the blank being about  $1\frac{1}{4}$  inches long. It is secured in a hole 12 about  $\frac{1}{8}$  of an inch in diameter, the wall of the tube T in which this hole is made being about  $\frac{1}{8}$  of an inch thick throughout the greater portion of its length.

Referring now more particularly to Fig. 4, the blank may be bent centrally to provide inner relatively long legs 14 and hence rebent to provide outer relatively short legs 16 and thence outwardly below the central bend to provide the horizontally extending shoulder portions 18 serving as a base or head. These may be extended by vertical flanges 20 which support in elevated position angularly directed end portions 22 which serve as soldering lugs and are here shown as provided with opposed notches 24, best seen in Figs. 3 and 5, in which the connecting wire may be wrapped to position it prior to soldering. The sides of the angle defined by the parts 16 and 18 fit over the upper margin of the hole 12 at diametrically opposite points therein and the horizontal portions 18 are herein of such length that the flanges 20 define shoulders presented to the walls of a circumferential groove 26 formed in the tube T, this engagement tending to hold the posts with their center lines parallel to the axis of the cylinder as illustrated in Fig. 1.

Below the shoulders 18 the outer and inner legs 16 and 14 provide a shank consisting of four contiguous parts lying in lateral alignment one with another. The inner legs 14, as seen in Fig. 4, extend upwardly beyond the shoulders 18 and

3

are accessible between the laterally disposed terminal parts 20 and 22 which rise above the shoulders 18 and to which parts the connections are made.

The device as described in the form shown in Fig. 4 may be inserted in the hole 12 by a movement of approach which in the case of the tube T is radial thereto, the shank entering the hole to lie therein in the manner of an inscribed rectangle in a circle. This is the position of Fig. 4.

Now if the central portion consisting of the up-standing ends of the inner legs 14 is pressed down from the outside of the tube T, the inner legs, supported in the region of the hole by the outer legs which may rest at their side edges against the wall of the hole, will at their inner or lower ends be curled over or clenched together with the projecting portions of the outer legs 16 around the inner edge of the hole in the manner illustrated in Fig. 6.

The formation of the device from a flat strip as herein described among other things permits a number of the posts to be assembled in parallel relation, as shown in Fig. 1, on closely arranged centers, yet with relatively wide spacing between them facilitating the attachment of the wires and avoiding danger of interference in the connecting operations. This spacing also provides a relatively large air gap avoiding electrical interference in the completed piece of apparatus.

In the claims the device is described in its un-set or unsecured position as shown in Figs. 3 and 4, and in the claims and in the description I use such words as "horizontal," "vertical," "upper" and "lower" as appropriate to the device when viewed as shown in Fig. 4. The words are, of course, relative.

I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive, as is in fact clear in several matters from the description itself. Reference is to be had to the appended claims to in-

4

dicating those principles of the invention exemplified by the particular embodiment described and which I desire to secure by Letters Patent.

I claim:

1. A soldering post adapted for the connection of leads in electronic apparatus in confined spaces or close groupings comprising a single strip of flat metal bent and rebent to provide a shank of four closely arranged lengths, the outer lengths being outwardly bent to define shoulders and extended to provide soldering lugs, the central lengths extending upwardly beyond said shoulders, the shank being insertable in a hole in the manner of an inscribed rectangle to have the lower ends of the shank clinched over the interior margin of the hole on downward thrust of the central lengths.

2. A soldering post adapted for the connection of leads in electronic apparatus in confined spaces or close groupings comprising a base having laterally thereof soldering lugs and depending therefrom a shank comprising lateral downwardly extending legs terminally joined by an integral connecting extension rising upwardly between the legs and terminating above the base, the legs and connecting extension thus providing four laterally aligned contiguous parts for entrance in a hole in the manner of an inscribed rectangle to have the lower ends of the shank clinched over the interior margin of the hole on downward thrust of the central lengths.

WILLIAM J. LARKIN.

#### REFERENCES CITED

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

#### UNITED STATES PATENTS

Number	Name	Date
1,364,461	Soss	Jan. 4, 1921
1,729,873	Hengstenberg	Oct. 1, 1929
1,907,857	Muter	May 9, 1933

#### FOREIGN PATENTS

Number	Country	Date
612,293	Germany	Apr. 17, 1935