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ELECTRON TUBE LEAD ADAPTER

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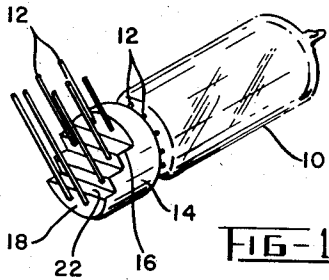


FIG-1

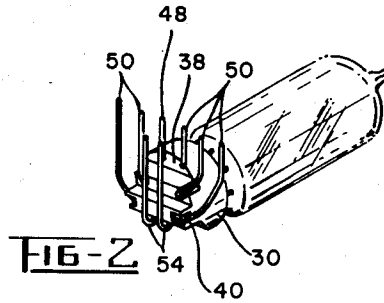


FIG-2

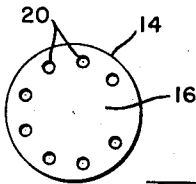


FIG-3

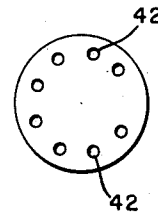


FIG-6

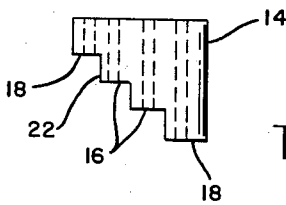


FIG-4

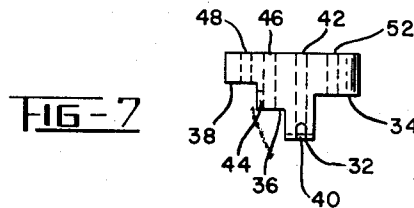


FIG-7

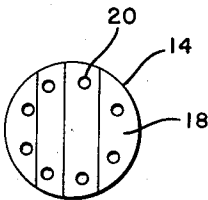


FIG-5

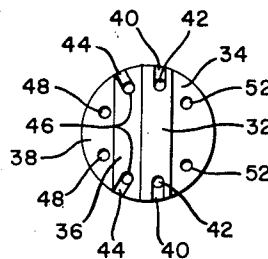


FIG-8

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ELECTRON TUBE LEAD ADAPTER

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3 Claims. (Cl. 339-145)

This invention relates to adapters for use with an electron tube or other device having a circular array of long flexible lead-ins in order to dress the lead-ins at right angles so that the tube or device may be plugged into a receptacle in a chassis or the like and lie parallel to the chassis. The adapters are particularly useful with devices having long flexible lead-ins which are to be pushed through a member having holes lying in a geometrical pattern, and, if desired, soldered to conductors on the back of the member after passage through the holes.

In the prior art, it had been the practice where it was desired to mount electron tubes having long flexible leads parallel to the chassis to make the base of the tube with a flat press bringing out all of the leads in a linear array and thereafter bending the leads at right angles so that they may be thrust in to a socket or the like in a chassis with the tube parallel to the chassis. But this type of construction for conventional sized tubes brings the leads, at least at the base of the tube, nearer together than where the leads emerge in circular array from the base of the tube.

It is an object of the invention to provide an adapter which shall receive leads arranged in a circular geometric pattern and dress them so that the leads, as they emerge from the adapter, may be arranged at right angles to the leads as they were received by the adapter and in an array to enable easy plugging of the wires into a socket in a chassis or through suitably arranged holes in the chassis.

It is a further object of the invention to make this adapter of such form that it may be close to the base of the device from which the leads emerge so as to prevent short circuiting of these leads between the base and the adapter.

It is a still further object of the invention to make the adapter of such a configuration, at the surface where the long flexible leads emerge from the adapter as to facilitate the proper bending and positioning of the leads.

These and other objects will become apparent after reading the following specification and claims in conjunction with the accompanying drawing in which:

Fig. 1 shows, in perspective, an adapter threaded over the lead-ins of an electron tube with the ends of the lead-ins bent ready for plugging into a receptacle or chassis.

Fig. 2 shows a similar view utilizing a modified form of adapter.

Fig. 3 is a top plan view of the adapter utilized in Fig. 1.

Fig. 4 is a side elevation of the same adapter, the bores in the adapter being shown in dotted lines.

Fig. 5 is a bottom plan view of the same adapter.

Fig. 6 is a top plan view of the adapter utilized in Fig. 2.

Fig. 7 is a side elevation of the adapter of Fig. 2, the bores in the adapter being shown in dotted lines; and

Fig. 8 is a bottom plan view of the adapter of Fig. 2.

Referring to the drawings in greater detail, at 10 there is indicated an electron tube having a circular base with a number of long flexible leads 12 extending from the

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base. In the embodiment shown there are eight such leads but there may be a lesser number with the particular adapter shown.

The adapter of Fig. 1 comprises an insulating member 14 having a planar circular face on the side close to the tube 10 and a stepped surface 16 on the opposite face. With eight leads there are four treads 18, from which the leads extend, two leads for each tread. Leading through the member from the plane face to the stepped face are bores 20 registering with the lead-ins as they emerge from the base of tube 10.

It can be seen that this adapter can easily be threaded over the lead-ins and pushed snugly up against the base of the tube to which it may be cemented, if desired. The leads protruding through the bores may then be easily bent at right angles hard up against the treads thus providing flexible lead extensions which are so arranged geometrically as to be easily plugged into a socket in a chassis with a circular or elliptical array of holes. The bent ends of the flexible leads may be spaced as desired by increasing or decreasing the height of the risers 22. Where more than eight leads emerge from the base of the tube, the adapter will have the number of treads increased.

In accordance with the modifications of adapter of Figs. 2 and 4 to 8 a different spacing of the bent ends of the leads 12 may be obtained. In this form of adapter 30 there is a topmost tread arranged a little to one side of a diameter across a face of the adapter and treads 34, 36 and 38 leading away from the top tread. The top tread has a recess 40 at each end each communicating with a bore 42 through the adapter. This is provided so that two of the flexible leads may be brought out through the bores 42, the leads being then bent at right angles so that they are aligned, and then again bent around the end wall of slots 42 into parallel alignment and in substantial alignment with the leads projecting through the tread 38, as seen in Fig. 2. The tread 36 is chordally arranged and has slots 44 at its ends which run substantially at an angle of 45° with respect to the chord and are of a depth to allow leads threaded through bores 46 to be brought out first at an angle of 45° parallel to the plane of tread 36 and then parallel to one another as shown in Fig. 2. The leads through bores 48 are bent into parallelism hard against the tread 38. Thus six leads are brought into parallelism in substantially one plane. The leads 54, through bores 52, are brought up over the tread 32 and then bent at right angles thereover into parallelism with one another and the other leads 48. Thus all of the leads form two lines of spaced parallel members which may easily be passed through a mating socket or mating holes.

Having thus described the invention what is claimed is:

1. An adapter for electric components having an array of circularly arranged leads projecting from its base, said adapter comprising a member having a plane face with bores in a circular array extending entirely through the member and perpendicular to said face, said member being stepped on the end thereof opposed to the plane face, with the bores leading through treads of the stepped face, one of said treads being substantially along a diameter of the circular array of bores and provided with slots at the ends, which slots extend parallel with the said diameter.

2. An adapter for electric components having an array of circularly arranged leads projecting from its base, said adapter comprising a member having a plane face with bores in a circular array extending entirely through the member and perpendicular to said face, said member being stepped on the end thereof opposed to the plane face, with the bores leading through treads of the stepped face, one of said treads being substantially along a chord

of the circular array of bores and provided with slots at the ends of and in the plane of the tread at an angle of substantially 45° with respect to said chord, said slots extending from the bores to the periphery of the member.

3. A combined electron tube and adapter, said tube at its base being provided with a circular array of electrode leads which, exteriorly of the tube, are long and flexible, said adapter comprising a body with bores extending from one face of the body to the other, the bores being in circular array and spaced apart to register with the leads where they emerge from the base of the tube, the body having a plane face perpendicular to the bores at the portion thereof closest to the tube and a stepped face at the opposite portion thereof, said leads

extending through said bores and bent into parallelism with each other and with the plane face of the body, the bores terminating in the stepped face in treads and the bent parallel wires engaging the treads of the stepped face.

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