

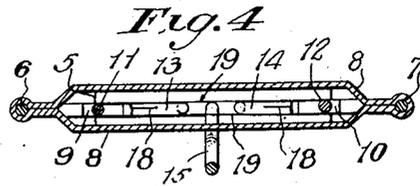
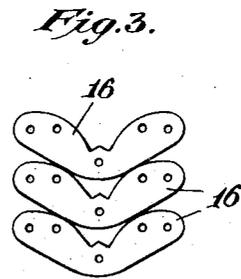
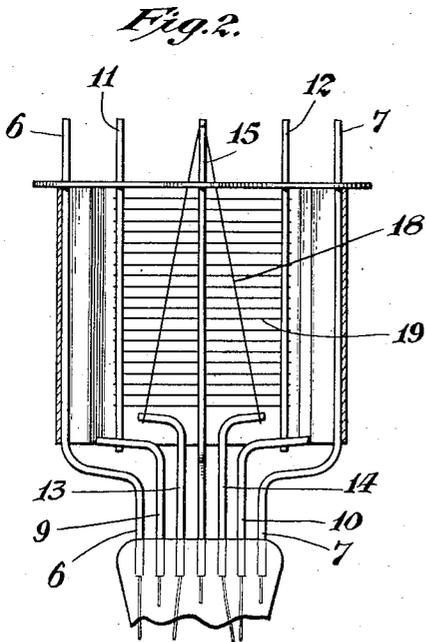
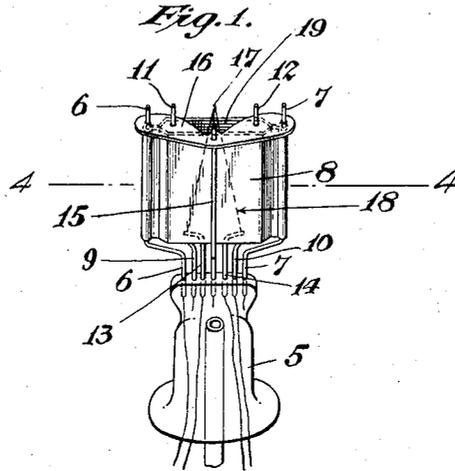
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RADIO GRID AND FILAMENT SPACER

Filed Nov. 14, 1925



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# UNITED STATES PATENT OFFICE.

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## RADIO GRID AND FILAMENT SPACER.

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This invention relates to a spacing element adapted to maintain the grid and filament of a radio tube in correct spaced relation to each other and to the plate.

5 These parts must be accurately placed when the tube is assembled, and the tube will function properly only so long as they remain in proper position. The operation of initially spacing the parts is tedious and delicate, as the parts are small and difficult to control, and the spacing is not long maintained under the shocks and jars of transportation and use.

15 The object of the present invention is to provide a spacer that will facilitate assembly and permanently secure the parts in correct relation.

20 In the accompanying drawing forming a part of this specification, there is shown by way of illustration a practical embodiment of the invention.

Fig. 1 is a perspective view of a flare tube assembly showing the spacer in position.

25 Fig. 2 is a longitudinal section through Fig. 1.

Fig. 3 is a plan view of several of the spacing elements.

30 Fig. 4 is a cross section taken in line 4-4 of Fig. 1.

Referring to the drawings more particularly, the flare tube 5 is shown as carrying sealed in its upper end the posts 6, 7, 9, 10, 13, 14 and 15. The plate element 8 is mounted on the extreme end posts 6 and 7. The posts 9 and 10 extend within the plate element and carry fastened to their upper ends the grid posts 11 and 12, which carry the grid, 19. Posts 13 and 14, also extending within the plate, are adapted to carry hooks for securing the lower ends of the filament 18, the upper end of which is supported by a hook 17 mounted on the post 15 which extends outside the plate.

45 Ordinarily the long slender posts 11, 12 and 15 have no support other than the tube 5, but they must maintain the grid and filament in place within very close limits to insure optimum results from the tube, and since these posts are of relatively light stock they are difficult to assemble and easily become displaced. The present invention avoids these difficulties by providing a spacer 16 made of mica, or similar insulating material, having holes punched therein to represent accurately the proper relative

positions of posts 6, 7, 11, 12 and 15. This spacer is placed in position, thereby moving the posts to proper spaced relation before the filament hook is applied to the upper end of post 15.

60 After the spacing element has been assembled over the ends of the posts the hook 17 is attached to the end of post 15 and the filament 18 is then placed in position.

65 The spacer remains permanently in place, thereby preventing any of the supporting posts from moving out of position, and since the spacer is made from insulating material it has no effect upon the operation of the tube.

70 Attention is called to the fact that the spacer is V-shaped, being notched to provide suitable clearance about the filament and having its apex extended to support post 15 which lies outside of the plate 8. Fig. 3 shows how nicely this configuration lends itself to the operation of stamping from sheet material, the spacers nesting together very closely so that there is practically no waste.

I claim:

1. In a flare tube assembly, a flare tube, supporting posts mounted at one end in said tube and carrying a plate, grid-supporting posts mounted at one end in said tube and extending within said plate, a filament-supporting post mounted at one end in said tube and extending without said plate, and a spaced mounted on the ends of said posts opposite the flare tube.

2. In a flare tube assembly, a flare tube, supporting posts mounted at one end in said tube and carrying a plate, grid-supporting posts mounted at one end in said tube and extending within said plate, a filament-supporting post mounted at one end in said tube and extending without said plate, and a spacer mounted on the ends of said posts opposite the flare tube and resting on the top of said plate.

3. In a flare tube assembly, a flare tube, supporting posts mounted at one end in said tube and carrying a plate, grid posts mounted at one end in said tube and carrying a grid within said plate, a filament post mounted at one end in said tube and extending without said plate, a hook attached to the upper end of the filament post, a filament mounted on said hook, and a spacer mounted on the ends of said posts opposite

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the flare tube and having a cut-out portion providing a clearance about said filament.

4. In a flare tube assembly, a flare tube, supporting posts mounted at one end in said tube and carrying a plate, grid posts mounted at one end in said tube and carrying a grid within said plate, a filament post mounted at one end in said tube and extend-

ing without said plate, a hook attached to the upper end of the filament post, a filament mounted on said hook, and a V-shaped spacer mounted on the ends of said posts and resting on the plate, said spacer having a clearance about said filament. 10

In testimony whereof I affix my signature.  
WALTER J. SKINNER.