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ELECTRON TUBES  
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Fig. 1

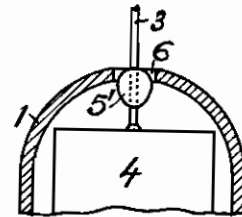
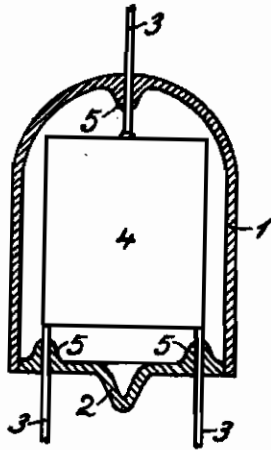


Fig. 2

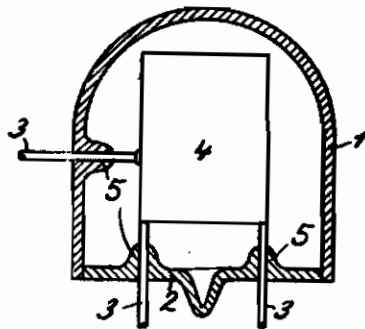


Fig. 3

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# ALIEN PROPERTY CUSTODIAN

## ELECTRON TUBES

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The leads to the electrode system of electron tubes may be arranged to extend through the glass bulb or envelope surrounding the electrode system. Also, some of the leads may be supported by a separately manufactured glass portion or bottom, while the other leads are sealed into the glass bulb. After finishing the electrode system the bulb is inserted over the electrode system and then sealed to the bottom.

In this connection the practice has been to seal into the bulb, before inserting it over the finished electrode system, those leads which the bulb is to carry, and then to join these leads to the electrodes fastened to the bottom. In most of these cases it must suffice that the leads merely contact with the electrodes instead of being fixed thereto, since it is difficult or impossible to interconnect them by soldering, welding or screwing, there being no space for the insertion of the requisite tool.

Another method of providing the bulb with inleads consists in fixing these to the electrode system, as by welding, and then uniting them with the glass bulb in the manner described hereafter, namely: the leads are inserted in tubular extensions of the glass bulb and are sealed in these extensions at the end thereof. For this purpose the leads may be fitted with a glass bead. This method, however, involves the use of comparatively long leads and therefore is disadvantageous especially where short or ultra-short waves are concerned. In addition, the tubular extensions of the bulb are a source of danger since they are easy to destroy. This method is nevertheless much used as other proposals have not been successful for the reason that glass is liable to destruction.

The present invention aims to overcome these difficulties and consists in certain features of novelty which will appear from the following description and the accompanying drawing, in which

Fig. 1 is a partially diagrammatic view showing

an electron tube whose inleads are fastened in the manner provided by the invention, Fig. 2 is a partially diagrammatic sectional view of a second form of such an electron tube, Fig. 3 is a fragmentary view that illustrates the method of producing the seals shown in Figs. 1 and 2.

1 denotes the bulb, 2 the bottom, 3 the leads to the electrode system 4, while 5 indicates the seals by which the leads are held in position. Bulb 1 and bottom 2 are preferably made of glass.

The seals 5 are provided inside the vessel so as to form no raised portions on the outer side thereof.

In order to achieve this the bulb 1 and bottom 2 are provided with holes, such as hole 6, Fig. 3. Hole 6 is by way of example shown to be provided in the bulb 1. Such holes are three or four times larger in diameter than the leads 3. Fig. 3 represents the upper part of Fig. 1 in the state of sealing the lead 3 thereof into bulb 1.

The leads 3 before fixing them to the finished electrode system 4 are fitted with a properly positioned glass bead 5', Fig. 3. The leads are then fastened to the electrode system by welding or in any other suitable manner. Thereupon the bulb provided with hole 6 is inserted over the electrode system with the respective lead 3 reaching through the hole 6. The bulb is in this way so positioned that the bead 5' is outside flush with the outer surface of the bulb, as will be seen in Fig. 3. The lead is held in position either by securing it rigidly to the electrode system or by means of a holding device located outside. The vitreous material around hole 6 is then warily heated to the softening temperature and melted with the bead 5' so as to form the upper seal 5, Fig. 1.

The seals 5 pertaining to the bottom leads 3, Figs. 1 and 2, and the lateral seal 5 in Fig. 2 are produced in a manner analogous to that just described.

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