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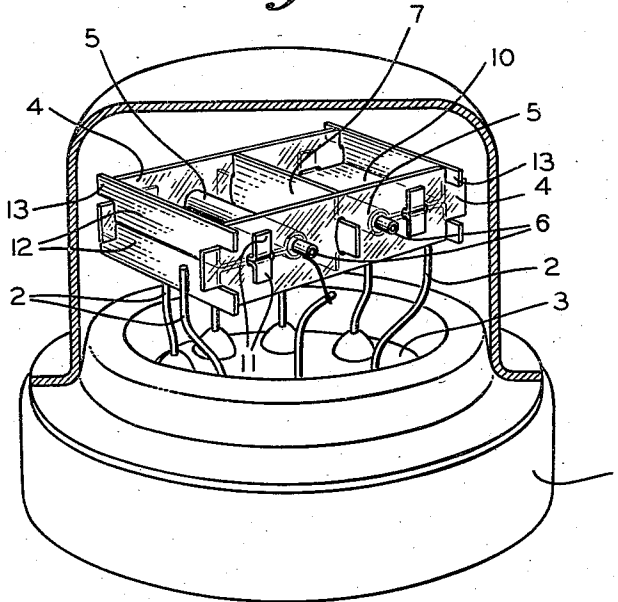
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2,181,080

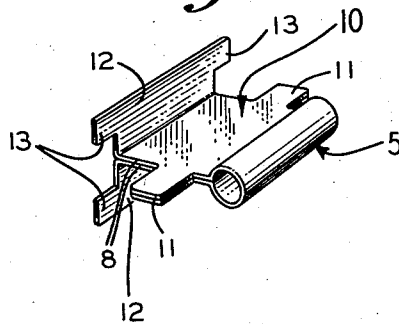
DOUBLE DIODE

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*Fig. 1*



*Fig. 2*



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## DOUBLE DIODE

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1 Claim. (Cl. 250—27.5)

My invention relates to electron discharge de-  
vices and more particularly to electrode assem-  
blies and their supporting means within the tube.

The object of my invention is to provide an  
electrode assembly of the unit mount construc-  
tion which is easy to assemble, rugged in con-  
struction, and has good electrical characteris-  
tics. The electrodes of my improved tube com-  
prise two diode units mounted in a single unitary  
structure that is easy to assemble and mount  
in the envelope, and in which the spacing be-  
tween cathode and anode remains constant dur-  
ing handling and use.

My invention is defined with particularity in  
the appended claim but one embodiment thereof  
is described in detail in the following specifica-  
tion and accompanying drawing in which:

Figure 1 is a perspective view of an electron  
discharge device embodying my invention, and

Figure 2 is a detail view of an anode con-  
structed according to my invention.

The mount shown in Figure 1, which is par-  
ticularly adapted for a metal envelope, comprises  
a metal stem or header 1 with electrode lead-in  
wires 2 sealed gas-tight in a glass disc or button  
3 closing the central portion of the header. The  
electrode assembly comprises two parallel in-  
sulating spacers 4, such as sheets of mica, perfo-  
rated with registering openings to receive and  
support in insulated spaced relation anodes 5,  
cathodes 6, preferably of the indirectly heated  
type, and a transverse shield 7. The anodes are  
attached at their ends to the insulating spacers  
and are held in concentric spaced relation to their  
respective cathodes. When assembled, the elec-  
trodes are attached, preferably by welding, to  
lead-in conductors 2, a metal shell is placed over  
the electrode and welded along its rim to the  
metal header 1, and the envelope is degassed,  
sealed-off and attached to a conventional base.

Each anode 5 is cylindrical and has a longi-  
tudinal flange 10. The anode may conveniently  
be made of an oblong sheet of metal, such as  
nickel, pressed across the middle to form a tubu-  
lar portion or cylinder, with the end portions of  
the sheet forming two flaps 8 which are brought  
together and spot welded to make the longitu-  
dinal flange 10. The flange 10 may, if desired,  
be slightly longer than the tubular portion of the  
anode to project beyond the ends of the anode  
and provide clearance between the ends of the  
anode and the spacers. The flange may be stiff-  
ened by ribs or channels pressed lengthwise  
along the flange. The ends of flange 10 are  
formed with ears or tabs 11 integral with the flaps

8. The ears are inserted through perforations in  
the spacers and when spread as shown in Figure 1  
draw the spacers into snug engagement with  
ends of the flanges of the two anodes. The two  
flaps 8 forming the longitudinal flange 10 are  
bent perpendicular to the plane of the flange to  
form fins 12 and are provided at their ends near  
their outer edges with lugs 13 for engaging the  
spacers a substantial distance from the plane of  
the flange. The ears 11 hold the spacers in snug  
engagement with the ends of the flange 10 and  
fins 12 to prevent tilting of the spacer and the  
lugs 13 effectively prevent rotation of the flange  
about an axis through the ears 11. To insure  
firm attachment of the anode to the spacer, the  
distance between lugs 13 may be made slightly  
less than the width of the spacer so that the  
edges of the lugs may cut into the edges of the  
spacer. These two points by contact, cooperat-  
ing with the third point of contact at ear 11,  
secure the parts together. The assembly is ad-  
ditionally strengthened and the diode units are  
electrically shielded by the transverse shield or  
partition 7, preferably of metal, inserted at its  
ends in perforations in the spacers.

An electrode assembly constructed according  
to my invention is easy to assemble, is rugged  
in construction, has good electrical characteris-  
tics, and is inexpensive to make. The reduced  
number of parts minimize cost and facilitate as-  
sembly of my improved device. The usual anode  
side rods and anode-to-spacer straps are elimi-  
nated. Longitudinal flange 10 with the perpen-  
dicular fins 12 are particularly rigid and are  
adapted, with the ears 11 and lugs 13, to prevent  
movement of the spacers or anodes. The ears  
11 at one end of the anodes are inserted in one  
spacer and the cathodes are placed in the anodes  
and one end inserted in perforations coaxial with  
the anodes, shield 9 is put in place, and the sec-  
ond insulating spacer is pressed into place. To  
lock the assembly in a rigid unitary structure  
it is merely necessary to bend or spread the  
ears 11 at the ends of the flanges. The assembly  
may then be placed on the header and the ap-  
propriate conductors secured, as by welding, to  
the electrodes.

Since many modifications may be made in an  
electrode assembly constructed according to my  
invention without departing from the scope  
thereof, it is desired that my invention be limited  
only by the prior art and by the appended claim.

I claim:

A unitary electrode assembly for electron dis-  
charge devices comprising a pair of parallel in-

5 sulating spacers, a cathode supported at its ends  
in said spacers, a cylindrical sheet metal anode  
around said cathode, said anode having a longi-  
tudinal flange, said flange comprising side-by-  
5 side sheet metal flaps welded together and in-  
tegral with the cylindrical anode, fins perpen-  
dicular to the plane of said flange integral with  
the edges of said flaps remote from said anode,  
10 means for firmly attaching said spacers to the  
ends of said flange and for preventing tilting of  
the spacers comprising an ear extension at each

end of said flange integral with the flaps extend-  
ing through an opening in the spacers and a lug  
extension on each end of each fin, the lug ex-  
tensions at one end of the fins being on opposite  
5 sides of and removed from the plane of said  
flange, and the edges of the lugs engaging oppo-  
site edges of the spacer, the distance between the  
edges of the lugs being slightly less than the  
width of the spacer between the lugs.

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