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G. BAUMBACH

2,297,449

ELECTRON TUBE

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FIG.1.

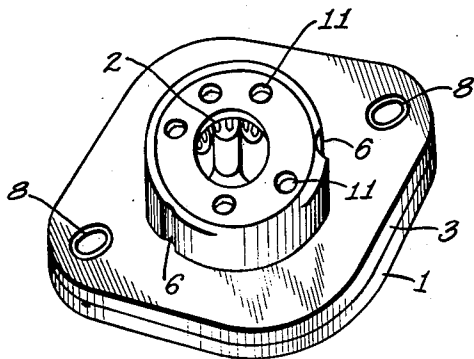


FIG.4.

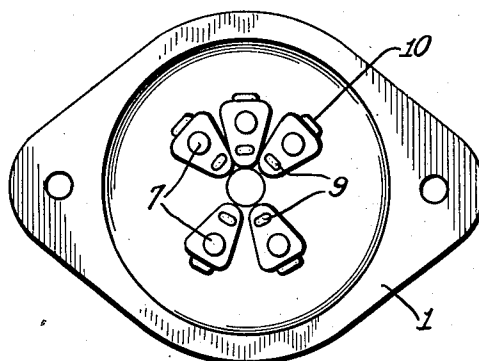


FIG.3.

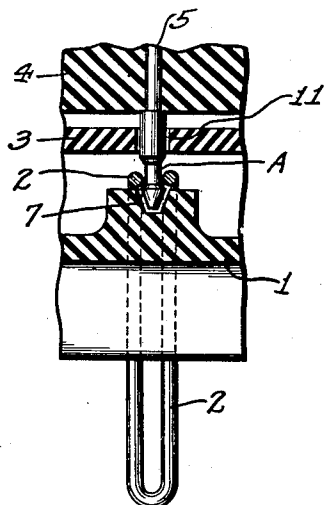


FIG.2.

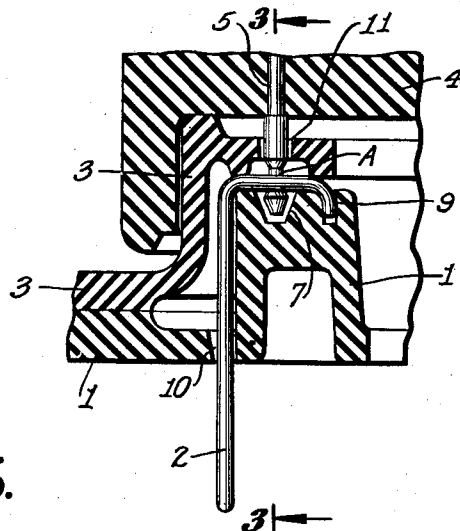
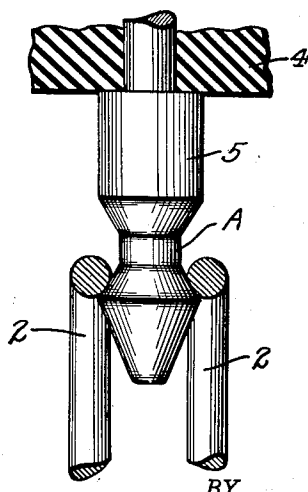


FIG.5.



INVENTOR.
GEORGE BAUMBACH
BY *E. D. Finney*
ATTORNEY.

UNITED STATES PATENT OFFICE

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ELECTRON TUBE

Georg Baumbach, Berlin, Germany; vested in the
Alien Property CustodianApplication April 19, 1941, Serial No. 389,293
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3 Claims. (Cl. 173-328)

This invention relates to the construction and arrangement of the contact springs forming part of the sockets for electron tubes and is also concerned with the contact studs projecting from the electron tubes and engaged by such contact springs.

In the prior devices these contact springs were of the ordinary tape-shaped construction and thereby gave rise to several disadvantages. Above all, they were not arranged to engage with the contact studs at a predetermined part thereof thus to determine the inductance of the supply leads to the electrode system and to hold the electron tube and socket together.

These two disadvantages are overcome by the present invention, as will be understood from the following description and the accompanying drawing, in which

Fig. 1 is a perspective view showing one embodiment of sockets as provided by the invention; Figs. 2 and 3 are fragmentary sectional views of this embodiment, Fig. 3 representing a section on line 3-3 of Fig. 2; Fig. 4 is a plan view illustrating the bottom part of the socket here shown by way of example, the contact springs, carried by such bottom part, not being represented. Figs. 2 and 3 are drawn to a scale larger than that of Figs. 1 and 4. Fig. 5 is a sectional detail view drawn to a scale larger than that of Figs. 2 and 3 and illustrating a contact stud of an electron tube and a form of the novel contact spring in engagement with this stud.

The socket comprises a bottom part 1 and an upper part or cap 3. The contact springs 2 are carried by part 1 and are clamped fast and covered by the cap 3, the parts 1, 3 being firmly held together by tubular rivets 8, Fig. 1, or by screws or other suitable fastening means. Such fastening means may at the same time serve for securing the socket in position.

The construction of the springs 2 will be understood from Figs. 2 and 3. The spring 2 here illustrated consists of a springy wire bent to form a loop having two shanks which are parallel to one another and, as viewed in Fig. 2, are in the shape of a U with unequal limbs. The shorter limbs are seated in bores or slots 9 of part 1. The longer limbs extend through openings 10 of part 1 and serve as soldering tabs. 4 denotes the bottom of an electron tube. Bottom 4 is inserted over cap 3 and has contact studs 5 which are each to engage with the two shanks of one of the springs 2, as will appear from Figs. 2, 3, and 5. Part 1 has recesses 7 for the free ends of the studs 5 while cap 3 is provided with bores 11 through which the studs 5 extend.

The contact studs 5 may have an annular groove A shaped as shown in Fig. 5, in order to provide for accurate positioning of the studs 5 with respect to the springs 2.

Preferably, the studs 5 are conical at their free ends, as represented in Fig. 5.

The cap 3 may have notches 6 or ribs for engagement with ribs or notches, respectively, of the part 4, in order to guide the parts 3, 4 with respect to each other, the notches and ribs being arranged in irregular distribution.

It will be seen that the novel socket is simple in construction and easy to assemble, since it is only necessary to apply the springs 2 to the part 1 and then to provide it with the cap 3.

The wires from which the contact springs 2 are made may be of any customary material.

What is claimed is:

1. In a socket for electron tubes, a bottom part, a cap attached to said bottom part and enclosing therewith a chamber, said cap being perforated at a plurality of points through which access may be had to said chamber, a contact spring for each perforation, each contact spring being substantially U-shaped with the closed loop of the U projecting to the outside through perforations in the bottom part, the open ends of the U being bent at right angles below said perforations with the tips of the spring anchored in the bottom part.

2. In a socket for electron tubes, a bottom part, a cap attached to said bottom part and enclosing therewith a chamber, said cap being perforated at a plurality of points in alignment with depressions in the bottom part within said chamber, a contact spring for each aligned perforation and depression, each contact spring being substantially U-shaped with the closed loop of the U projecting from said chamber to the outside through perforations in the bottom part, the open ends of the U being bent at right angles and straddle the depression, the tips of the spring being bent down into bores in the bottom part.

3. In a socket for electron tubes, a bottom part having a central raised portion, a cap attached to said bottom part and enclosing a chamber on top and along the sides of the raised portion, said cap being perforated at a plurality of points in alignment with depressions in the top surface of the raised portion, a contact spring for each aligned perforation and depression, each contact spring having a substantially U-shaped main portion with the closed loop of the U extending vertically along the sides of the raised portion and projecting to the outside through perforations in the bottom part, and an end portion bent at right angles to the U lying on top of the raised portion straddling the depression with the tips of the springs bent down into bores in the top surface of the raised portion.

GEORG BAUMBACH.