Aug. 2, 1949. W. A. READY 2,477,940

SOCKET FOR ELECTRONIC TUBES

Filed Jan. 10, 1945

Fig. 1.

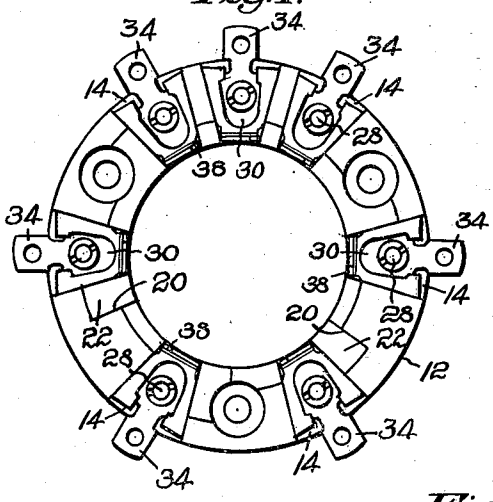


Fig. 2

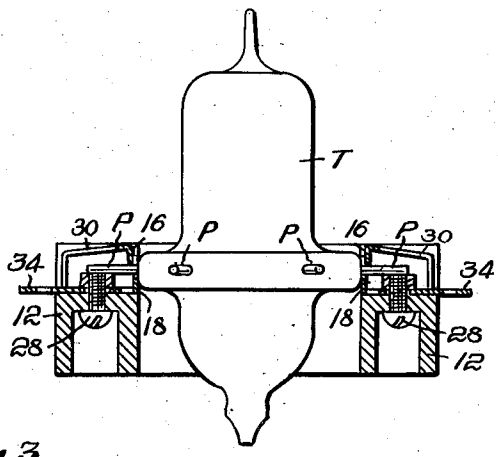


Fig. 3.

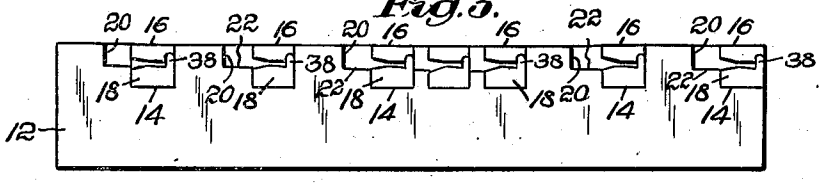


Fig. 4.

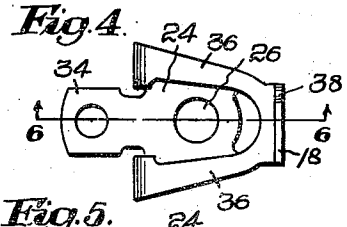


Fig. 5.

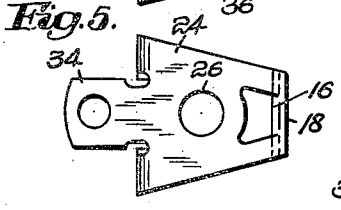


Fig. 6.

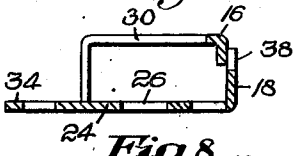


Fig. 8.

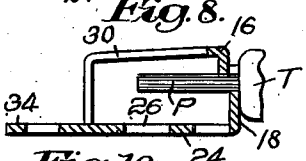


Fig. 7.

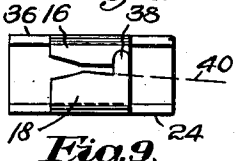


Fig. 9.

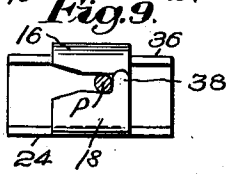
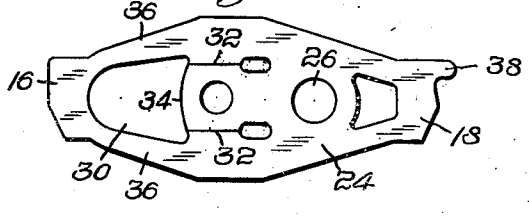


Fig. 10.



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BY

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SOCKET FOR ELECTRONIC TUBES

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Application January 10, 1945, Serial No. 572,187

1 Claim. (Cl. 173—328)

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This invention relates to mountings or "sockets" for electronic tubes and to the prong-engaging devices forming a part of the same, and the object is to provide an improved construction adapted for mounting a tube of the type having a circumferential series of radially projecting contact-making prongs. One form of such a tube is frequently termed an "acorn tube" from its general shape as here illustrated in Fig. 2.

My invention and the practical advantages to be realized from the use thereof will be well understood by those skilled in the art by reference to the following description taken in connection with the accompanying drawings showing an illustrative embodiment of the invention and wherein:

Fig. 1 is a plan view of the socket;

Fig. 2 is a cross section of the same showing a tube in place;

Fig. 3 is a development in a plane of the interior periphery of the socket;

Fig. 4 is a top plan view of one of the prong-engaging clips;

Fig. 5 is a bottom view;

Fig. 6 is a section on the line 6—6 of Fig. 4;

Fig. 7 is an end elevation as seen from the interior circumference of the socket;

Figs. 8 and 9 are views similar to Figs. 6 and 7 respectively but showing the prong in position; and

Fig. 10 is a plan of the blank from which the clip is bent.

The socket herein shown comprises an annulus 12 of insulating material, into the center of which the tube T (Fig. 2) is inserted by a movement of axial approach. The annulus has ranged about the periphery thereof a series of prong-gripping clips corresponding in number and spacing to the prongs P of the tube. I have applied no reference numeral to denote the clips as a whole as it would be confused with the numerals applied to individual parts thereof, such, for instance, as the numerals 16 and 18 which mark the prong-gripping jaws, by reference to which the clip may be readily located in Figs. 1, 2 and 3. The form of the clips herein shown will be described in detail hereinafter and for the present it is sufficient to state that they are set into the radially extending recesses 14 of the annulus to lie substantially flush with the top thereof. These recesses conveniently are of truncated sector-shape form as shown and the clips in plan (see Fig. 4) are of a similar contour to fit the recesses and to present in locations corresponding substantially to chords of a circle upper and lower prong-engaging jaws 16 and 18 respectively, providing at one side (the left viewing Fig. 3) an entrance between them and adjacent the other side a seat whereon the prong is positioned when entered by a rotative movement corresponding to a movement from left to right in Fig. 3.

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As best seen in Fig. 3, intervening portions of the annulus are cut away to provide recesses at the entering sides of the jaws having shoulders 20 and bottoms 22, the latter substantially aligned with the entrances to the bites of the jaws 16 and 18. These facilitate the engagement of the prongs between the jaws of the clips. The tube may be inserted in the socket by an axial movement, the prongs entering the recesses to the right of the shoulders, viewing Fig. 3, or, viewing Fig. 1, in a position spaced counterclockwise from the clips by which they are to be grasped, these recesses forming a guide for positioning the tube in its proper orientation. A subsequent rotative movement brings the prongs P into position between the jaws as shown in Figs. 2, 8 and 9.

The socket illustrated has seven clips, three of which (seen at the upper portion of Fig. 1) are very close together. Herein the recess at the entrance side of the first of these (that at the eleven o'clock position viewing Fig. 1) as well as the recesses adjacent the other four clips has shoulder 20 and bottom 22, whereas in the case of the other two clips of the group of three the shoulder has been omitted, the septum between the clip-receiving recesses 14 being cut away throughout its width to the level of the bites of the clip jaws to define only the prong-engaging bottom surfaces 22 along which the prongs, introduced from above, may be moved to enter between the jaws.

The clip herein shown may be considered as a segment of a split resilient tube (see Figs. 6 and 8) with the jaws 16 and 18 defining the split. It will be convenient to describe the construction shown with reference to the blank (Fig. 10) from which it may be bent up. This blank includes a base portion 24 which may have an opening 26 to receive a fastening means, such as the bolt 28 shown in Fig. 2, for securing the clip in place in the recess 14. At one end of the base a flange is bent upwardly, forming the lower jaw 18. At the other end of the base, at the left viewing Fig. 10, there is provided an opening 30 from which slits 32 extend defining a central tongue or tab 34 which may project outwardly substantially coplanar with the base to provide for the connection

of suitable electric conductors thereto, as will be apparent from Fig. 1. The opening **30** and slits **32** define at either side resilient arm portions **36** which are bent upwardly at the outer end of the base and doubled over in opposition to the base in overhanging relation thereto and support at their ends the downwardly extending flange-like upper jaw **16**. Ample flexibility combined with a strong grip on the prong P and an enduring resiliency in the clip is provided by this construction. The opening **30** between the arms 36, as best seen in Fig. 4, provides for access to the upper side of the base **24** to permit the clip to be fastened in position as by the nut of the bolt **28**.

Referring to Figs. 6 and 8, the upper jaw **16** preferably does not directly oppose the lower jaw but lies closely adjacent thereto to close on the prong P in the manner of the blades of a pair of shears or the incisor teeth.

Referring particularly to Figs. 3, 8 and 9, it will be seen that the jaws **16** on the entrance side are bevelled off to provide for guiding the prong into the bite of the jaws. Herein the lower jaw **18** terminates at the opposite side in an upwardly projecting lug **38** which limits the entering movement of the prong and desirably the upper edge of this jaw immediately in advance of the lug is sloped downwardly toward the same, as is indicated by the line **40** in Fig. 7 which graphically shows the inclination of this surface which otherwise could not be clearly observed on the drawing. The prong in its entering movement from the left in Figs. 7 and 9 and under the resilient stress of the upper jaw **16** moves down along this sloping surface and is held against stop lug **33**, as illustrated in Fig. 9.

I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I

therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive, as is in fact clear in several matters from the description itself. Reference is to be had to the appended claim to indicate those principles of the invention exemplified by the particular embodiment described and which I desire to secure by Letters Patent.

I claim:

A tube socket comprising an annulus of insulating material mounting at intervals thereabout substantially radially disposed clips, each formed of a strip of flat metal bent along parallel transverse lines and having at one end an upstanding jaw having its edge extending substantially as a chord of the annulus and its body remote from the end bent upwardly at a point radially outward from the jaw and thence extending inwardly as an otherwise unattached, overhanging arm in spaced relation to said base, the arm terminally supporting a cooperating jaw, the edges of the jaws being shaped to provide at one side a prong-guiding entrance and at the other a prong-positioning seat.

WILLIAM A. READY.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,678,082	Rottenburg	July 24, 1928
2,259,328	Sinninger	Oct. 14, 1941
2,290,306	White	July 21, 1942
2,320,871	Keith	June 1, 1943
2,374,221	Lorenzen	Apr. 24, 1945
2,380,589	Franklin	July 31, 1945