

March 15, 1927.

F. S. SINCLAIRE

1,621,381

TUBE SOCKET

Filed Feb. 19, 1924

Fig. 1.

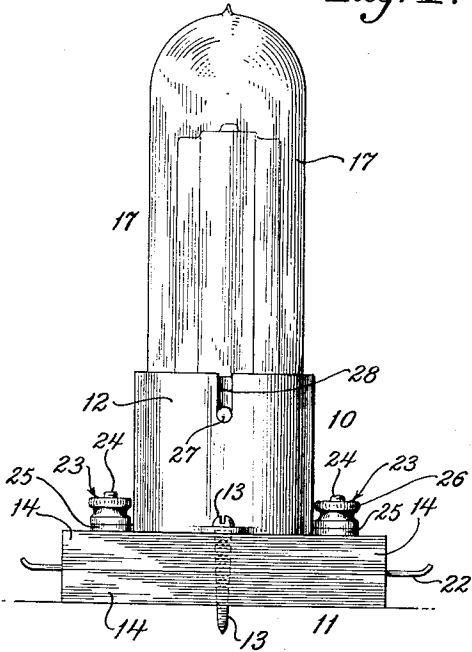


Fig. 2.

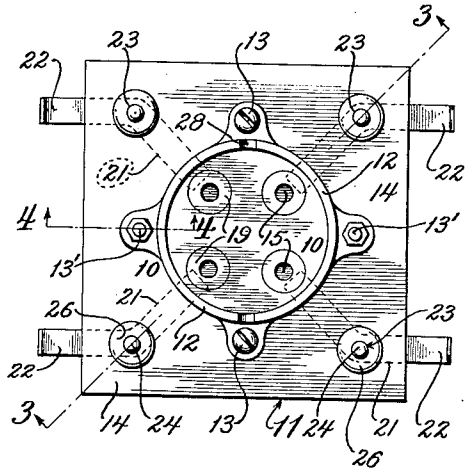


Fig. 3.

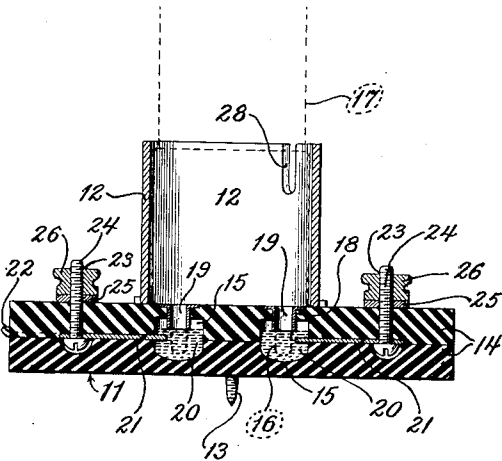


Fig. 4.

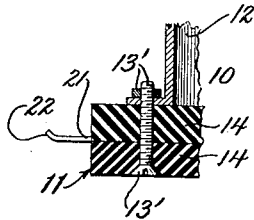
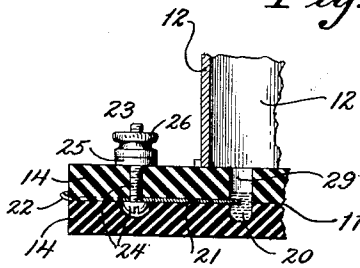


Fig. 5.



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TUBE SOCKET.

Application filed February 19, 1924. Serial No. 693,923.

This invention relates to sockets and more particularly to vacuum tube sockets for use in radio communication.

The principal object of the invention is the provision of a tube socket wherein a positive contact is established between the contact pins of the tube and its socket to permit clearer and sharper communication by radio.

Another object of the invention is to provide a socket having a plurality of wells filled with a fluid conductor such as mercury for the reception of the contact pins carried by the base of a vacuum tube.

A further object of the invention is the provision of a vacuum tube socket having wells therein for the reception of a liquid conductor and means whereby the liquid is trapped in the well for preventing the accidental spilling of the same.

A still further object of the invention is to provide a socket of the type mentioned which is simple in construction, cheap of manufacture and highly efficient for the purpose intended.

With these and other objects in view, the invention resides in certain novel construction and combination and arrangement of parts, the essential features of which are hereinafter fully described, are particularly pointed out in the appended claim, and are illustrated in the accompanying drawing, in which:—

Figure 1 is a side elevation of my invention showing a vacuum tube socket connected therewith.

Figure 2 is a top plan view of the socket with the top removed.

Figure 3 is a vertical transverse sectional view on the line 3—3 of Figure 2.

Figure 4 is a fragmentary sectional view on the line 4—4 of Figure 2.

Figure 5 is a fragmentary sectional view of a modified form.

Referring more particularly to the drawing, the reference numeral 10 designates my improved socket in its entirety which includes a base 11 for supporting an upstanding shell or sleeve 12 which is bolted to the base 11 as at 13. The base 11 is constructed of a pair of identical plates 14, 14, which are held together by bolts or the like 13', the said plates being constructed of insulating material such as hard rubber or bakelite. Wells 15 are formed in the base 11 and in the present instance four of such wells are shown for the reception of a similar number of con-

tact pins 16 carried by the underside of the base of a vacuum tube 17. The wells 15 open to the top of the base and are each provided with a restricted portion 18 through which projects a collar 19 secured to the top plate 14 as clearly shown in Figure 3 of the drawing. The collar 19 is of a size to permit the pins 16 to project within the liquid contact or mercury 20 which is placed in the wells, and serves as a trap for preventing the mercury from accidentally spilling when the socket is tilted or inverted.

To facilitate the connection of the wires with the mercury conductor, contact strips 21 are interposed between the plates 14, 14 and are counter-sunk therein, one end of the strips extending into the wells 15 for contact with the mercury, and the other ends extending beyond the plates as at 22 to receive a solder connection with the respective wires leading to the various parts of the radio apparatus. Should it be desired to establish a detachable connection with the contact strip, there is provided terminals 23 each of which comprises a bolt 24 having its head counter-sunk in the lower plate 14 and extending through the contact strips and projecting above the upper plate 14 to receive a washer 25 and a thumb nut 26. The free ends of the wire may be connected between the washer and the nut whereby a positive contact may be had with contact strips.

From the foregoing description, it will be seen that when the tube is inserted in the socket to bring the pin 27 carried by the base of the tube 17 into the slot 28 formed in the shell 12, the pins 16 will be made to enter their respective sockets and to be submerged into the mercury whereby positive contact is established between the tube and its socket. It will of course be understood that the supply of mercury may be replenished by separating the plates 14 or by removing the collar 19.

In Figure 4 of the drawing, there is shown a slight modification of my invention wherein the collar 19 is dispensed with and the well 29 is of the same diameter throughout its length.

It will be seen that there has been shown a tube socket whereby the contacts are free from dirt and which do not require adjustment necessary in spring contacts commonly employed in sockets of this type.

While I have described what I deem to

be the most desirable embodiment of my invention, it is obvious that many of the details may be varied without in any way departing from the spirit of my invention, and
5 I therefore do not limit myself to the exact details of construction herein set forth nor to anything less than the whole of my invention limited only by the appended claim.

What is claimed as new is:—

10 An electrical connector comprising a pair of plates of insulating material having a mercury cup provided therebetween, a collar

depending from one of said plates into said cup to form a trap at the top of the same and through which collar one of the parts to
15 be electrically connected is adapted to be inserted, and a conductor strip interposed between said pair of plates and having one end extending into said mercury cup and its other end projecting beyond the sides of said
20 plates.

In testimony whereof I have affixed my signature.

FRANCIS S. SINCLAIRE.