Dec. 1, 1931. E. A. BOHLMAN 1,833,984

SOCKET

Filed April 9, 1926

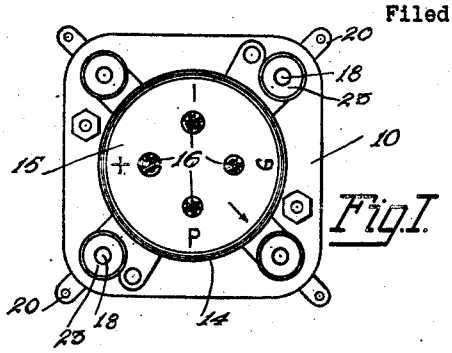


Fig. 1.

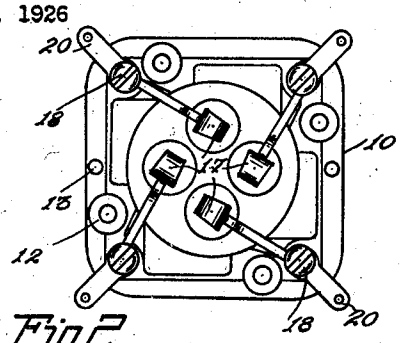


Fig. 2.

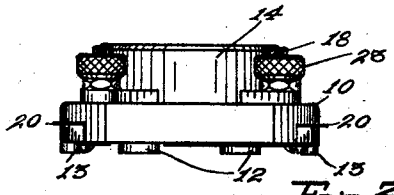


Fig. 3.

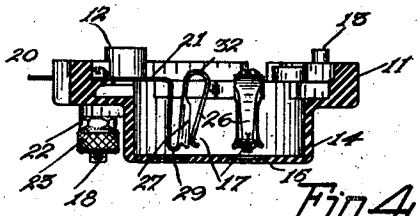


Fig. 4.

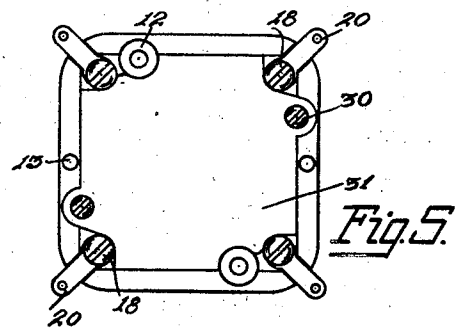


Fig. 5.

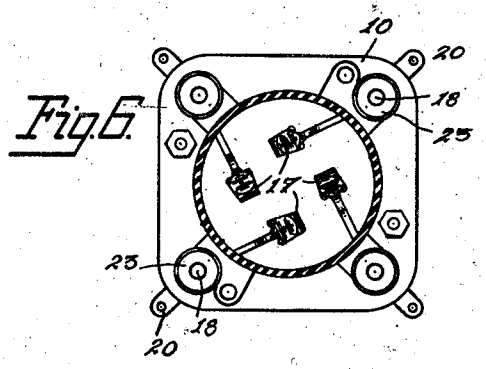


Fig. 6.

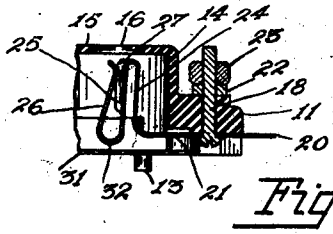


Fig. 7.

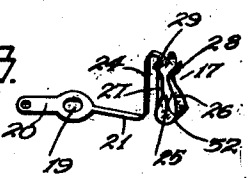


Fig. 8.

Inventor:
Ernest A. Bohlman.
By S. A. Goodman.
Attorney.

Patented Dec. 1, 1931 1,833,984

UNITED STATES PATENT OFFICE

ERNEST A. BOHLMAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO KELLOGG SWITCHBOARD AND SUPPLY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS

SOCKET

Application filed April 9, 1926. Serial No. 100,798.

This invention relates to sockets adapted to receive and support vacuum tubes such as are employed in radio systems and the like.

It has been found desirable to provide means in the sockets whereby the tube carried thereby may be resiliently supported from the base or from the panel upon which the tube is mounted. Heretofore means have been provided whereby the socket proper is resiliently supported in its entirety from the base.

The object of the present invention is to provide a socket wherein the tube will be resiliently supported from the base or the supporting panel without the necessity of providing means for resiliently supporting the socket member from the base; thus permitting the manufacture of the socket with less parts and effecting a saving both in the process of manufacture and in the material employed.

One of the features of the invention resides in the provision of a socket with openings therein for the reception of the tube terminal pins or contacts and the arrangement of the terminal pin receiving contact devices of the socket in alignment with the said openings whereby when the pins are inserted through the openings they are firmly received by the contact devices, means being provided to resiliently support the individual contact devices from the base.

Another feature of the invention resides in the arrangement whereby the resilient supporting means for the sockets are in the form of metal springs which act electrically to join the contact receiving devices to the binding posts of the socket.

Other features and advantages will appear from time to time as the description of the invention progresses.

It is believed the further disclosure of the invention will be understood most readily from a detailed description thereof taken in connection with the accompanying drawings, in which:

Fig. 1 is a plan view of the socket;

Fig. 2 is a view of the under side of the socket with the cover plate removed;

Fig. 3 is a view of the side of the socket;

Fig. 4 is a transverse section through the socket showing the socket in inverted position;

Fig. 5 is a view similar to Fig. 2, but shows the bottom cover plate in position;

Fig. 6 is a view similar to Fig. 1, but with the top of the socket member cut away; thus showing the contact members therewithin;

Fig 7 is an enlarged view of one of the contact members in section, and

Fig. 8 is a perspective view of one of the contact members detached.

Referring now to the drawings in which like reference characters indicate the same parts in the several views, 10 indicates the base of the socket having the downwardly extending flange 11 adapted to be maintained in spaced relation to the mounting plate or board by means of the hollow lugs 12 through which screws adapted to secure the socket to the mounting plate are adapted to pass and also the solid lugs 13. Extending upwardly from the base 10, as shown most clearly in Figs. 3 and 4, is a hollow cup-shaped or dome shaped member 14. The member 14 is provided in the upper wall 15 thereof with the openings 16 adapted to receive the terminal pins of the tube associated therewith. In the present embodiment of the invention the wall 15 is provided with four of the openings 16 to accommodate a tube having four terminals. However, it is obvious that this number may be varied in accordance with the type of tube to be employed.

Within the member 14 and positioned below the openings 16, respectively, are the contact devices 17 adapted to receive and firmly grip the terminal pins inserted through the openings 16. One of these contact devices is shown in detail in Figs. 7 and 8.

Extending upwardly through the base 10 are the binding posts 18 each of which passes through an opening 19 in terminal strap 20 integral with the resilient arm 21 which supports the contact device generally indicated at 17. Each binding post is provided with a clamping nut 22 and also a knurled nut 23 in the usual manner. The resilient member 21 at its outer end is S-shaped; it extends upwardly as shown at 24 and thence down-

wardly to provide the member 25 and is again rebent on itself and extends upwardly to provide the member 26. The member 25 is provided with the curved extensions or wings 27 (see Figs. 4 and 8) which act to provide a groove within which the terminal pin is adapted to slide. The upwardly extending member 26 terminates in an outwardly curved portion 28. The outwardly curved portion 28 together with the oppositely curved part 29 at the top of member 25 act to provide a tapered guide way to direct a terminal pin between the members 25 and 26 wherein the pin is held by the resiliency of the members.

Secured to the bottom of the base and within the flange 11 by means of the screws 30 is a cover plate 31. The cover plate 31 is spaced slightly from the resilient members 21 and also from the curved portion 32 which joins the parts 25 and 26. Thus when the terminal pins of the tube are inserted in the openings the movement of the contact device is limited by the part 32 engaging the cover plate 31 and when the pressure is removed from the socket the resiliency of the supporting members acts to move the contact devices and socket so as to maintain them free of the base member and the wall 15.

It is now clear that the tube is freely supported by the contact members 17 together with the supporting arms 21 and associated parts so that the tube is free to vibrate slightly in all directions. It is, of course, understood that the openings 16 through which the terminal pins of the tube pass are slightly larger than the pins.

By the construction above described each of the pin receiving contact devices is separately resiliently supported thus permitting a freer movement of the tube by a minimum amount of apparatus. The manner of constructing the contact devices integral with the resilient supporting arm and the terminal tabs acts to produce a socket which is of extreme simplicity and exceedingly cheap to manufacture and assemble.

While in the drawings and in the above description but a single set of details have been disclosed, it is to be understood that many modifications in the character of the device and the supporting means therefor are contemplated. The invention, therefore, should be limited only by the scope of the appended claims.

Having thus described my invention what I claim is new and desire to secure by Letters Patent of the United States is:

1. In a tube socket, a base, S-shaped tube terminal pin receiving contact devices and resilient supporting means for said S-shaped contact devices joining said devices to said base.

2. In a tube socket, a base, S-shaped tube terminal pin receiving contact devices and supporting springs for said S-shaped contact devices, respectively, joining said devices to said base.

3. In a tube socket, a base, binding posts on said base, S-shaped tube terminal pin receiving contact devices and supporting springs for said S-shaped contact devices, respectively, joining said devices to said binding posts.

4. In a tube socket, a base, S-shaped tube terminal pin receiving contact devices and supporting springs integral with said S-shaped contact devices, respectively, joining said devices to said base.

5. In a tube socket, a base, binding posts on said base, S-shaped terminal pin receiving contact devices and supporting springs integral with said S-shaped contact devices, respectively, joining said devices to said binding posts.

6. In a tube socket, a supporting member, said member having openings therein for the reception of vacuum tube terminal pins, S-shaped tube terminal pin receiving contact devices within said member in alignment with said openings, respectively, and resilient means for supporting said S-shaped contact devices.

7. In a tube socket, a supporting member, said member having openings therein for the reception of vacuum tube terminal pins, tube terminal pin receiving contact devices within said member in alignment with said openings and resilient supporting means for said devices, respectively, said contact devices which are integral with said supporting means being bent and rebent upon themselves to form S-shaped contact devices.

8. In a tube socket, a supporting member, said member having openings therein for the reception of vacuum tube terminal pins, terminal pin receiving contact devices within said member in alignment with the said openings, respectively, said devices comprising a member bent and rebent upon itself, and resilient supporting means for said devices integrally formed therewith, respectively, electrically joining said devices to said binding posts.

9. In a tube socket, a supporting member, said member having openings therein for the reception of vacuum tube terminal pins, tube terminal pin receiving contact devices within said member in alignment with said openings, respectively, said devices comprising a member bent and rebent upon itself to form a pair of grooves, one of said grooves being adapted to receive a terminal pin, and springs integral with said devices, respectively, for supporting said devices from said member.

10. In a tube socket, a base, a cup shaped member carried by said base, said member having openings therein for the reception of vacuum tube terminal pins, tube terminal pin receiving contact devices within said member in alignment with said openings, respec-

tively, said devices comprising a member bent and rebent upon itself, and resilient means integral therewith for supporting said devices.

11. In a tube socket, a base, a cup shaped member carried by said base, said member having openings therein for the reception of vacuum tube terminal pins, tube terminal pin receiving contact devices within said member in alignment with said openings, said devices comprising a member bent and rebent upon itself, and resilient supporting means integral therewith for said devices, respectively.

12. In a tube socket, a base, binding posts on said base, a cup shaped member carried by said base, said member having openings therein for the reception of vacuum tube terminal pins, terminal pin receiving contact devices within said member in alignment with the said openings, respectively, said devices comprising a member bent and rebent upon itself, and resilient supporting means for said devices formed integrally therewith, respectively, electrically joining said devices to said binding posts.

13. In a tube socket, a base, a cup shaped member carried by said base, said member having openings therein for the reception of vacuum tube terminal pins, tube terminal pin receiving contact devices within said member in alignment with said openings, said devices comprising a member bent and rebent upon itself, and springs integral with said devices, respectively, for supporting said devices from said base.

14. In a tube socket, a base, binding posts on said base, a cup shaped member carried by said base, said member having openings therein for the reception of vacuum tube terminal pins, terminal pin receiving contact devices within said member in alignment with the said openings, respectively, said devices comprising a member bent and rebent upon itself, and supporting springs integral with said devices, respectively, electrically joining said devices to said binding posts.

In testimony whereof I have signed this specification.

ERNEST A. BOHLMAN.