

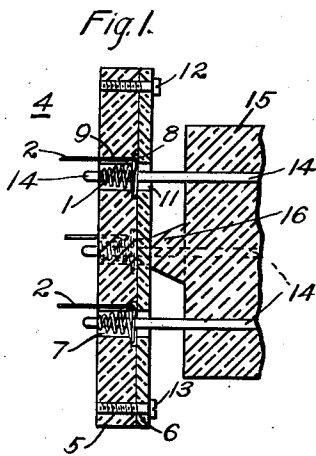
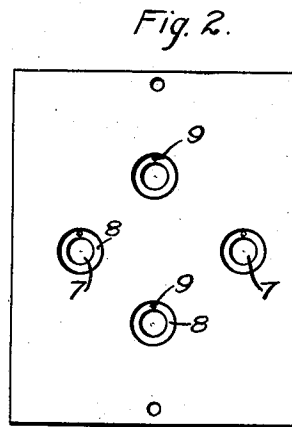
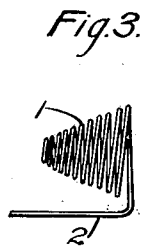
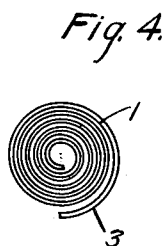
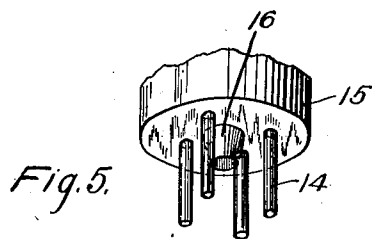
Jan. 6, 1931.

A. B. REYNDERS

1,788,066

BASE SOCKET

Filed March 17, 1922



WITNESSES:

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BASE SOCKET

Application filed March 17, 1922. Serial No. 544,525.

My invention relates to socket devices and it has special relation to base sockets adapted for use with vacuum tubes.

The principal object of my invention is to provide a socket of compact and rugged design which lends itself to inexpensive quantity production with existing automatic machinery.

Another object of my invention is to provide a socket device of such design as to provide an exceptionally firm electrical contact and a smooth mechanical contact with an engaging plug.

A further object of my invention is to provide a base socket which provides a resilient mounting for vacuum tubes, thereby eliminating tube noises resulting from vibration.

With these and other objects in view, my invention further consists in the constructional details and arrangements hereinafter more fully described and claimed and illustrated in the accompanying drawing, wherein

Figure 1 is a longitudinal sectional view of one form of socket device embodying my invention adapted to be employed as a vacuum-tube base, showing a portion of the tube base in operative relation thereto;

Fig. 2 is a front elevational view of the main supporting member which is adapted to carry the resilient contact elements;

Figs. 3 and 4 are side and end elevational views, respectively, of a resilient contact element embodying my invention;

Fig. 5 is a fragmentary perspective view of the tube base of Fig. 1.

In the illustrated embodiment of my invention, a conical spring member 1, having an integral terminal tab 2 extending from the larger end thereof, is employed as a resilient contact element. The final turn 3 of the large end of the helix may be expanded to provide a supporting shoulder, as hereinafter described. The conical spring 1 may be made of such materials as phosphor-bronze or stainless steel.

The contact elements 1 may be mounted in any approved supporting structure, as determined by the specific application involved. In the drawing, a base structure 4 adapts my invention to vacuum-tube base sockets. The

supporting structure 4 comprises a main supporting plate member 5 and a plate or cap member 6. The plate member 5 is provided with a plurality of perforations 7, countersunk to form recesses 8. Adjacent each recess is an additional perforation 9 extending parallel to the main perforation 7 and adapted to receive the terminal tab 2. The cap member 6 is provided with a plurality of perforations 11 corresponding, in diameter and position, to the main perforations 7 of the member 5.

In assembling the parts of my invention, the conical springs 1 are disposed in the main perforations 7, the final expanded turns 3 thereof being disposed in the recesses 8, thereby serving as supporting shoulders. The terminal tabs 2 extend from the supporting member 5 through the auxiliary perforations 9, as shown in the drawing. By means of such construction, the springs 1 may be mounted from the larger ends thereof, leaving the smaller ends disposed freely within the main perforations 7. The several springs may be securely clamped in position by means of the member 6, which is held in place by bolts 12 and 13.

It is intended that plug elements, such as the elements 14 of a vacuum-tube base block 15, shall be actuated into engagement with the contact elements 1 from the large ends thereof and held, by sliding contact, in the smaller turns of the elements. A boss 16 is provided in the tube base block 15 to admit of greater relative motion of the tube and socket than would obtain were the base block 15 and the socket 4 directly in engagement with each other. The contact elements 1 may be disposed in a non-symmetrical relation in order to prevent the wrong terminal pins of a vacuum-tube or other device 15 from being inserted into the base socket.

While I have shown only one embodiment of my invention, for the purpose of describing the same and illustrating its various applications, it is apparent that various modifications may be made in the arrangement and mounting of the resilient contact terminals without departing from the spirit and scope of my invention. I desire, therefore, that

only such limitations shall be made thereon as are demanded by the prior art or are specifically set forth in the appended claims.

I claim as my invention:

1. In a base socket, the combination with a unitary member having a plurality of perforations, of a conical-spring element having a terminal tab, said element being disposed in one of said perforations and supported at one end only, said tab extending in the same direction as said element and extending through a second perforation in said unitary member.
2. In a base socket, the combination with a unitary member having a plurality of unsymmetrically disposed pairs of main and auxiliary perforations, of a conical-spring element having a terminal tab individual to each pair of perforations, each element being disposed in a main perforation and supported from the large end thereof, each tab extending from said member in the same direction as said element and extending through an auxiliary perforation.
3. In a base socket, the combination with a member having a plurality of unsymmetrically disposed pairs of main and auxiliary perforations, of a second member having similarly disposed main perforations, a conical-spring element having a terminal tab extending from the larger end thereof individual to each pair of perforations, each element being disposed in one of said first-mentioned main perforations, each tab extending from said member through an auxiliary perforation, whereby said spring may be supported from the larger end, and means for binding said second member to the surface of said first-mentioned member adjacent the larger ends of said springs, the main perforations in said members being in alignment.
4. In a base socket, the combination with a member having a plurality of unsymmetrically arranged pairs of main and auxiliary perforations, said main perforations being countersunk and said auxiliary perforations originating in said countersunk portions, of a second member having similarly arranged main perforations, a conical-spring element having a terminal tab extending from the larger end thereof individual to each pair of perforations, each element being disposed in one of said first-mentioned main perforations, each tab extending from said member through an auxiliary perforation, whereby said spring may be supported from the larger end, and means for securing said second member to the portion of said first-mentioned member containing the larger ends of said springs, the main perforations in said member being in alignment.
5. In combination, a socket device comprising a plurality of conical-spring contact elements and a supporting member therefor, a co-operating plug member comprising an insulating block, a plurality of engaging pins

carried thereby and adapted to be actuated into engagement with said contact elements and an elevated portion extending from said block in the general direction of said pins and adapted to engage the surface of said supporting member.

6. In combination, a socket device comprising a plurality of conical-spring contact elements and a supporting member therefor, said elements being supported at one end and free to move at the other, and a co-operating plug member comprising a supporting member, a plurality of pins carried thereby and adapted to engage said contact elements and a boss extending from the surface of said last-mentioned supporting member in the general direction of said pins and adapted to engage the surface of said first-mentioned supporting member.

7. In combination, a socket device comprising a plurality of conical-spring contact elements and a supporting means therefor adapted to support said elements at the large ends thereof only and a co-operating plug member comprising an insulating block, a plurality of engaging pins adapted to engage said contact elements at the small ends thereof and a boss extending from the surface of said insulating block in the general direction of said pins and adapted to engage the surface of said supporting means with said springs engaging said contact elements, whereby relative motion may obtain between said socket device and said plug member.

8. The combination with a plug member having a central raised portion and a plurality of contact pins disposed thereabout, of a socket member provided with an abutment for said raised portion and a plurality of contacting means for frictionally engaging the respective pins and for providing a yielding support both longitudinally and transversely of said pins.

In testimony whereof, I have hereunto subscribed my name this ninth day of March, 1922.

ARTHUR B. REYNDERS.