

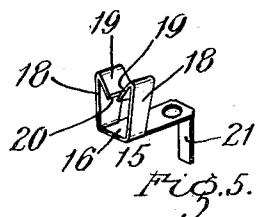
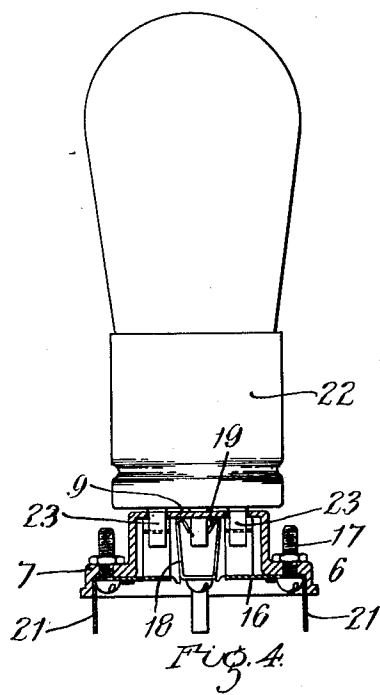
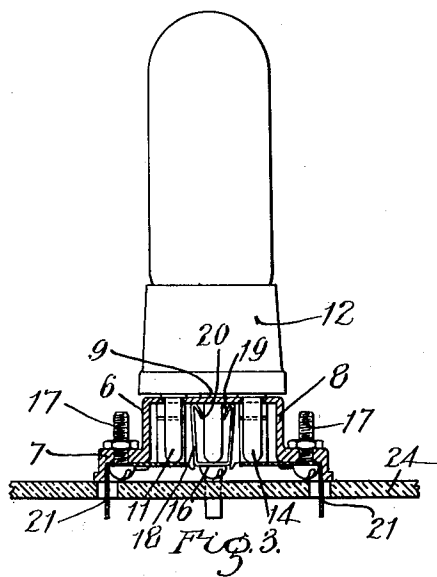
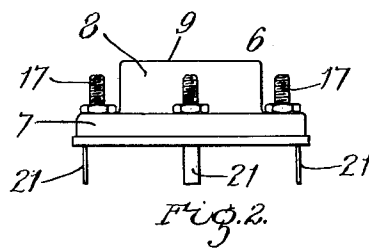
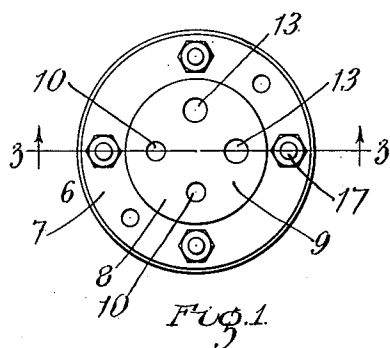
Jan. 5, 1932.

M. ALDEN

1,839,522

SOCKET FOR VACUUM TUBES

Filed March 22, 1926



Inventor:
Milton Alden.

by his atty. *Charles S. Gooding.*

UNITED STATES PATENT OFFICE

MILTON ALDEN, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO RADIO INVENTIONS, INC., A CORPORATION OF NEW YORK

SOCKET FOR VACUUM TUBES

Application filed March 22, 1926. Serial No. 96,388.

This invention relates to a socket for a vacuum tube, and has for its object to provide a socket in which vacuum tubes of different types and having terminal pins of different diameters and different lengths may be inserted, the contact members of said socket being constructed in such a manner that they will yieldingly engage the opposite sides of terminal pins of different diameters.

It is still further an object of the invention to so construct the contact members of the socket that the terminal pins of certain types of vacuum tubes will also be yieldingly engaged at their lower extremities by said contact members.

The invention consists in a socket for a vacuum tube as set forth in the following specification and particularly as pointed out in the claims thereof.

Referring to the drawings:—

Figure 1 represents a plan view of a socket embodying my invention.

Fig. 2 is a side elevation of said socket.

Fig. 3 is a central vertical section taken on the line 3—3 of Fig. 1 illustrating one type of vacuum tube in position in said socket.

Fig. 4 is a view similar to Fig. 3 illustrating another type of vacuum tube located within the socket.

Fig. 5 is a perspective view of one of the contact members.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 6 represents a base constructed of suitable insulating material and embodying therein a lower, circular, flanged portion 7 and a central raised portion 8 also circular in form and having a flat top 9 through which extend a pair of openings 10 adapted to receive the terminal pins 11 of a vacuum tube 12 of well known construction. Another pair of openings 13 are also provided extending through the top 9, said openings being slightly larger than the openings 10 and being adapted to receive a pair of

terminal pins 14 of said vacuum tube 12, said terminal pins 14 being slightly greater in diameter than the terminal pins 11.

A plurality of resilient contact members 15 are provided for the terminal pins 11 and 14, each of said contact members embodying therein a flat portion 16 which is secured at one end thereof to the under side of the flange 7 by a screw 17 which also constitutes a binding post for a wire which forms an electric circuit conductor to said contact member. The flat portion 16 of each contact member 15 is adapted to yieldingly engage the lower extremity of a terminal pin 11 or 14 and form an electric circuit connection therewith. The contact members 15 also embody therein a U-shaped end portion having a pair of oppositely disposed upwardly projecting arms 18 which are located upon opposite sides of the terminal pins, and said arms terminate in downwardly converging upper extremities having edges 20 which are adapted to yieldingly engage the opposite sides of the terminal pins and thereby form an electric contact therewith.

It will, therefore, be seen that when a type of vacuum tube as illustrated in Fig. 3 is inserted in the socket, that the contact members 15 will have a yielding engagement with each of the terminal pins in three places, namely, at the lower extremity of the contact pins and upon the opposite sides thereof, and the upper extremity of said contact members will engage terminal pins of different diameters with equal effectiveness.

The contact members 15 also embody therein a downwardly projecting terminal portion 21 which may project through a base panel or member 24 to which the socket is attached, and in radio sets where the wire connections to the socket are all concealed beneath the base panel, said wires may be connected to said terminal portions 21.

The arms 16 afford a spring support for the tube and the side arms such as 19 furnish

cutting edges which afford excellent contacts which adapt themselves to tube prongs of various sizes and locations.

In Fig. 4 I have illustrated a vacuum tube 22 of another well-known type positioned within the socket. This vacuum tube is provided with a plurality of terminal pins 23, all of which are of the same diameter and all of which are relatively shorter than are the terminal pins of the vacuum tube 12. When this form of vacuum tube is inserted within the socket, the contact members will not engage the lower extremities of the terminal pins, but the upper extremities of the contact members will engage the opposite sides of said contact pins and form a contact therewith in exactly the same manner as has been previously described in connection with the vacuum tube 12.

The socket of this invention is adapted to receive all of the common types of vacuum tubes irrespective of the diameter and length of the terminal pins and the contact members will form an electrical connection with said terminal pins at, at least, two points thereon.

This is a partial continuation of applicant's case #621,575, filed February 27, 1923, now Patent #1,580,942, with respect to a modification of the form shown in Fig. 7 of that patent.

I claim:—

1. A socket for a vacuum tube comprising, in combination, a base provided with a plurality of openings therein adapted to receive the terminal pins of a vacuum tube, and a plurality of one-piece contact members fast to said base, each embodying therein a main spring support and a pair of upwardly projecting arms with cutting edges adapted to yieldingly engage said terminal pins upon opposite sides thereof.

2. A socket for a vacuum tube comprising, in combination, a base having an upper wall provided with a plurality of openings therein adapted to receive the terminal pins of a vacuum tube, and a plurality of one-piece contact members fast to said base, each embodying therein a main spring support and a pair of upwardly projecting arms engaging the underside of the upper wall of the base and adapted to grip said terminal pins at a point adjacent to the underside of said upper wall.

3. A socket for a vacuum tube comprising, in combination, a base provided with a plurality of openings therein adapted to receive the terminal pins of a vacuum tube, and a plurality of contact members fast to said base, each embodying therein a main spring support and a pair of upwardly projecting arms having downwardly converging upper extremities, the latter having cutting edges adapted to engage said terminal pins upon opposite sides thereof.

4. A socket for a vacuum tube comprising,

in combination, a base provided with a plurality of openings therein adapted to receive the terminal pins of a vacuum tube, and a plurality of contact members fast to said base, each embodying therein a pair of upwardly projecting arms having downwardly converging upper extremities, the latter being adapted to engage said terminal pins upon opposite sides thereof, a flat resilient portion of said contact member between said arms being adapted to engage the lower extremity of said terminal pins and yieldingly support a tube.

5. A socket for a vacuum tube comprising, in combination, a base provided with a plurality of openings therein adapted to receive the terminal pins of a vacuum tube, and a plurality of contact members fast to said base and embodying therein a U-shaped end portion having upwardly projecting arms terminating in downwardly converging extremities adapted to engage said terminal pins upon opposite sides thereof, a resilient portion of said contact members between said arms being adapted to engage the lower extremity of said terminal pins and yieldingly support a tube.

6. A vacuum tube socket comprising an insulating base having a top with perforations for the tube prongs, contact members having their outer ends secured to said base and provided with spring arms for resiliently resisting the insertion and supporting a tube, each spring arm having side portions extending toward the top of the base and terminating in reversely bent tips with cutting edges for engaging and scraping the sides of a prong, said top serving as a stop to limit the insertion of the prongs and to limit rotation of the tube.

7. A tube socket comprising an insulating base having a top with four perforations for the prongs of a tube, a conducting member corresponding with each of said perforations and each comprising a one-piece metallic strip with a spring arm having one end supported by said base and the other end extending inwardly in line with one of the perforations, a spring finger integrally connected to the inner end of each arm and extending substantially at right angles to said arm and an inclined cam-like tip integrally connected to the upper end of each spring finger adjacent one of said perforations said tips having cutting edges for scraping the edges of inserted tube prongs.

8. A vacuum tube socket comprising a support formed of insulating material and having a group of passages spaced to receive the prongs of a tube, a one-piece conducting member associated with each passage and consisting of a resilient arm having its outer end secured to the underside of the support, and two spaced spring jaws integrally united with and supported by the inner end of each

arm, said jaws being constructed and arranged to grip opposite sides of prongs of various diameters and each having contact edges inclined in line with the passages to be engaged by tube prongs inserted through the passages, the lower face of the support adjacent the passages serving as an abutment for the spring jaws when the tube prongs are being withdrawn.

In testimony whereof I have hereunto set my hand.

MILTON ALDEN.

15

20

25

30

35

40

45

50

55

60

65