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TUBE BASE

Filed Dec. 1, 1924

Fig. 1.

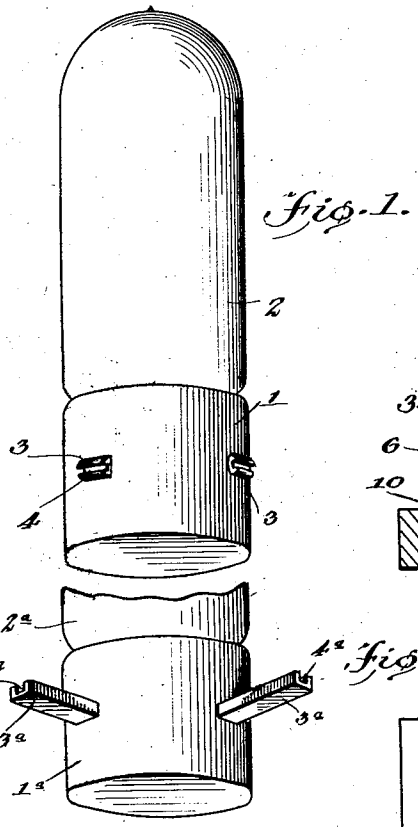


Fig. 2.

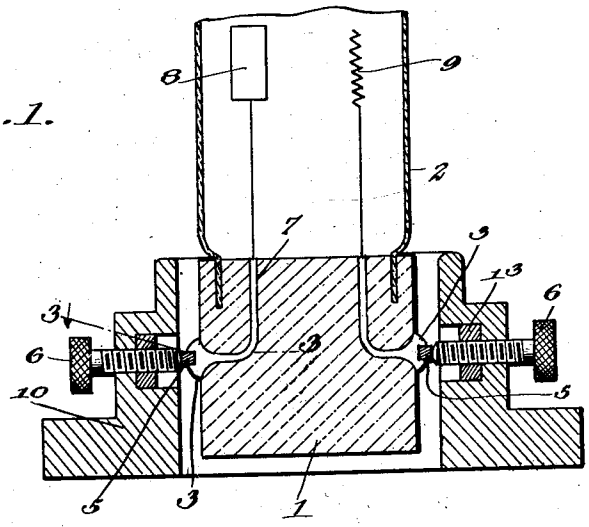


Fig. 4

Fig. 3.

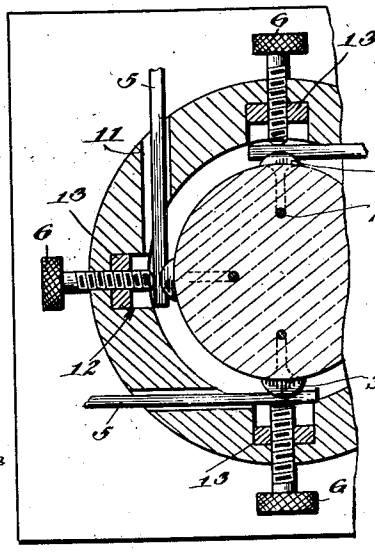
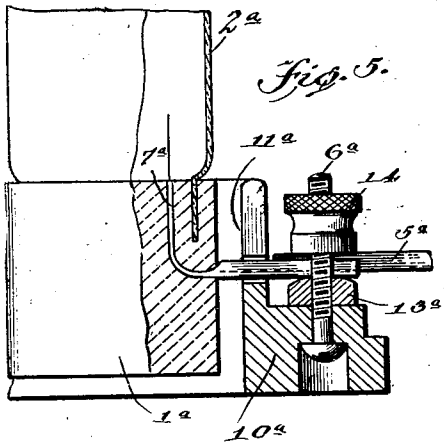


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

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TUBE BASE.

Application filed December 1, 1924. Serial No. 753,266.

This invention relates to improvements in tube bases, and it consists of the constructions, combinations and arrangements herein described and claimed.

An object of the invention is to provide a radio receiving tube having a base in which the contacts are not only of a special formation but also are so mounted as to be as widely separated as possible.

Another object of the invention is to provide a radio receiving tube having contacts of such arrangement that the electrical conductor can be clamped thereto directly, thus avoiding electrical losses which might otherwise occur through a multiplicity of conducting elements.

Another object of the invention is to provide a radio tube having contacts formed with depressions or grooves in which the conducting wire is tightly clamped in order to make a direct electrical connection.

Another object of the invention is to provide a radio tube in which the contacts are extended from the side of the base rather than the bottom.

Other objects and advantages will appear in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 is a perspective view of a radio tube having a base equipped with the improved contacts.

Figure 2 is a sectional view illustrating how the contacts are clamped in position in a socket.

Figure 3 is a detail horizontal sectional view taken substantially on the line 3—3 of Figure 2.

Figure 4 is a perspective view of a tube base illustrating a modification of the contacts.

Figure 5 is a detail sectional view illustrating how the modified contacts are clamped in a tube socket.

As already stated in one of the objects of the invention, it is the purpose of the improved structure to make it possible to apply the electrical conducting wire closer to the contact which it is intended to supply and thereby either materially reduce or entirely eliminate the electrical losses which occur when the current is passed through a multiplicity of intermediate conducting elements. The principle of the invention has been developed to the point where the conducting wire is actually engaged with the contact which is intended to be ultimately supplied with the current.

It is quite usual to see radio receiving tubes with a number of contact pins or slots on the bottom. There are usually four of these representing the plate, grid and filament terminals. It is a matter of no small consideration in receiving tubes to separate the plate and grid circuits as widely as possible. Yet, it is a notorious fact that the familiar receiving tubes bring these particular circuits quite close together due to the proximity of the contact pins at the bottom of the base.

According to the invention, the base 1 of the radio receiving tube 2 is equipped with a plurality of contacts 3 at the side instead of at the bottom. In practice these contacts will number four, but regardless of the number used the construction of each is alike. Since this is so, the description of one will suffice for all, and corresponding reference characters are intended to designate similar parts in each instance.

The contact 3 is made of a suitable conducting material and resembles a button or knob at the side of the base. It is so shaped that it fits snugly upon the base. It has a horizontal groove or slot 4 for the purpose of receiving the wire 5 which is laid therein as suggested in Figures 2 and 3, and clamped in position by the set screw 6.

A continuation 7 (Fig. 2) of the contact 3 makes connection with a particular element in the tube 2. In the instance selected, it is the plate 8. Both the plate 8 and the grid 9 are digrammatically illustrated, the actual structure being different as those familiar with radio receiving tubes will know. Inasmuch as each of the contacts 3 have a similar continuing conductor, it becomes necessary to make the base 1 of insulating material. There can be no metal sheathing as is customarily adopted, because this would produce a short circuit.

There is sufficient room in the socket 10 to permit of introducing the wire 5 as proposed. To this end, the socket has an opening 11 (Fig. 3) through which the wire is introduced. It also has a recess 12 which is occupied by a nut 13 carrying the set screw 6. It is a simple matter to introduce the wire 5 at the opening 11 and see to it that it enters the slot 4, whereupon the set screw 6 is

tightened upon the wire making a direct connection between the conducting wire and the contact which it is to supply.

In Figures 4 and 5 the structure is somewhat different. The contact 3^a now extends out quite a distance instead of being close to the side of the base 1^a. As before, the contact has a slot 4^a for the reception of the wire 5^a (Fig. 5). The wire and contact now stand in a radial position in respect to the tube rather than a tangential position as in Figures 2 and 3.

An opening 11^a in the socket 10^a provides for the passage of the contacts 3^a when seating the tube. These openings must be open to the top of the socket to permit introduction of the contacts. The binding post 6^a has a nut 13^a upon which the contact and wire are clamped by means of a nut 14.

From the foregoing description it will be apparent that one of the purposes sought to be carried out is to separate the contacts on the base as widely as possible. They are situated at points diametrically opposite each other, and are as far removed and as completely out of parallelism as the diameter of the base will permit. Mention has already been made of the desirability of keeping the plate and grid circuits separated as widely as possible. This is done by placing the respective contacts at diametrically opposite points as shown in Figure 2. The wire 5 and 5^a may either be the familiar round or square bus wire, or wire of other cross sectional shape may be employed if desired. The principle of the invention is to apply the conductor directly to the contact, and to this end it is immaterial what the particular shape of the conductor is. It is also anticipated that the conducting wire may be held against the particular contact by means other than the set screw shown. It is not outside of the scope of the invention to employ solder, for example, although this would obviously preclude the ready disassembly of the parts such as is now permissible.

While the construction and arrangement of the improved tube base is that of a generally preferred form, obviously modifications and changes may be made without departing from the spirit of the invention or the scope of the claims.

I claim:—

1. A vessel containing electrically operative elements, a base therefor, and contacts for said elements situated at the sides of the base at determined degrees of circumferential separation, said contacts having slots for the reception of electrical conductors.

2. A vessel containing electrically operative elements, a base therefor, electrical contacts for the elements extending in radial directions and being situated at the sides of the base, said contacts having slots running in the direction of a plane at right angles to the axis of the vessel.

3. A vessel containing electrically operative elements, an insulating base therefor, and contacts extending from the elements to the sides of the base, said contacts having slots directed so as to permit application of conductors in tangential positions.

4. A vessel containing electrically operative elements, an insulating base therefor, and contacts extending out from the sides of the base having longitudinal grooves to receive electrical conductors in radial positions.

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