Jan. 24, 1928. 1,657,390

A. HALIKMAN

SOUND ELIMINATOR FOR RADIOTUBES

Filed Feb. 26, 1927

Fig. 1.

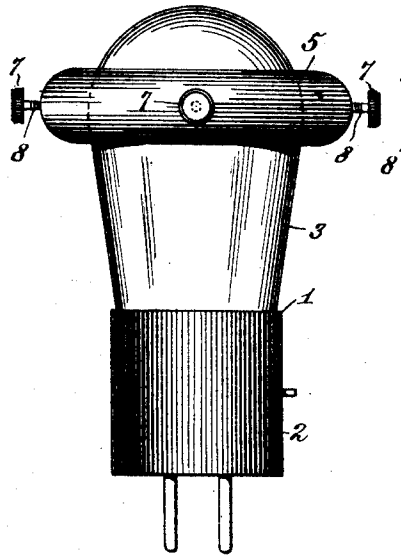


Fig. 2.

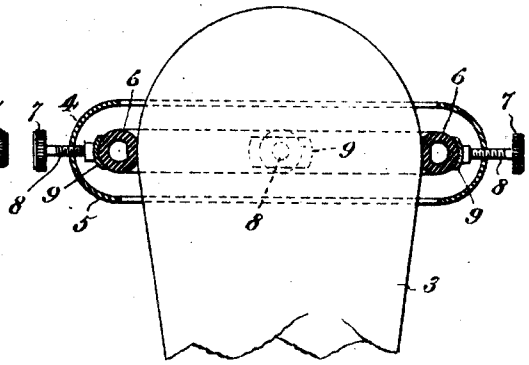


Fig. 3.

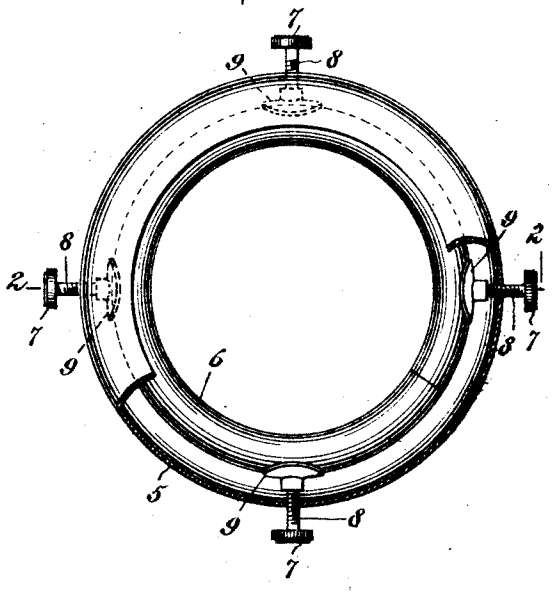
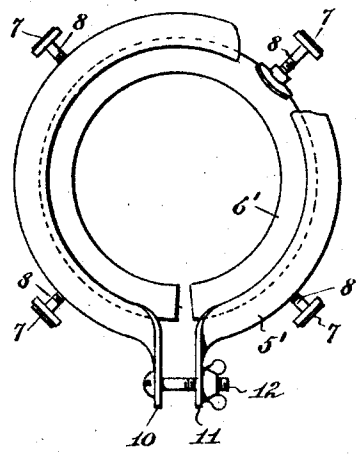


Fig. 4.



WITNESSES

William A. Goebel.

A. L. Kitchin.

INVENTOR

Abraham Halikman

BY Munn & Co.

ATTORNEY

Patented Jan. 24, 1928. 1,657,390

UNITED STATES PATENT OFFICE.

ABRAHAM HALIKMAN, OF NEW YORK, N. Y.

SOUND ELIMINATOR FOR RADIOTUBES.

Application filed February 26, 1927. Serial No. 171,271.

This invention relates to sound eliminating devices for radio tubes and has for an object to provide an improved construction which may be quickly applied and quickly removed and when applied may be easily adjusted.

Another object of the invention is to provide a sound eliminator for radio tubes wherein a circular member or ring is brought in contact with the tube and held in close contact to take up any vibration.

A further object, more specifically, is to provide a sound eliminator wherein a rubber ring solid or hollow, is clamped at suitable intervals to the large part of the radio tube to thereby dampen or completely eliminate any sound produced by friction, vibration or the like.

In the accompanying drawing—

Figure 1 is a side view of a conventional radio tube with an eliminator embodying the invention applied thereto.

Figure 2 is a sectional view through Figure 3 on line 2—2, part of the radio tube being shown in connection therewith.

Figure 3 is an enlarged top plan view of the eliminator shown in Figure 1, part of the casing or body of the eliminator being broken away.

Figure 4 is a top plan view on a reduced scale, of a modified form of eliminator to that shown in Figure 3.

Referring to the accompanying drawing by numerals, 1 indicates a radio tube which is provided with the usual base 2 and bulb 3. The tube 1, including the interior structure, forms no part of the present invention but only the eliminator 4 hereinafter fully described. In all forms of radio tubes, it has been found that noises occur which are commonly termed howling. This howling is produced by different causes including vibration produced mechanically or electrically where vibration is not desired. To reduce or eliminate what is known as howling in tubes, the eliminator is arranged on the tube as shown in Figures 1 and 2. This eliminator is provided with a body or casing 5 preferably of metal and preferably semi-tubular so that the rubber band 6 may be arranged almost wholly within the body. The band 6 has been shown as a hollow rubber tube but it may be solid if desired. The band 6 is preferably made so that the interior diameter is substantially the same as the outside diameter of the largest part of the bulb 3.

When the parts have been moved down to the position shown in Figure 1, the various thumb members 7 are rotated for operating the screws 8, which in turn operate the presser feet 9 whereby the band or tube 6 is pressed against the tube 1. The feet 9 are loosely mounted on the screw members 8 and, consequently, the feet 9 may adjust themselves to the action of the band 6 as the screws 8 are tightened. As shown in Figure 2, the screw members 8 have been tightened until the tube 6 has become slightly flattened on the inner part whereby it firmly contacts with a section of the radio tube. In the drawing, four of the screw members 8 and accompanying presser feet 9 have been disclosed but it will be evident that a greater number or even a less number might be used without departing from the spirit of the invention. It will be noted that the metallic body 5 is not in contact with the tube 1 but only the rubber band or ring 6. It has been found by experience that this band or ring when clamped tightly to the radio tube 1 will reduce and usually eliminate all noise or howling. Preferably the band or ring 6 is clamped at the large part of the bulb 3 but it could be clamped at some other point without departing from the spirit of the invention.

In Figure 4, a slightly modified construction is shown wherein the body 5′ is open at one point and bent for forming radiating ears 10 and 11. A clamping screw 12 connects these ears whereby the diameter of the ring 6′ may be varied so as to accommodate a larger or smaller radio tube. If desired, the screw or bolt 12 may be used for securing the desired pressure of the ring 6′ against the radio tube but preferably the parts are merely adjusted to cause the ring 6′ to snugly engage the radio tube and then the various screw members 8 are operated for causing the desired pressure against the radio tube.

What I claim is:

1. A sound eliminator for radio tubes comprising a rubber member, a supporting body, and a plurality of screw members coacting with the body for clamping the rubber member against the glass part of the tube, said screw members being manually operated for varying the clamping action.

2. A sound eliminator for radio tubes comprising an encircling rubber member adapted to encircle and engage the glass part of a radio tube, a body spaced from

and out of contact with said rubber member, and clamping means carried by the body for pressing the rubber member against the glass part of said tube.

3. A sound eliminator for a radio tube comprising a resilient ring adapted to encircle a radio tube, a supporting body for surrounding said tube and spaced from said ring, and clamping members carried by the said supporting body for pressing sections of said ring against the glass part of said tube.

4. A sound eliminator for a radio tube comprising a rubber ring, a supporting body spaced from and surrounding said tube, and radially extending screws carried by the body acting on said ring for pressing the ring at different points against the glass part of said tube.

5. A sound eliminator for radio tubes comprising a rubber ring, an encircling supporting body, and a plurality of screw clamping members carried by the body and acting on said ring for pressing the ring at different points against the glass part of said tube.

6. A sound eliminator for radio tubes comprising a rubber ring adapted to encircle the glass part of the tube, an annular body semi-tubular in cross section positioned to partly encircle said ring but remain out of contact with said tube, a plurality of screw members carried by said body, and a clamping foot carried by each screw member, said screw members acting to force said clamping feet against the rubber ring and in turn force the rubber ring tightly against the glass part of said tube.

7. A sound eliminator for radio tubes comprising a rubber ring, an annular body surrounding said ring, said body being open at one point, means for adjusting the size of said opening whereby the body will be increased or decreased in diameter so as to accommodate different size radio tubes, and clamping members carried by said body acting on said ring for forcing the same against the glass part of the radio tube.

8. A sound eliminator for a radio tube, comprising a hollow ring, an encircling supporting body spaced from said ring, and screw clamping members carried by said supporting body acting on the ring for pressing the same against the glass part of a tube when the device is in use, said ring partly collapsing when applied at the points pressed and thereby spreading somewhat over the tube to which the device is applied.

ABRAHAM HALIKMAN.