Oct. 9, 1928. 1,686,878

E. C. RAASCH

INTERFERENCE AND STATIC ELIMINATOR

Filed March 30, 1927

Fig. 1.

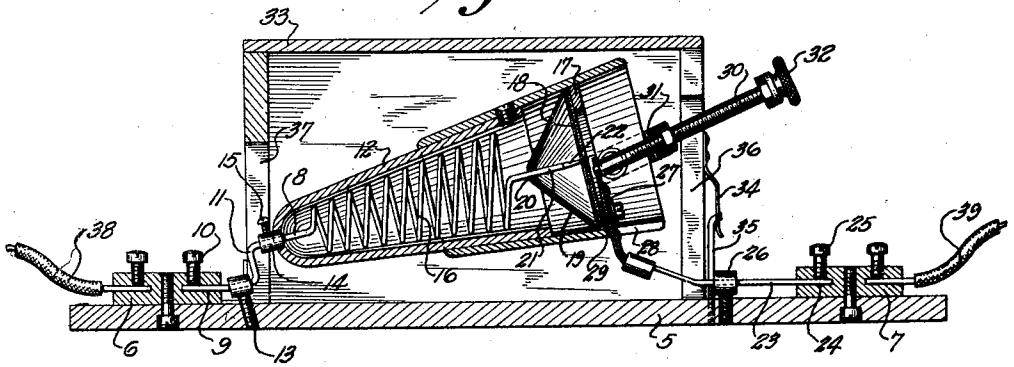


Fig. 2.

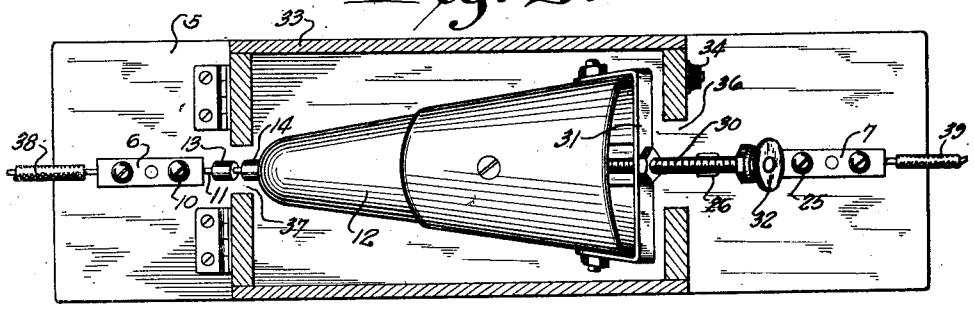
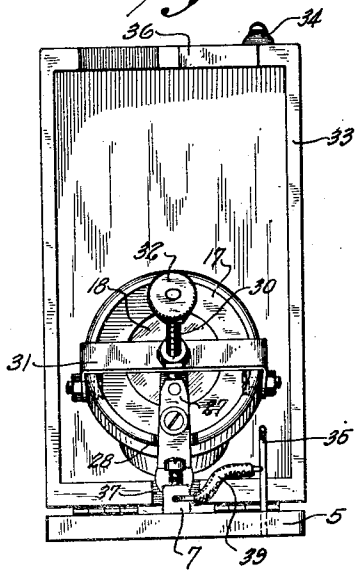


Fig. 3.



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UNITED STATES PATENT OFFICE.

EARL C. RAASCH, OF WAUPUN, WISCONSIN.

INTERFERENCE AND STATIC ELIMINATOR.

Application filed March 30, 1927. Serial No. 179,512.

This invention relates to improvements in interference and static eliminators, particularly adapted for use with radio receiving sets.

It is the primary object of the present invention to provide an interference and static eliminator adapted to be connected in the aerial lead-in wire adjacent a radio receiver and which will effectively reduce and eliminate static and interference received by the radio set.

A further object of the invention is to provide an interference and static eliminator which absorbs static and interference before it reaches the receiver.

A further object of the invention is to provide a device of the character described, which when attached with a radio receiver, will result in the reception of music and talking natural in quality and unmarred by atmospheric disturbances.

A further object of the invention is to provide a device of the character described which can be manually adjusted so as to be readily adapted to the peculiar receptive qualities of any radio receiver.

A further object of the invention is to provide a device of the character described which can be adjusted so that it is possible to separate stations that are crowded on the dials of a radio receiver.

A further object of the invention is to provide a device of the character described which will result in a saving in the life of "B" and "C" batteries used by a radio receiver.

A further object of the invention is to provide a device of the character described which can be readily attached to the rear portion of a radio receiver in a convenient out-of-the-way position.

A further object of the invention is to provide an interference and static eliminator which is of very simple construction, is inexpensive to manufacture, is strong and durable, and is well adapted for the purposes described.

With the above and other objects in view, the invention consists of the improved interference and static eliminator for radio receivers and its parts and combinations as set forth in the claims, and all equivalents thereof.

In the accompanying drawing in which the same reference characters indicate the same parts in all of the views;

Fig. 1 is a vertical sectional view of the interference and static eliminator;

Fig. 2 is a plan view thereof with the cover shown in horizontal section; and

Fig. 3 is a front end view thereof with the cover in raised position.

Referring now more particularly to the drawings, it will appear that the numeral 5 indicates the base of the device which is of a flat, rectangular shape and is preferably formed of wood, composition, rubber or other non-conducting material. Metallic blocks 6 and 7 are secured to the face of the base near the ends thereof and the outer end portion of an elongated resistance member 8 enters an aperture 9 in the block 6 and is secured therein by a set screw 10. The outer end portion of the resistance member is angular in shape, as at 11, forming a supporting bracket portion, and said resistance member enters an aperture in the closed rear end portion of a cone member 12 formed of non-conducting material, supporting said end portion of the cone member. The bracket portion 11 of the resistance member is anchored to the base 5 by an eyed screw 13 and the cone member is connected to the resistance member by a collar 14 and a set screw 15.

Said resistance member 8 is preferably formed of twelve gauge copper wire and the major portion thereof within the confines of the cone member is formed in convolutions or coils, as at 16.

Within the forward open end portion of the cone member a metallic washer 17 is lodged and said washer engages the surface of a thin disc 18 of celluloid, said disc being confined between the washer and the periphery of a small inner metallic cone 19.

The apex of the inner cone 19 is apertured, as at 20, to permit the entrance of the outer elongated portion 21 of the resistance member and the end of said portion 21 is pointed, as at 22, and extends through a central aperture in the disc 18, terminating slightly beyond the outer face thereof, as shown in Fig. 1.

A wire or connection 23 extends into an aperture 24 in the other metallic block 7 and is held therein by a set screw 25. The medial portion of said connection 23 extends through an eyed screw 26 secured in the base 5 and then is bent upwardly and is connected with a metallic finger 27. Said finger 27 extends through a slot 28 therefor

in the cone 12 and is mounted against a block 29 positioned within a split portion of the washer 17. The finger is yieldable and the free end portion of the same, adjacent the pointed end portion 22 of the resistance member, may be flexed.

For the purpose of flexing the finger 27 to adjust the space between it and the resistance member 8, an elongated adjusting screw 30 is provided, threaded through a U-bracket 31 secured to the sides of the open end portion of the cone member 12. The outer end portion of the adjusting screw is formed with a knurled head 32, while the inner end portion engages the flexible part of the finger 27 to force it into proximity to the resistance member end 22.

The cone member 12 is enclosed or housed by a cover member 33 hinged at its rear end portion to the base 5 and it is held in enclosing position by complementary catches 34 and 35. The cover may also be opened to the position shown in Fig. 3, permitting access to the cone member. The forward and rear portions of the cover are slotted, as at 36 and 37, to accommodate extending portions of the device.

In use, the device is preferably positioned against the rear wall of a radio receiver and the end portion of the aerial lead-in wire 38 is inserted and clamped into the metallic block 6. Another wire 39 is connected to the block 7 and said wire is attached to the aerial terminal of the receiver. It will thus be seen that the device is included in the aerial circuit. The coiled portion within the cone member in effect forms a choke, while the small metallic cone engaged by the end of the choke, together with the celluloid disc and metallic washer, forms a condenser which is adjustable by means of the finger. Sound waves pass through the aerial wire and into the choke portion and to the metallic cone. An induced current is set up in the other side of the condenser including the metallic washer and finger and said current is led to the receiver through the wire 39. This arrangement effectively reduces static, interference and atmospheric disturbances and lengthens the life of the batteries.

From the foregoing description it will be seen that the improved interference and static eliminator is of simple and novel construction, and is well adapted for the purposes described.

What I claim as my invention is:

1. The combination with a radio receiver including an aerial circuit, of an interference eliminating device interposed in said circuit and comprising in series a choke member and a condenser member, a conical insulating housing enclosing said members, and a condenser adjusting member projecting from the conical housing.

2. An interference eliminating device, comprising an insulating housing, a coil therewithin, a metallic member within the housing adjacent one end portion of the coil, a sheet of non-conducting material across the metallic member, a metallic ring separated from the metallic member by said non-conducting sheet, one end portion of the coil extending through the metallic member and the non-conducting sheet, a finger engaging the ring and spaced from the extended end portion of the coil, and circuit connections connected to the other end portion of the coil and to the finger.

3. An interference eliminating device, comprising an insulating housing, a dished metallic member within one end portion thereof, a non-conducting disc covering the end of said dished member, a metallic ring spaced from the dished member by said disc, a coil within the housing and having a projecting end portion extending through said dished member and said disc, a yielding finger engaging the ring and spaced from the extended end portion of the coil, means for manually moving said finger to vary its proximity to the end portion of the coil, and circuit wires extending from the opposite end portion of the coil and from the finger.

4. An interference eliminating device, comprising a base member, an insulating housing supported thereabove, a conical metallic member within one end portion of the housing, a non-conducting disc covering the open end of said conical member, a metallic ring spaced from the conical member by said disc, a coil within the housing and having a projecting end portion extending through said conical member and the disc, a yielding finger engaging the ring and adjustably spaced from the extended end portion of the coil, an outwardly projecting adjusting screw engaging said finger, circuit wires extending from the outer end portion of the coil and from the finger, and a cover secured to the base and enclosing the housing.

In testimony whereof, I affix my signature.

EARL C. RAASCH.