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G. G. CLARKE

RESISTANCE DEVICE FOR ANTENNÆ CIRCUITS

Filed Feb. 20, 1926

Fig. 1.

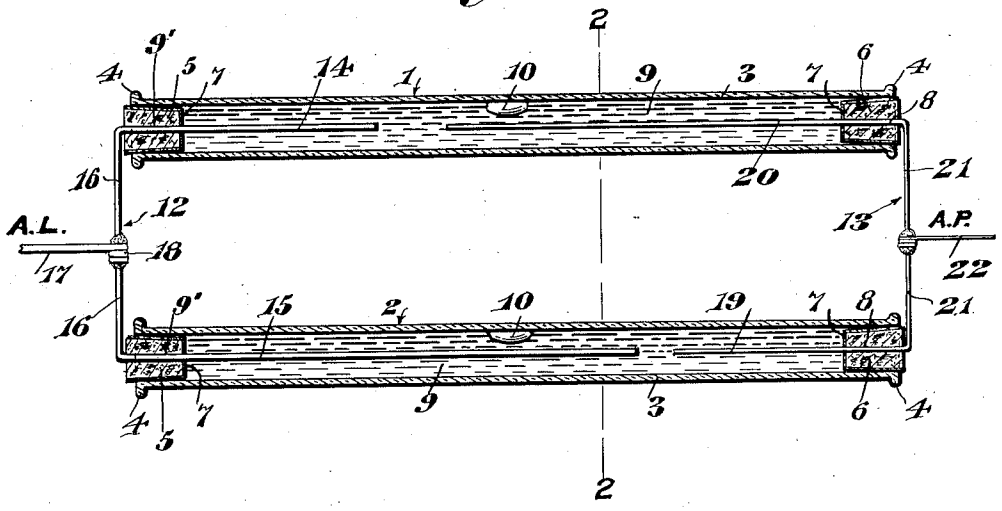
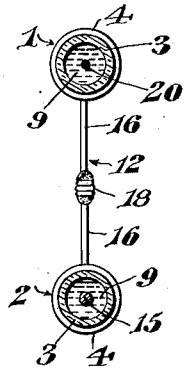


Fig. 2.



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RESISTANCE DEVICE FOR ANTENNÆ CIRCUITS.

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This invention relates to a resistance device or static eliminator for use in connection with radio sets, and has for its object to provide, in a manner as hereinafter set forth, a device of such class for interposition between an antenna and the antenna post of the instrument to render the antenna circuit aperiodic to prevent it being set in violent oscillations by shock impulses, such as static, which enter through the antenna, to overcome interference with the sound production from the electrical waves transmitted.

Further objects of the invention are to provide, in a manner as hereinafter set forth a resistance device or static eliminator, which is simple in its construction and arrangement, strong, durable, thoroughly efficient in its use, conveniently installed with respect to an antenna and a receiver, and inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claim hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:—

Figure 1 is a longitudinal sectional view of a resistance device or static eliminator in accordance with this invention.

Figure 2 is a section on line 2—2 Figure 1.

A resistance device or static eliminator, in accordance with this invention includes a pair of static removing elements referred to generally as 1 and 2 and as each of said elements is of the same construction, but one will be described, as the description of one will apply to the other. Each of said elements consists of a tubular container of appropriate length and diameter and formed of impervious material, preferably glass. It is to be understood that each container can be constructed of any suitable material and as before stated set up of any appropriate length and inner and outer diameter, but preferably the inner diameter of each container is three-eighths of an inch. The container is indicated at 3 and is formed at each end with an outwardly extending annular bead 4. Each end of the container is closed by a tightly fitting plug and one of said plugs is indicated at 5 and the other at 6. When the plugs are seated in closure position, they project slightly from the ends of the container. The plugs 5 and 6 can be constructed of any suitable material, preferably however, they are set up from cork provided with a coating 7 of acid resisting material. The plugs 5 and 6 are of tapered contour, of appropriate length and the plug 5 is provided with an axially arranged bore 9′ extending from end to end of the plug body. The plug 6 is provided with an axially arranged bore 8 which extends from end to end of the plug body. Arranged in the container 3 is a liquid body 9 providing a static remover. The body 9 is of a quantity when stored in the container to form in connection therewith an air bubble 10 or what may be termed an air space 10.

The resistance device or static eliminator further includes a pair of oppositely disposed yoke-shaped members referred to generally by the reference characters 12 and 13. The member 12 is termed a combined static and wave conductor and the member 13 is termed a wave carrier. The member 12 is formed from a length of wire bent in U-shaped form and in a manner whereby one of the arms thereof will be of greater length than the other arm thereof. The shorter arm is indicated at 14 and the longer arm at 15 and the outer ends of the arms 14 and 15 are connected together by a coupling portion 16. The short arm 14 extends through the plug 5 of the element 1 into the container 3 of such element and passes through the bore 7′ of such plug. The arm 15 extends through the plug 5 and into the container 3 of such element and further through the bore 7′ of the plug of the element 2. The coupling portion 16 is arranged exteriorly of the plugs 5 of the elements 1 and 2 and has the antenna lead 17 electrically connected therewith as at 18. The member 13 is constructed from a single length of wire bent in U-shaped form to provide a long arm and a short arm and the short arm of the member 13 is indicated at 19 and the long arm at 20. The outer ends of the arms 19 and 20 are connected together by a coupling portion 21.

The arm 20 of the member 13 extends through the plug 6 of the element 1 and into the container 3 of such element and further extends through the bore 8 of such plug.

The arm 19 of the member 13 extends through the plug 6 of the element 2 and into the container 3 of such element and further through the axial bore of such plug. The coupling portion 21 is arranged exteriorly of the plugs 6 of the elements 1 and 2 and is electrically connected with the antenna post of the receiving set by the circuit connection 22. The elongated arm 20 of the member 13 is of less length than the elongated arm 15 of the member 12 and the short arm 14 of the member 12 is of greater length than the short arm 19 of the member 13. The inner end of the arm 14 of the member 12 is spaced from the inner end of the arm 20 of the member 13 and the inner end of the arm 15 of the member 12 is spaced from the inner end of the arm 19 of the member 13. The distance between the ends of the arms 14 and 20 is greater than the distance between the ends of the arms 15 and 19 and preferably the distance between the ends of the arms 14 and 20 is one-half inch and between the opposed ends of the arms 15 and 19 three-sixteenths of an inch. The diameter of the wire from which the member 12 is formed is greater than the diameter of the wire from which the member 13 is formed and preferably the wire from which the member 12 is formed is of the gauge 14 with a diameter of .083 and the wire from which the member 13 is formed is of number 16 gauge and of a diameter .063. It is to be understood that the diameters of the wires from which the members 12 and 13 are formed can be such which will be thoroughly appropriate.

The liquid which forms the absorber is a compound derived from blue clay, sulphuric acid and water.

The capacity of the combined static and wave conductor is such that it will carry any amount of wave and static from the lead and which is conducted into the container 3 so the shock impulses such as static will be absorbed and the electrical wave, free of static, will be taken up and conducted by the carrier 13 to the receiving set, and by such arrangement all unnecessary noises which enter through the antenna will be prevented from reaching the receiving set.

A resistance device or static eliminating device, in accordance with this invention, has the aerial wire or antenna lead connected therewith, in lieu of connecting said lead to the antenna post. The device is then connected to the antenna post of the receiving set. The set is now in position to receive.

A resistance device or static eliminator in accordance with this invention, does not impair the operation of a receiving set in any manner whatsoever. The device automatically adjusts itself according to the volume of static. No matter what volume of static is received from the antenna lead it is conducted by the combined static and wave conductor, to and is completely absorbed by the liquid.

It is thought the many advantages of a static eliminator, in accordance with this invention, can be readily understood, and although the preferred embodiment of the invention is as illustrated and described, yet it is to be understood that changes in the details of construction can be had which will fall within the scope of the invention as claimed.

What I claim is:—

A resistance device for the purpose referred to comprising a pair of spaced parallel tubes open at each end, a closure plug for each end of each tube, a body of acidulated liquid within each of said tubes to provide a static absorbing element, a yoke-shaped conductor adapted to be connected in an antenna circuit, opposing one end of the tubes and including a pair of arms, each extending centrally through a plug at such end of a tube and into an absorbing element within such tube, and a yoke-shaped carrier adapted to be connected to the antenna post, opposing the other end of the tubes and including a pair of arms, each extending centrally through a plug at said other end of a tube and into the absorbing element within such tube and spaced from the conductor arm within the latter.

In testimony whereof, I affix my signature hereto.

GEORGE G. CLARKE.