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E. H. HAND

1,847,872

ANTENNA SHIELD FOR ELIMINATING INTERFERENCE AND UNDESIRABLE WAVES

Filed March 7, 1928

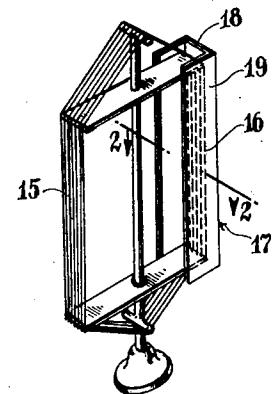


Fig. 1.

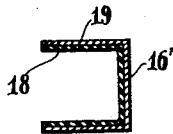


Fig. 2.

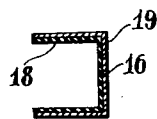


Fig. 4.

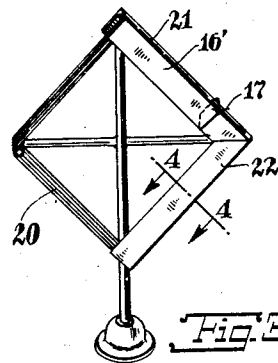


Fig. 3.

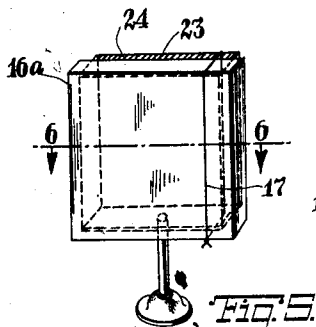


Fig. 5.

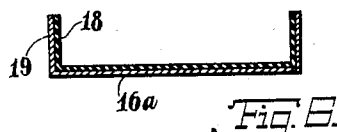


Fig. 6.

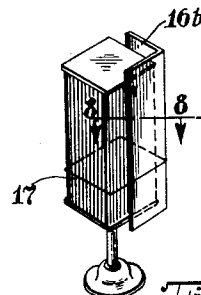


Fig. 7.

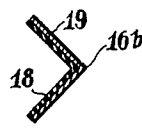


Fig. 8.

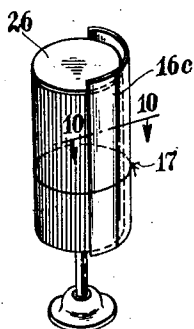


Fig. 9.

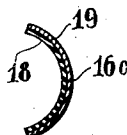


Fig. 10.

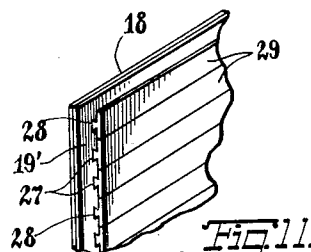


Fig. 11.

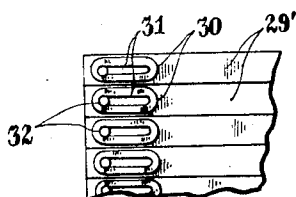


Fig. 12.

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ANTENNA SHIELD FOR ELIMINATING INTERFERENCE AND UNDESIRABLE WAVES

Application filed March 7, 1928. Serial No. 259,624.

This invention relates generally to radio antennæ and has more particular reference to a novel shield therefor.

The invention has for an object the provision of a device of the class mentioned which is of simple durable construction, desirable and efficient in action and which can be manufactured and sold at a reasonable cost.

The device is portable and capable of being applied to all types of loop antennæ. It consists of an inner layer of electric insulation material and an outer layer of metal or radio wave shield. Any means for attaching the device to an antenna may be used, and it is so attached so as to be insulated from the antenna for permitting grounding without grounding desired reception. The outer metal layer may be provided with extensible shield members for increasing the effective range of the antenna.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

Referring to the accompanying drawings, forming a material part of this disclosure:

Fig. 1 is a perspective view of a loop antenna having the invention applied thereto.

Fig. 2 is a horizontal sectional view of the shield per se, taken on the line 2—2 of Fig. 1.

Fig. 3 is a perspective view of a loop antenna of different design, having the invention applied thereto.

Fig. 4 is a sectional view of the shield per se, taken on the line 4—4 of Fig. 3.

Fig. 5 is a perspective view of a loop antenna of a further different design, having the invention applied thereto.

Fig. 6 is a horizontal sectional view of the shield per se, taken on the line 6—6 of Fig. 5.

Fig. 7 is a perspective view of a loop antenna of a further different design, having the invention applied thereto.

Fig. 8 is a horizontal sectional view of the shield per se, taken on the line 6—6 of Fig. 7.

Fig. 9 is a perspective view of a loop antenna of a further different design, having the invention applied thereto.

Fig. 10 is a horizontal sectional view of the shield per se, taken on the line 10—10 of Fig. 9.

Fig. 11 is a fragmentary perspective view of a portion of the invention shield construction according to modified form.

Fig. 12 is a front view thereof, but of further modified form.

The reference numeral 15 indicates generally a loop antenna of rectangular shape, and having the shield 16 attached to one edge thereof by means of a string 17. It should be understood that the attaching means is not limited to a string, and may be any means whatsoever. The shield 16 consists of an inner layer 18 of electric insulation material, such as rubber, fibre, or the like, and an outer layer 19 of metal, that is, a radio wave shield, both layers being secured together by means of adhesive, or the like. This shield is removable and portable as will be readily understood from the drawings.

The numeral 20 indicates generally a loop antenna of diamond shape and having the shield 16' attached to one side thereof. Necessarily it must be formed of an upper section 21 and a lower section 22 at an angle to each other.

The reference numeral 23 indicates generally a loop antenna of rectangular shape having the winding across its front and rear faces indicated by lines 24, and having the shield 16^a attached to one face thereof.

The reference numeral 25 indicates generally a loop antenna wound on a vertical block and having the shield 16^b attached to cover a corner and the two adjacent sides of the block.

The reference numeral 26 indicates generally a loop antenna wound on a vertical cylinder, and having the shield 16^c attached to cover one side thereof. Necessarily this shield is of curved form.

The modified form of the device illustrated in Fig. 11 discloses the outer layer 19' formed with a plurality of parallel dove tailed grooves 27 engaged by the dove tailed

tongues 28 on the rear face of a plurality of parallel and adjacent shield members 29. The tongues are tight fits in the grooves so that the members 29 frictionally hold various extended positions to which they may be placed. One, two or any number of these shield members 29 may be extended desirable distances for increasing the effective range of the device. Elliptical shield members 30 formed with elongated slots 31 are adjustably secured to the tips of the members 29' by means of screws 32 passing thru the slots and engaging the members 29'. These may also be extended for further increasing the shielding range of the device.

While I have shown and described a preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention what I claim as new and desire to secure by United States Letters Patent is:—

1. A shield for a loop antenna, comprising a shield for concentrating radio waves from a certain direction and for shutting out interfering waves from other directions, an open layer of insulating material adapted to fit that portion of the antenna most distant from the source of the radio waves which it is desired to receive, said shield being formed from a plurality of metal shield members, and coacting means on said shield members and insulation layer for extendibly supporting said shield members, whereby the shielding area may be changed by extension of said metal shield member.

2. A shield for a loop antenna, comprising a shield for concentrating radio waves from a certain direction and for shutting out interfering waves from other directions, a layer of insulating material adapted to fit the outer portion of that part of the antenna most distant from the source of the selected radio waves, said shield comprising a plurality of adjacent metal shield members adjustably mounted on the outer side of said insulating material, and additional shield members superimposed extensibly mounted on said shield members, whereby the shielding area may be changed by adjustment of the shield members and the additional shield members.

In testimony whereof I have affixed my signature.

ERLE H. HAND.