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REFLECTING STRUCTURE FOR ELECTRIC WAVES

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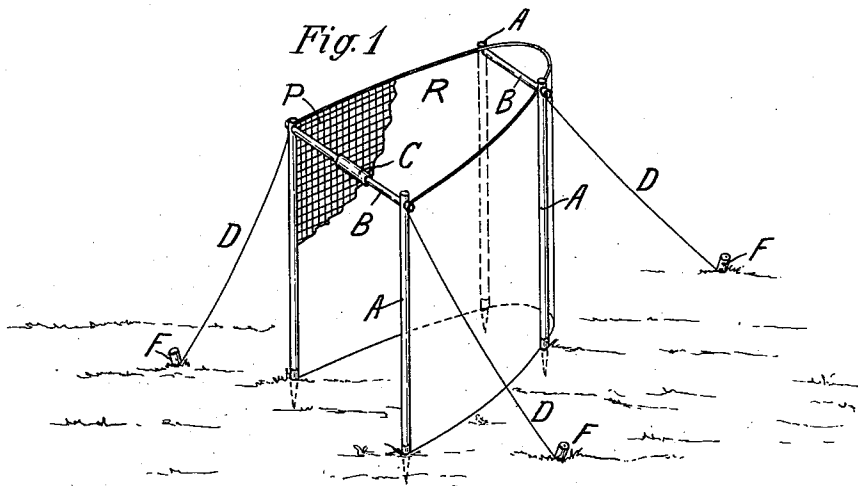
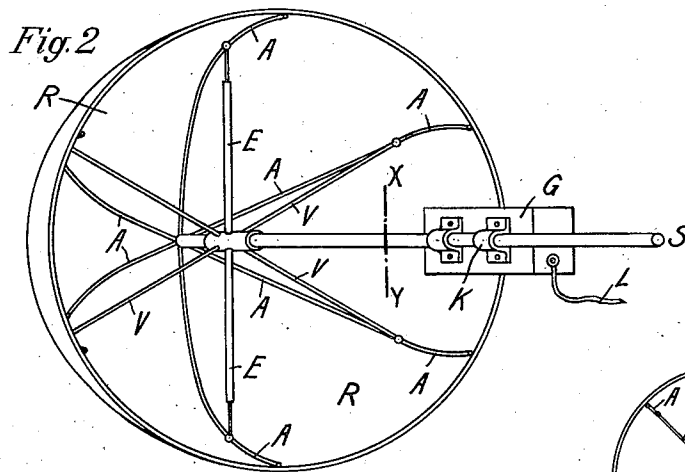
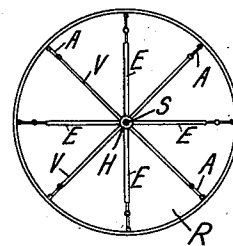
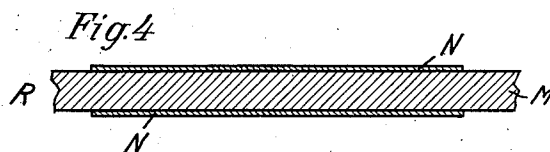
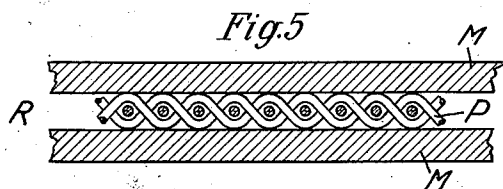


Fig. 3



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REFLECTING STRUCTURE FOR ELECTRIC WAVES

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9 Claims. (Cl. 250—11)

This invention relates to reflector structures for use in radio signalling systems and particularly to reflector structures as employed in directive systems operating with electromagnetic waves of short or ultra-short wavelength.

In such systems in order to attain efficient reflection and directional effects the dimensions of the reflecting surface must be large in comparison with the wavelength employed and it follows therefore that unless extremely short wavelengths are employed the dimensions of the reflecting structure are such as to render it unmanageable in a transportable receiving or transmitting station.

It has also proved desirable to provide means for modifying the dimensions and shape of reflecting structures within certain limits in order to take into consideration special conditions which may prevail in the particular locality where the station is required to operate. Thus, for example, it may be required to extend the reflecting surface more on one side than the other of the receiving or transmitting dipole in order to screen off obliquely incident disturbances. It may also be necessary to vary the direction of radiation by modifying the shape or position of the reflector structure.

The object of the invention is to provide a portable reflector structure which meets these requirements and in accordance with the invention we provide a reflector structure the reflecting member of which is foldable. This member may consist of a material in which cloth and metal are combined in a manner which makes folding possible. A cloth or like material may for example be provided with a metallic coating or united with a wire gauze. Such a reflector can be easily erected in any locality and its shape may be adjusted to suit local conditions.

Several embodiments are described in the following description with reference to the accompanying drawing in which:—

Fig. 1 is a perspective view of one example of a reflector structure. Part of the material of the reflector has been broken away to show the layer of metallic gauze. Fig. 2 is a perspective view of a second embodiment. Fig. 3 shows a modification of the example of Fig. 2 in section along the line XY of Fig. 2 on a smaller scale. Figs. 4 and 5 are sections of two suitable materials for the reflecting member.

In the embodiment illustrated in Fig. 1 the reflecting member R is secured to poles or supports A driven into the ground and is stayed by transverse rods B and guy ropes D which are secured

to the tops of the poles A and to pegs F. The rods B may be made in two parts united by a sleeve C so that their length may be adjusted. As a result of the flexibility of the reflecting member R the structure can be made to assume the shape of a parabolic screen or its shape may be modified to meet local conditions.

The apparatus shown in Fig. 2 has the form of an umbrella or sunshade. The reflecting surface R is secured to ribs A which with the supports V form a framework resembling that of a sunshade, the sleeve 4 being slidable on a rod S which corresponds to the sunshade stick. The reflecting surface is thus given the form of a parabolic or similarly shaped hollow body. Two of the supports V forming in diameter may constitute a dipole E which serves as the radiating or receiving antenna.

As shown in Fig. 3 more than two of the supports V may constitute the antennae. In this figure two pairs of these supports at right angles to one another form two dipoles E. Moreover a part of the rod S may be metallic and may form a dipole so that differently polarized waves may be received and transmitted.

The high frequency portion of the receiving or transmitting apparatus may be contained in a box G which may be slidably supported on the rod S by fish plates K. A cable L extends from the box G to the low frequency equipment.

It will be appreciated that the form of reflector structure shown in Figs. 2 and 3 being readily collapsible is easily transported and may be quickly erected in any position.

As illustrated in Fig. 4 the reflector member R may be formed of a cloth or similar material M with a metallic coating N on one or both sides.

In Figs. 1 and 5 the reflector member R is formed of two layers M of cloth or the like between which is interposed a layer of wire gauze P.

What is claimed is:

1. A reflecting structure for short electric waves comprising a foldable reflecting member and a collapsible framework on which said foldable member is mounted so that the collapsing of the framework folds up said member.

2. A reflecting structure, according to claim 1, wherein said framework comprises poles adapted to be driven into the ground.

3. A reflecting structure for short electric waves comprising a collapsible framework forming an umbrella frame, and a foldable reflecting member forming the cover of said umbrella frame.

4. A reflecting structure, according to claim 3,

wherein said framework includes a pair of stiffening supports arranged to form a dipole.

- 5 5. A reflecting structure, according to claim 3, wherein said framework includes several pairs of stiffening supports arranged to form dipoles.

6. A reflecting structure, according to claim 3, wherein said framework includes stiffening supports arranged in pairs at right-angles to each other, each pair forming a dipole.

- 10 7. A reflecting structure, according to claim 3, wherein are provided means connected with said reflecting member for detachably supporting high frequency signalling equipment.

8. A reflecting structure, according to claim 11, wherein said reflecting member consists of a foldable insulating material with a foldable metallic coating thereon.

9. A reflecting structure, according to claim 1, 5 wherein said reflecting member consists of two layers of foldable insulating material with a wire gauze interposed therebetween.

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