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Fig. 1

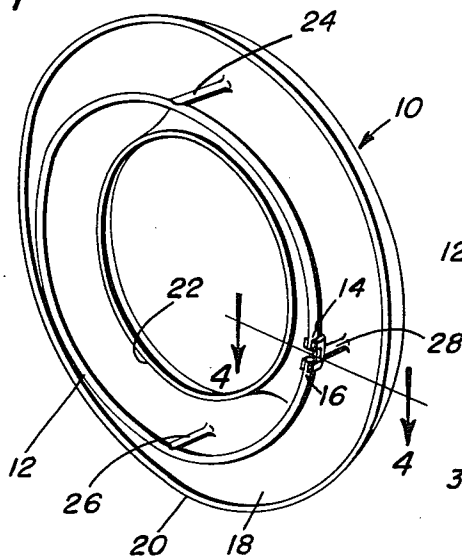


Fig. 4

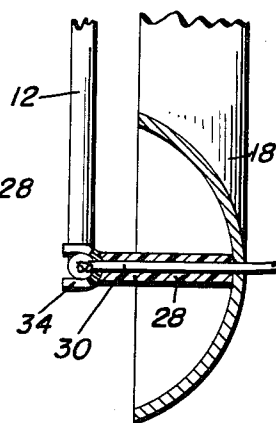


Fig. 3

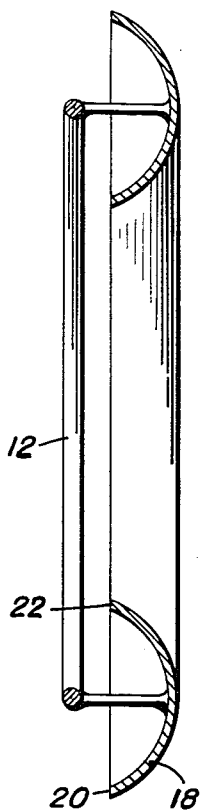


Fig. 2

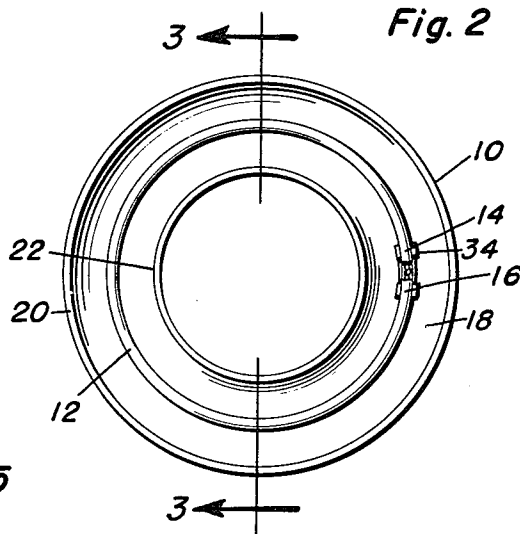
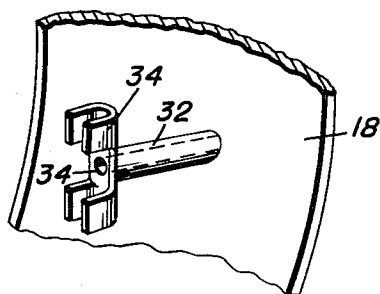


Fig. 5



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5 Claims. (Cl. 250—33.65)

This invention relates to antennae and more particularly to a dipole antenna especially adapted for use with ultra high frequency systems such as television, radar, and the like.

The particular object of this invention resides in the provision of an unexpectedly sensitive antenna which eliminates certain engineering problems arising in the installation, tuning, and the support of conventional large arrays of dipole antennae.

The construction of this invention features a highly sensitive directional dipole antenna including a circular dipole and a reflector constituted from a paraboloid of revolution with the dipole as the focus of the paraboloid of revolution. The axis of the paraboloid of revolution coincides with the axis of the dipole and the dipole is held in spaced relationship from the reflector by suitable insulators. The dipole is formed with free ends which are clampingly held to the reflector by an insulative bracket.

Still further objects of the invention reside in the provision of a dipole antenna that is strong and durable, simple in construction and manufacture, capable of being installed in lieu of conventional dipole antenna, and which may be constructed from conventional materials at a relatively low cost.

These, together with the various ancillary objects and features of the invention which will become apparent as the following description proceeds, are attained by this dipole antenna, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

Figure 1 is a perspective view of the dipole antenna comprising the present invention;

Figure 2 is a front elevational view of this device;

Figure 3 is an enlarged vertical sectional view as taken along the plane of line 3—3 in Figure 2;

Figure 4 is a sectional detail view as taken along the plane of line 4—4 in Figure 1 showing the construction of the supporting means for the ends of the dipole; and,

Figure 5 is a perspective detail view showing the construction of the insulative bracket for supporting the ends of the dipole.

With continuing reference to the accompanying drawings wherein like reference numerals designate similar parts throughout the various views, reference numeral 10 generally designates the dipole antenna comprising the present invention which includes a circular dipole 12 which is shown to be of a circular cross-section. It is within the concept of the invention to construct this dipole from any suitable and conventional material and it may be formed of such cross-sectional shape as to provide the best operating characteristics. The dipole 12 is circular in shape and has its free ends 14 and 16 held in spaced relationship.

The circular dipole 12 is used in conjunction with a reflector 18 which is constituted from a paraboloid of revolution with the dipole 12 as the focus of the paraboloid of revolution. As shown in the drawings the lips 20 and 22 of the reflector do not extend about the dipole 12,

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but if it is desired to construct the antenna with such configuration, it is within the concept of this invention to do so.

Suitable insulators 24 and 26 are used to support the dipole 12 in spaced relationship relative to the reflector 18. It is to be noted that the number of supporting insulators as at 22 and 24 may be varied and it is highly advantageous to use as few insulators of as small size as is possible. It is within the concept of this invention to provide an insulative bracket of any suitable configuration as at 28 for supporting the free ends 14 and 16 of the dipole in such manner that the coaxial cable connected to each of the free ends 14 and 16 and as indicated at 30 may be connected to the free ends for connection to the receiver. The bracket 28 as can be best seen in Figure 5 may consist of a tubular portion 32 having an aperture 34 therethrough through which the conductors 30 can pass. There is further provided a clip portion 34 having lugs adapted to embrace the dipole 12. The clip portion 34 may be constructed so as to clampingly engage the ends 14 and 16 of the dipole 12 and the entire bracket 28 may be constructed from such insulative material as Plexiglas, or other suitable materials. Various other configurations and shapes of brackets 28 may be used as desired.

Since from the foregoing, the construction and advantages of this antenna are readily apparent, further description is believed to be unnecessary. It is to be noted, however, that this unexpectedly sensitive antenna is of extreme compactness of construction and may be easily incorporated in various designs for military and commercial functions.

Numerous modifications will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, and it is therefore not the intention to limit the invention to the precise embodiment shown and described, but all suitable modifications and equivalents may be readily resorted to.

What is claimed as new is as follows:

1. An antenna comprising a circular dipole and a reflector constituted from a paraboloid of revolution with said dipole as the focus of said paraboloid of revolution, the axis of said paraboloid of revolution coinciding with the axis of said dipole, the reflector having inner and outer circular peripheral edges with the inner peripheral edge being of a lesser diameter than the diameter of said dipole, and with the outer peripheral edge being of greater diameter than the diameter of the dipole.

2. An antenna comprising a circular dipole and a reflector constituted from a paraboloid of revolution with said dipole as the focus of said paraboloid of revolution, said dipole having two free ends, the reflector having inner and outer circular peripheral edges with the inner peripheral edge being of a lesser diameter than the diameter of said dipole, and with the outer peripheral edge being of greater diameter than the diameter of the dipole, and an insulative support holding said free ends in spaced relationship to said reflector.

3. An antenna comprising a circular dipole and a reflector constituted from a paraboloid of revolution with said dipole as the focus of said paraboloid of revolution, the axis of said paraboloid of revolution coinciding with the axis of said dipole, the reflector having inner and outer circular peripheral edges with the inner peripheral edge being of a lesser diameter than the diameter of said dipole and with the outer peripheral edge being of greater diameter than the diameter of the dipole, said dipole having two free ends, and an insulative support holding said free ends in spaced relationship to said reflector.

4. An antenna comprising a circular dipole and a reflector constituted from a paraboloid of revolution with said dipole as the focus of said paraboloid of revolution, and means holding said dipole at the focus of said reflector.

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tor, the reflector having inner and outer circular peripheral edges with the inner peripheral edge being of a lesser diameter than the diameter of said dipole and with the outer peripheral edge being of greater diameter than the diameter of the dipole.

5. An antenna comprising a circular dipole and a reflector constituted from a paraboloid of revolution with said dipole as the focus of said paraboloid of revolution, and means holding said dipole at the focus of said reflector, the axis of said paraboloid of revolution coinciding with the axis of said dipole, the reflector having inner and

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outer circular peripheral edges with the inner peripheral edge being of a lesser diameter than the diameter of said dipole, and with the outer peripheral edge being of greater diameter than the diameter of the dipole.

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