

May 31, 1949.

S. E. MAUTNER
PARABOLIC ANTENNA

2,471,828

Filed July 4, 1944

2 Sheets-Sheet 1

FIG. 1.

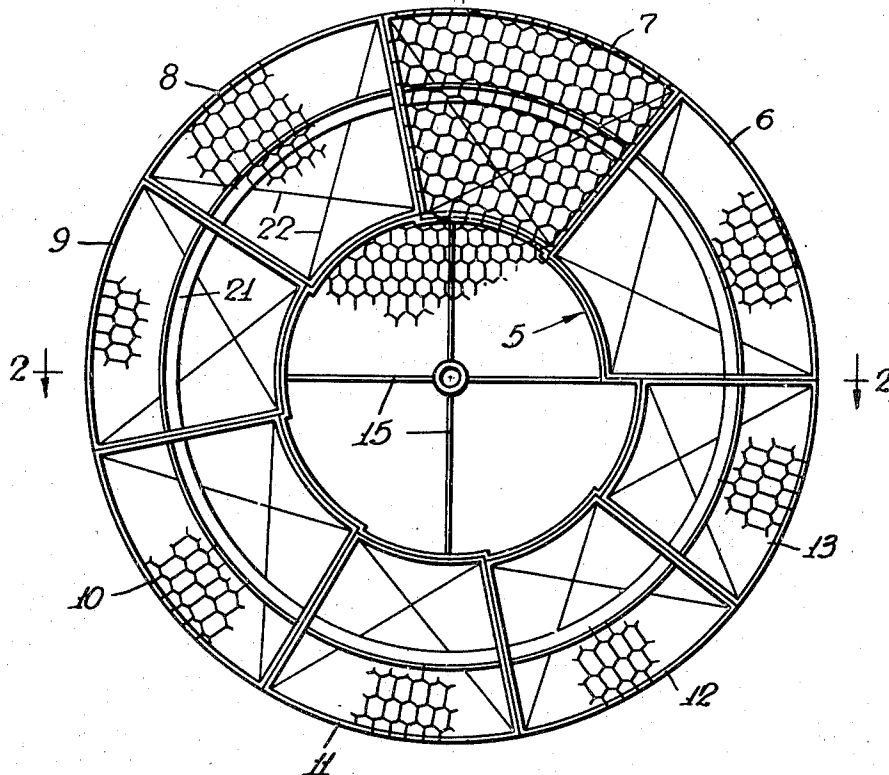
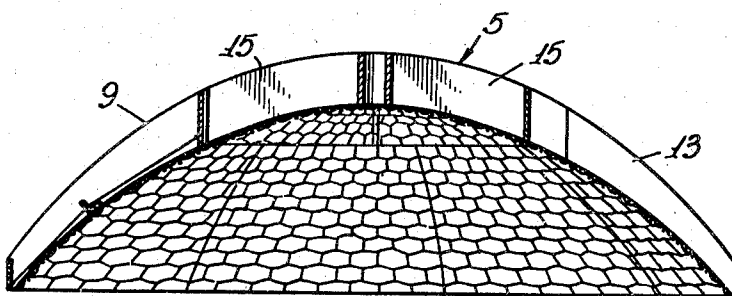


FIG. 2.



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2 Sheets-Sheet 2

FIG. 3.

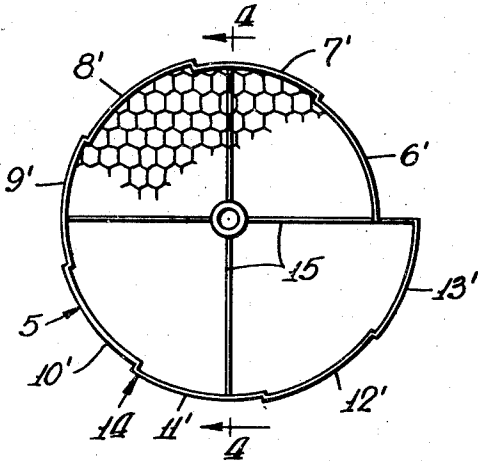


FIG. 4.

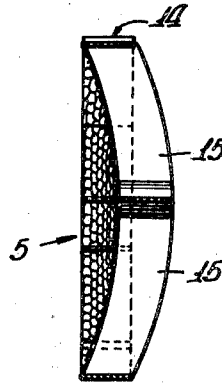


FIG. 5.

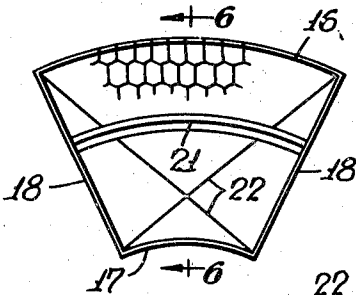


FIG. 6.

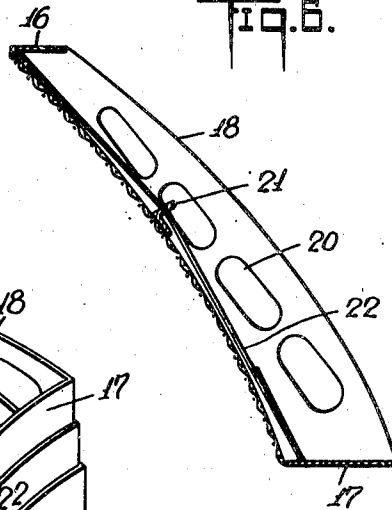
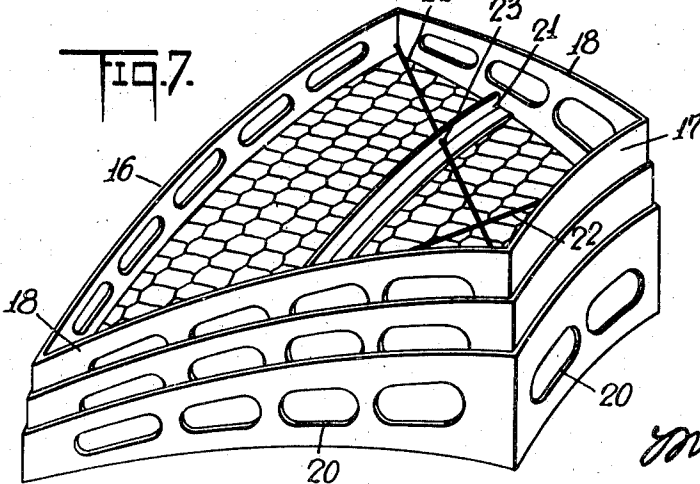


FIG. 7.



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PARABOLIC ANTENNA

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Application July 4, 1944, Serial No. 543,460

3 Claims. (Cl. 343-18)

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Specifically, my invention relates to a parabolic antenna, but it should be understood that in its broader aspects my invention is of more general application.

Parabolic antennae and the like as now manufactured are often of comparatively large size. In order to facilitate the shipment and storage of devices of the character noted they have been built in sections, but all such sectional devices with which I am familiar have occupied a great deal of space and the shipping weight has been excessive.

It is the principal object of my invention to provide a parabolic antenna or the like so formed and constructed as to occupy but little space when disassembled and packed.

Another object is to provide a simplified form of parabolic antenna and the like.

Still another object is to provide a parabolic antenna and the like which, when packed for shipment, occupies very much less space and weighs very much less than any similar device with which I am familiar.

Other objects and various features of novelty and invention will be hereinafter pointed out or will become apparent to those skilled in the art.

In the drawings which show, for illustrative purposes only, a preferred form of the invention—

Fig. 1 is a front view in elevation of a parabolic antenna illustrating features of the invention;

Fig. 2 is a sectional view taken substantially in the plane of the line 2—2 of Fig. 1;

Fig. 3 is a front view in elevation of the central section of the antenna shown in Fig. 1;

Fig. 4 is a sectional view taken substantially in the plane of the line 4—4 of Fig. 3;

Fig. 5 is a view in front elevation of one of the outer sections shown in Fig. 1;

Fig. 6 is an enlarged sectional view taken substantially in the plane of the line 6—6 of Fig. 5; and

Fig. 7 is an enlarged isometric view of a plurality of nested outer sections.

The parabolic antenna illustrated includes a central section, designated generally 5, and a plurality of outer sections 6, 7, 8, 9, 10, 11, 12 and 13. The number of outer sections employed may, of course, be varied, but for a parabolic antenna or more or less standard dimensions the number of outer sections illustrated is very satisfactory.

The central section 5 is preferably formed principally of sheet material, such as sheet metal, which, in upstanding form, may be bent periph-

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erally into the general form of a spiral, indicated generally at 14. The peripheral surface is preferably formed in peripheral steps 6', 7', 8', 9', 10', 11', 12' and 13', the steps corresponding in number to the outer sections. In the form illustrated the step 6' is the longest, and each succeeding step is progressively shorter and designed to receive outer sections which may be nested, as will be hereinafter described. The central section may be braced, as by means of cross braces or the like 15.

The outer sections 6—13 are preferably principally of sheet material, for example, sheet metal, bent or fabricated into generally trapezoidal shape, as shown in the drawings. While these outer sections are termed generally trapezoidal in form, they will preferably, though not necessarily, have curved bases and straight sides, so that the assembled antenna will be of circular form. Each outer section includes a long outer base wall 16 and an inner base wall 17, which walls are connected by side wall plates 18—18. The sheet material forming the frame of the outer sections as well as the framework for the central section, if desired may be provided with openings, such as 20, to assure lightness of the structure. Since the frames of sheet material are preferably rather light and of themselves more or less flimsy, I prefer to brace the same in suitable fashion. In the form shown an angle iron 21 extends between the opposite sides 18 of each outer section and may be secured thereto in any suitable fashion, as by welding, if the parts are of metal. I preferably also provide diagonal braces 22—22, which may be in the form of wires suitably secured to diagonal opposite corners of the frame, and these diagonal braces preferably extend through apertures, such as 23, in the angle iron brace 21. Thus, a relatively rigid yet light frame is provided for each outer section.

Each of the outer sections has its shorter or inner base so designed as to fit one of the steps of the central section. For example, the inner base of the outer frame 6 is designed to interfit with the peripheral step 6' of the central section frame. The radial sides 18 of the respective sections are designed to interfit with each other so that the composite framework formed by the inner section 5 and the outer sections will form a complete and closed frame. All of these sections are secured together by any suitable means, such as by clips, bolts, or other devices (not shown) but as will be readily understood.

The central section 5 and each of the outer

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sections are suitably faced, and when the device is a parabolic antenna as herein specifically illustrated the facing may consist of suitable foraminous material, such as poultry netting, as illustrated in the drawings. The central section 5 and each of the outer sections are formed in such shape that the facings when all parts are assembled will form a surface of the desired shape, for example, a parabolic shape.

In the form illustrated all of the outer sections are similar in shape, and each section after the first section 6 is progressively smaller in its frame dimensions than the next preceding section, so that each succeeding section will fit within and nest with the next preceding section. This fit is well illustrated in Fig. 7 and this feature is indicated, though not adequately illustrated, in Fig. 1, for the reason that, for clarity, the sheet material such as sheet metal illustrated in Fig. 1, has been shown considerably thicker than the actual sheet material would be.

While I have illustrated eight outer sections, all designed so that they will nest one within the other, it is to be understood that the sections could be otherwise arranged, for example, the sections could be nested in two sets of four each, that is to say, there might be two sections of each size, equal to each other.

When the outer sections are nested and the outer sections and inner section packed for storage or shipment, the space occupied is considerably less than half that occupied by comparable devices now in use. Furthermore, by reason of my improved construction in forming various sections of relatively thin sheet material and providing adequate bracing therefor, and by reason of the compactness of the devices, the total shipping weight of my improved antenna is only a little over a third of the shipping weight of comparable antennae now in use.

It should be understood that if the principles of my invention are to be applied in connection with other devices, such as reflectors and the like, the facing material, instead of being foraminous material, such as poultry netting, may be made of reflecting material and the geometrical shape of the device may be varied in accordance with requirements.

While the invention has been described in considerable detail and a preferred form illustrated, it is to be understood that various changes may be made within the scope of the invention as defined in the appended claims.

I claim:

1. In a parabolic antenna construction, a central section having a periphery of generally spiral

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form, said central section being peripherally divided into steps of decreasing length, outer sections of generally trapezoidal form having the shorter bases to fit said steps, said outer sections being of substantially similar shape and each succeeding section being of a size to fit within the next preceding section, for the purpose set forth.

2. In an antenna or the like an inner section having a generally spiral periphery, a plurality of outer sections to be secured thereto, said outer sections being of generally trapezoidal form, each of said sections having a frame of sheet material, all of said outer sections being generally similar in shape and each succeeding section being sufficiently smaller than the next preceding section so as to fit within the latter, whereby said outer sections may be nested, for the purpose described.

3. In a parabolic antenna device, a central frame section formed of upstanding sheet material, said central section having an outer periphery of generally spiral form and provided with peripheral steps, outer sections, each comprising a generally trapezoidal shaped frame formed of upstanding sheet material, one of the sides of each of said outer frames being of a size to fit one of the steps of said central section and other of the sides of said outer sections being of sizes and positioned to engage adjacent sides of adjacent outer sections, said outer sections being secured to said central section and to each other, said outer sections being of generally similar shape and of sizes to interfit and nest one within another, bracing means for each of said outer sections, said central section and each of said outer sections being faced with foraminous material.

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