

Oct. 13, 1942.

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ROTATION SYMMETRIC REFLECTOR

2,298,880

Filed Dec. 10, 1940

Fig. 2

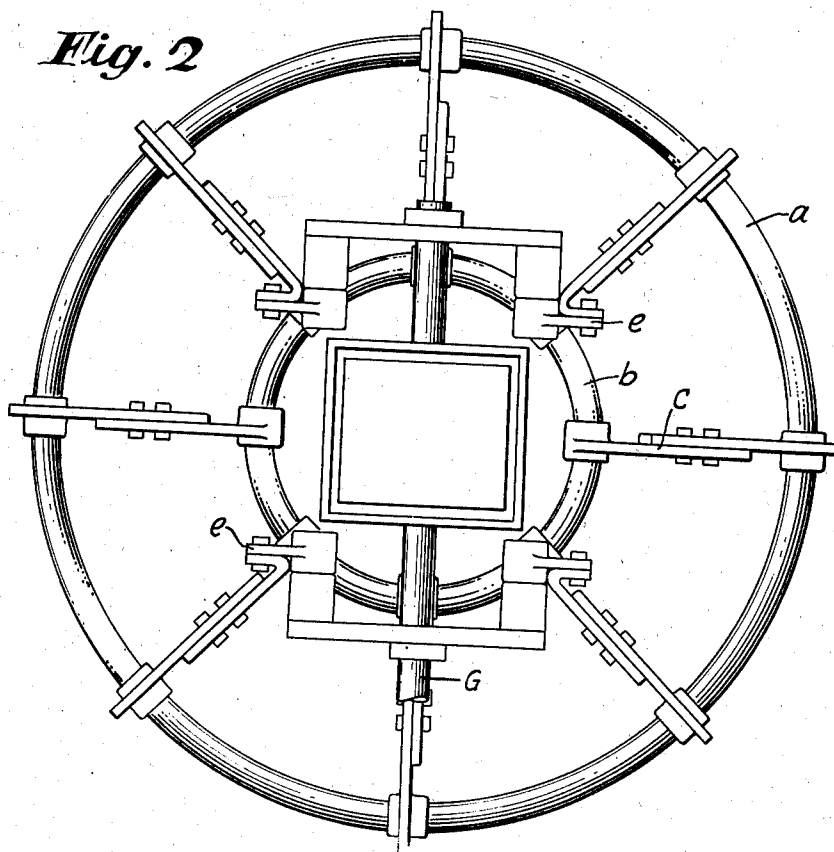
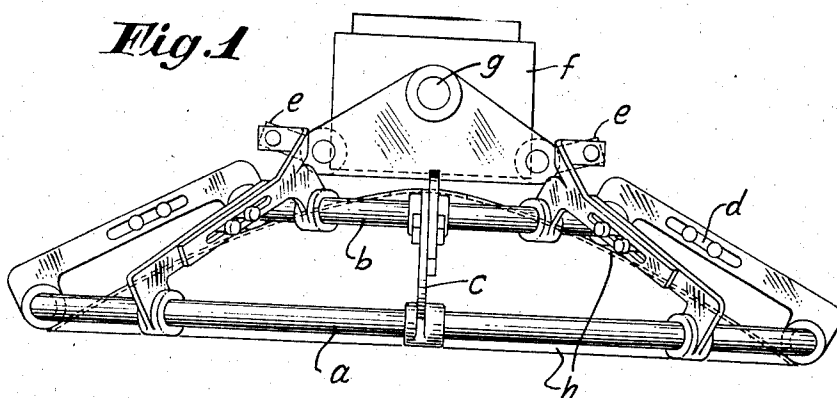


Fig. 1



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2,298,880

ROTATION SYMMETRIC REFLECTOR

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Application December 10, 1940, Serial No. 369,441
In Germany March 16, 1939

6 Claims. (Cl. 250—11)

This invention is concerned with a rotation symmetric reflector adapted to transmit or receive electromagnetic oscillations of ultra-short wave-length. The focus of the beam that is sent out or received, where such a reflector is used, is governed by the apertural width or angle of the reflector. It is known that directive beam diagrams or space patterns which are produced by reflectors of this kind are attended also with secondary or stray lobes or ears. The latter are conditioned by the focal length.

Now, ways and means are demanded in practice which in a simple manner will insure a change in the focal length with a view to obviating these undesired lobes or ears as far as feasible.

The reflector presenting rotational symmetry of the invention satisfies this requirement by providing a supporting construction for the reflector which comprises two or more coaxial rings and radial struts or braces inter-connecting the various rings and being of variable length. The coaxial rings, for instance, could consist of tubular rings. The effective reflecting surface or area is then placed into the supporting means adjustable as stated and secured and held therein by ways and means known in the prior art.

An exemplified embodiment of the basic idea of the invention is illustrated by way of example in Figs. 1 and 2. Fig. 1 is a sectional view of the rotation symmetric reflector of the invention, while Fig. 2 is an elevation thereof. In the exemplified embodiment here shown, only two tubular rings *a* and *b* are provided for the sake of simplicity. The radial connector struts or braces are indicated at *c*. For the purpose of changing the length, struts *c* are bipartite, the two constituent parts being connected with each other and guided inside each other by bolts and keyways. The latter serve to alter the length of the braces. To change the focal distance of the reflector surfaces *h* to be placed in this supporting structure, all that is necessary is to change the spacing between the two rings *a* and *b*. In order that the devices *f* mounted in the posterior part of the supporting means and the supporting or bearing means *g* for the rotary parabola structure may be adjustable at the same time to the desired extent, intermediary means *e* are provided which are designed to compensate for such changes in the distance as may otherwise occur in position.

Where such changes in focal length are frequent and where it is thus desirable to avoid substitution or replacement of the reflecting sur-

face *h*, it will be expedient to make the reflecting surface *h* of a wire grate construction of such a nature that it will partake of the change in form occasioned upon a variation of the distances of the various co-axially disposed annuli.

While the basic idea of the invention has been hereinbefore described as applied to a reflector designed for the transmission or reception of electromagnetic oscillations of ultra-short wave-length, the same idea will be found useful similarly in connection with all reflector arrangements of this kind which are designed to insure focusing of any mechanical or electrical oscillations at all, no matter of what wave-length.

What is claimed is:

1. An electro-magnetic reflector subjected to undesirable secondary stray lobes in the normal operation thereof comprising a curved electromagnetic reflecting surface, a first annular support member located adjacent the outside of said reflecting surface, a second annular support member coaxially arranged with respect to said first support member, and means interposed between said support members for adjusting the curvature of said reflecting surface to prevent occurrence of said undesirable stray lobes.
2. An electro-magnetic reflector subjected to undesirable secondary stray lobes in the normal operation thereof, comprising a curved electromagnetic reflecting surface, a first annular support member located adjacent the outside of said reflecting surface, a second annular support member coaxially arranged with respect to said first support member, and means including a plurality of radially mounted braces interposed between said support members for adjusting the curvature of said reflecting surface to prevent occurrence of said undesirable stray lobes.
3. An electro-magnetic reflector subjected to undesirable secondary stray lobes in the normal operation thereof, comprising a curved electromagnetic reflecting surface, means for changing the focal length of said reflecting surface including a plurality of coaxial rings, and a plurality of radially mounted braces having adjusting means for adjusting the curvature of said reflecting surface to prevent occurrence of said undesirable stray lobes.
4. An electro-magnetic reflector subjected to undesirable secondary stray lobes in the normal operation thereof, comprising a curved electromagnetic reflecting surface, means for changing the focal length of said reflecting surface including a plurality of coaxial rings of variable

length, and a plurality of radially mounted braces having adjusting means for adjusting the curvature of said reflecting surface to prevent occurrence of said undesirable stray lobes.

5 5. An electro-magnetic reflector subjected to undesirable secondary stray lobes in the normal operation thereof, comprising a curved electro-magnetic reflecting surface, a first annular support member located adjacent the outside of said reflecting surface, a second annular support member coaxially arranged with respect to said first support member, means including a plu- 10 rality of radially mounted braces interposed between said support members for adjusting the curvature of said reflecting surface, and inter- 15 mediary means for supporting a box-like member located in the rear of said reflecting surface

to prevent occurrence of said undesirable stray lobes.

6. An electro-magnetic reflector subjected to undesirable secondary stray lobes in the normal operation thereof, comprising a curved electro-magnetic reflecting surface of wire grate construction, a first annular support member located adjacent the outside of said reflecting surface, a second annular support member coaxially arranged with respect to said first support member, a plurality of radially mounted braces, said braces having a plurality of slots with binding means for adjusting the distance between said support members to change the curvature of said reflecting surface to prevent occurrence of said undesirable stray lobes.

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