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ULTRA-SHORT WAVE TRANSMITTER

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Fig. 1

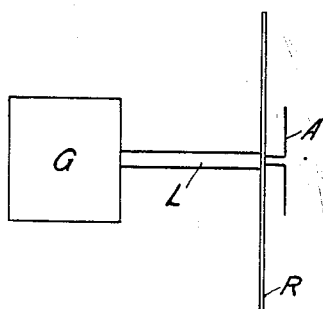
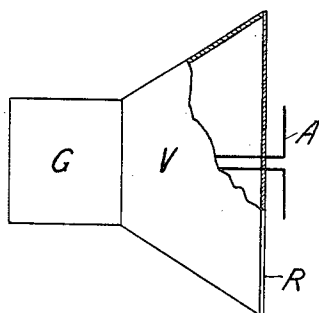


Fig. 2



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UNITED STATES PATENT OFFICE

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ULTRA-SHORT WAVE TRANSMITTER

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In Germany October 24, 1935

1 Claim. (Cl. 250—11)

The invention relates to ultra-short wave transmitters of the kind provided with a reflection structure. With these arrangements it has been experienced that the undesired backward radiation caused by such reflection structure is not lessened so much as may theoretically be expected with a reflection structure dimensioned accordingly. Careful researches have shown this phenomenon to be attributable to the reflection structure and transmitting arrangement oscillating after the manner of a dipole.

The invention has for its object to do away with this draw-back and to such end consists in certain features of novelty that will appear from the following description and be particularly pointed out in the appended claim, reference being had to the accompanying drawing, in which

Fig. 1 is a diagrammatic representation of the known arrangement, while Fig. 2 is a partially sectioned diagrammatic view of an example of the novel arrangement.

Like reference characters denote like parts in both figures.

The reflection structure is constituted by a wall R. In front of this wall an antenna structure A of any known construction, such as a so-called saw-tooth antenna or a fir-like antenna etc., is disposed. Wall R is formed of sheet metal or wire gauze and is dimensioned as large as possible with a view to avoiding backward radiation. Antenna system A and the generator, whose casing is designated G, are interconnected by a Lecher-wire system L. The Lecher wires and generator are screened, as is well known with these arrangements, the generator being so by means of the casing G. As the length of the

Lecher wires should be a multiple of $\gamma/4$, γ being the wavelength, it follows that the distance between wall R and casing G is likewise equal to a multiple of $\gamma/4$. The tendency now is that the wall R, the screening of the Lecher wires and the casing G are as a whole acting after the manner of a horizontally located dipole with great end capacity. As a result, backward radiation will occur.

In order to avoid this the invention proposes to unite wall R and the generator screening with each other in a manner to form a single body, as will appear from Fig. 2. Wall R and casing G are here connected with one another by a metallic structure V so as to be, in electrical relation, in the nature of a single body, wall R and casing or screening G thus being prevented from oscillating in dipole-fashion. Structure V may be made of sheet metal, wire gauze or metal tapes connected to each other by well conductive means.

What is claimed is:

A transmitter for ultra-short wave oscillations comprising a generator, a shielding means enclosing said generator, a radiator, an energy line having a length of $\gamma/4$ or a multiple thereof and interconnecting said generator and said radiator, a reflecting wall located between said shielding means and said radiator in close proximity to the radiator, and a further shielding device which directly connects the outer edges of said reflecting wall and the outer edges of said first shielding means of the generator along straight lines so as to assemble said first shielding means of the generator and said reflecting wall into one single unit.

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