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J. BÖHME ET AL
HIGH FREQUENCY SYSTEM

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Fig. 1

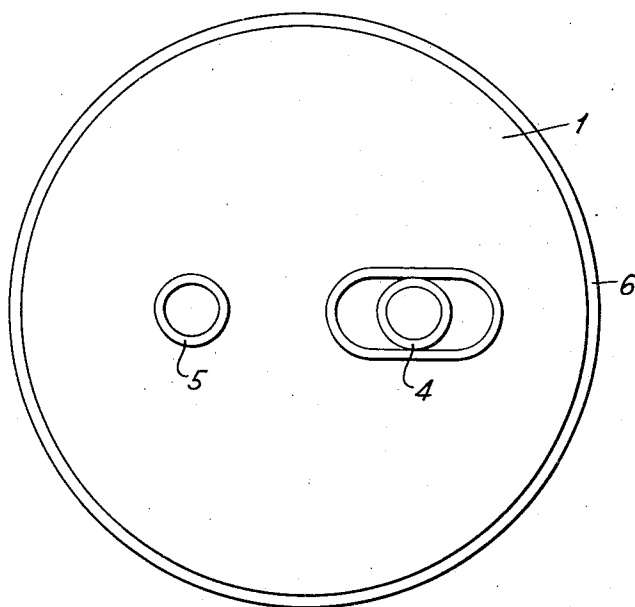


Fig. 2

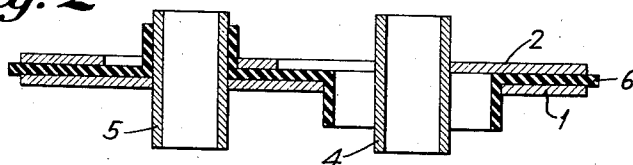
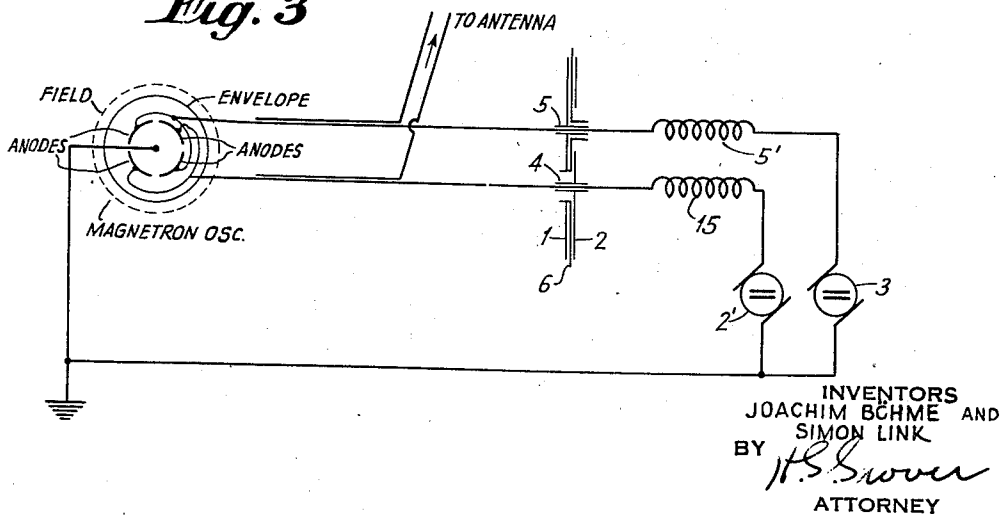


Fig. 3



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HIGH-FREQUENCY SYSTEM

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4 Claims. (Cl. 178—44)

In high frequency oscillation generators, especially short wave generators, it is known from experience that the radio frequency energy shows a tendency to flow away from the oscillatory circuit along any conductors at all which happen to be united with the oscillation circuit. As a consequence, the oscillatory energy which is radiated away by the antenna structure is diminished. Now, the present invention is concerned with an arrangement which is adapted to preclude the flowing or draining off of oscillatory energy from the oscillation circuit in a simple manner without the use of additional circuit means. To be more precise, a condenser forming a part of the oscillation circuit is so designed that it acts at the same time as a reflector for electric waves. This condenser is then so arranged in the oscillation circuit that such energy as would otherwise drain out the oscillation circuit is reflected thereon and is thus compelled to stay inside the circuit.

It is preferable and advantageous to use a condenser according to the invention whenever the oscillatory circuit consists of a Lecher system. In a case like this, the condenser serving as a reflector and used for tuning, and as a radio frequency block or termination of the Lecher wire system, is disposed in such a fashion that along the conductor parts of the Lecher system located above the condenser it will prevent leaking away of energy.

In the drawing is shown an exemplified embodiment of the condenser designed to act as a reflector, according to this invention, and used for tuning the Lecher wire system. Fig. 1 shows an elevation view of the condenser, while Fig. 2 is a sectional view thereof. Fig. 3 shows the condenser in use in a Lecher wire, high frequency system.

The condenser coats or plates consist of two circular metal discs 1 and 2 which are separated from each other by a layer of insulation 6. The condenser body thus obtained is provided with two openings to pass through the conductors of the Lecher wire system, being at right angles to the plane through the condenser. In order that the vertical position of the condenser plane in reference to the conductors of the Lecher wire system may always be insured, metallic sleeves or bushes 4 and 5 are provided which are connected with the coats of the condenser, and are disposed upon the conductors of the Lecher wire system in a shiftable manner. The bush 4 is connected conductively with the coat 2, while it is insulated from the coat 1; and similar-

ly bush 5 is conductively united with the coat 1, while being insulated from the coat 2.

Inasmuch as it is necessary, in a great many instances, that the mutual distance of the conductors of the Lecher wire system should be varied, the openings in the metallic discs, as well as in the insulation material, are so formed that the desired shift of the bushes 4 and 5 in reference to each other will be feasible. With this end in view, for instance, the hole in the disc 2, through which the metallic bush 5 is passed in a way so as to be insulated therefrom, is made oblong. In a similar manner, the corresponding opening in the disc 1, as well as the opening of the insulation material around the metallic bush 4, is made in the form of an oblong hole.

What is claimed is:

1. In combination, in a high frequency system, a pair of Lecher wires, a condenser bridging said wires intermediate the ends of said wires and adjustable over the lengths thereof, the armatures of said condenser comprising metallic discs having connected thereto two substantially cylindrical metallic tubes insulated from one another, each of said tubes surrounding a portion of one wire of said pair, said discs having their longitudinal planes perpendicular to the Lecher wires, said condenser, functioning as a reflector cooperating with said Lecher wires to tune same.

2. In combination, in a high frequency system, a pair of Lecher wires, a condenser bridging said wires intermediate the ends of said wires and adjustable over the lengths thereof, the armatures of said condenser comprising metallic discs having connected thereto two substantially cylindrical metallic tubes insulated from one another, each of said tubes surrounding a portion of one wire of said pair, said discs having their longitudinal planes perpendicular to the Lecher wires, said tubes being conductively connected to said Lecher wires and being each provided with openings at the ends thereof for enabling passage of a Lecher wire therethrough, said condenser functioning as a reflector cooperating with said Lecher wires to tune same.

3. In combination, in a high frequency system, a pair of Lecher wires, a condenser bridging said wires and adjustable over the lengths thereof, each of the two armatures of said condenser having connected thereto a substantially cylindrical metallic tube which is insulated from the other armature, each of said tubes surrounding a portion of one wire of said pair, the longitudinal planes of said armature being perpendicular to the Lecher wires, and means for varying the dis-

tance between said metallic tubes within predetermined limits.

4. In combination, in a high frequency system, a pair of parallel conductors, a condenser bridging said conductors and being adjustable over the lengths thereof, said condenser including two metallic coatings each of which has connected to it a hollow metallic tube, said tubes being parallel to but insulated from each other, each of

said tubes surrounding a portion of one conductor of said pair and being conductively connected thereto, and means for varying the distance between said metallic tubes within predetermined limits, said condenser cooperating with said pair of parallel conductors to tune the same.

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