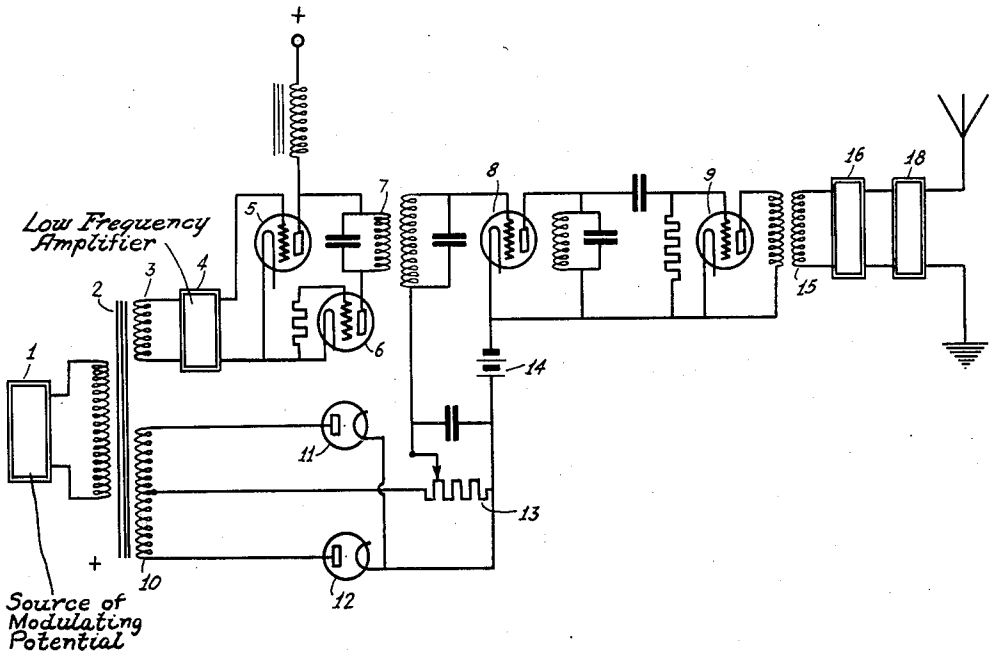
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SIGNALING

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SIGNALING

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9 Claims. (Cl. 250—17)

In wireless transmitting installations it is advisable to provide an arrangement for controlling the intensity of the oscillations to be transmitted so as to avoid over-load either of the transmitting valves or of the valves and loud-speakers in the receiving stations.

For this purpose in most of the known installations an arrangement is used, which is operated manually and can be entrusted only to the conduct of a competent connoisseur of music so as to obtain an exact reproduction of the sounds to be transmitted.

The present invention relates to a transmitting installation in which the modulation depth of the oscillations to be transmitted is controlled automatically.

According to the invention the transmitting installation comprises either a medium frequency or high frequency generator which is modulated by the microphonic currents and whose output energy is supplied through an amplifier to a detector, whose output energy modulates the actual transmitter. In addition, an arrangement is provided by which the amplitude of the oscillations supplied by the interconnected generator to the detector is regulated in dependency of the intensity of the microphonic currents.

The invention will be more clearly understood by reference to the accompanying drawings, representing schematically, by way of example, an embodiment of the invention.

The sound vibrations which are translated in the microphone 1 into electric oscillations are supplied to a transformer 2, comprising one primary and two secondary windings. Via the secondary winding 3 and a low frequency amplifier 4, voltage variations are impressed on the grid of a discharge tube 5, said variations corresponding to the sound vibrations translated into electric oscillations.

A high or medium frequency generator is denoted by 6. This generator is modulated by the potentials applied to the grid of the tube 5, and its frequency is kept constant by means of a crystal or in another suitable manner. The modulated high or medium frequency oscillations set up in the output circuit 7 of the generator 6 are supplied through the intermediary of a high or medium frequency amplifier 8 to a detector 9, whose output energy modulates the actual transmitter.

The low frequency current variations set up in the secondary winding 10 of the transformer 2, which correspond to the microphonic currents, are rectified by two rectifiers 11 and 12. Due to this a fluctuating direct voltage will occur at the terminals of the resistance 13, this voltage being superimposed on the negative grid bias supplied by 14 to the grid of high or medium frequency amplifier 8.

By this fluctuating direct voltage the amplification effected by the amplifier 8 is changed in dependency of the amplitude of the microphonic currents. The circuit arrangement is so chosen, that at an increase of the amplitude of the microphonic currents the grid bias of tube 8 becomes more negative, whilst in case of a decrease of the amplitude the grid bias of tube 8 becomes less negative.

In view of the bias battery 14, the value of the resistance 13 is so chosen, that the amplification of the amplifier 8 decreases in the presence of a greatly increasing amplitude of the microphonic currents, in other words at a greatly increasing tension through the resistance 13.

By a judicious choice of the resistance 13 and by properly choosing the transformer winding 10 and the constant bias 14 it is possible to properly determine the extent to which the amplification is changed by the amplifier 8. Due to this arrangement the low frequency oscillations which are supplied to the low frequency amplifier 16 of the actual transmitter 18 through the transformer 15 are controlled in such manner that the exceedingly high peaks of the microphonic currents, as regards their effect are smoothed.

I claim:

1. The method of signaling which includes modulating locally generated energy with modulating energy, amplifying the modulated energy, utilizing a portion of the modulating energy to vary the amplification of the modulated energy inversely to the strength of the modulating energy, rectifying the amplified modulated energy, and utilizing the rectified energy for modulating high frequency carrier energy.

2. In combination, a source of modulating energy, a generator of oscillations, a circuit interposed between said source of modulating energy and said generator of oscillations for modulating the oscillations generated with energy from the source of modulating energy, a circuit connected with said oscillation generator for amplifying the modulated oscillations, a detector for detecting the modulated oscillations, a source of high frequency energy, a circuit connecting said detector to said high frequency source for modulating energy from the source of high frequency oscillations with the detected energy, and means for controlling the degree to which said high frequency oscillations are modulated comprising a

rectifier circuit connected on the one hand with said source of modulating energy and on the other hand with the circuit for amplifying the modulated oscillations.

3. In combination, a source of modulating energy, means for generating oscillations, means for utilizing a portion of the modulating energy to modulate the generated oscillations, means for amplifying the resulting modulated oscillations, means for utilizing a portion of the modulating energy to vary the amplification of the amplifying means inversely to the strength thereof, means for detecting the amplified modulated oscillations, and means for utilizing the detected energy to modulate other generated high frequency energy.

4. The combination of a wireless transmitting installation comprising a super-audible frequency generator which is modulated by the microphonic currents and whose output energy is supplied through an amplifier to a detector whose output energy modulates the actual transmitter, of means whereby the amplitude of the modulated oscillations supplied by the generator to the detector is controlled in accordance with the intensity of the microphonic currents.

5. A combination as claimed in claim 4 in which said control means includes means for producing a unidirectional current the intensity of which varies as the intensity of the microphonic currents, and means for controlling the grid potential of said amplifier with said unidirectional current.

6. A carrier frequency repeating means, and means for impressing signal modulations thereon, the amplitude of which is controlled comprising, a source of modulating frequencies, a source of above audible frequencies modulated thereby, amplifying means connected with the output of said source of above audible frequencies, said amplifying means comprising a thermionic tube having an input circuit including a resistance, and rectifying means having its input terminals connected with said source of modulating frequencies and its output terminals connected with said resistance.

7. Means for producing amplitude controlled modulating signals comprising, a source of modulating frequencies, a thermionic oscillation generator, a thermionic discharge tube having its input terminals connected with said source of modulating frequencies and its output terminals connected with said oscillation generator, a thermionic relay having its grid cathode circuit connected with said oscillation generator and its output electrodes connected with a utilization circuit, a resistance in said grid cathode circuit, and a thermionic rectifier having its input circuit connected with said source of modulating frequencies and its output circuit connected in series with said resistance.

8. A carrier frequency repeating device and means for impressing signal modulations thereon, the amplitude of which is controlled, comprising, a source of above audible frequencies, a thermionic amplifier having its anode electrodes coupled with said source of above audible frequencies and its input electrodes energized by signal modulations, amplifying means having its input electrodes coupled with said source of above audible frequencies and its output electrodes coupled with said carrier frequency repeating means, a resistance connected between the input electrodes of said amplifying means, and a thermionic rectifier having its output electrodes connected in series with said resistance and its input electrodes energized by signal modulations.

9. A device as recited in claim 8 in which a source of potential is connected in series with said resistance between said input electrodes, and in which a capacity is connected in parallel with said resistance.

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