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RECEIVER FOR FREQUENCY MODULATED WAVES
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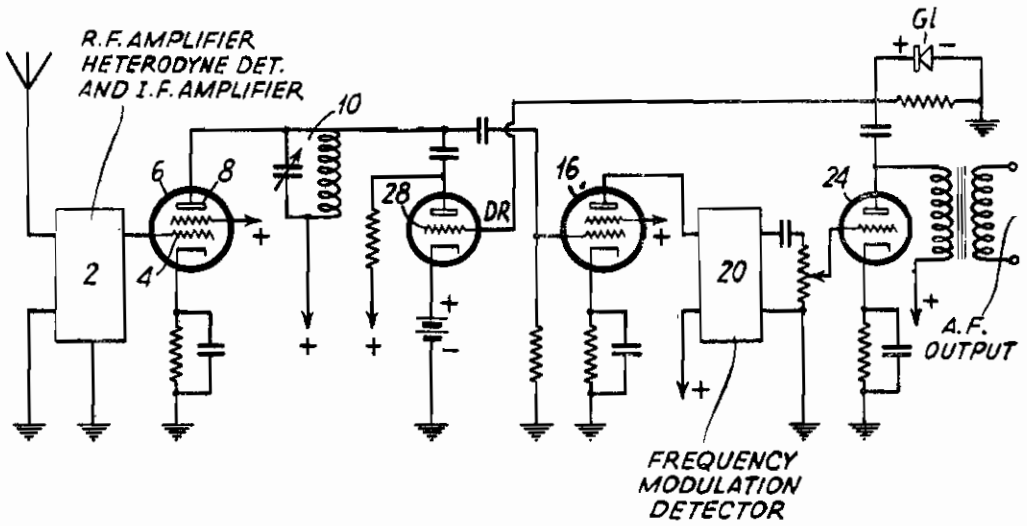

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ALIEN PROPERTY CUSTODIAN

RECEIVER FOR FREQUENCY MODULATED WAVES

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In order to provide a receiver for frequency modulated waves which has an extremely low noise potential, the proposal has already been made to render the width of the receiving filter narrow as compared with the frequency stroke and to shift as regards its frequency the working curve of the filter or the potential, to be demodulated, in the rhythm of the gained modulation potential such that the demodulation takes place always within the same working range of the working curve. Such a receiver is of particular importance in the case of short waves and ultra-short waves.

A noise potential which is practically sufficiently low is obtained with substantially smaller requirements as compared with the said proposal, if, in accordance with the present invention, in receivers for frequency-modulated waves, more especially for short waves and ultra-short waves, the band width is varied in dependence on the gain modulation potential in such a manner that there corresponds with a small frequency stroke or swing a small band width and with a large frequency stroke or swing a large band width. Hence, the invention originates from the teaching that only at small signal amplitudes a very low noise potential is necessary, while the latter can increase when the signal amplitudes become larger. The variation of the band width is hereby so carried out that the proportion of the frequency stroke or swing and band width remains almost constant at any frequency stroke or swing.

In receivers for amplitude-modulated waves, it is known to vary the band width for the purpose of controlling the selectivity. In this case, this variation is carried out in dependence on the amplitudes of the incident waves in such a manner that when powerful transmitters are received, there is a low selectivity assigned to the receiver, and when weak transmitters are received the selectivity assigned to the receiver is high. In the receiving arrangement according to the invention however, the amplitude of the arriving waves is of no importance to the variation of the band width.

In describing my invention, reference will be made to the attached drawings wherein the single figure illustrates a frequency modulation receiver including the intermediate-frequency band width controlling means of my invention.

The band width of the receiver according to the invention may be varied for instance by varying the coupling or by a detuning of the coupling filter. The band width of a coupling filter can be controlled by means of known control elements such as for instance by means of tubes, hot conductors, rectifiers, or by varying the preliminary magnetization of an iron coil.

The variation of the band width of the receiver according to the invention may also be advantageously realized by varying the damping of one or of several intermediate-frequency circuits. The damping may hereby suitably be varied by means of a controllable resistance such as, for instance, by means of a damping tube, or hot conductor. An example of construction is shown in the figure in which only those details are shown which contribute to an understanding of the invention. A is an aerial supplying wave energy to amplifier **2** connected at its output to the grid **4** of intermediate-frequency amplifier tube **6**. The anode **8** of tube **6** is connected with a circuit **10** tuned to the intermediate frequency. The output of **8** is supplied to tube **16**. In the figure, items **6** and **16** are intermediate-frequency amplifiers which supply frequency modulated waves to a demodulator in **20**. **24** is an audio-frequency amplifier. The audio-frequency output of **20** is supplied to rectifier G1 and the detected audio-frequency potential (detector G1) operates upon the grid **28** of the damping tube DR which functions as a controllable resistance and represents a variable damping of the intermediate frequency circuit.

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