June 26, 1934. J. ROHNFELD 1,964,598

FADING ELIMINATION

Filed March 5, 1932

Fig. 1

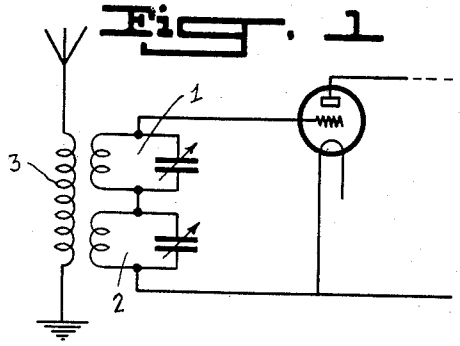


Fig. 2

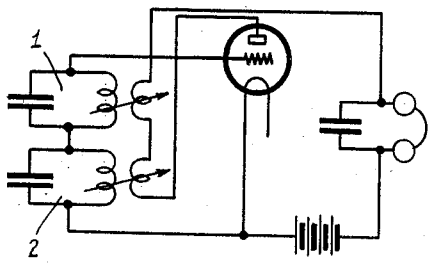


Fig. 3

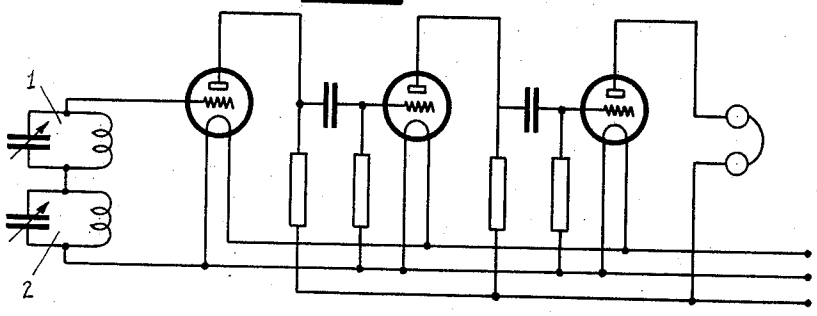


Fig. 4

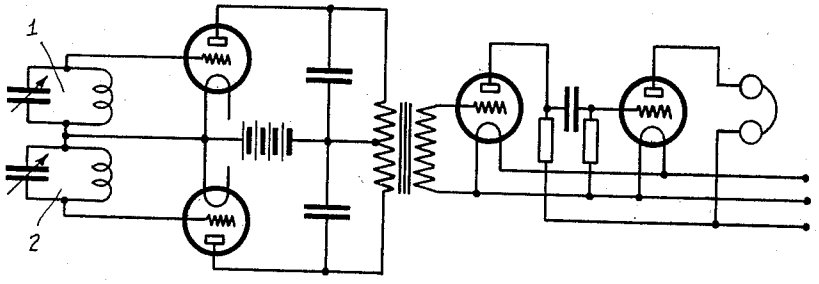
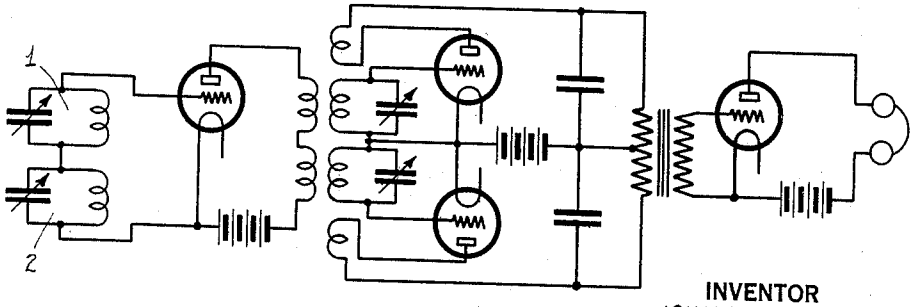


Fig. 5



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FADING ELIMINATION

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Application March 5, 1932, Serial No. 596,965
In Germany April 2, 1931

1 Claim. (Cl. 250—20)

In what follows a method is to be disclosed which makes it possible, in broadcast reception, to diminish fading while simultaneously insuring an increase in volume.

The operation of this method is predicated upon the presupposition that the program to be received is transmitted at the same time on two or more waves, which condition in the majority of instances is satisfied by the existence of master and secondary transmitters.

The solution is as follows:

For instance, in an audion receiver the input circuit is furnished with two partial oscillation circuits which in turn are arranged in series with each other and which constitute a joint oscillation circuit. Suppose, one of the said "partial" circuits is tuned to one transmitter, say, Vienna, and the other circuit to the second transmitter having the same program, say, Graz.

This receiving method is based upon the improbable occurrence that simultaneous fading occurs in the case of both transmitter stations. But if fading happens in only one of the stations, while reception from the second station remains undisturbed, this fact becomes hardly noticeable in the receiving method here disclosed.

A better understanding of the invention may be had by referring to the accompanying drawing, wherein Figures 1 to 5 illustrate, diagrammatically, various circuit arrangements embodying the principles of this invention.

Figure 1 illustrates the input circuit of any audion receiver circuit having my particular scheme wherein two tunable oscillation circuits 1 and 2 are shown coupled to an antenna 3. Each of the two tunable circuits may be tuned to a different transmitting station which is transmitting the same signal.

Figure 2 illustrates a regenerative circuit in connection with this scheme which may be so designed that the two "partial' circuits regenerate independently of each other.

If desired, the receiver scheme can be varied so that for all simultaneously received equally modulated waves a joint radio frequency and audio frequency amplifier may be employed. This is shown in Figure 3. For each of these waves also separate radio frequency amplifiers could be employed, while the audio frequency stage or stages are common (Figure 4), or else for each wave only a separate regeneration stage is provided, while the rest of the radio frequency and the audio frequency part of the set are common (Figure 5).

Of course, phasing means may be employed in the various modifications shown and described herein.

I claim:

In a radio communication system wherein two carrier waves having different frequencies are simultaneously modulated by a common signal and thus transmitted over the ether and having a receiving circuit comprising an input circuit having a plurality of serially connected circuits tuned to be resonant to different frequencies, a single, multiple electrode electron discharge device whose control electrode is conductively connected to said tuned circuits, and means in circuit with said electron discharge device for regeneratively amplifying each of the resonant frequencies independently of each other, the method of reception which comprises selectively receiving both or either one of said waves in said resonant circuits, regeneratively amplifying said waves independently of each other in said means, and combining said waves in said electron discharge device.

JOHANNES ROHNFELD.