

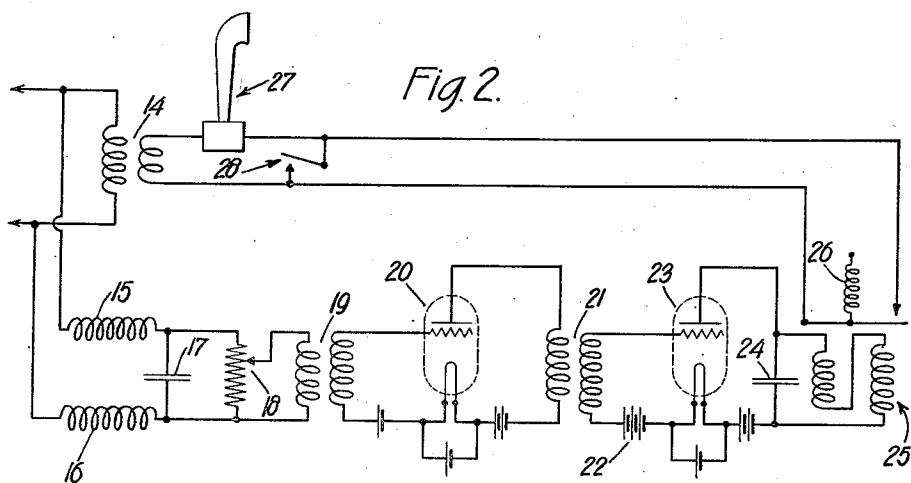
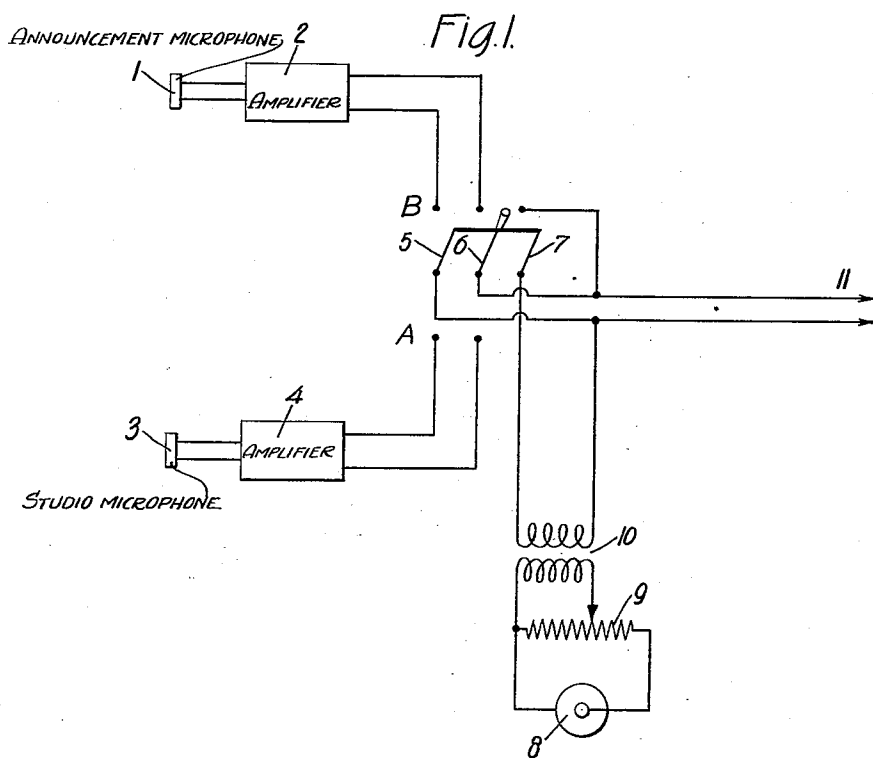
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RADIO BROADCASTING AND RECEIVING

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RADIO BROADCASTING AND RECEIVING

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3 Claims. (Cl. 250-6)

This invention relates to a method of solving a problem in broadcast reception. This problem is the separation of entertainment programs from undesired advertising talks, by the automatic operation of the receiving apparatus so that the listener is spared the effort of manually operating his set.

The problem is solved by providing at the broadcast transmitter an inaudible modulating frequency which is automatically put on the transmitter whenever the advertising talk is being made and providing at the receiver a selective receiving means to receive this steady tone and to cause it to operate a relay which cuts off the loud speaker of the receiver. When the advertising talk is finished the auxiliary modulating frequency at the transmitter is cut off, the relay at the receiver reconnects the loud speaker and the set is in condition to receive the desired part of the program.

In the drawing forming part of this specification,

Figure 1 illustrates the general arrangement of the transmitting system; and

Figure 2 illustrates the general arrangement of the receiving system for carrying out this invention.

Referring now to Figure 1, 1-2 represents the announcement microphone and its associated amplifying system and 3-4 represents the studio microphone and amplifier for picking up the musical part of the program. 5-6 is a switch for throwing over from one microphone to the other and 7 is a simultaneously operated switch for throwing on to the modulating input to the radio transmitter 11 a sub-audible modulating current from the source 8-9-10. A frequency of the order of 20 cycles may be used. This frequency is chosen so that it will be inaudible and will not therefore affect the reception on ordinary receivers not equipped with the automatic cut out.

Referring now to Figure 2, 14 represents the output transformer of an ordinary broadcast receiver. 15-16-17 is a filter designed to pass the sub-audible frequency but to cut off the frequencies which are normally transmitted in the musical program. 18 is a potentiometer to adjust the input to the amplifier 19-23. The last tube 23 of the amplifier is biased to cut off by the battery 22. The plate circuit of the tube 23 contains a relay 25, the contact of which is normally held closed by the spring 26, thereby keeping the loud speaker circuit normally closed.

The operation of the system is as follows:

When the switch 5-6-7 at the transmitter is in position A, the transmitter operates in the ordinary way. The broadcast receiver also operates in the ordinary way. The filter 15-16-17 cuts off the frequencies used in the transmission of music so that the amplifier and relay remains inoperative. When, however, the switch is thrown to the announcement microphone in position B, a constant inaudible modulation is immediately impressed on the transmitter. This is received by the broadcast receiver, passes through the filter 15-16-17 and is amplified up to a point where it actuates the relay 25 cutting off the loud speaker 27. This condition is maintained until the studio microphone is connected in place of the announcement microphone, when upon removal of the subaudible frequency the relay arm is released and again completes the relay circuit.

Where the listener desires to receive the advertising part of the program he may do so by closing the switch 28.

Instead of a sub-audible auxiliary frequency, a super-audible frequency with suitable modification of the filtering means at the receiver may be used.

To compensate for different adjustments of the receiver to produce varying degrees of loudness and to insure the operation of the automatic cut off device on various signal strengths, the bias of the amplifier tubes 20, 23 may be arranged to be controlled by the strength of the carrier supplied to the detector tube in any of the well-known methods of accomplishing automatic volume control.

Instead of the filter 15, 16, 17 a tuned circuit or a plurality of them tuned to the sub-audible or superaudible frequency may, of course, be used.

I have described what I believe to be the best embodiments of my invention. I do not wish, however, to be confined to the embodiments shown, but what I desire to cover by Letters Patent is set forth in the appended claims.

I claim:

1. The method of enabling a listener to separate entertainment programs from undesired advertising talks in radio broadcasting to a multiplicity of receiving stations, which consists in transmitting with the advertising talk an inaudible frequency, selecting said inaudible frequency at the receiver, and selectively causing said inaudible frequency at the receiver to render the loud speaker thereof inoperative as long as the inaudible frequency is being received.

2. In a radio broadcasting system, a transmitter, a plurality of receivers, means for transmitting an inaudible frequency while certain portions of the program are being broadcast, means
5 at said receivers responsive to said inaudible frequency to render the reproducers of said receivers inoperative while said inaudible frequency continues to be received, and means whereby the operator of any receiving set may render said
10 last mentioned means of such set effective or ineffective.

3. A receiver for use in the system of claim 2, said receiver comprising a loud speaker, means responsive to current of inaudible frequency to render said loud speaker inoperative, and manually operable means to render said first mentioned means ineffective to control the loud
80 speaker.

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