

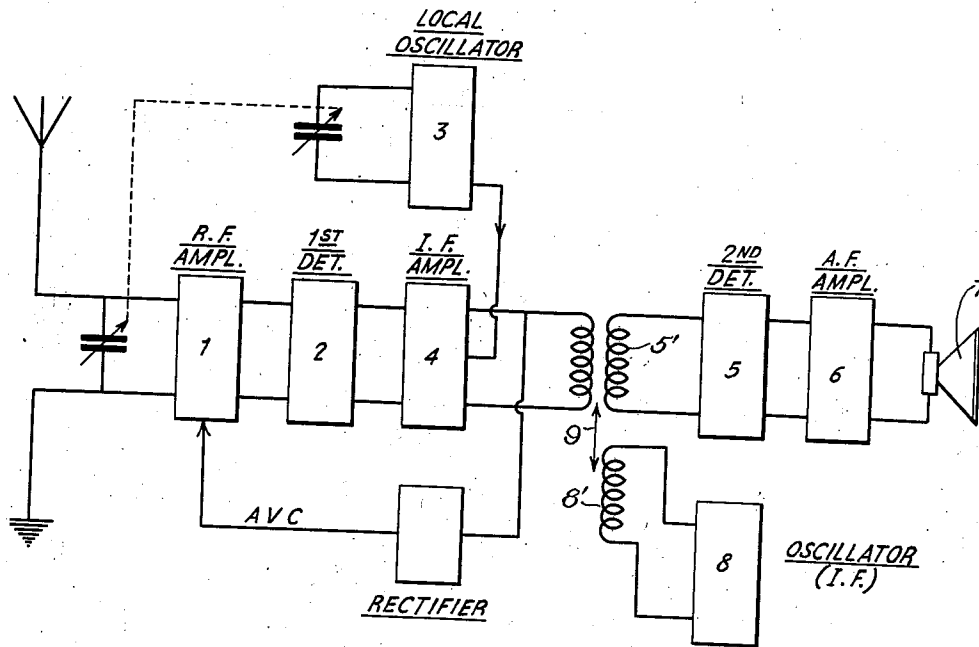
June 8, 1937.

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2,083,239

TUNING CONTROL

Filed Aug. 3, 1935



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2,083,239

TUNING CONTROL

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Application August 3, 1935, Serial No. 34,572
In Germany August 16, 1934

1 Claim. (Cl. 250—20)

It is known that the accurate tuning of a wireless receiving set with automatic volume control implies difficulties since the right tuning with these receivers cannot be found, as was formerly usual, by the adjustment of the greatest sound strength of the loudspeaker fed from the receiver. Efforts have already been made to avoid this drawback by making use of so-called visible tuning control. Although this allows the receiver to be accurately tuned to the carrier wave to be received, this visible tuning control has the drawback, that it requires more attention on the part of the operator of the receiver.

The present invention has for its purpose to provide a radio-receiving set with automatic volume control, measures being taken which allow tuning by ear.

According to the invention this is achieved by coupling an oscillator with the high or intermediate frequency amplifier of the receiver, said oscillator being tuned to the same wave length as the high or the intermediate frequency amplifier.

With superheterodyne receivers, as is well known, the intermediate frequency is determined either by the difference or the sum of the received carrier frequency and the frequency of the oscillations generated by the local superheterodyne oscillator. With modern receivers the tuning means of the high frequency arrangement preceding the first detector are mechanically coupled with the tuning means of the superheterodyne oscillator, so that upon detuning of the receiver relatively to the carrier wave to be received, the intermediate frequency supplied to the intermediate frequency amplifier depends on the frequency to which the intermediate frequency amplifier is tuned.

When according to the invention an oscillator is coupled with the intermediate frequency amplifier, which oscillator is tuned to the same frequency as the intermediate frequency amplifier, a low frequency interference tone occurs at a slight detuning of the receiver in the output of the second detector, this interference tone manifesting itself in the loudspeaker. The occurrence of such a tone intimates that the tuning of the receiver should be altered in the direction of the low tones until it disappears. When this point

has been reached so that the receiver is accurately adjusted, the oscillator may be disconnected. The advantage of this arrangement is that the tuning can be effected by ear independently of the operation of the automatic volume control.

The invention will be more clearly understood with reference to the accompanying drawing by means of which the circuit arrangement, according to the invention, will be explained in a superheterodyne receiver. The receiver comprises a high frequency amplifier 1, a first detector 2, with which a superheterodyne oscillator 3 is coupled in a known manner, an intermediate frequency amplifier 4, a rectifier 5 with a succeeding low frequency amplifier 6 and finally, a loudspeaker 7.

According to the invention the input circuit of the second detector 5 is coupled with an oscillator 8 which is tuned to the same frequency as the intermediate frequency amplifier. The automatic volume control is represented conventionally, and is designated by the letters "AVC". The oscillator 8 may be disconnected from the input of the second detector by reducing the coupling between coils 5' and 8', as denoted by the arrow 9, when the beat note has disappeared.

What I claim is:

In a superheterodyne receiver of the type comprising a converter, intermediate frequency amplifier, second detector, audio reproducer network and an automatic volume control network for reducing the gain of at least one stage ahead of the second detector as the received signal amplitude increases, an arrangement for securing accurate tuning of the receiver which includes a local oscillator coupled to said second detector input for impressing on the latter waves of a frequency equal to the frequency of the intermediate frequency energy fed to the second detector input, whereby an audible beat note is produced by the reproducer network when the receiver is slightly de-tuned with respect to a desired signal carrier frequency, and means for rendering the oscillator inoperative to impress waves on the detector input when the receiver has been tuned to said carrier and the beat note has disappeared.

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