

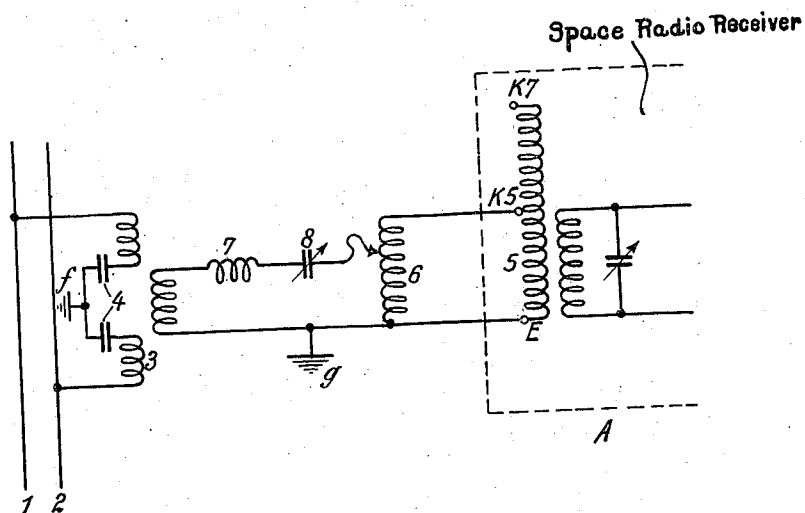
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COMBINED SPACE AND WIRED RADIO RECEIVER

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COMBINED SPACE AND WIRED RADIO RECEIVER

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3 Claims. (Cl. 179—2.5)

It is well known to transmit over telephone lines broadcast performances. This method, which has been designated as high frequency broadcasting, is effected by means of a high frequency carrier impressed upon the subscribers' lines and modulated with the performance to be transmitted. The high frequency carrier may be impressed in an exchange, for example. This method is not only adapted for transmitting music, speech and the like but may be used also for transmitting alarm communications or signals of any kind.

It is desirable here to employ the same receiving apparatus as are used for receiving wireless broadcast performances. However these apparatus when used for receiving multiple broadcast transmissions which are arriving on a network possessed of great initial energy, prove not to be of sufficient selectivity. This has been found by experiments to be due to the fact that in devices of this kind the coupling of the antenna coil with the tuning circuit is in many cases extremely tight. Such a dimensioning of the input circuit of the receiver is attributable to a requirement that has to be met for the purposes of wireless reception, viz. to ensure that despite the use of small and simple antennas the output should be as great as possible.

In order to adapt these receiving apparatus for use with the said high frequency broadcasting the invention provides for decreasing the effect of the coupling means by which the high frequency receiver can be connected to an antenna.

One embodiment of the invention is described hereafter by way of example, reference being had to the accompanying drawing which is a diagrammatic representation of this example.

A denotes a high frequency receiver the casing of which is indicated by dash lines. K_5 and K_7 designate binding posts intended for connecting the receiver to an antenna. The earth terminal is denoted by E. The coil designated 5 is the primary of the input circuit of the receiver.

The high frequency energy is led to the receiver A by two lines 1, 2 and is led away from these by a symmetrical transformer 3 whose primary is earthed at f in a symmetrical manner over condensers 4. The secondary of this transformer is not connected directly to the input circuit of the receiver but through an arrangement that acts to decrease the effect of the coupling means by which the receiver can be connected over its input circuit to an antenna. This intermediary arrangement in the case represented comprises a coil 6, connected to the binding posts K_5 , E, an inductance 7 and a variable capacity 8. The post E is grounded at g. The parts 6, 7, 8 are connected together in the manner shown in the drawing, so as to form a tuned circuit.

The novel arrangement also has the advantage

that with receivers of the same manufacturing series differences among the coils 5 do not affect the tuning to such an extent as if these coils were forming part of the tuning circuit.

The link circuit is tuned to the carrier frequency which is to be received. A part of the input coil 5 of the receiver is arranged in shunt to the inductance 6 contained in the link circuit. Provided that this link circuit is tuned to the resonance the parallel-joined coils 5 and 6 operate as voltage dividers. In order to alter the coupling, the ratio of the coil resistances, operating only as ohmic resistance in case of resonance, may be varied. The arrangement has the advantage that the coupling of the receiver can be varied as far as zero provided that the coil 6 is absolutely separated from the link circuit by adjusting the shiftable contact right to the earthed end. The disclosed arrangement has over an arrangement with a voltage divider formed by an ohmic resistance the advantage that the resonance curve of the tuned link circuit is very sharp and that a selection of the carrier frequencies which are to be separated is effected before entering the receiver. The tuning of the link circuit is effected by the rotating plate condenser 8, while the variation of the coupling is obtained by the adjustment of the coil 6.

The transformer 3 and parts 6, 7, 8 are preferably combined to constitute a separate device adapted to be inserted between the high frequency supplying cable and the receiver. It is however possible also to effect the invention with the aid of coils disposed in the receiver, such as tuning coils for wave ranges not being used.

What is claimed is:

1. In a wired-radio receiving system the combination of a high frequency space radio receiver, wires carrying incoming wired-radio signals energy, a transformer having a primary symmetrically connected to these wires, a coupling coil in said receiver, a self-induction coil connected in parallel with said coupling coil, and a circuit tuned to the frequency of the signals to be received between the secondary of said transformer and said self-induction coil.

2. A wired-radio receiving system according to claim 1 further comprising means for varying the extent of the coupling between the said wires and the said receiver.

3. In a wired-radio receiving system the combination of elements according to claim 1 further comprising means forming with said self-induction coil an adjustable inductive voltage divider for varying the coupling between said wires and said receiver.

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