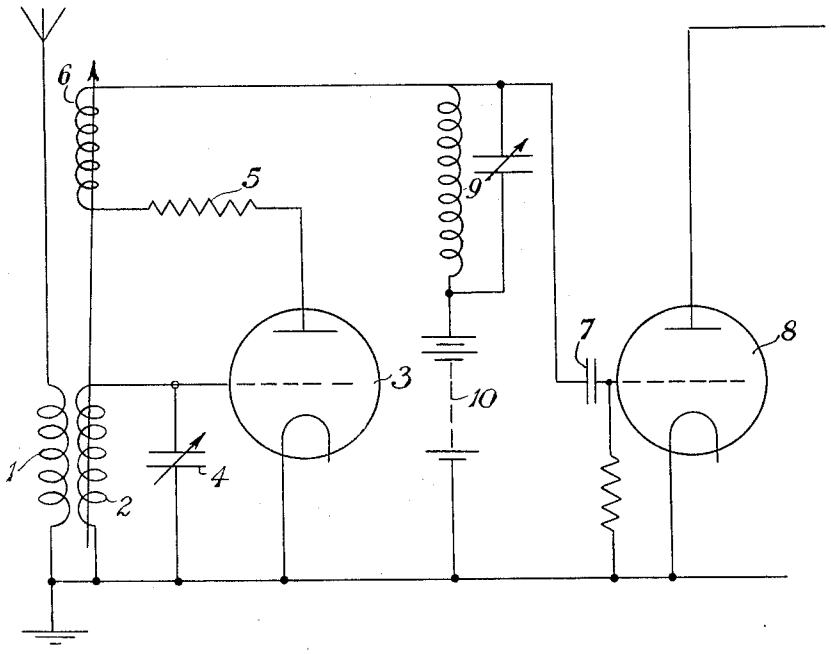
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THERMIONIC VALVE CIRCUIT

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THERMIONIC VALVE CIRCUIT

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4 Claims. (Cl. 250—20)

The present invention relates to thermionic valve circuits and more particularly to high frequency amplifier or detector circuits.

According to the present invention, in a thermionic valve circuit in which retroaction is provided between the anode and grid circuits of a thermionic valve acting as a high frequency amplifier or detector, a resistance is connected in series between the anode of said valve and the grid of a subsequent valve. The inclusion of this resistance permits a substantially constant setting of reaction for all settings of the tuning condensers whilst the sensitivity of the circuit remains substantially constant.

The invention is illustrated by way of example in the accompanying drawing.

Referring to the drawing, an inductance 1 is connected between an aerial and an earth connection and is coupled to a second inductance 2 in the grid circuit of a high frequency amplifier 3, this second inductance 2 being tuned by means of a variable condenser 4 shunted across it. The anode of the valve 3 is connected through a resistance 5, a reaction coil 6 coupled to the coil 2 and a condenser 7, all arranged in series, to the grid of a second valve 8 which may be a second high frequeny amplifier or a detector valve. If desired, the valve 3 may be so connected that it acts as a detector valve in which case the valve 8 may be a low frequency amplifier. The side of the condenser 7 remote from the grid of the second valve 8 is connected through a tuned circuit 9 comprising an inductance shunted by a variable condenser to the positive terminal of a suitable high tension source 10, the negative terminal of which is connected to one limb of the valve filaments. The coupling between the reaction coil 6 and the grid circuit of the first valve may be made variable in known manner. It will be found that with the circuit above described, if the value of the series resistance 5 is suitably chosen, the sensitivity of the circuit may be maintained substantially constant throughout the range of the tuning condensers without altering the coupling between the reaction coil 6 and the tuned grid circuit 2, 4.

It will be understood that the invention is not limited to circuits embodying inductive reaction but is also applicable where capacity reaction is used. Furthermore, any desired form of coupling may be used between one valve and the next in place of the tuned anode coupling above described.

I claim:

1. In a thermionic amplifier, a pair of valves each having a tunable input circuit, an output circuit for one of said valves connected to the input circuit of the other valve, said connection including a radio frequency current limiting resistor connected to the anode of the one or first valve, a stopping condenser connected to the grid of the other or second valve, and a feedback circuit connected in series between said resistor and condenser.

2. In a thermionic amplifier, a first valve having a radio frequency input circuit, a second valve, a tunable circuit included in the output circuit for the first valve and serving as an input circuit for the second valve, and a series connection between said valves including a resistor connected to the anode of the first valve, a feed back inductor and a stopping condenser extending in series between said resistor and the grid of the second valve, said resistor being located in said radio frequency circuit whereby said resistor controls the flow of radio frequency current therethrough.

3. In an electric amplifier, the combination of an electric valve, a tuned grid circuit therefor, means providing a feed back coupling to said grid circuit connected with the anode of said valve, an output circuit coupling means for said valve connected in circuit and in series with said feed back coupling means to receive signal currents therethrough from the anode, and a resistor interposed in circuit between the anode and said series connected coupling means to control the flow of current thereto from the anode.

4. In an electric amplifier, the combination of an electric valve, a tuned grid circuit therefor, means providing a feed back coupling to said grid circuit connected with the anode of said valve, a tuned output circuit for said valve connected in circuit and in series with said feed back coupling means to receive signal currents therethrough from the anode, and a current limiting impedance means interposed in circuit between the anode and said feed back coupling means to control the flow of signal currents from the anode to said coupling means and through said coupling means to the tuned output circuit.

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