

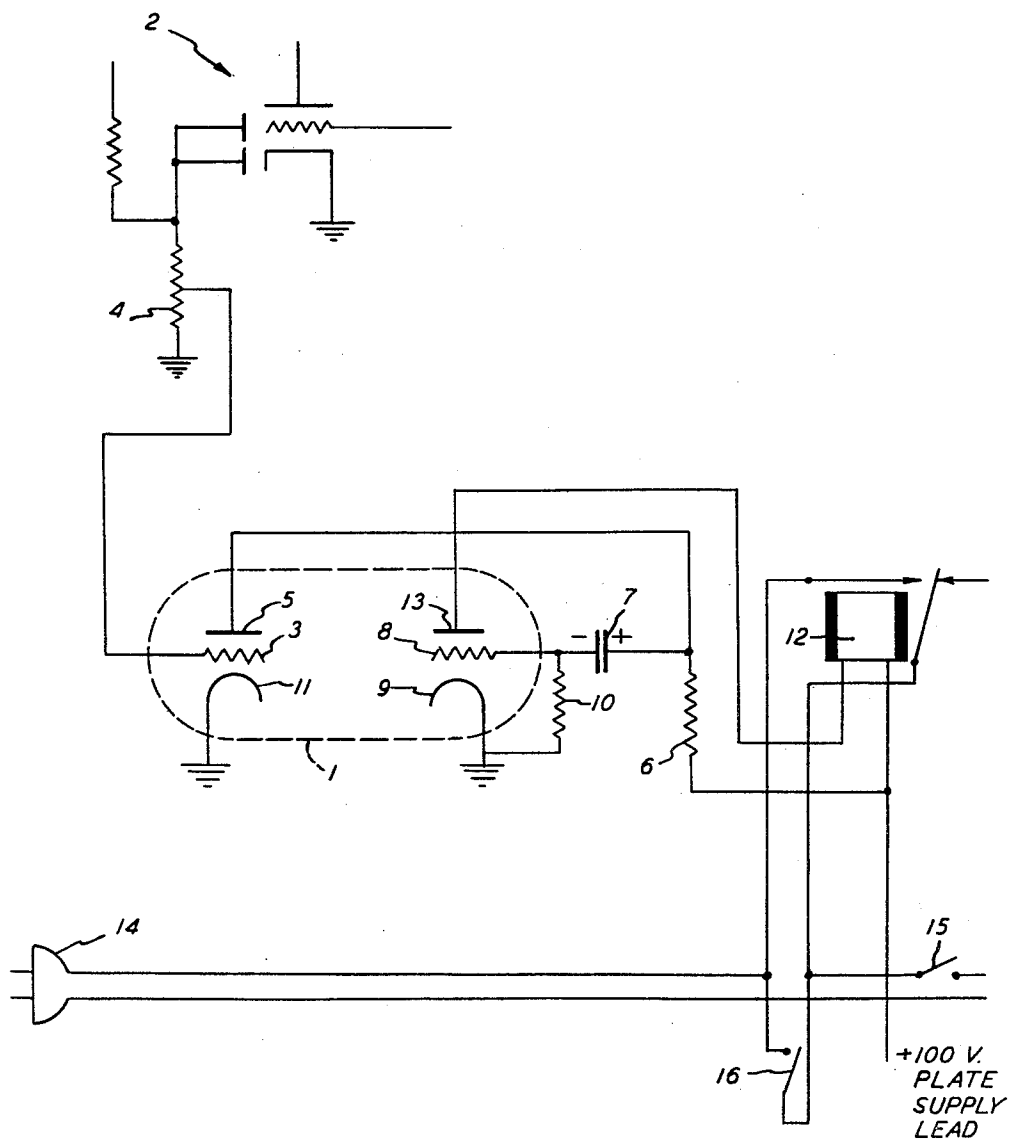
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AUTOMATIC CUTOFF FOR RADIO RECEIVERS

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AUTOMATIC CUTOFF FOR RADIO RECEIVERS

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3 Claims. (Cl. 250-2)

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This invention relates to radio receivers and has reference to automatic means for cutting off the power source.

An object of the invention is to provide automatic means for cutting off the main power source to a radio receiver; which means is operated by the radio station carrier.

Another object of the invention is to provide a unit for the described purpose which is capable of being attached to an automatic volume control circuit of a radio receiver.

These and other objects of the invention will become apparent from the following description of the accompanying drawing of a wiring diagram illustrating an embodiment of my invention.

In the form of the invention shown, a dual triode tube 1 is connected with the A. V. C. circuit 2 of a radio receiver. The control grid 3 of one triode section of the tube 1 is connected with the voltage divider resistor 4 of the A. V. C. circuit 2. The plate 5 is connected with a 20,000 ohm resistor 6 which, in turn, is connected with a 5 mf. condenser 7 and the other grid 8 of the dual triode tube 1. The last referred to grid 8 is connected with its own grounded cathode 9 by a 20 megohm resistor 10. The other cathode 11 is grounded, but it is to be understood that a dual triode containing a common cathode may be used in place of the separate cathodes 9 and 11. Also within the scope of the present invention, separate triodes may be used instead of the dual triode, and which separate triodes would be connected in the manner described.

The 20,000 ohm resistor 6 connects the plate 5 and the condenser 7 to a 100 volt plate supply lead, and the said resistor is also connected with the coil of a 10,000 ohm relay 12 having normally opened contacts. The coil of the relay 12 is also connected with the plate 13 of the second referred to triode section.

The normally opened contacts of the relay 12 are connected in series with one line of the main power source to the radio receiver, which source is indicated at 14 by the symbol for a plug, and includes therein the usual manual switch 15. Another switch 16 is provided in parallel with the normally opened contacts of the relay 12.

In operation, the switch 16 in parallel with the relay 12 is closed, and subsequently the manual switch 15 of the radio receiver is also closed. After selecting a station, the switch 16 connected with the relay 12 is opened and the described automatic cut-off has control and is ready to cut off the radio receiver by opening the main

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power line 14 when the carrier frequency of the selected radio station terminates.

When a station is selected, a voltage is applied to the A. V. C. voltage divider resistor 4 and a negative voltage is applied to the grid 3 of the first section of the dual triode 1. This negative voltage causes a reduced plate current through the 20,000 ohm resistor 6, providing a relatively high plate voltage of the plate 5. The condenser 7 will also have the same voltage with respect to current as the plate 5. The grid 8 of the second section of the dual triode 1 will be zero voltage with respect to its cathode 9; therefore, the plate current of the plate 13 to the relay 12 will be high enough to maintain the normally opened contacts of the said relay in their closed position.

When the carrier frequency of the selected station is turned off, the negative voltage is removed from the grid 3 of the first triode section, causing the plate current of the plate 5 to increase to a relatively large value, and thus increase the voltage drop across the resistor 6. The last function brings the plate 5 and condenser 7 to near current potential, and thereby discharges the said condenser through the resistor 6 and the resistor 10. The voltage drop produced across the resistor 10 by the discharge of the condenser 7 will momentarily produce a negative voltage on the grid 8, causing the plate current of the plate 13 to be lowered to a value permitting the contacts of the relay 12 to open, removing the main power source from the radio receiver.

The described form of the invention is not restrictive, but may be made in many ways within the scope of the appended claims.

What is claimed is:

1. A power cut-off for a radio receiver having an automatic volume control circuit including a voltage divider resistor, a triode having its grid connected with said voltage divider resistor of said automatic volume control circuit, the plate of said triode being connected with a positive plate supply lead, a relay including a positive side and a negative side and having normally open contacts, said contacts being connected in series with one line of the power source to said receiver, the positive side of said relay being connected with said positive plate supply lead, a second triode, a condenser connected between the plate of the first said triode and the grid of the second said triode, a resistor connected between the last referred to grid and the ground of the receiver, the plate of the last referred to

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triode being connected with the negative side of said relay.

2. A power cutoff for a radio receiver having an automatic volume control circuit including a voltage divider resistor, a dual triode having the grid of one section connected with the voltage divider resistor of said automatic volume control circuit, the plate of said triode section being connected with a positive plate supply lead, a relay including a positive side and a negative side and having normally open contacts, said contacts being connected in series with one line of the power source to said receiver, the positive side of said relay being connected with said positive plate supply lead, a condenser connected between the plate of the first referred to triode section and the grid of the other triode section, a resistor connected between the last referred to grid and the ground of the receiver, and the plate of the last referred to triode section being connected with the negative side of said relay.

3. A power cutoff device for a radio receiver having an automatic volume control circuit including a voltage divider resistor, a vacuum tube having its cathode grounded and its control element connected with said voltage divider resistor, the anode of said vacuum tube being con-

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nected with a positive plate supply lead, a relay including a positive side and a negative side and having normally open contacts, said contacts being connected in series with one line of the power source of said receiver, said anode of said vacuum tube being connected with said positive side of said relay, a second vacuum tube also having its cathode grounded, a condenser between the anode of the first said vacuum tube and the control element of the second said vacuum tube, a resistor connected between the last referred to control element and the ground of said receiver, the anode of the last referred to vacuum tube also being connected with the negative side of said relay.

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