

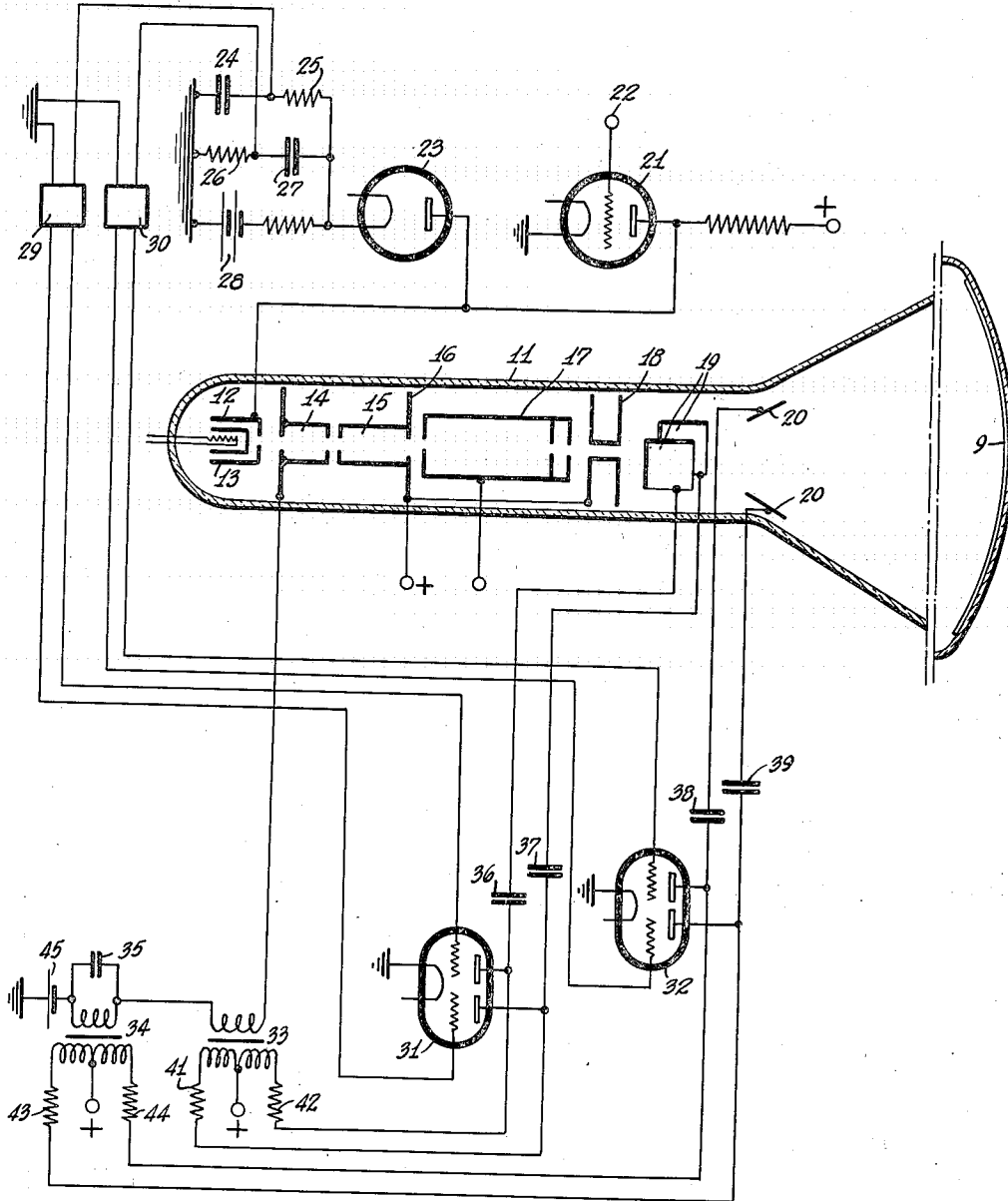
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TELEVISION RECEIVING ARRANGEMENT

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TELEVISION RECEIVING ARRANGEMENT

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4 Claims. (Cl. 178—7.7)

In a television arrangement it is well known to effect synchronisation between transmitter and receiver by emitting long frame and short line synchronizing signals. It is also well known to suppress the return line of the luminous point in cathode ray tube receivers by deriving from the synchronizing signals an impulse applied to the control grid of the cathode in order to suppress the emission during the return period of the ray, i. e. between one and the next line or frame.

This method has the disadvantage of capacitative loads of the light control. It is the object of the invention to avoid that disadvantage by using a special electrode passed by the ray for suppressing.

The invention will be more clearly explained by means of the accompanying drawing, which shows diagrammatically a television receiving tube with the necessary connection according to the invention.

In the drawing, 11 is the glass wall of the tube, 12 the indirectly heated cathode, 13 the control grid, 14 to 19 electrodes concentrating the ray emitted by the cathode firstly upon the aperture of the diaphragm 16 and then to project an image of this aperture upon the screen 9. The ray is deflected in the usual way by means of two pairs of deflecting plates 19 and 20.

The television signals are applied to the input 22 of the terminal amplifier 21 and its output is connected to the control grid 13 and to a rectifier tube 23 biased by a battery 28. The two kinds of synchronizing signals thus obtained are in the usual way separated from each other by two capacity-resistance filters 24—25 and 26—27 and conducted to the input of two relaxation generators 29—30 the outputs of which are connected in push-pull to the control grids of two amplifiers 31—32. The anodes of these amplifiers are via condensers 36—37 respectively 33—39 connected to the deflecting plates and, according to the invention, via anode resistances 41 to 44, connected in push-pull to the primaries of two transformers 33—34. The secondaries of the transformers, that of the frame part being shunted by a condenser 35, are inserted between earth and the electrode 14. Thus, during the flow of video currents, 14 having a slight positive bias owing to the battery 45, acts as a part of the electron lens system 14—18 whilst, when a synchronisation signal is received, it is supplied with a strong negative impulse and blocks the ray.

The duration of the blocking impulses must

naturally be greater than the duration of the white synchronisation signals sent by the transmitter. These signals should preferably be as short as possible, and amount for the line impulses to 5% of the line period, and for the image change impulses should preferably not exceed one single line period.

It may be specifically pointed out that the generation of blocking impulses as just described by means of impulse transformers is in no way confined to the use of push-pull amplification. The same method is also capable of being performed with simple relaxation amplifiers 31—32 and with transformers 33—34 having but one primary winding. It is then merely necessary to employ a transformation ratio of twice the amount. In any case the primary impedance of said transformers ought to be small as compared with the anode resistances 41—44.

The modulation of the wireless transmitter takes place in the method according to the invention in such a manner that in the case of black in the image the aerial current vanishes. In the case of white in the image the transmitter is fully utilized, and in the case of synchronisation signals the aerial current is amplified beyond the normal. In this way, as compared with the black impulse method hitherto employed, there is obtained the advantage that the synchronisation signals overtone all interferences, as they are the loudest signals in the course of the entire television transmission.

I claim:

1. In a television receiver comprising a cathode ray tube having a cathode for producing an electron ray, a grid for controlling the intensity of said ray, an auxiliary electrode consisting of a diaphragm and two pairs of deflecting electrodes, two generators for producing deflecting voltages and two transformers having primary and secondary windings, each of said generators being connected to one pair of said deflecting plates and to the primary of one of said transformers, the secondaries of said transformer being connected in series to said auxiliary electrode for blocking said ray during the return period.

2. In a television receiver comprising a cathode ray tube having a cathode for producing an electron ray, a grid for controlling the intensity of said ray, an auxiliary electrode consisting of a diaphragm and two pairs of deflecting electrodes, two generators for producing deflecting voltages and two transformers having primary and secondary windings, each of said generators being connected in push-pull to one pair of said de-

deflecting plates and to the primary of one of said transformers, the secondary of said transformers being connected in series to said auxiliary electrode for blocking said ray during the return period.

3. In a television receiver comprising a cathode ray tube having a cathode for producing an electron ray, a grid for controlling the intensity of said ray, an auxiliary electrode consisting of a diaphragm arranged immediately in front of said grid, and two pairs of deflecting electrodes, two generators for producing deflecting voltages and two transformers having primary and secondary windings, each of said generators being connected to one pair of said deflecting plates and to the primary of one of said transformers, the secondary of said transformers being connected in series to said auxiliary electrode for blocking said ray during the return period.

4. In a television receiver comprising a cathode

ray tube having a cathode for producing an electron ray, a grid for controlling the intensity of said ray, an auxiliary electrode consisting of a diaphragm and two pairs of deflecting electrodes, two generators for producing deflecting voltages and two transformers having primary and secondary windings, each of said generators being connected by means of condensers in push-pull to one pair of said deflecting plates and to the primary of one of said transformers, the secondary of said transformer being connected in series to said auxiliary electrode for blocking said ray during the return period to one pair of said deflecting plates and directly to the primary of one of said transformers, the secondary of said transformer being connected in series to said auxiliary electrode for blocking said ray during the return period.

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