PUBLISHED
MAY 18, 1943.
BY A. P. C.

P. DESERNO
TELEVISION RECEIVERS
Filed March 29, 1940

Serial No.
326,565

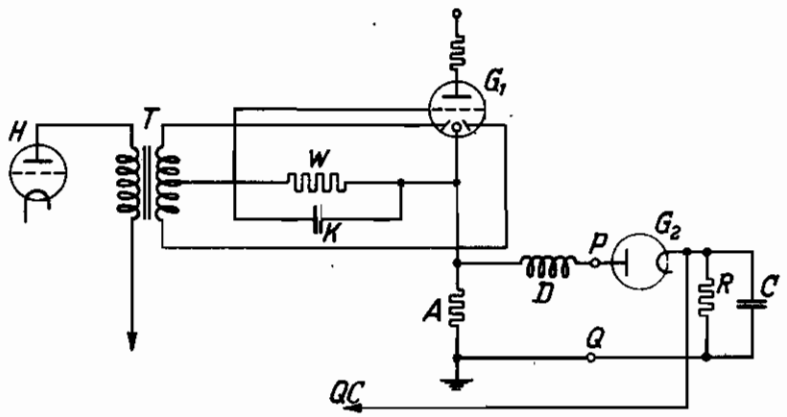

Fig. 1

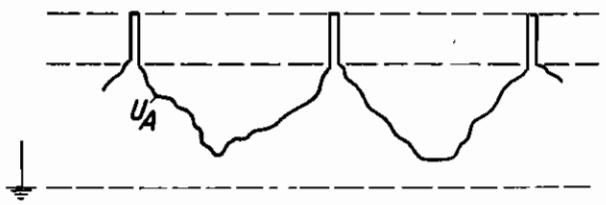

Fig. 2

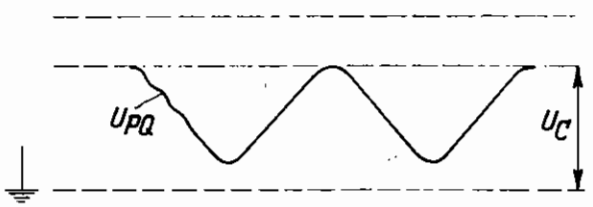

Fig. 3

Inventor:
Peter Deserno
by R. C. Hoyngood
Att'y

Published May 18, 1943

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ALIEN PROPERTY CUSTODIAN

TELEVISION RECEIVERS

Peter Deserno, Berlin, Germany; vested in the Alien Property Custodian

Application filed March 29, 1940

In television receivers the automatic amplitude regulation meets with difficulties. The simple expedient of forming a mean value of the high frequency energy in order to produce the regulating voltage is not possible because the mean value changes in accordance with the luminosity values of the picture. In the case of bright pictures the mean value would be greater than with dark ones.

Transmitting arrangements are known which are based on the so-called gap synchronization, that is, a synchronizing method in which the picture signals increase toward positive values from an amplitude that corresponds to the black value of the incoming signal voltage, while the synchronizing signals are extended from the black value in the reverse direction toward the zero value. With these transmitting arrangements a regulating voltage may be obtained by taking from the frequency mixture the amplitude which is equivalent to the black value. This amplitude merely depends upon the magnitude of the received high frequency energy, being independent of the luminosity values of the picture.

According to the invention, in order to produce the regulating voltage equipment to the black value the synchronizing signals are filtered out from the rectified frequency mixture, which contains the picture and synchronizing signals, by means of a choker device while the remainder of this mixture is conveyed to a condenser in such manner that its potential shall rise to become equal to the black value. To such end the voltage supplied to the condenser passes through a rectifier which prevents back discharge of the condenser over the feeding source, such as a coupling resistance. The condenser is thus always charged to the maximum value of the feeding voltage. The voltage supplied to the condenser is applied to it with such a polarity that its potential increases whenever the arriving voltage varies toward the black value.

The choker device by which the synchronizing signals are filtered out from the rectified frequency mixture is dimensioned to cut off all such frequencies as are above line frequency. The voltage at the condenser will hence not be able to increase beyond the black value, the synchronizing impulses having been segregated.

In order to enable the potential at the condenser to decrease in accordance with the black value whenever the receiving amplitude increases, a resistance is connected in parallel with this condenser. Such resistance and condenser are calculated to afford a time constant that accords with the duration of the several picture periods, such as a second.

In the accompanying drawing, Fig. 1 is a circuit diagram showing one embodiment of the invention, while Figs. 2 and 3 illustrate curves referred to in explaining the function of this embodiment.

An electron tube H, Fig. 1, is the last stage of the intermediate frequency amplifier of a television receiver. To this tube a final tube G_1 is connected through a transformer T. Tube G_1 is arranged to act as a rectifier in known manner. The potential arising at a resistance W and a condenser K acts to control the anode current of tube G_1 by means of a control grid thereof, as will be seen in Fig. 1. In the cathode lead of the tube G_1 a coupling resistance A is included which is grounded in unipolar fashion. At resistance A a voltage arises that corresponds to the rectified frequency mixture containing picture and synchronizing signals. The curve U_A of this voltage is illustrated in Fig. 2.

A choke coil D acts to cut off all those frequencies which are above line frequency. At points P, Q a voltage UPQ, Fig. 3, is effective which has the synchronizing impulses segregated. The maximum value of this voltage hence equals the black value of the incoming voltage, as will be understood from Fig. 3. Condenser C thus charges to acquire a potential Uc that corresponds to the black value.

Rectifier G_2 prevents the condenser from discharging through resistance A. Condenser C discharges over resistance R whenever the dark value changes. The dimensions are such that condenser and resistance shall afford a time constant of about a second.

The regulating voltage is derived from condenser C, as indicated by the arrowed line QC, in order to be conveyed to a control tube or several such tubes.

PETER DESERNO.