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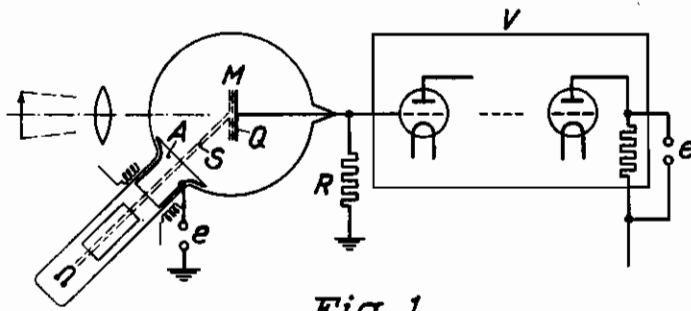


Fig. 1

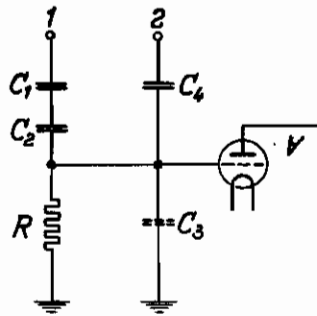


Fig. 2

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This invention relates to television dissectors, that is, devices in which an electron beam is caused to sweep over or scan an image produced on a mosaic of minute photo-sensitive elements, whereby picture currents or signals appear in an output circuit. The invention has for its object to increase the sensitivity of these devices, as will be understood from the following description, reference being had to the accompanying drawing, in which

Fig. 1 is a diagrammatic view showing the principal features of one embodiment of the invention, Fig. 2 illustrates an equivalent circuit arrangement referred to in explaining the function of this embodiment.

As will be seen from Fig. 1 an optical image is projected on a screen M of mosaic elements and is scanned here by means of an electron beam S. As is well known the scanning operation is as follows: As soon as the scanning beam S strikes a non-illuminated mosaic element the potential thereof rises so as to acquire a positive value of about 3 volts over the accelerating electrode A. After the beam has moved from such element the potential of this slightly decreases during the picture scanning period. The decrease is effected by electrons which return from a space charge formed in front of screen M in consequence of the emission of secondary electrons, these constituting a multiple of the primary or bombarding current effective as beam S. Depending upon the magnitude of this beam current the potential of the element decreases, acquiring a value that is slightly positive, being equal to or lower than the potential of the electrode A. When beam S impinges upon an illuminated mosaic element the potential thereof likewise rises instantaneously. This potential is changed to the same positive value as acquired by a non-illuminated element, but is not caused by the emission of photo-electrons to decrease as intensely as in the event of no illumination. Thus, in the case of an illuminated element when again scanned the rise in potential or the recharging quantity will be smaller than with a non-illuminated one. This different behaviour of a non-illuminated element as compared with an illuminated one entails the origination of the picture signal in consequence

of the fact that at this instant there will be less electrons returning to the electrode A while at this time the charging quantity of the entire mosaic is varied in the negative sense. As is well known an odd number of amplifying tubes is required for the subsequent amplification so that in the event of illuminating a mosaic element the negative signal produced by means of the transmitting tube here shown shall cause an illumination to arise in the receiving Braun tube.

According to the invention these fluctuations of the current passing toward the accelerating electrode A are increased by a sort of feedback or reaction coupling.

In the case represented in the drawing the picture signals of a voltage e are conveyed through the output circuit of the amplifier V to the electrode A in the proper phase. This amplifier comprises grid-controlled amplifying tubes. Whenever the current toward A decreases then the negative potential applied to A adds to this decrease, whereas in the event of an increase of this current, such increase being due to a dark point of the mosaic, an additional increase is effected by a rise in voltage. In this way it is possible to intensify the variations or the modulation of the accelerating current and thereby to amplify the picture signals.

In the equivalent circuit shown in Fig. 2 the feedback or retroactive voltage is applied to point 1. Condenser C_1 represents the capacity between accelerating electrode and the mosaic elements, condenser C_2 represents the capacity between the mosaic elements and the so-called impulse or signal plate Q, Fig. 1, and R denotes the input resistance of the amplifier V. C_3 represents the capacity of the input circuit. When applying the picture voltage e to the point 1 a voltage division takes place which causes the input circuit of the amplifier to be considerably overmodulated. In order to prevent this a neutralization arrangement is provided in which the picture voltage, dephased by 180° , is at point 2 and over a condenser C_4 supplied to the first or input grid of amplifier V. This auxiliary arrangement when properly balanced will be suitable to obviate disturbances.

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