Fig. 1.

Fig. 2.

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TELEVISION AND LIKE SYSTEM

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This invention relates to improvements in television and like system and is especially concerned with systems of the type in which at a transmitter the luminescent screen of a cathode ray tube is scanned to produce a moving light spot which is projected upon the object to be scanned so that light passing through, in the case of a transparent object, or diffusely reflected from, in the case of an opaque object, becomes incident upon a light sensitive device to give rise to an image signal. It is found that in systems of this type uneven thickness of the fluorescent material, relatively insensitive portions of material forming the screen of the cathode ray tube and uneven thickness of the glass end wall of the tube cause an uneven background in the received image.

The present invention seeks to overcome this difficulty either wholly or in part by the provision of means whereby the brightness of the scanning spot is maintained substantially constant irrespective of local variations in the brightness of the fluorescent screen or of the value of ray current e. g. due to hum, interference splashes and so on.

According to the present invention in a television or like system of the type described there is provided means for compensating for local variations in the brightness of the scanning spot on the screen of the cathode ray tube.

According to a feature of the present invention in a television or like system of the type referred to there is provided an auxiliary light sensitive device which is affected only by light incident directly thereon from the fluorescent screen of a cathode ray tube, the output from the said light sensitive device being employed to control the intensity of the electron beam incident upon the said screen.

According to an alternative feature of the present invention the output from the said auxiliary light sensitive device is employed to control the gain of an amplifier through which the signal derived from the signal-producing light sensitive device is passed.

In order that the present invention may be more particularly described reference is now made to the accompanying diagrammatic drawing which illustrates in Figs. 1 and 2 by way of example two embodiments of the invention.

In Fig. 1 of the drawings the luminescent screen 1 of a cathode ray tube 2 is scanned and an image of the screen 1 is projected upon the transparency 3 by means of an optical system 4. Light passing through the transparency 3 is received upon a light sensitive cell 5 which feeds a vision amplifier 6. An auxiliary light sensitive cell 7 is arranged to receive light from any part of the luminescent screen 1 and the output from this light sensitive cell is amplified by an auxiliary amplifier 8 and is used to control the amplification of the amplifier 6 in such a way that when the brightness of the luminous spot on the screen 1 increases, the amplification of the amplifier 6 decreases and vice versa, the system being adjusted so that the image signal output from the amplifier 6 remains substantially constant independently of the brightness variation, within a certain range, of the scanning spot on the screen 1.

Alternatively, or in addition, as shown in Fig. 2 part of the output from the amplifier 8 may be used to control the intensity of the electron beam scanning the screen 1 so as to bring the brightness of the luminescent spot on the screen 1 to some predetermined level. The auxiliary cell 7 should be placed at some distance from the screen 1 so that it is affected equally by light spots at different positions on the screen 1 but if this condition cannot be fulfilled the amplification of the auxiliary amplifier 8 may be caused to vary with the position of the scanning spot on the screen 1. This may be effected by means of a variable mu valve in the amplifier 8 which is arranged to be biased by a signal derived from the scanning generators controlling the electron beam in the tube 2.

We claim:

1. A television system comprising a cathode ray tube having a luminescent screen exposed to an electron beam, means for projecting the scanning spot of light formed by said beam on said screen upon an object to be scanned, a light sensitive device for receiving the light after it has been incident upon said object, means connected to said light sensitive device for providing an image signal corresponding to the light and shade of the object, an auxiliary light sensitive device arranged to receive light directly from said screen, and means connected to said auxiliary light sensitive device to compensate for local variations in the brightness of the spot of light on the screen.

2. A television system comprising a cathode ray tube having a luminescent screen exposed to an electron beam, means for projecting the scanning spot of light formed by said beam on said screen upon an object to be scanned, a light sensitive device for receiving the light after it has been incident upon said object, means connected to said light sensitive device to compensate for local variations in the brightness of the spot of light on the screen.
to said light sensitive device for providing an image signal corresponding to the light and shade of the object, an auxiliary light sensitive device arranged to receive light directly from said screen, and means connected to said auxiliary light sensitive device for controlling the intensity of said electron beam.

3. A television system comprising a cathode ray tube having a luminescent screen exposed to an electron beam, means for projecting the scanning spot of light formed by said beam on said screen upon an object to be scanned, a light sensitive device for receiving the light after it has been incident upon said object, means comprising an image signal amplifier connected to said light sensitive device for providing an image signal corresponding to the light and shade of the object, an auxiliary light sensitive device arranged to receive light directly from said screen, and means connected to said auxiliary light sensitive device for controlling the gain of said image signal amplifier.

4. A television system comprising a cathode ray tube having a luminescent screen exposed to an electron beam, means for projecting the scanning spot of light formed by said beam on said screen upon an object to be scanned, a light sensitive device for receiving the light after it has been incident upon said object, means connected to said light sensitive device for providing an image signal corresponding to the light and shade of the object, an auxiliary light sensitive device arranged to receive light directly from said screen, means connected to said auxiliary light sensitive device to compensate for local variations in the brightness of the spot of light on the screen, and means for controlling said last mentioned means so that for a given brightness of scanning spot on said screen it is substantially independent of the position of the said spot of light on said screen.

5. A television system according to claim 1 wherein the light spot is projected upon a transparent object so that light passing therethrough is incident upon the light sensitive device.

6. A television system according to claim 1 wherein the light spot is projected upon an opaque object so that light diffusely reflected therefrom is incident upon the light sensitive device.

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