Feb. 8, 1938. K. SCHLESINGER 2,107,392

TELEVISION ARRANGEMENT

Filed June 1, 1934

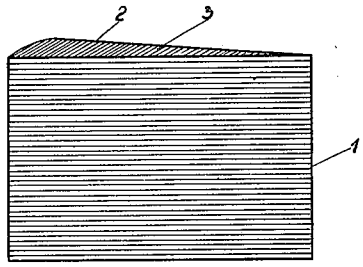

Fig 1.

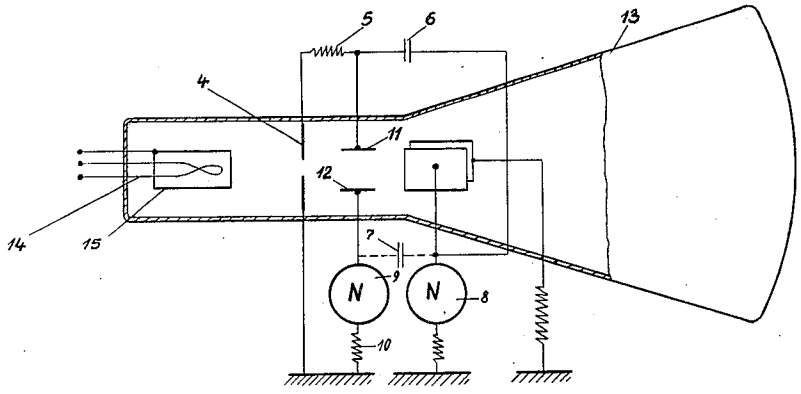

Fig 2.

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Patented Feb. 8, 1938

2,107,392

UNITED STATES PATENT OFFICE

2,107,392

TELEVISION ARRANGEMENT

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Application June 1, 1934, Serial No. 728,526
In Germany June 3, 1933

2 Claims. (Cl. 178—7.7)

The known television arrangements, in which the screen is produced by the use of an image tilting oscillation generator and a line tilting oscillation generator, are accompanied by a defect, which will be explained in conjunction with Fig. 1 and which is removed by an arrangement according to Fig. 2.

In particular referring to Fig. 1, there is formed above the horizontal bounding line 3 of the screen a streak 2, which varies continuously in form and causes considerable deterioration of the image.

Careful investigations have shown that this error is caused by a capacitative action on the image tilting oscillation circuit by the line tilting circuit, substantially by action on the line traversed by the image tilting potentials, whilst the action on the plate circuits in the tube itself may be practically ignored.

The subject matter of the present invention resides in arrangements and connection systems, which allow the error in question to be completely avoided.

The simple solution consists, as has already been proposed, in screening off the line traversed by the image tilting potentials up to its entry into the Braun tube, whilst screening of the image tilting circuit within the tube is unnecessary.

The screening means must be so constructed in accordance with the invention that the time constant determined by the earth capacity and the working resistance of the image tilting generator is smaller than the return tilting period (for example, smaller than 1/5000 sec.).

In this manner the line traversed by the image tilting potential may be constructed in the form of a wire as thin as a needle, and disposed in a screening tube of large diameter. In place of the screening tube there may also be employed in accordance with the invention a part of the chassis, which is screened off against all lines conducting line tilting potentials.

Instead of screening off the line traversed by image tilting potential it is possible in accordance with the invention to short-circuit the image deflecting plate against high frequency.

A short-circuiting of this nature may be obtained in simple fashion by means of a condenser, the capacity of which must be approximately 100 times greater than the interfering part-capacity. The use of a condenser of this kind, however, results in great deterioration of the return line. In place, therefore, of the condenser it is possible in accordance with the invention to employ more conveniently a possibly damped series circuit or also a band pass filter allowing the passage of all frequencies above 2500 periods.

It is, however, particularly convenient to compensate the interfering potentials.

The compensation may be performed quite generally by the application of a potential, which is equal to the interfering potential, to the second image-deflecting plate, i. e., by the use of an equal but oppositely directed field.

A connection system for carrying out the method according to the invention is illustrated diagrammatically by way of example in Fig. 2.

In the same: 13 in a Braun tube, having cathode 14 and Wehnelt cylinder 15. 12 is the image deflecting plate, which receives the image-deflecting potenial from the generator 9 with the working resistance 10. Between the image potential line and the line tilting potential line there is situated the detrimental capacity 7. The plate 11 is connected over the resistance 5, which is equal to the resistance 10 (for example, 3000 ohms), with the earthed anode 4. The compensation potential is conducted to the plate 11 through the medium of the condenser 6, which is so adjusted that its capacity is equal to the interfering capacity 7.

I claim:

1. An arrangement for deflecting the cathode ray in a Braun tube having a source of electrons, an anode, a fluorescent screen and two pairs of deflecting plates, one pair serving for the line deflection of the cathode ray produced in said tube and the second pair serving for the framing deflection, comprising two scanning oscillation generators, means for connecting one of said generators with said line deflecting plates, means for connecting the other of said generators with said framing deflecting plates, a condenser connected between said line scanning oscillation generator and one plate of said second pair for applying a potential of the same amplitude and reversed phase as compared with the potential causing disturbing capacitative influences between said line scanning oscillation generator and said other plate of said second pair of deflecting plates.

2. In a television arrangement comprising a Braun tube having a pair of line deflection plates and a pair of frame deflection plates, a tilting oscillation generator connected by leads to one of the first pair of plates, and another tilting oscillator connected by leads to one of the second pair of plates, each other plate of both pairs being connected through a separate impedance to the anode, a condenser connecting the line deflection plate connected to its tilting generator to the frame deflection plate connected to the anode, the capacity of said condenser being equal to the non-avoidable disturbing capacity between said generators and between the leads connecting said generators to said plates.

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