

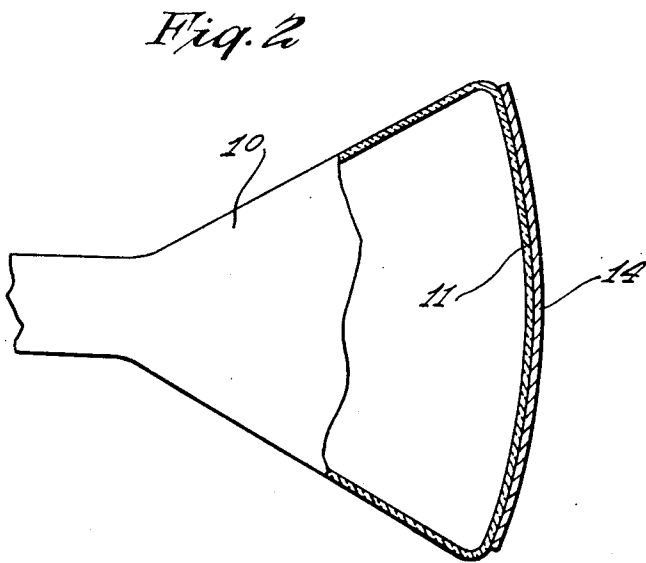
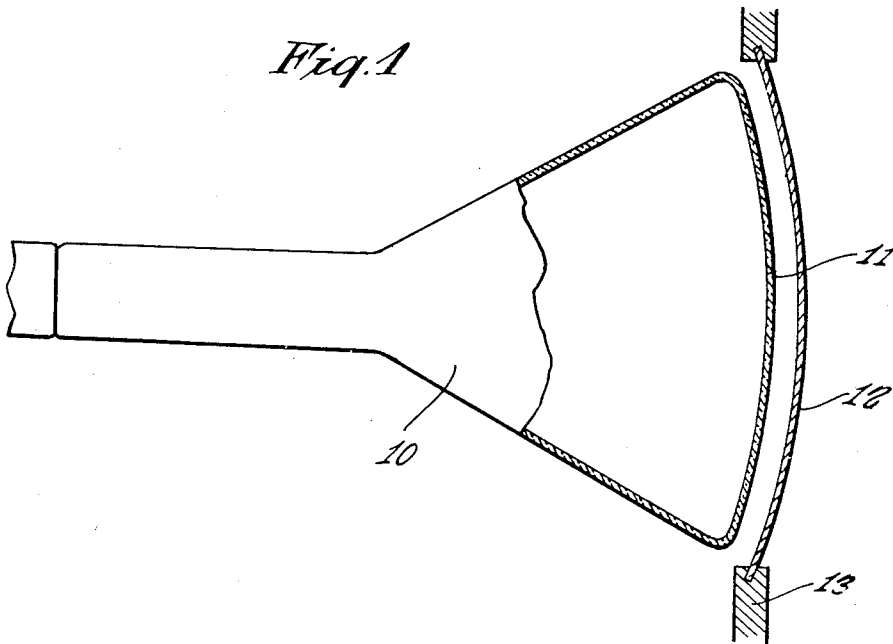
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2,461,464

FILTER FOR FLUORESCENT SCREENS

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FILTER FOR FLUORESCENT SCREENS

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2 Claims. (Cl. 250—164)

1

The present invention relates to improvements in cathode ray tubes and more particularly to tubes of this type for use in television receivers.

An object of the invention is to provide an improved cathode ray tube suitable for use in television receivers which gives a better contrast in the reproduced picture than is obtainable with tubes of conventional construction.

A further object of the invention is to provide an image reproducing device for use in conjunction with a television receiver which reduces eye strain on the observer and improves the spectral distribution curve of the light emitted by the tube.

Still another object of the invention is to improve the definition of the picture by excluding from the observer light which, by reason of its color and by being scattered over the dark portion of the picture tends to produce a blurred characteristic in the observed image.

A further object of the invention is to provide these improvements without appreciable structural alteration in the machinery for the manufacture of cathode ray tubes now currently in the production of these devices.

It is a further object of the invention to permit the advantages thereof to be incorporated into television receivers of existing types without the necessity of replacing the costly cathode ray tubes used therein.

Other and further objects will become apparent upon reading the following specification together with the accompanying drawing forming a part thereof.

Referring to the drawing:

Figure 1 is a view in sectional elevation, partly broken away, of an embodiment of the invention as applied to a television receiver using a conventional tube.

Figure 2 is a view in sectional elevation, partly broken away, of an embodiment of the invention applied to the tube itself thereby avoiding the necessity for any structural changes in the television receiver.

Referring to Figure 1, a cathode ray tube of well known and conventional construction in all respects and suitable for use in a television receiver is shown having a front screen bearing portion 11 internally coated with fluorescent material of the conventional type currently used to produce an image of substantially black and white coloration.

This fluorescent material currently used in conventional cathode ray tubes for television receivers is characterized by the emission of a

2

generally yellow whitish or greyish light in response to bombardment by the electron stream within the tube. Included in the emitted fluorescence is the yellow-orange region of the visible spectrum. This yellow-orange light scatters and produces objectionable glare in the form of coronas or hazes, decreases the normal image contrast and impairs the sharpness of definition of the reproduced image.

These several objectionable effects may be in large measure overcome by the interposition between the image formed on the fluorescent screen at 11 and the observer of the image of a transparent sheet 12 tinted with a blue-green pigment. The conformation of the transparent sheet 12 is shown in Figure 1 as spaced from and following the contours of the screen portion 11 of cathode ray tube 10. Other conformations may be used if desired.

In Figure 2, a modified embodiment of the invention is shown in which the transparent sheet 14 is applied directly to the screen bearing portion 11 of cathode ray tube 10. Using this arrangement, no alteration of the structure of the television receiver is required. The existing tube is merely replaced by the modified tube embodying the invention.

In operation, the blue-green pigment reduces the degree of transparency of either sheet 12 of Figure 1 or sheet 14 of Figure 2 in the objectionable longer wave-length portion of the spectrum. By reducing the intensity of light in the yellow-orange portion of the spectrum, the scattering thereof is reduced, the definition of the reproduced image is sharpened, the contrast of the picture is improved and the objectionable glare, which is tiring to the eyes of the observer, is greatly reduced.

Owing to the fact that in the operation of a television cathode picture tube a given minimum of emitted light is essential to the formation of an image which can be viewed intelligibly, the gain of the said cathode tube cannot be reduced below that minimum without destroying the image. Therefore, there is no practical way of reducing the glare or haze in that image at the required minimum other than by the placement and use of the invention as described herein.

While I have described what I believe to be the best embodiments of my invention, I do not wish to be limited to the embodiments shown, but what I desire to cover by Letters Patent is set forth in the appended claims. The invention is applicable as has been stated to the screen bearing portion of the tube 10 for direct view and

on projection sets between the observer and the screen on which the picture appears.

I claim:

1. In a reproducing device of the type including a fluorescent screen upon which there is formed a light image the spectrum of which includes light in the yellow-orange region, means for enhancing definition of said image comprising a sheet of transparent material interposed in the normal path of viewing of said screen and having substantially uniformly distributed coloring of a hue which selectively discriminates against light in the yellow-orange region of the spectrum of the light transmitted through said sheet.

2. Means as claimed in claim 1 wherein said hue is blue-green.

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