

Title (en)
FRONT ASSEMBLY FOR A CATHODE RAY TUBE

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Application
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Abstract (en)
[origin: EP0234519A2] An improved front assembly for a color cathode ray tube having a tension foil shadow mask is disclosed. The faceplate of the tube has on its inner surface a centrally disposed phosphor screen surrounded by a peripheral sealing area adapted to mate with a funnel. A separate faceplate frame means is secured to the inner surface of the faceplate between the sealing area and the target. The separate frame means according to the invention includes a weldable metal supporting by weldments a tension foil shadow mask a predetermined distance from the inner surface of the faceplate. The faceplate-mounted frame means may comprise shadow mask support structures of sheet metal having in cross-section the shape of an inverted "V", and the shapes of a hollow tube, a rectangle, and a tooth. The shadow mask support structure may also be provided with at least one foot resting on the inner surface of the faceplate for bracing and stabilizing the structure against upset from the high tension of the mask. Further, the weldable metal of the frame means may comprise a separate continuous or discontinuous metal cap or strip and the frame means further including a support structure comprising four discrete rails composed of ceramic with the weldable metal interconnecting the rails to form a generally rectangular unitary shadow mask support structure. The ceramic may also serve as a "buffer" for compensating for the difference in thermal coefficients of the glass of the faceplate and the metal of the cap or strip. The separate faceplate-mounted frame means may have according to the invention a plurality of slurry-passing structures contiguous to the inner surface of the faceplate for passing any surplusage of slurry during the radial-flow slurry-deposition process used in screening the faceplate. The shadow mask support structure can also include a first surface for receiving and securing the foil shadow mask, and a second surface inclined from the first surface to the screen area effective to conduct from the screen area any excess of coating material applied during the slurry deposition process. As a result, discontinuities in phosphor application visible to the viewer, and non-adherence of phosphor resulting in wash-off and flake-off, are avoided. An embodiment is also shown in which electrical connection is made between a mask support structure and a screen.

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