

[54] LIGHT SOURCE FOR PLANAR ILLUMINATION IN LIQUID CRYSTAL DEVICE

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[ \* ] Notice: The portion of the term of this patent subsequent to Mar. 20, 2007 has been disclaimed.

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[51] Int. Cl.<sup>5</sup> ..... G02F 1/13; F21V 7/04

[52] U.S. Cl. .... 359/49; 362/31; 362/347

[58] Field of Search ..... 350/345, 334, 360; 362/31, 347

[56] References Cited

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Primary Examiner—Rolf Hille  
Assistant Examiner—S. V. Clark  
Attorney, Agent, or Firm—Antonelli, Terry, Stout & Kraus

[57] ABSTRACT

A light source device disposing light sources at both end faces of the transparent plate in which a surface of the transparent plate in the side of an observer (front surface) is formed as the inclined and curved surface in view of limiting reduction in quantity of light per unit area at the observing area being far from the light source within a certain level, the one surface of the transparent plate is formed as the rough surface to diffuse the incident light, the other surface of the transparent plate is formed as a mirror-surface, and a reflecting layer having a high lightness is disposed at the lower side of the transparent plate in order to provide sufficient luminance for observers.

13 Claims, 8 Drawing Sheets

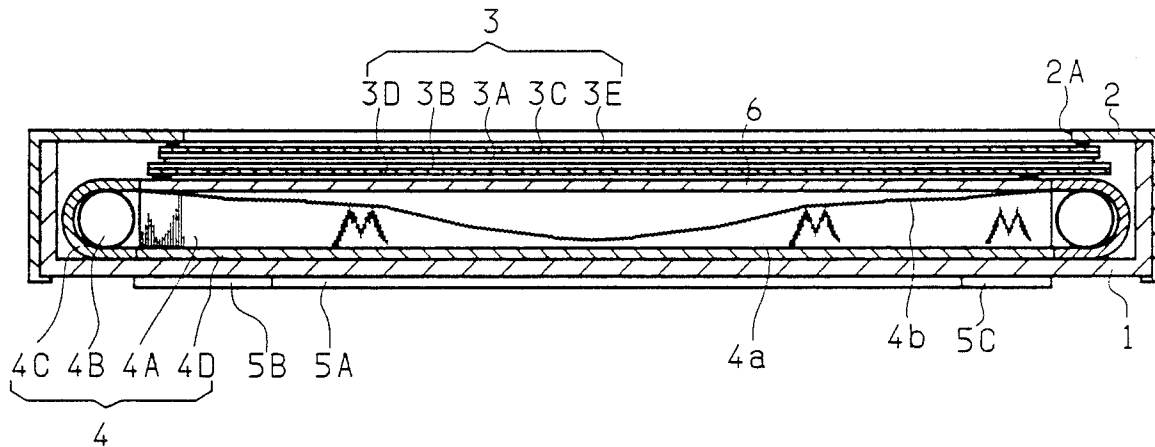




FIG. 2

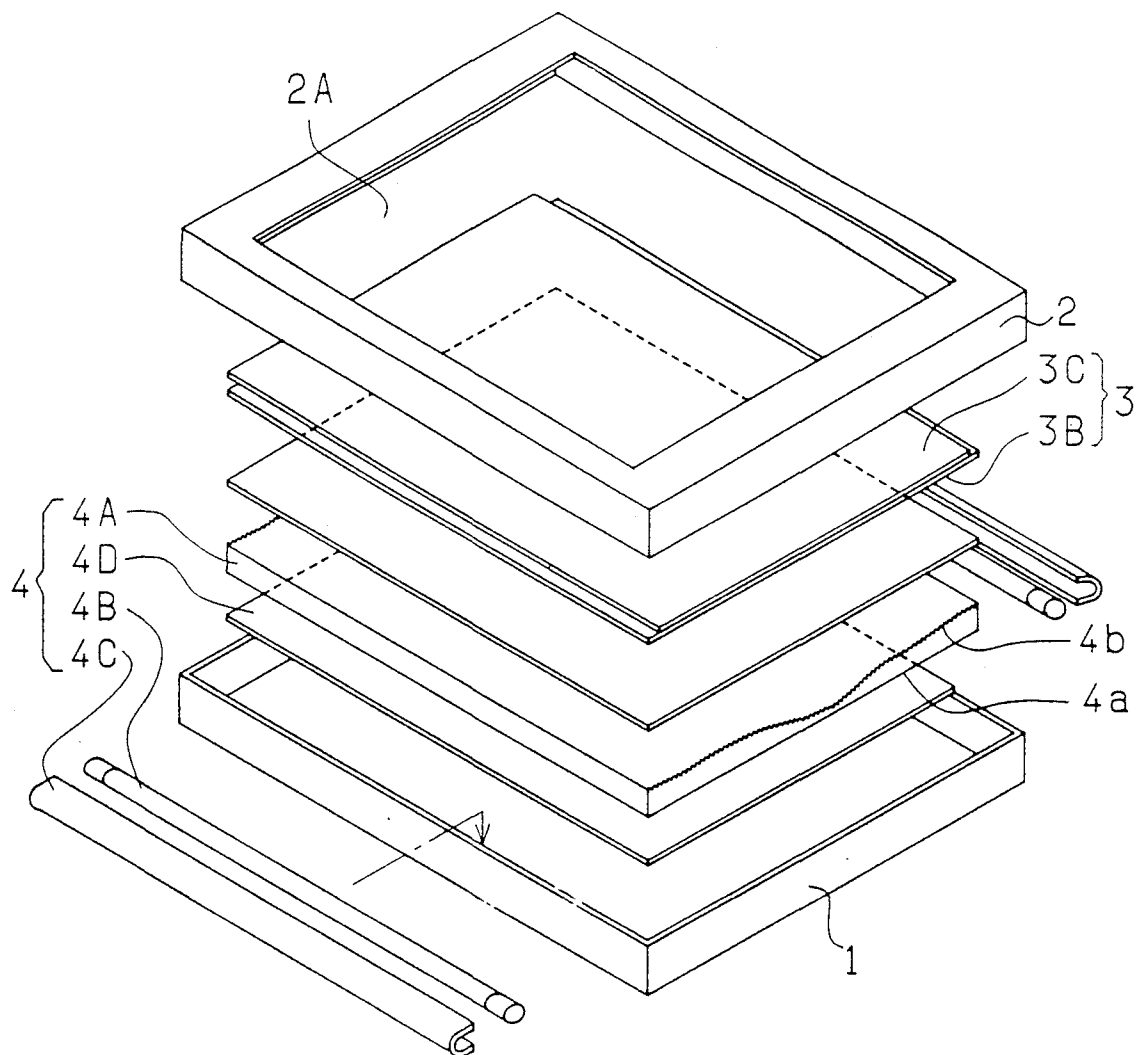


FIG. 3

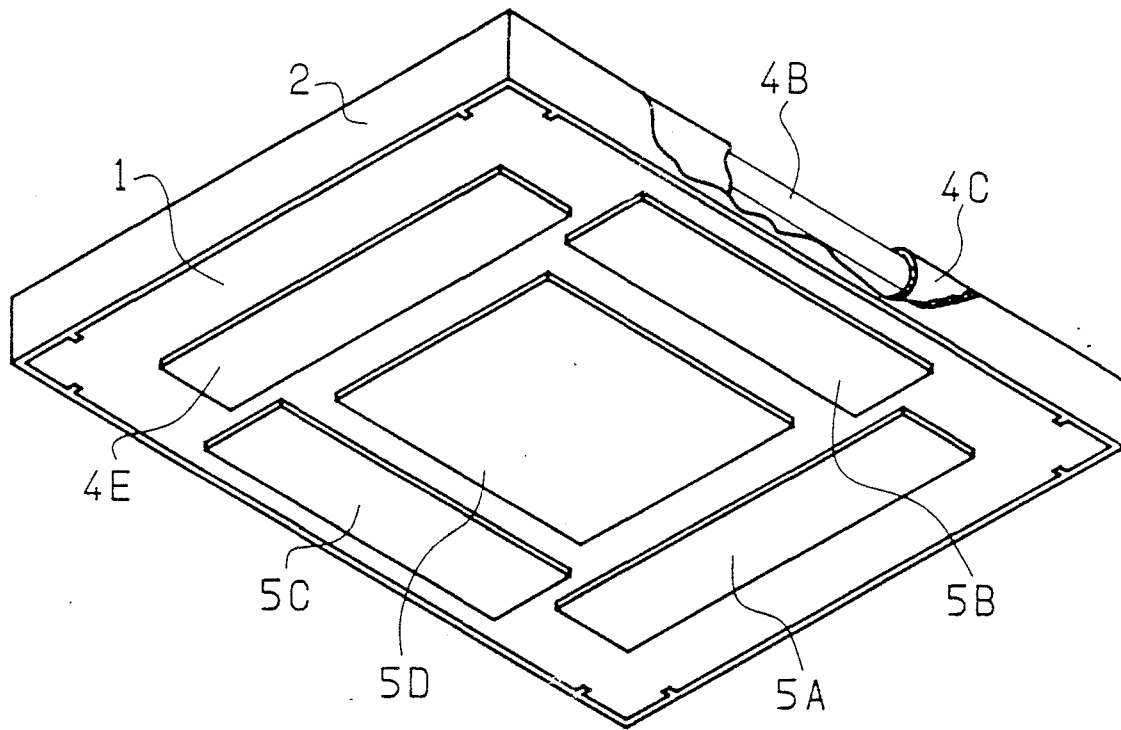
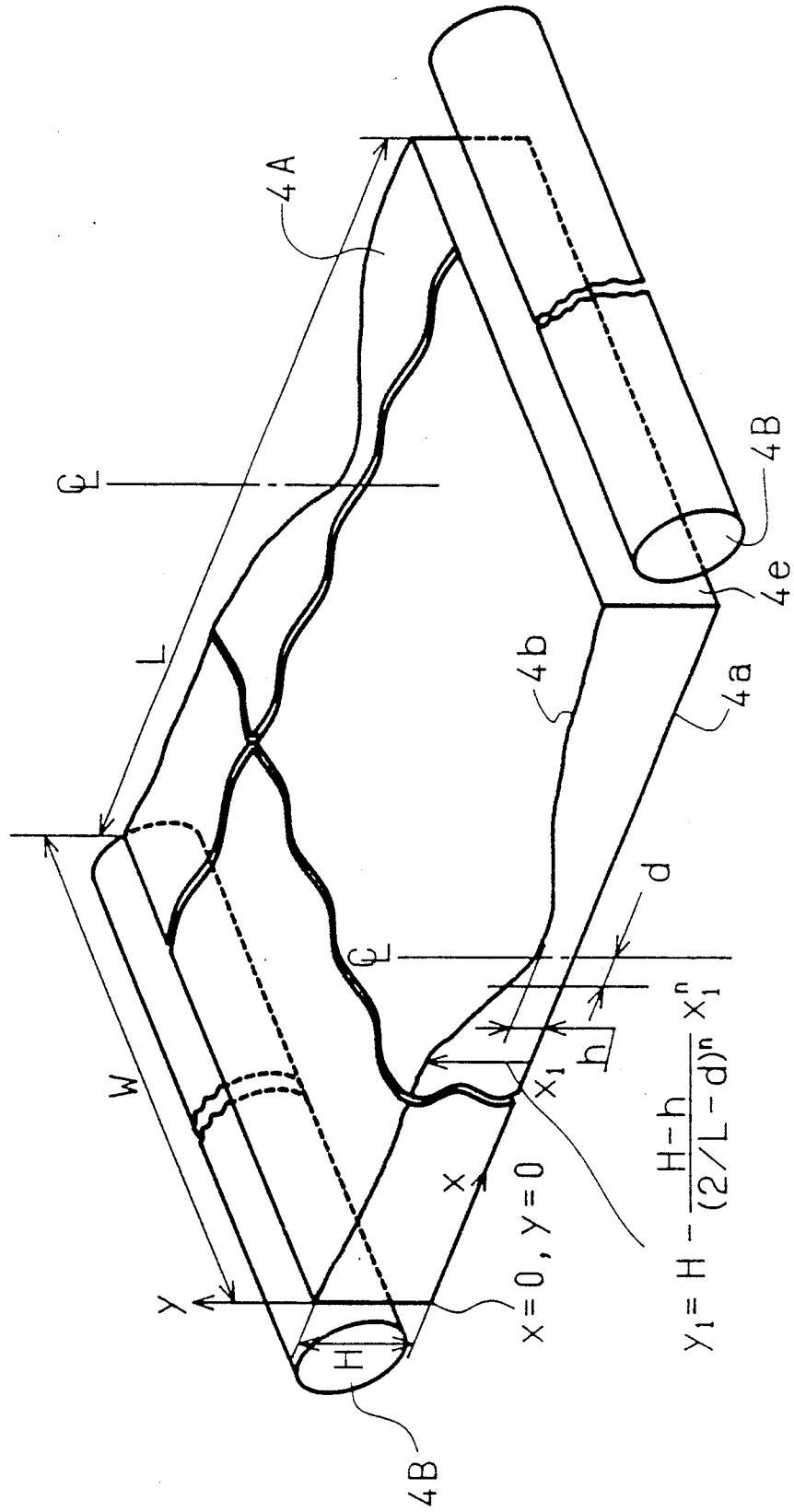


FIG. 4



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