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Kobayashi et al.

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[54] PLANAR ILLUMINATING DEVICE

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[73] Assignee: **Stanley Electric Co., Ltd., Tokyo, Japan**

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[30] Foreign Application Priority Data

Jan. 24, 1992 [JP] Japan 4-032951

[51] Int. Cl.⁶ **F21V 8/00**

[52] U.S. Cl. **362/31; 362/26; 362/27; 362/331**

[58] Field of Search **362/26, 27, 29, 30, 362/31, 326, 327, 328, 330, 331, 339, 223**

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[57] ABSTRACT

A planar illuminating device, comprising a light-transmitting plate made of a transparent material and having opposite side edges and opposing front and rear faces, two sources of light each arranged adjacent to one of the side edges of the plate, a reflector arranged behind the plate rear face and reflecting rays of light from the plate to the front face of the plate, a light diffuser arranged in front of the plate and diffusing rays of light from the plate. The device comprises a reflecting finish applied directly to the rear face of the plate. A reflecting surface of the reflecting finish faces substantially in the direction of the front face of the plate. The reflectance of part of the reflecting finish depends on the distance of that part from either of the two sources of light. The device further comprises parallel prismatic cuts along the front face of the plate. The longitudinal axes of the prismatic cuts are substantially parallel to rays of light passing from the sources of light through the plate. A combination of the reflecting finish and the reflector increases the surface illuminance and the uniformity in the surface illuminance of the planar illuminating device.

11 Claims, 5 Drawing Sheets

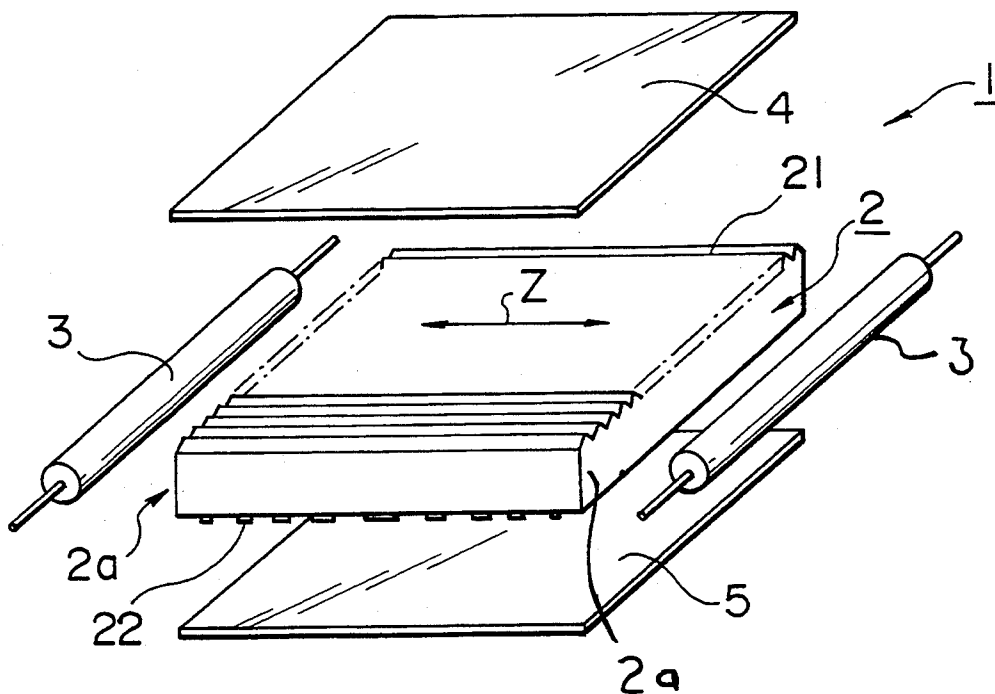


FIG. 1

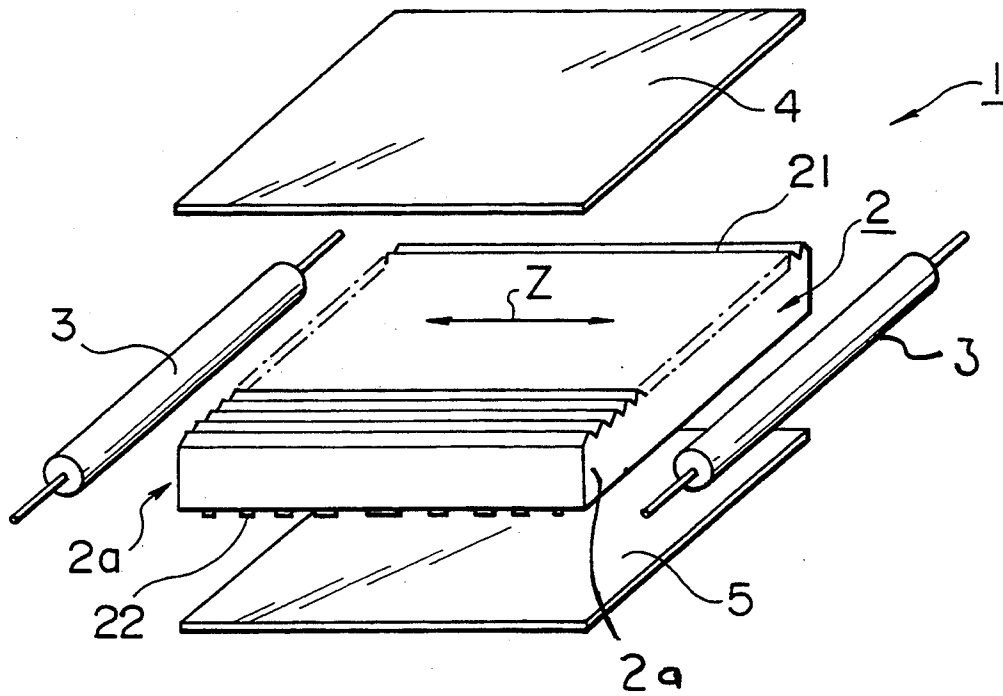


FIG. 2

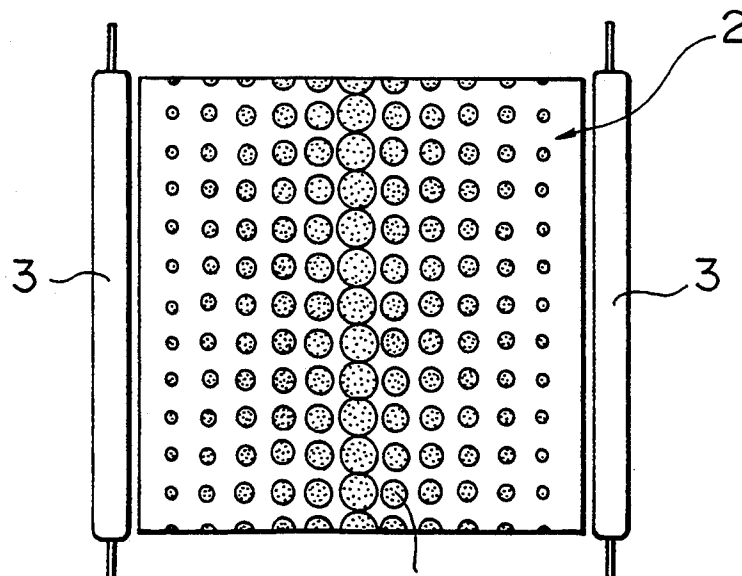


FIG. 3

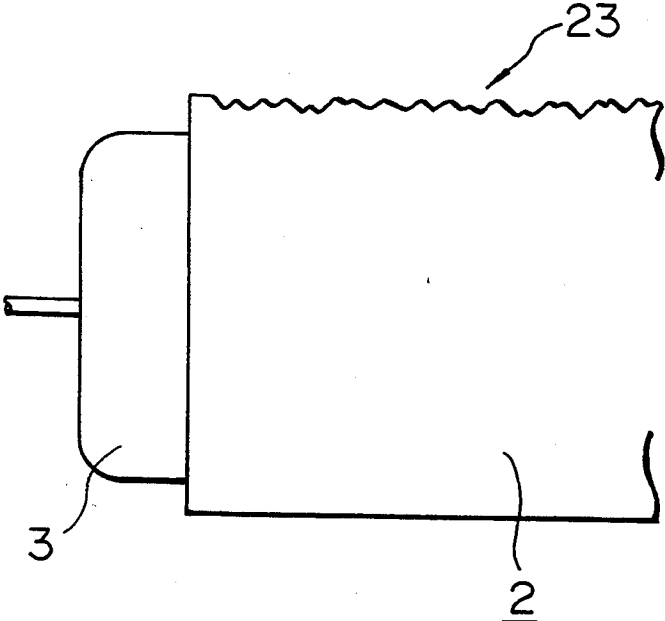


FIG. 4

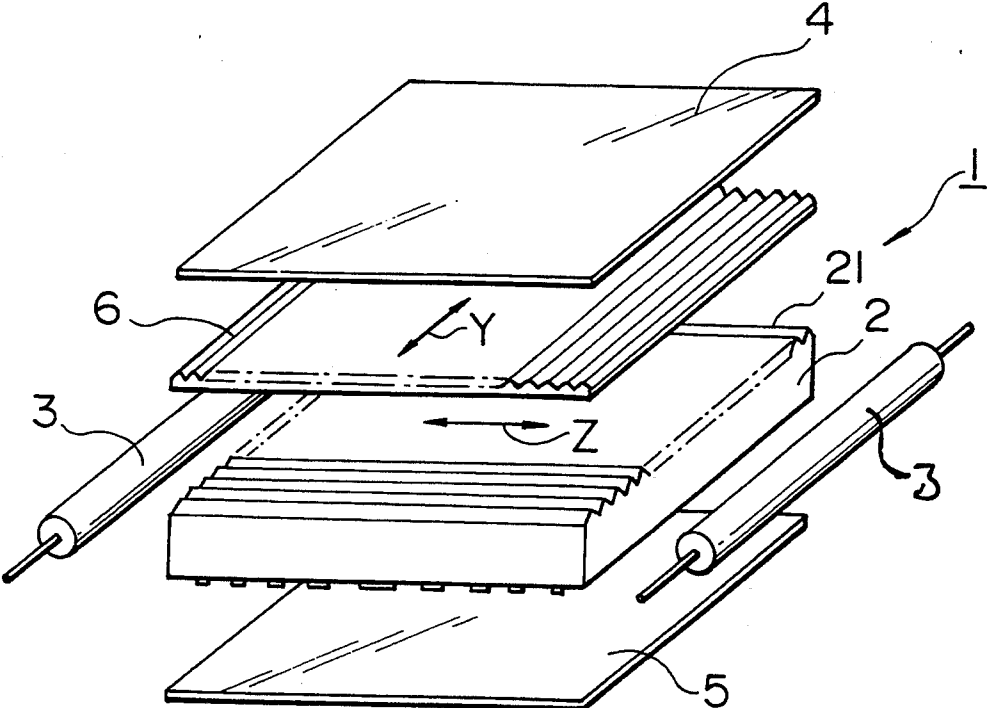


FIG. 5

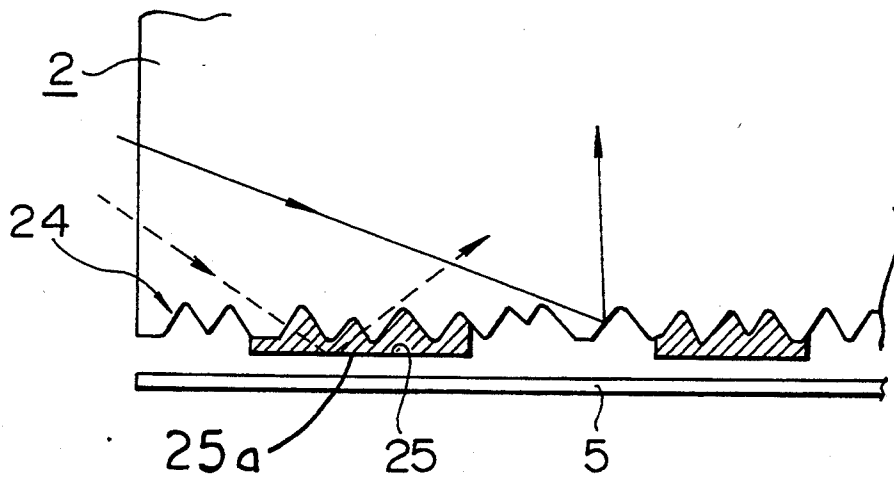
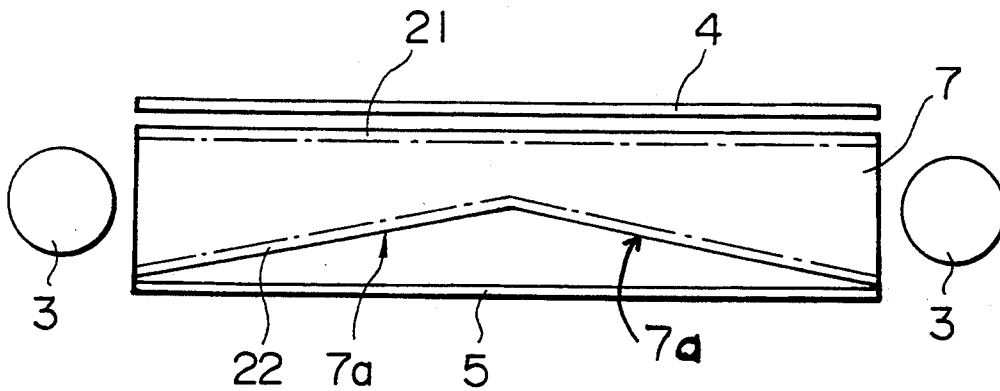


FIG. 6



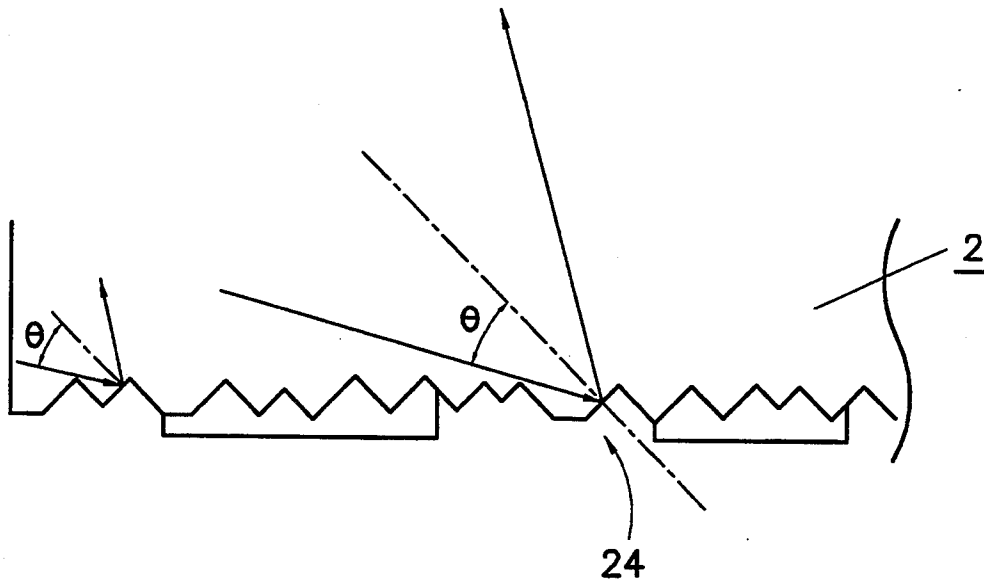


Fig. 5a

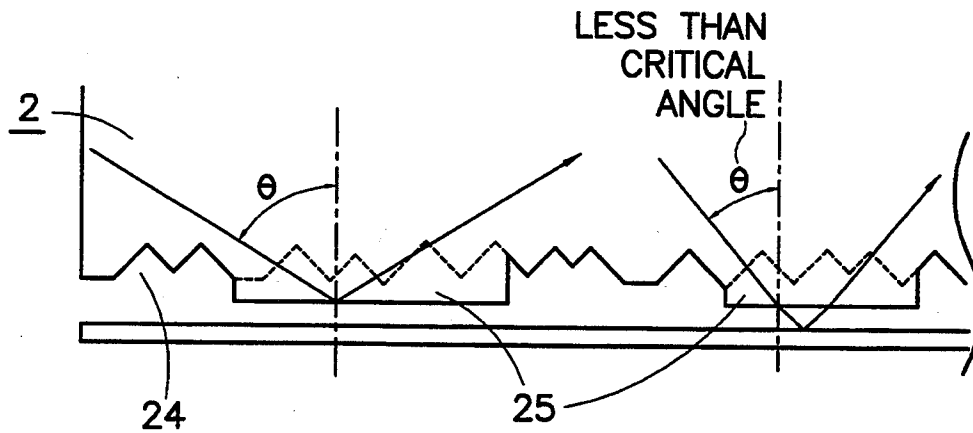


Fig. 5b

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