



- [54] **PLASTIC OPTICAL MEMBER AND LIGHT-QUANTITY-CONTROLLING MEMBER EACH HAVING A LIGHT-DIFFUSING LAYER ON ITS SURFACE**
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FOREIGN PATENT DOCUMENTS

- 2054433 5/1972 Germany .
- 349167 11/1959 Japan .
- 498711 2/1974 Japan .
- 57-128383 8/1982 Japan .
- 58-155947 9/1983 Japan .
- 59-8809 2/1984 Japan .
- 61-276831 12/1986 Japan .
- 2126501 5/1990 Japan .

OTHER PUBLICATIONS

- English language translation of claim of JP-A-34-9167.
- English language translation of claim of JP-A-49-8711.
- English language translation of claim of JP-B-59-8809.
- English language translation of claims of JP-A-5-7-128383.
- English language Abstract of JP reference No. 2-126501.
- English language translation of Claims of JP-A-5-8-155947.
- English language Abstract of JP Reference No. 61-276831.
- Derwent Publications Ltd. London, GB; AN 89-183663 & JP 1 123 201 May 16, 1989.
- Derwent Publications Ltd. London, GB AN 86-058934 & JP 61 010499 Jan. 17, 1986.

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- [51] Int. Cl.<sup>6</sup> ..... **G02B 13/20; G02B 5/02; A61G 13/00**
- [52] U.S. Cl. .... **359/707; 359/599; 362/33**
- [58] Field of Search ..... **359/599, 707, 893, 894, 359/619; 362/26, 31, 33**

[56] References Cited

U.S. PATENT DOCUMENTS

- 3,671,101 6/1972 Finch ..... 359/599
- 3,850,667 11/1974 Tani et al. .... 117/36.7
- 4,114,983 9/1978 Maffitt et al. .... 359/599
- 4,310,219 1/1982 Jaccard ..... 359/599
- 4,427,265 1/1984 Suzuki et al. .... 359/599
- 4,529,563 7/1985 McGinniss ..... 264/84
- 4,573,766 3/1986 Bournay, Jr. et al. .... 362/26
- 4,989,933 2/1991 Duguay ..... 359/599

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[57] ABSTRACT

There is provided a plastics optical member having on its surface a light-diffusing layer composed of a layer of micro-joints formed by immersing a plastics material successively in a good solvent and a poor solvent, and a plastics light-quantity-controlling member having on its surface a white pattern composed of the micro-joints. The superiority in light diffuse reflection, transmission and light-quantity-controlling property permit their incorporation into various optical systems such as screens for projection, various displays, light-source-directly-under-an-illumination-surface type light boxes, edge light type light boxes, etc.

8 Claims, 6 Drawing Sheets

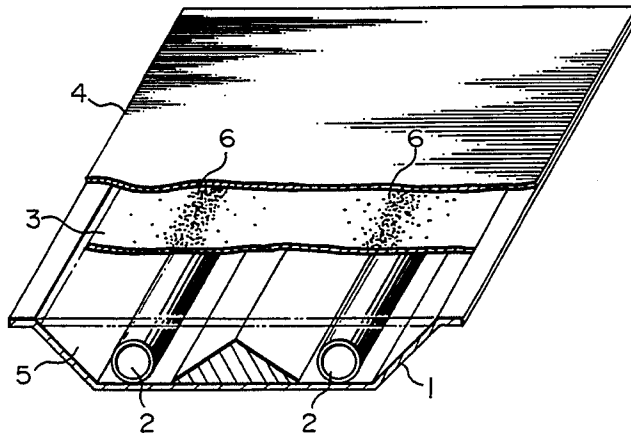


FIG. 1

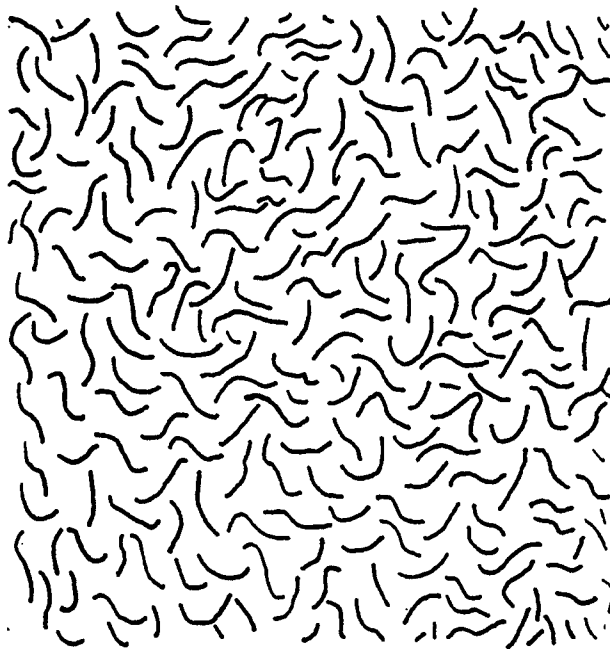


FIG. 2

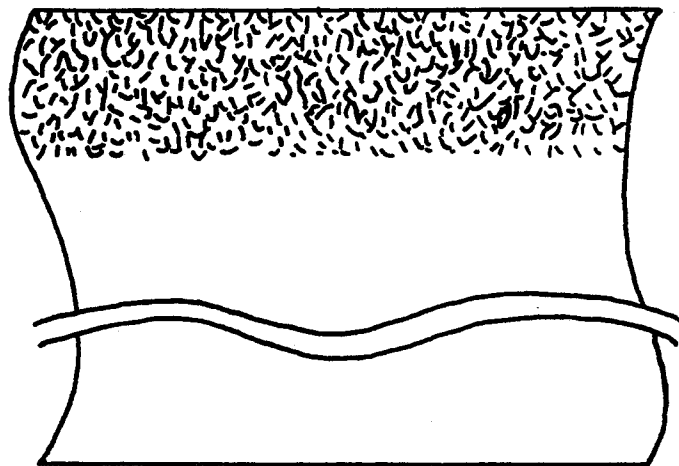


FIG. 3



FIG. 4

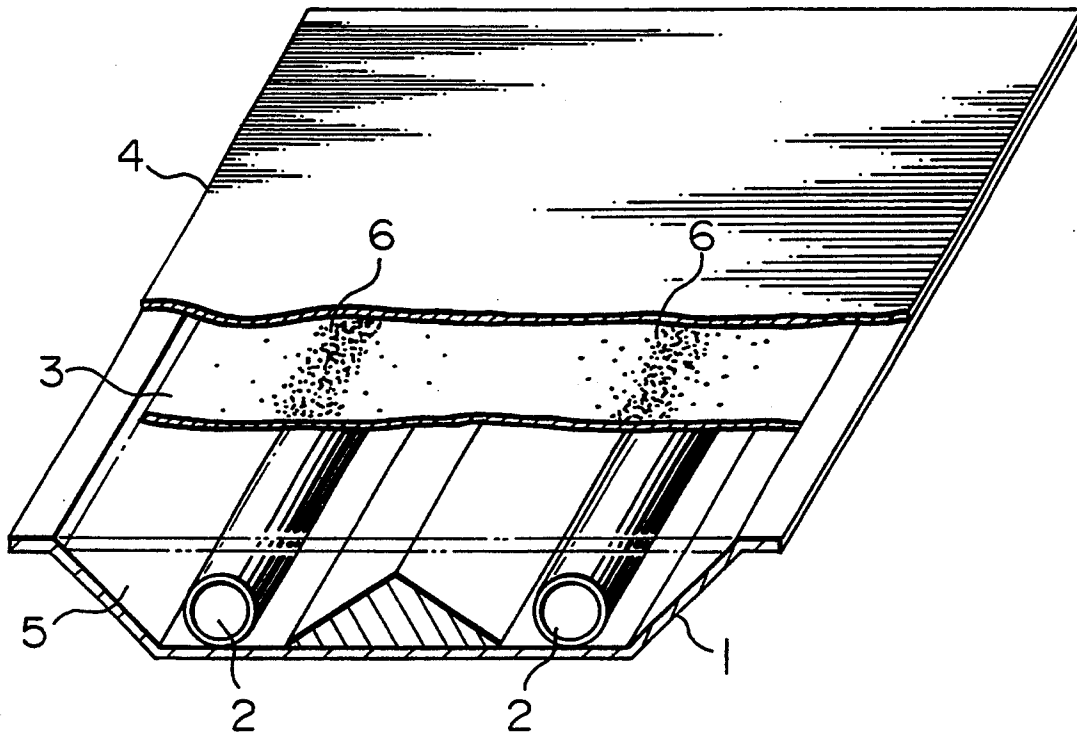


FIG. 5

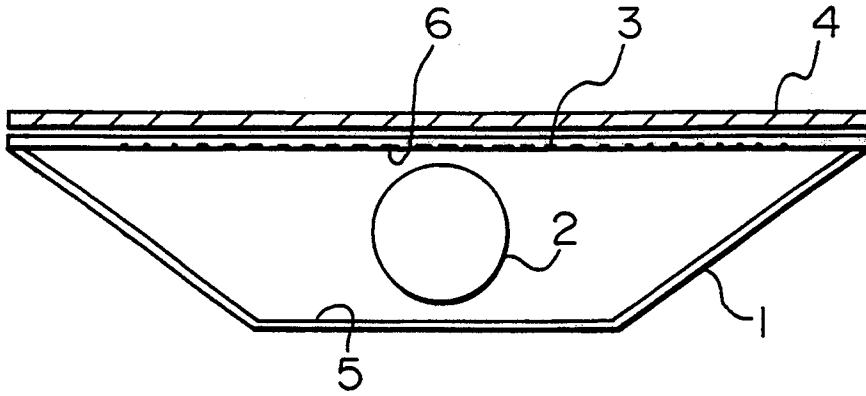


FIG. 6

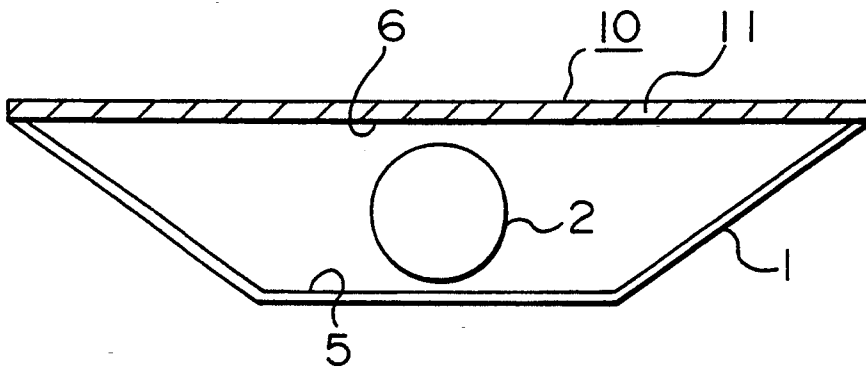
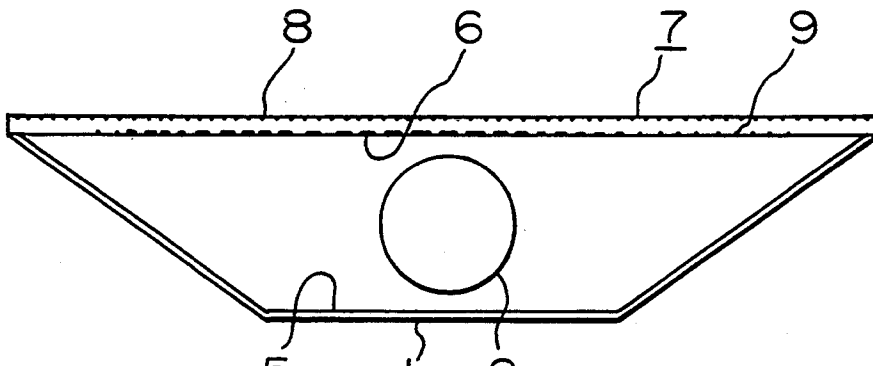


FIG. 7



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