

(19) JAPANESE PATENT OFFICE (JP)

(12) GAZETTE OF PATENT PUBLICATION (A)

(11) PUBLICATION NUMBER OF PATENT APPLICATION PP H6-273756

(43) DATE OF PUBLICATION SEPTEMBER 30, HEISEI 6 YEAR (1994.9.30)

(51) Int. Cl. <sup>5</sup> Identification Symbol Reference Number FI Technology Expression Part

G02F 1/1335 530 7408-2K

F21S 1/00 E 8815-3K

G02B 6/00 331 6920-2K

Request Of Examination Unrequested Number Of Claims 4 OL (Total 5 Pages)

(21) APPLICATION NUMBER PA H5-62028

(22) APPLICATION DATE MARCH 22, HEISEI 5 YEAR (1993.3.22)

(71) APPLICANT 000003757

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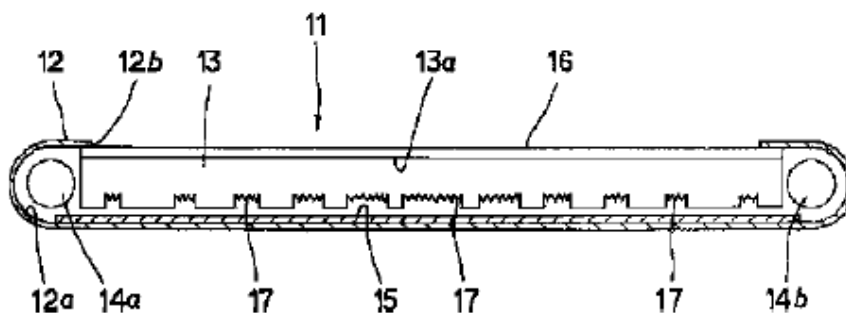
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(54) [NAME OF INVENTION] ILLUMINATING DEVICE AND LIQUID CRYSTAL DISPLAY DEVICE

(57) [ABSTRACT]

[PURPOSE] Brightness and efficiency are increased by reducing or preventing leakage of light leaking from a light guide body to an exterior.

[CONSTITUTION] A plurality of rough surface reflecting portions (17) where a light from a pair of fluorescent lamps (14a, 14b) is reflected on a rough surface and is guided toward a light emitting surface (13a) are formed on an opposite surface opposite to the light emitting surface (13a) of a light guide body (13). As the rough surface reflecting portions (17) become farther from the pair of fluorescent lamps (14a, 14b), a density of the rough surface reflecting portions increases.



[SCOPE OF CLAIMS]

[CLAIM 1] An illuminating device comprising a light source, and a light guide body receiving a light from the light source and guiding the light toward a light emitting surface, wherein a

plurality of rough surface reflecting portions where the light from the light source is reflected on a rough surface and is guided toward the light emitting surface are formed on an opposite surface opposite to the light emitting surface of the light guide body.

[CLAIM 2] The illuminating device, wherein the rough surface reflecting portions are formed such that a density of the rough surface reflecting portions increases as the rough surface reflecting portions become farther from the light source.

[CLAIM 3] An illuminating device, comprising: a light source; a light source reflecting part surrounding the light source and reflecting a light from the light source; a light guide body where a plurality of rough surface reflecting portions are formed denser as the rough surface reflecting portions become farther from the light source, the rough surface reflecting portions receiving the light from the light source, and a portion of the light from the light source reflected on a rough surface and guided toward a light emitting surface; a diffusing means on the light emitting surface of the light guide body; and a reflecting means on the rough surface reflecting portions.

[CLAIM 4] A liquid crystal display device comprising the illuminating device of one of claims 1 to 3, and a liquid crystal display panel whose rear surface is illuminated by the light from the illuminating device.

[DETAILED DESCRIPTION OF INVENTION]

[0001]

[INDUSTRIAL UTILIZATION FIELD] The present invention relates to an illuminating device or a liquid crystal display device suitable for a backlight, etc. illuminating a rear surface of a

LCD (liquid crystal display device) panel, etc. Especially, the present invention relates to an illuminating device or a liquid crystal display device obtaining higher efficiency by reducing a loss of output light.

[0002]

[PRIOR ART] An example of this kind of an illuminating device according to the prior art, for example, is shown in FIG. 5. This illuminating device (1) is referred to as a side (edge) light type, where most of an inner surface (2a) of a lamp case (2) is formed as a reflecting surface.

[0003] This lamp case (2) accommodates a light guide body (3) of a rectangular plate shape, for example, and one pair of left and right fluorescent lamps (4a, 4b) of a straight line shape, for example, which are disposed at sides of left and right end portions of the light guide body (3), therein. In addition, an LCD (liquid crystal display device) panel not shown is disposed and fixed on a light emitting surface (3a) which is a top surface of the drawing for the light guide body (3) through a diffusing sheet (5).

[0004] Further, a reflecting film (6) of a dot shape composed of a white paint, for example, is formed on an outer bottom surface of the light guide body (3) by a printing, etc. The reflecting film (6) of a dot shape is formed such that a density of the dot becomes denser as the dot becomes farther from the fluorescent lamps (4a, 4b).

[0005] Accordingly, although a portion of a light from one pair of fluorescent lamps (4a, 4b) is transmitted through an inside of the light guide body (3) and is totally reflected on a gap of the reflecting film (6) of a dot shape, a portion of the light is totally reflected on the reflecting film

(6) of a dot shape and the other light is diffused and reflected to be emitted from the light emitting surface (3a) toward the diffusing plate (5). The light is further diffused to illuminate a rear surface of the LCD panel not shown.

[0006]

[PROBLEM TO BE SOLVED BY THE INVENTION] However, in the illuminating device (1) according to the prior art as shown in FIG. 6, when the light designated by an arrow of the drawing in the light guide body (3) is reflected on the reflecting film (6) of a dot shape, a portion of the light leaks from an interface (K) between the rear surface of the light guide body (3) and the reflecting film (6) of a dot shape to an exterior to generate a loss of light. As a result, there is a problem such that efficiency as a unit is not necessarily high. In addition, since the reflecting film (6) of a dot shape is formed by a printing, absorption of light by printing ink is excessive.

[0007] The present invention is performed based on this situation, and the object of the present invention is to provide an illuminating device and a liquid crystal display device which can improve the efficiency as a unit by reducing a loss of light.

[0008]

[MEANS FOR SOLVING PROBLEM] To solve the above problem, the present invention is composed as follows.

[0009] The invention described in claim 1 of the present application (hereinafter, a first invention) is an illuminating device comprising a light source, and a light guide body receiving a

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