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(54) [Title of the Invention] ILLUMINATION APPARATUS

(57) [Abstract]

[Object] An object of the invention, which relates to an illumination apparatus, is to provide a plane illumination apparatus that realizes high brightness and high productivity.

[Construction] An illumination apparatus at least includes a light-guiding plate 11 and a light source 12 provided along and next to a side edge of the light-guiding plate. The apparatus is characterized in that, a light-diffusing plate 21 is provided on an outgoing-light emission surface of the light-guiding plate 11; a concave portion 14 having a substantially triangular cross-sectional shape is formed in an opposite surface of the light-guiding plate 11 as a line pattern or a dot pattern; a transparent layer 16

is formed on the opposite surface of the light-guiding plate 11, in which the concave portion 14 is formed, by using a material that has an index of refraction that is greater than that of the light-guiding plate 11, said transparent layer being formed in such a way that the concave portion 14 is filled in by said material; and a reflection sheet 18 is either provided on or formed integrally on an outer surface of the transparent layer 16.

[Claims]

[Claim 1] An illumination apparatus that at least includes a light-guiding plate (11) and a light source (12) that is provided along and next to a side edge of the light-guiding plate,

characterized in that,

a light-diffusing plate (21) is provided on an outgoing-light emission surface of the light-guiding plate (11);

a concave portion (14) that has a substantially triangular cross-sectional shape is formed in an opposite surface of the light-guiding plate (11) as a line pattern or a dot pattern;

a transparent layer (16) is formed on the opposite surface of the light-guiding plate (11), in which the concave portion (14) is formed, by using a material that has an index of refraction that is greater than an index of refraction of the light-guiding plate (11), said transparent layer being formed in such a way that the concave portion (14) is filled in by said material; and

a reflection sheet (18) is either provided on or formed integrally on an outer surface of the transparent layer (16).

[Claim 2] An illumination apparatus that at least includes a light-guiding plate (11) and a light source (12) that is provided along and next to a side edge of the light-guiding

plate,

characterized in that,

a concave portion (34) that has a substantially triangular cross-sectional shape is formed in an outgoing-light emission surface of the light-guiding plate (11) as a line pattern or a dot pattern;

a transparent layer (36) is formed on the outgoing-light emission surface of the light-guiding plate (11) by using a material that has an index of refraction that is greater than an index of refraction of the light-guiding plate (11), said transparent layer being formed in such a way that the concave portion (34) is filled in by said material;

a light-diffusing plate (38) is provided on an outer surface of the transparent layer (36); and

a reflection sheet (32) is provided on an opposite surface of the light-guiding plate (11).

[Claim 3] An illumination apparatus that at least includes a light-guiding plate (11) and a light source (12) that is provided along and next to a side edge of the light-guiding plate,

characterized in that,

a concave portion (34) that has a substantially triangular cross-sectional shape is formed in an outgoing-light emission surface of the light-guiding plate (11) as a

line pattern or a dot pattern;

a transparent layer (36) is formed on the outgoing-light emission surface of the light-guiding plate (11) by using a material that has an index of refraction that is greater than an index of refraction of the light-guiding plate (11), said transparent layer being formed in such a way that the concave portion (34) is filled in by said material;

a light-diffusing plate (38) is provided on an outer surface of the transparent layer (36);

a concave portion (14) that has a substantially triangular cross-sectional shape is formed in an opposite surface of the light-guiding plate (11) as a line pattern or a dot pattern;

a transparent layer (16) is formed on the opposite surface of the light-guiding plate (11), in which the concave portion (14) is formed, by using a material that has an index of refraction that is greater than an index of refraction of the light-guiding plate (11), said transparent layer being formed in such a way that the concave portion (14) is filled in by said material; and

a reflection sheet (18) is either provided on or formed integrally on an outer surface of the transparent layer (16).

[Claim 4] The illumination apparatus according to any of Claims 1, 2, and 3, further characterized in that either one

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