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PCT Pub. Date: **Oct. 12, 2023**

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(57)

US 2025/0243983 A1 Jul. 31, 2025

ABSTRACT

(30) **Foreign Application Priority Data**

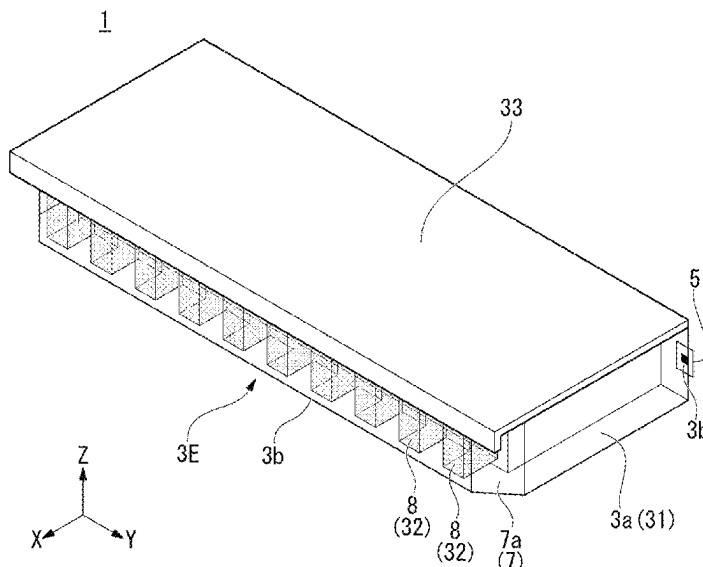
Apr. 6, 2022 (JP) 2022-063342

(52) **U.S. Cl.**
CPC *F21S 41/24* (2018.01)

(58) **Field of Classification Search**
CPC .. G02B 6/0041; G02B 6/0043; G02B 6/0016;
G02B 6/0025; F21S 43/245; F21S
43/239; F21S 43/237; F21S 43/241; F21S

A vehicle lamp includes light sources, and a light guide body configured to guide light emitted from the light sources from one end side toward an other end side of the light guide body. The light guide body has a shape in which a first light guide part located in front of the light sources and a second light guide part extending in one direction between one end side and the other end side are connected. The second light guide part has a plurality of light emitting parts, which are disposed side by side in one direction and which are configured to emit the light by diffusing the light, and transmissive parts which are disposed between the neighboring light emitting parts and which are configured to transmit the light.

5 Claims, 12 Drawing Sheets



(58) **Field of Classification Search**

CPC ... B29C 64/124; B29C 64/165; B29C 64/194;
B29C 64/188; B29C 64/112; B29C
64/118

See application file for complete search history.

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Written Opinion dated May 23, 2023 issued in International Application No. PCT/JP2023/012215.

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FIG. 1

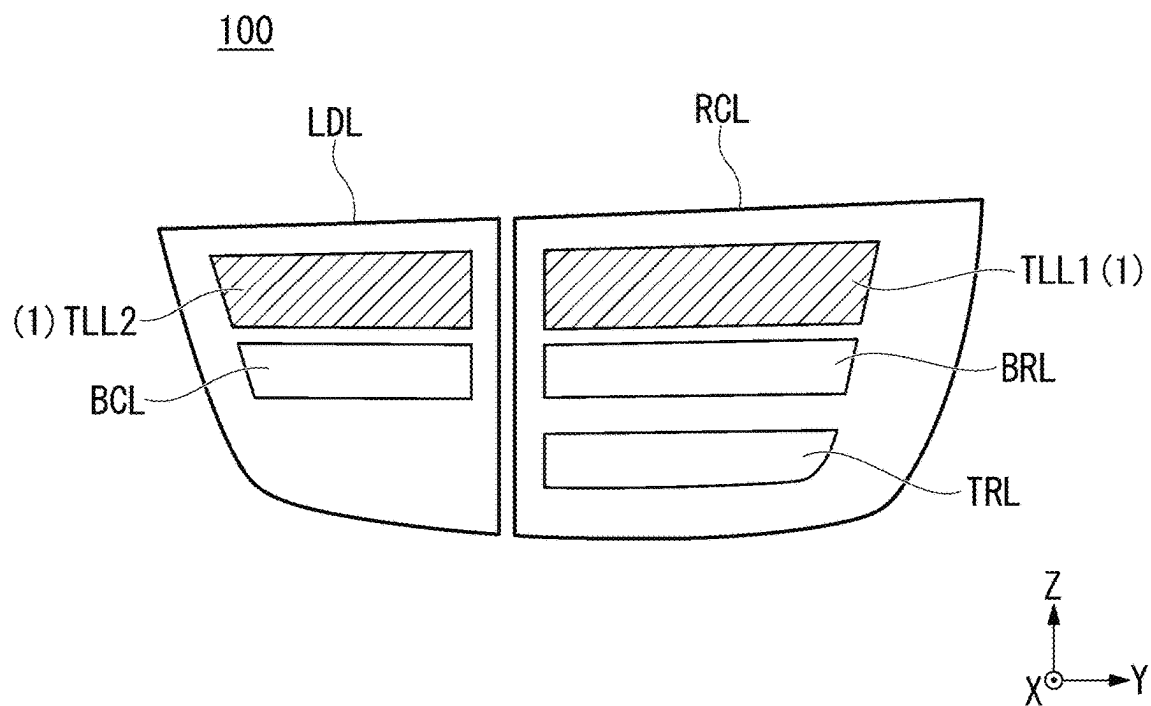


FIG. 2

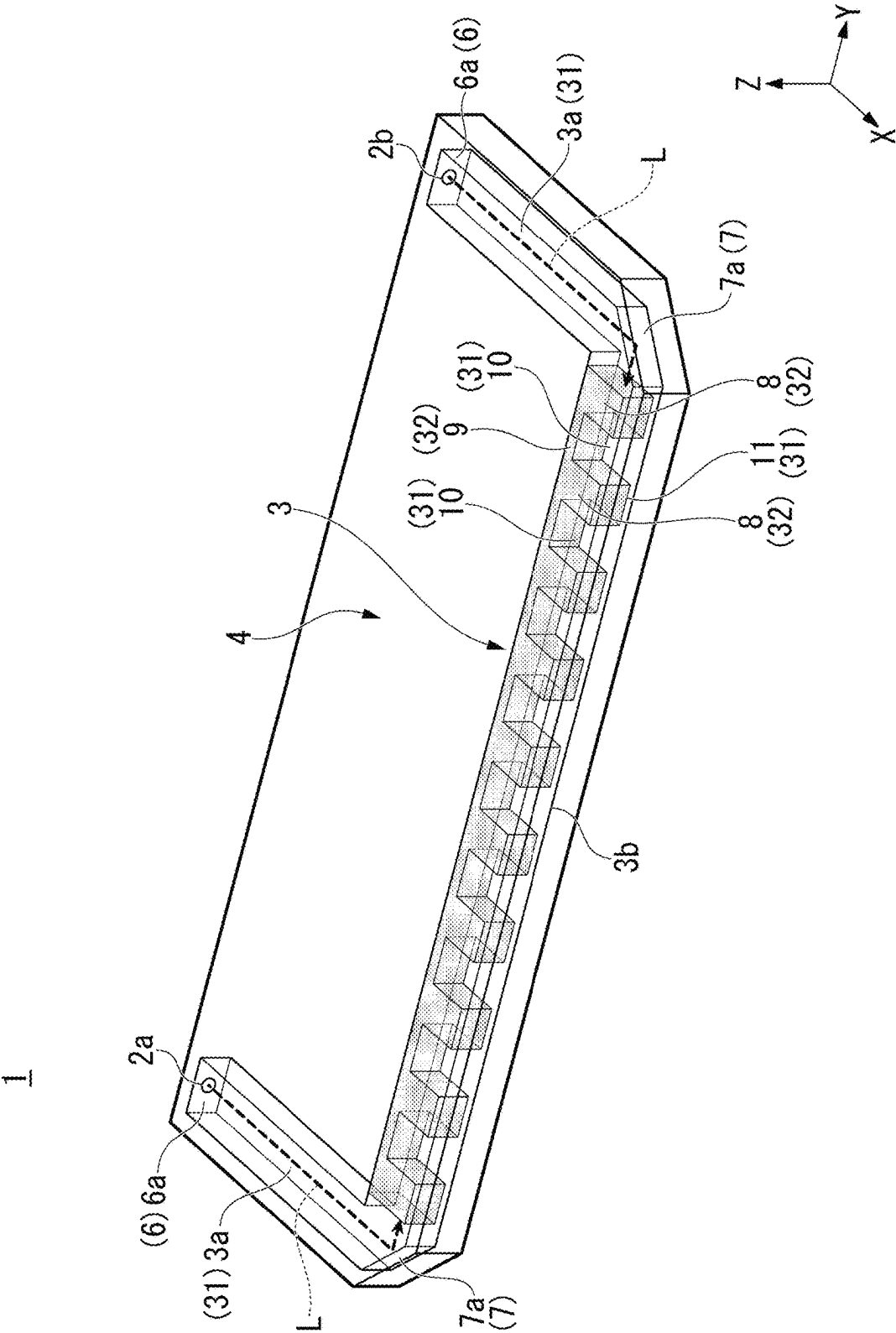


FIG. 3

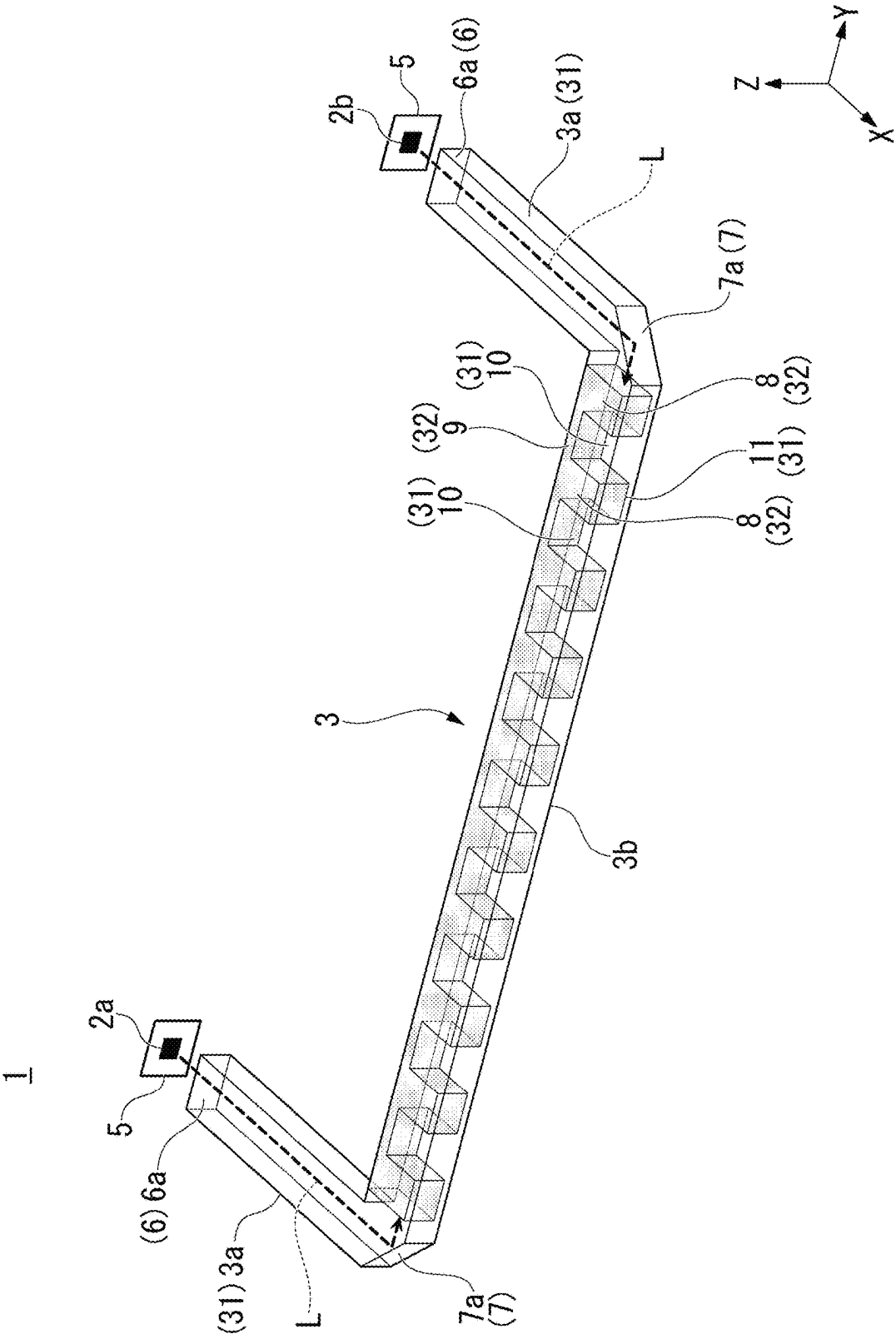


FIG. 4

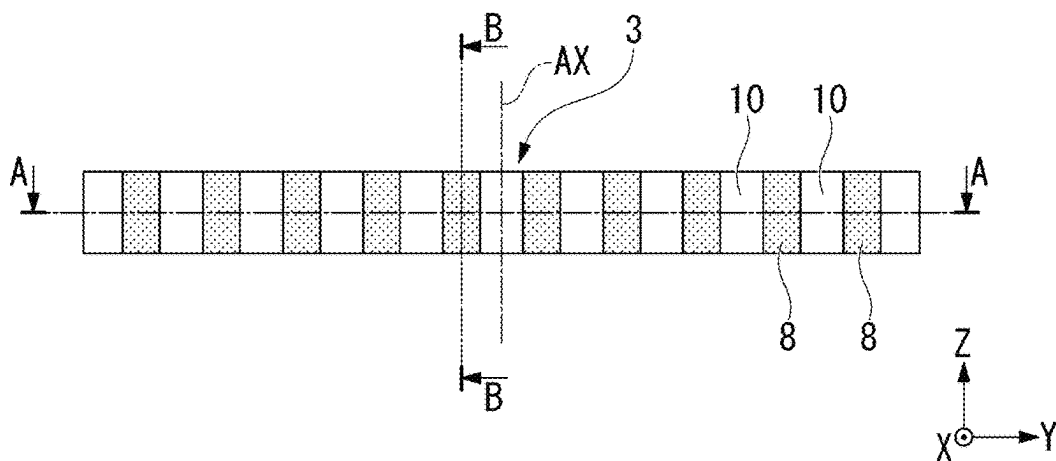


FIG. 5

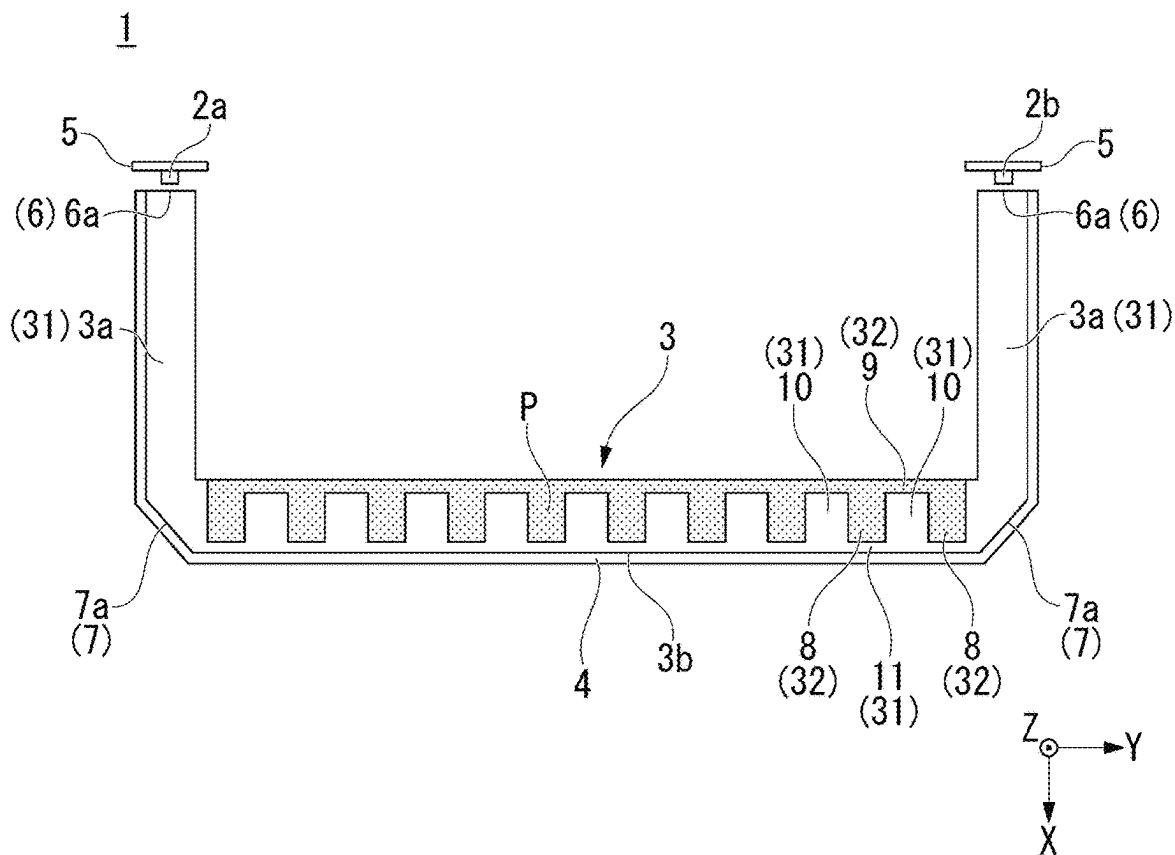


FIG. 6

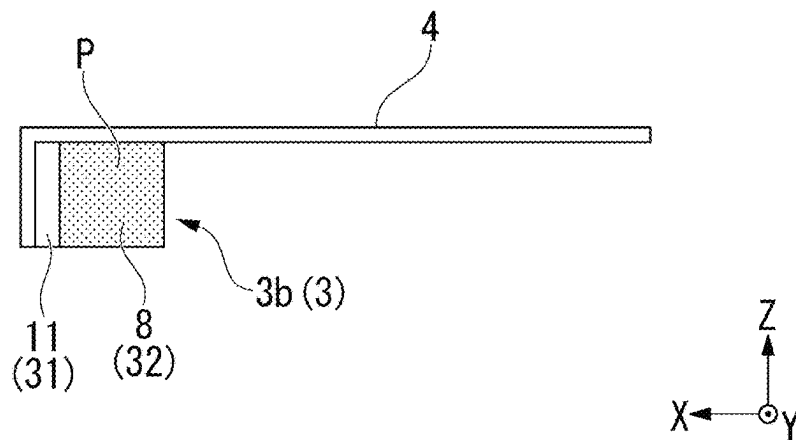


FIG. 7

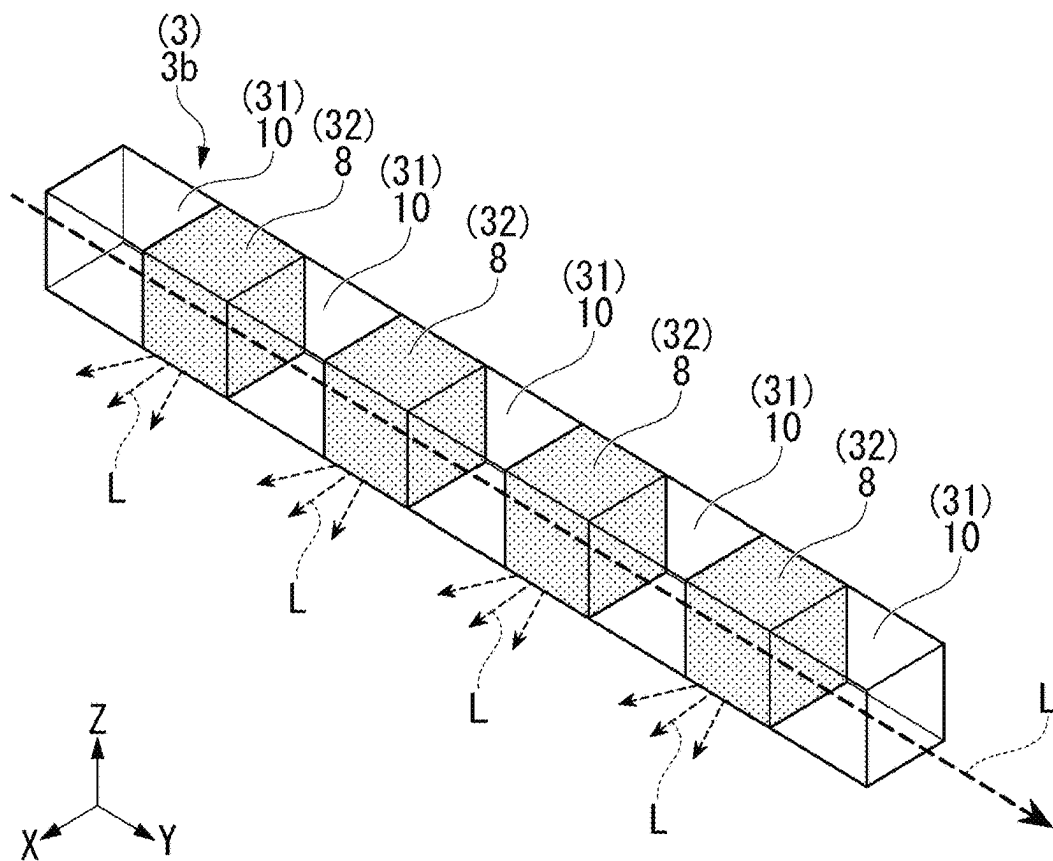


FIG. 8

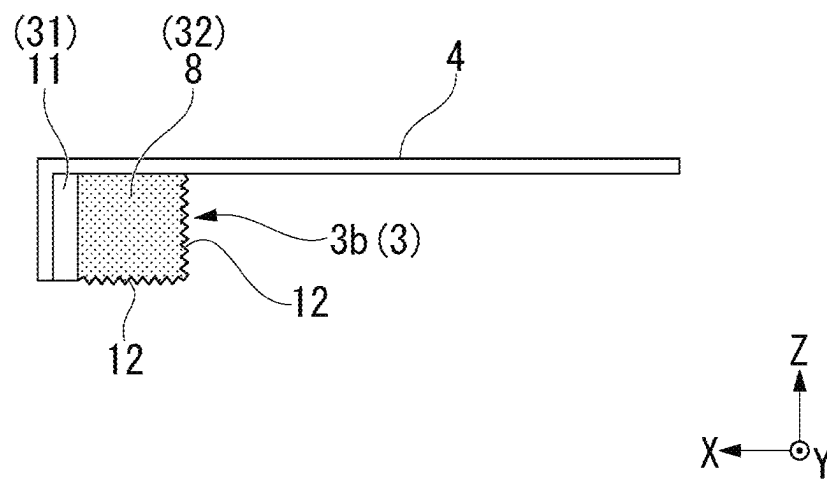


FIG. 9A

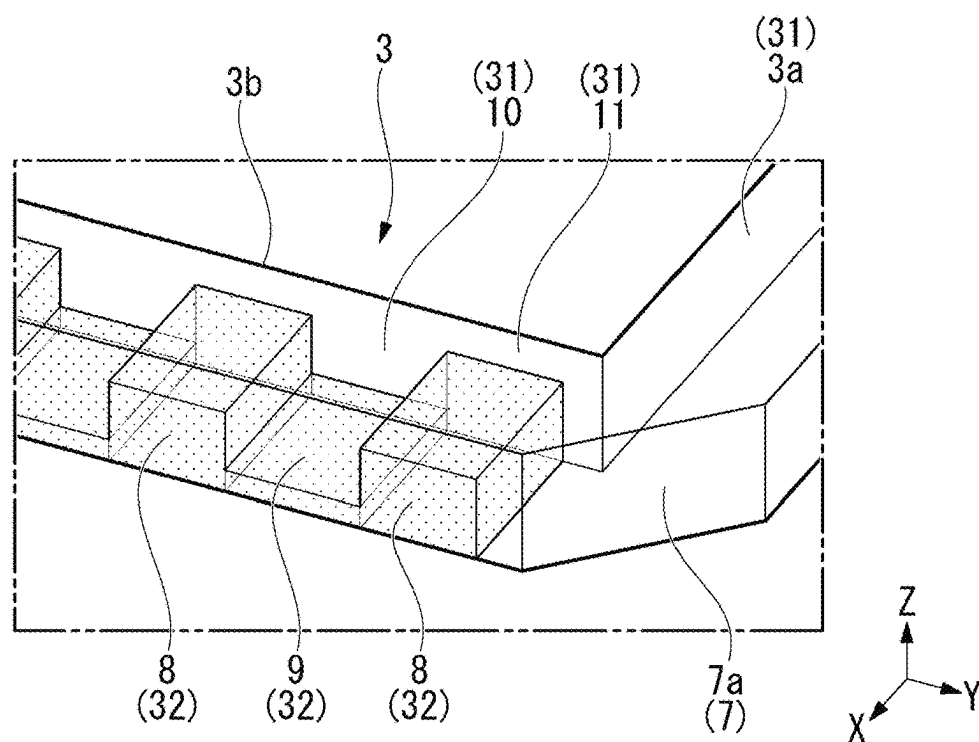


FIG. 9B

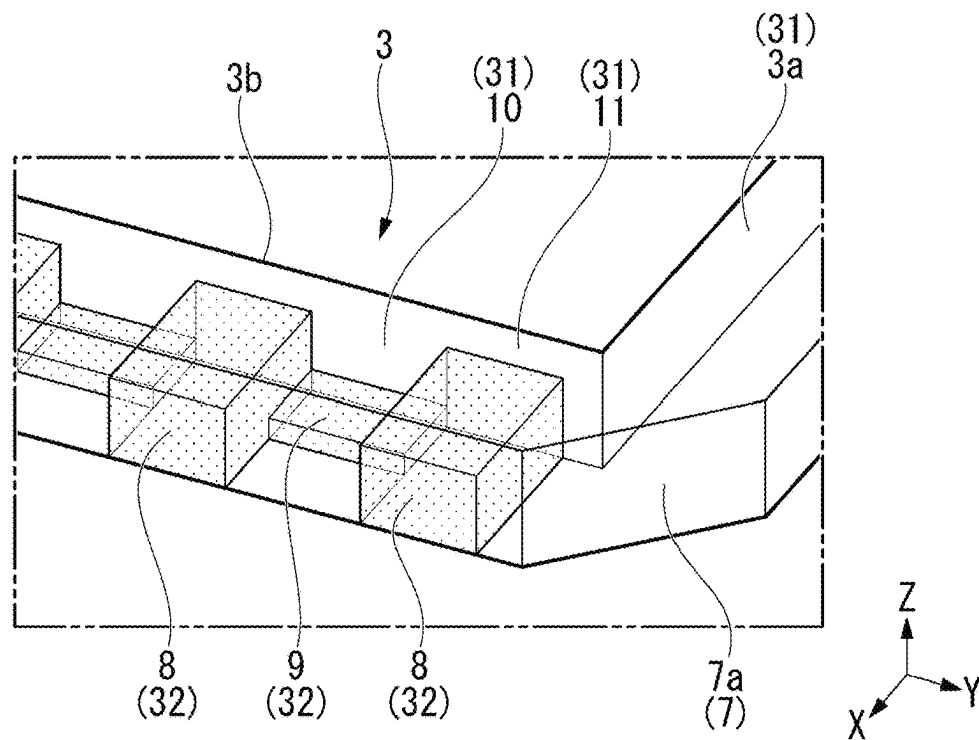


FIG. 10A

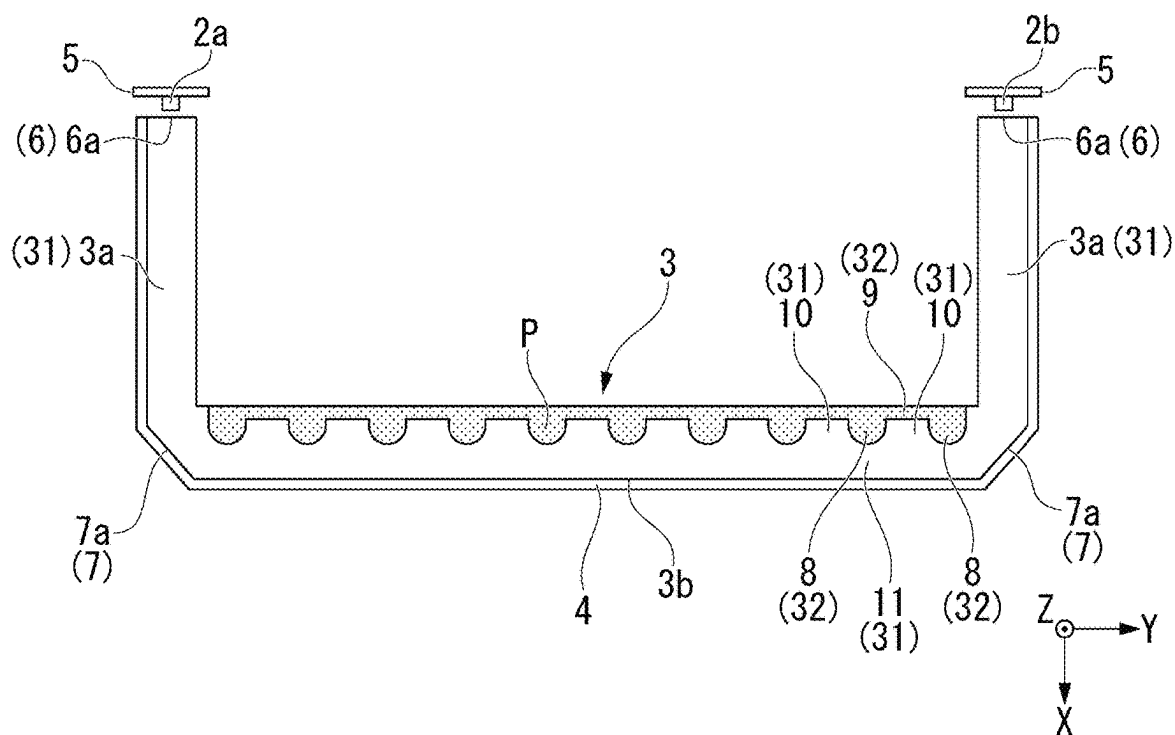


FIG. 10B

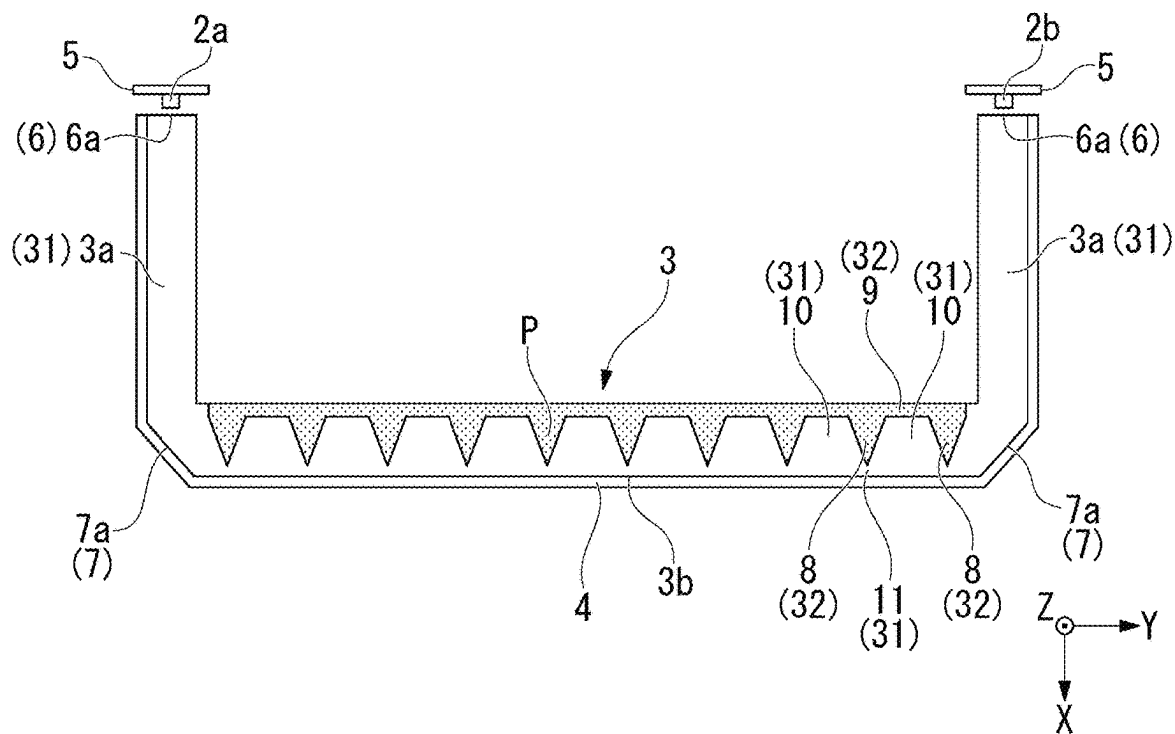


FIG. 11

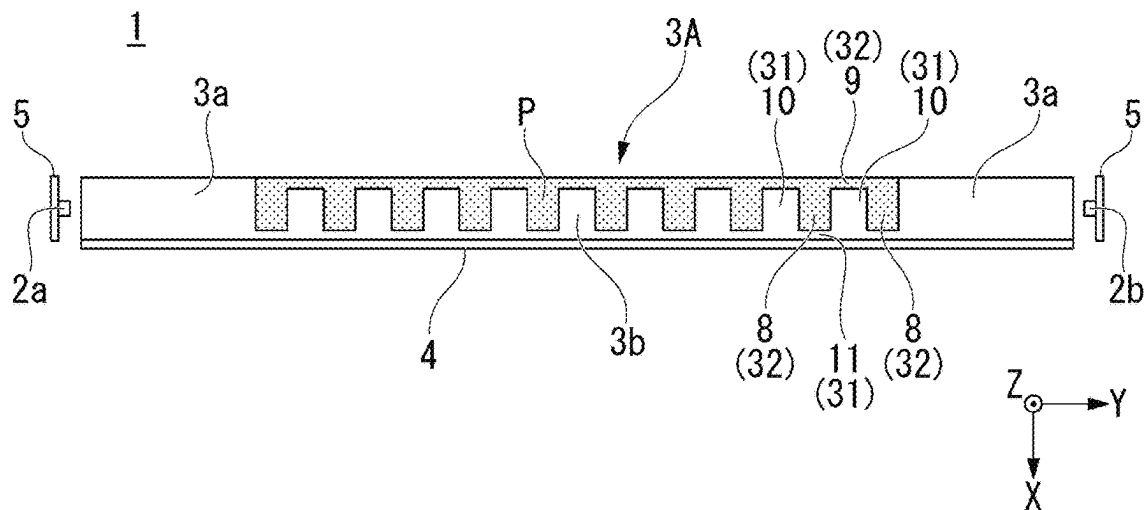


FIG. 12

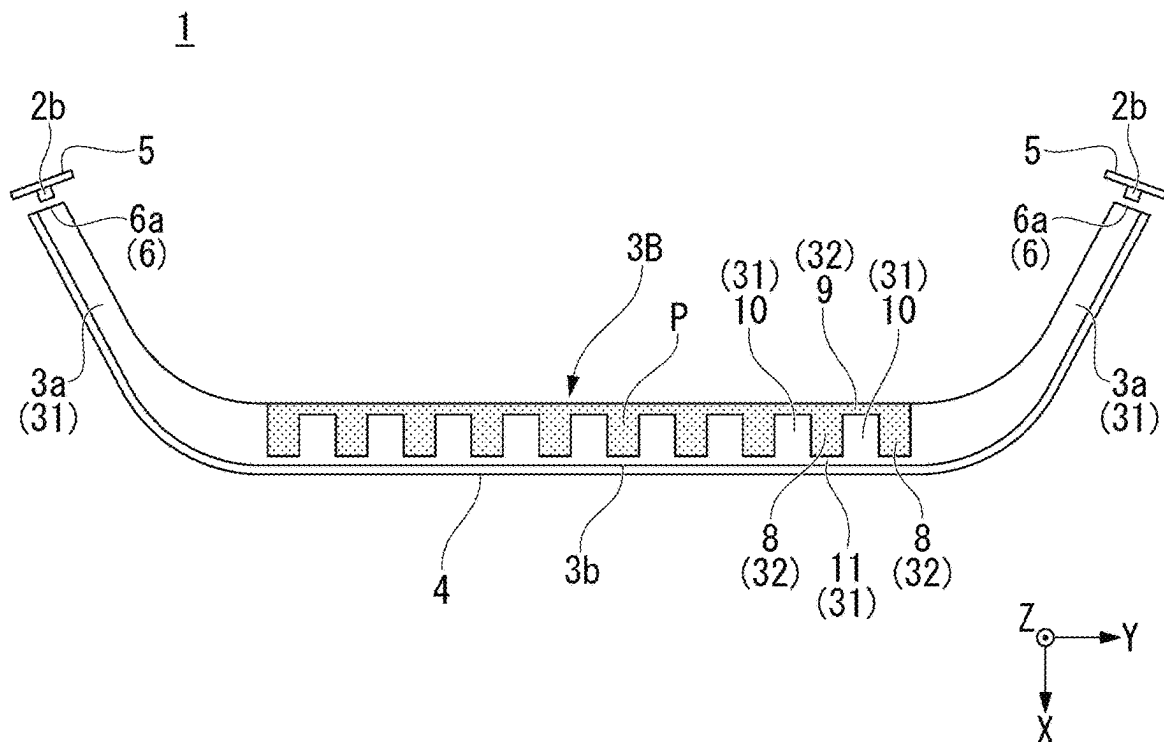


FIG. 13

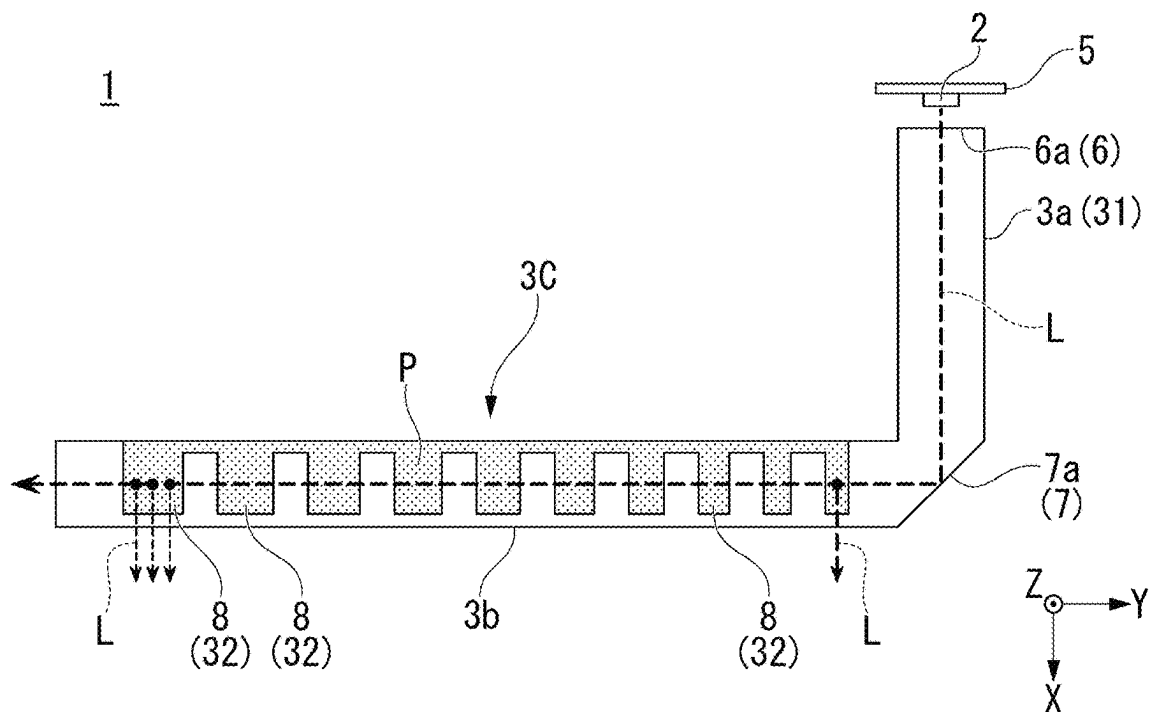


FIG. 14

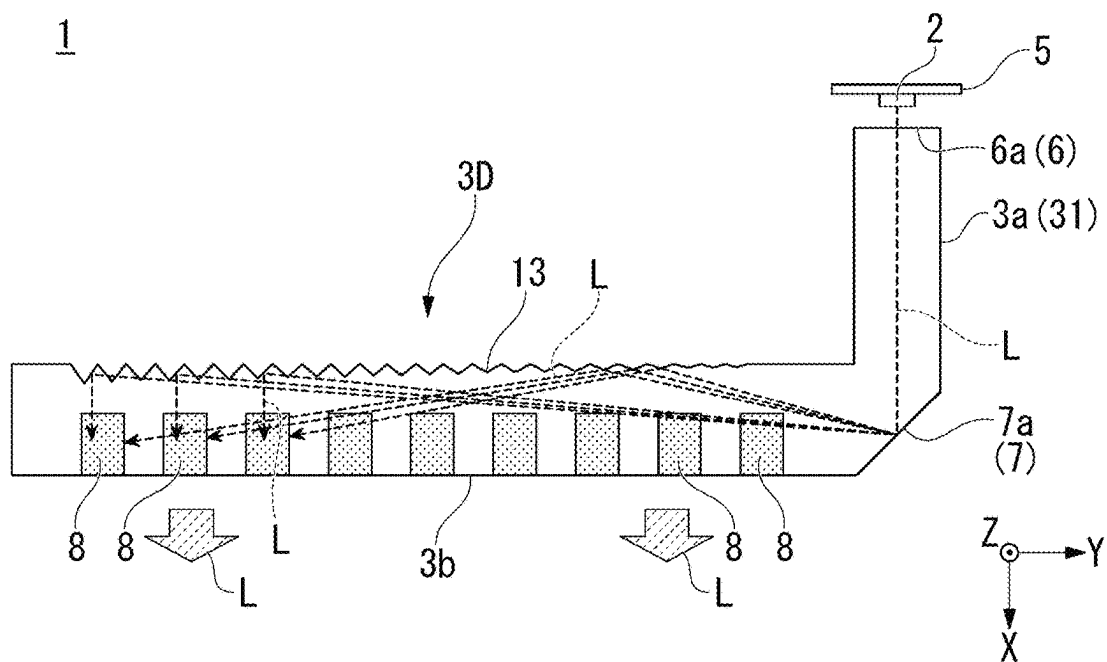


FIG. 15A

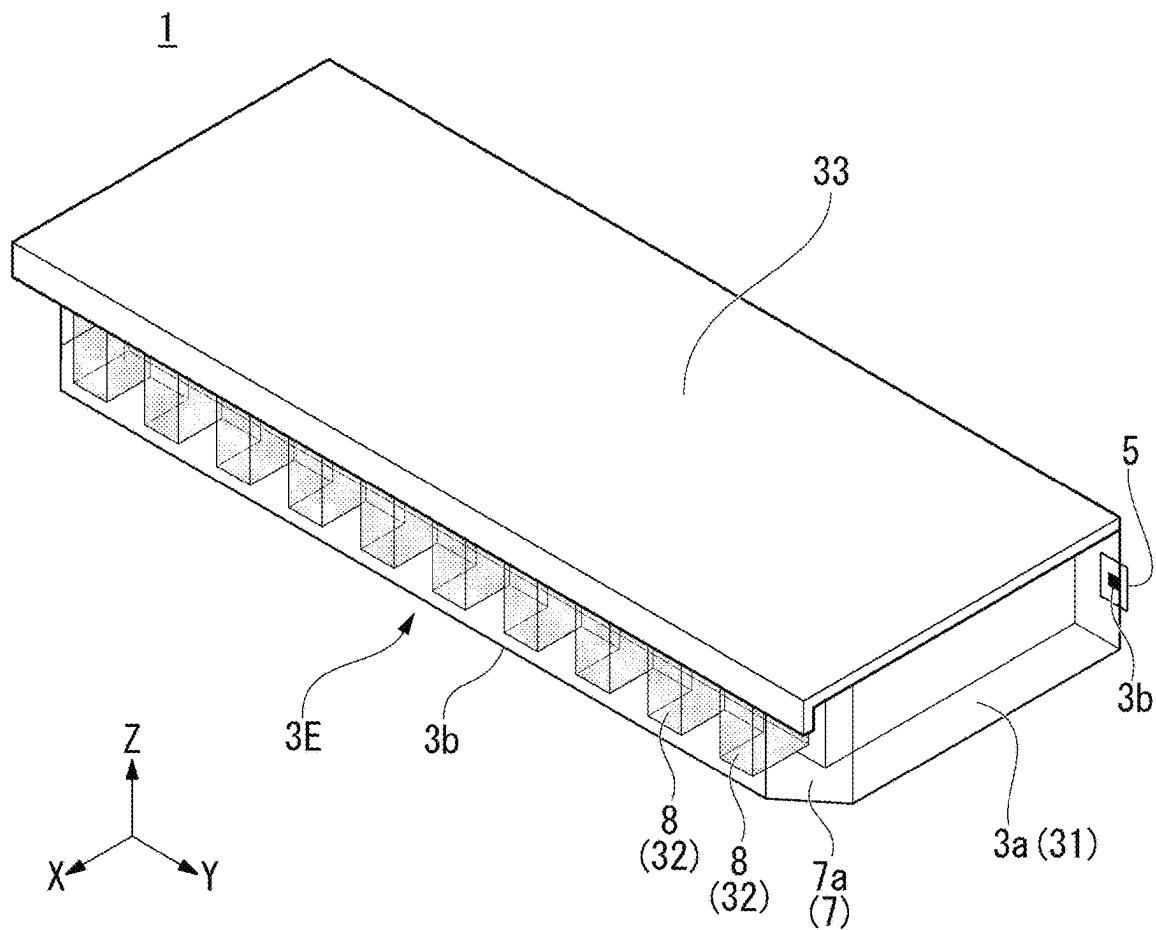


FIG. 15B

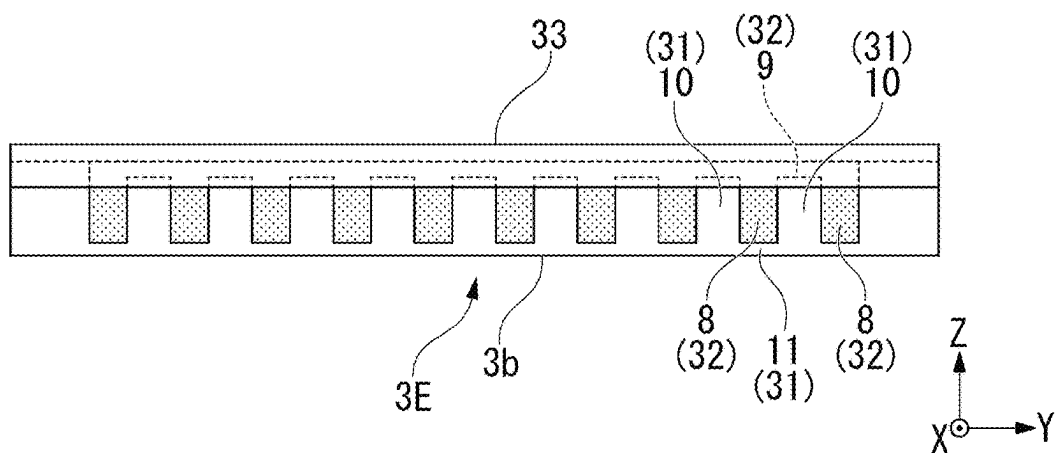
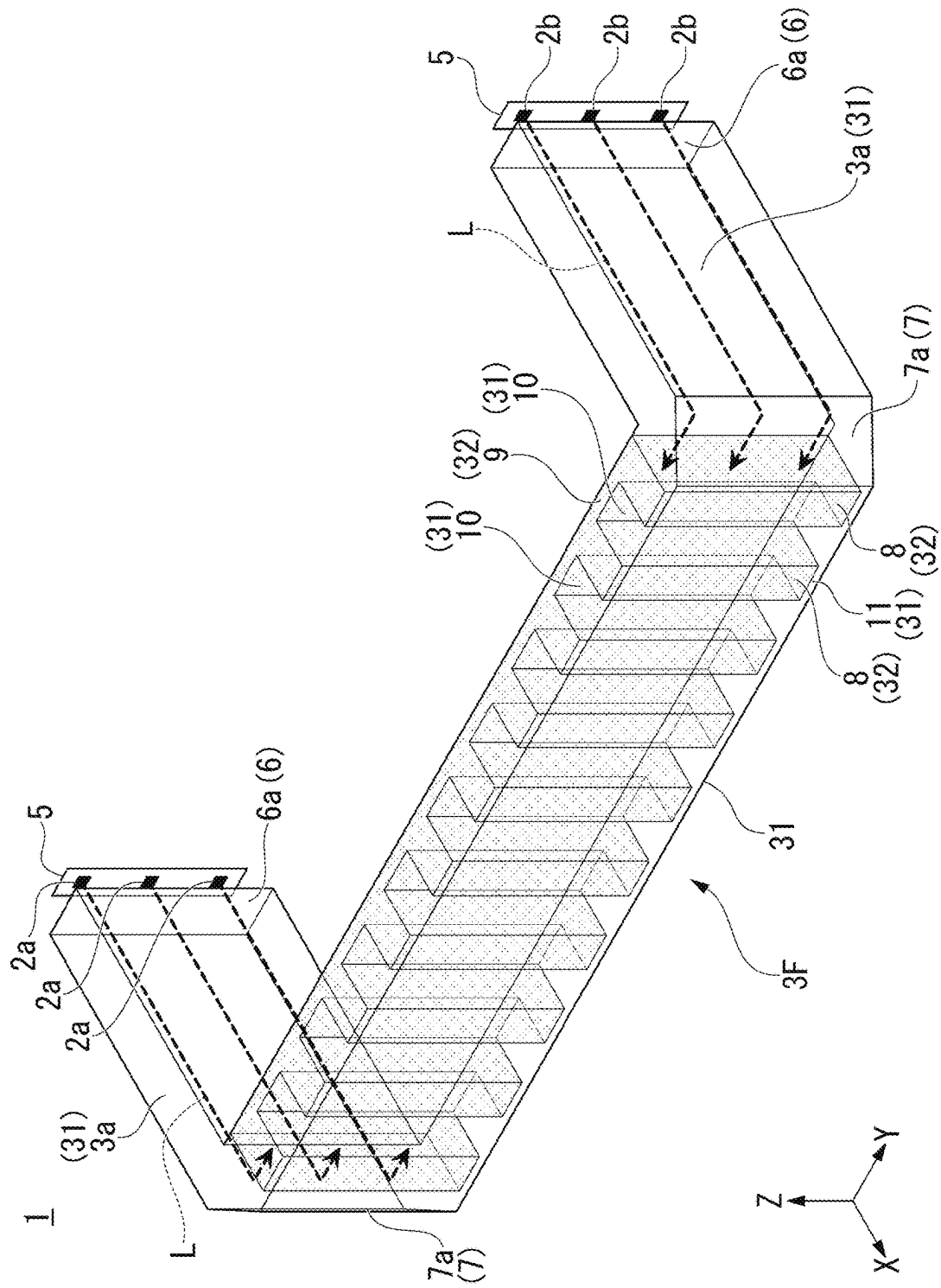


FIG. 16



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VEHICLE LAMP**TECHNICAL FIELD**

The present invention relates to a vehicle lamp.

Priority is claimed on Japanese Patent Application No. 2022-063342, filed Apr. 6, 2022, the content of which is incorporated herein by reference.

BACKGROUND ART

In the related art, as a vehicle lamp mounted on a vehicle, there is known a configuration in which a light source such as a light emitting diode (LED) or the like and a light guide body such as an inner lens or the like are combined (for example, see the following Patent Document 1). In such a vehicle lamp, due to the diversification of design, various forms of configurations have been developed.

For example, the following Patent Document 1 discloses a vehicle lamp including a light guide body constituted by a multi-color molded product having a rod-shaped part formed of a first resin material and a plate-shaped part formed of a second resin material containing a light diffusing material, and a light source, in which light emitted from the light source enters from a light incidence surface of the rod-shaped part, and light entering the plate-shaped part from the rod-shaped part via a connecting convex portion is emitted from a main surface of the plate-shaped part by a light diffusing material.

CITATION LIST**Patent Document**

Patent Document 1: Japanese Unexamined Patent Application, First Publication No. 2019-033044

SUMMARY OF INVENTION**Technical Problem to be Solved**

Incidentally, in the invention disclosed in the above-mentioned Patent Document 1, by emitting the light diffused by the light diffusing material from the main surface of the plate-shaped part, it is possible to make the light emitting surface of the plate-shaped part emit light uniformly.

However, in the invention disclosed in the above-mentioned Patent Document 1, it is difficult to create a three-dimensional effect or a floating feeling of emission caused by the emission of the light emitting surface.

An aspect of the present invention is directed to providing a vehicle lamp capable of creating a three-dimensional effect or a floating feeling of emission.

Solution to Solve Problem

An aspect of the present invention provides the following configurations.

- (1) A vehicle lamp including:
 - light sources; and
 - a light guide body configured to guide light emitted from the light sources from one end side toward other end side of the light guide body,
 wherein the light guide body has a shape in which a first light guide part located in front of the light source and

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a second light guide part extending in one direction between the one end side and the other end side are connected, and

the second light guide part has a plurality of light emitting parts, which is disposed side by side in the one direction and which is configured to emit the light by diffusing the light, and transmissive parts which are disposed between the neighboring light emitting parts and which are configured to transmit the light.

(2) The vehicle lamp according to the above-mentioned (1), wherein the light sources are disposed on both ends of the light guide body so as to face each other, and

the light guide body guides one light emitted from one light source from the one end side toward the other end side of the light guide body, and guides the other light emitted from the other light source from the other end side toward one end side of the light guide body.

(3) The vehicle lamp according to the above-mentioned (1), wherein the light emitting part is configured by disposing a light diffusing material in a part of a light transmitting member that constitutes the light guide body.

(4) The vehicle lamp according to the above-mentioned (3), wherein the light guide body is formed by two-color molding of the light transmitting member and the light diffusing material.

(5) The vehicle lamp according to the above-mentioned (3), wherein the light diffusing material includes a first connecting part that connects neighboring ones of the light emitting parts, and

the first connecting part connects part of neighboring light emitting parts other than at least front surface sides of the light emitting parts.

(6) The vehicle lamp according to the above-mentioned (5), wherein the light transmitting member includes a second connecting part that connects neighboring ones of the transmissive parts, and

the second connecting part connects at least parts of the transmissive parts of the neighboring transmissive parts.

(7) The vehicle lamp according to the above-mentioned (5), including a light shielding member disposed to cover a range overlapping with the first connecting part of the light guide body when seen in a front view and an entire surface of the light guide body on an upper surface side.

(8) The vehicle lamp according to the above-mentioned (6), wherein the second light guide part has a plurality of reflection cuts that is disposed on the second connecting part and the transmissive parts and that is configured to reflect light toward the light emitting part.

Advantageous Effects of Invention

According to the aspect of the present invention, it is possible to provide a vehicle lamp capable of creating a three-dimensional effect or a floating feeling of emission.

BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is a front view showing a configuration of a vehicle lamp unit including a vehicle lamp according to an embodiment of the present invention.

FIG. 2 is a perspective view showing the configuration of the vehicle lamp shown in FIG. 1.

FIG. 3 is a perspective view showing a state in which a cover lens is omitted in the configuration of the vehicle lamp shown in FIG. 2.

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FIG. 4 is a front view showing the configuration of the vehicle lamp shown in FIG. 3.

FIG. 5 is a cross-sectional view of the vehicle lamp along line segment A-A shown in FIG. 4.

FIG. 6 is a cross-sectional view of the vehicle lamp along line segment B-B shown in FIG. 4.

FIG. 7 is a perspective view for describing a structure for emission by the vehicle lamp shown in FIG. 2.

FIG. 8 is a cross-sectional view showing a configuration in which a diffusion part is provided in a light emitting part.

FIG. 9A is a perspective view showing a variant of a first connecting part.

FIG. 9B is a perspective view showing a variant of the first connecting part.

FIG. 10A is a perspective view showing a variant of the light emitting part.

FIG. 10B is a perspective view showing a variant of the light emitting part.

FIG. 11 is a cross-sectional view showing a first variant of a light guide body.

FIG. 12 is a cross-sectional view showing a second variant of the light guide body.

FIG. 13 is a cross-sectional view showing a third variant of the light guide body.

FIG. 14 is a cross-sectional view showing a fourth variant of the light guide body.

FIG. 15A is a cross-sectional view showing a fifth variant of the light guide body.

FIG. 15B is a cross-sectional view showing the fifth variant of the light guide body.

FIG. 16 is a cross-sectional view showing a sixth variant of the light guide body.

DESCRIPTION OF EMBODIMENTS

Hereinafter, an embodiment of the present invention will be described with reference to the accompanying drawings in detail.

Further, in the drawings used in the following description, in order to make each component easier to see, dimensions of each component may be shown at different scales, and dimensional ratios of each component may not necessarily be the same as the actual ones.

As the embodiment of the present invention, for example, a vehicle lamp 1 shown in FIG. 1 to FIG. 7 will be described.

Further, FIG. 1 is a front view showing a configuration of a vehicle lamp unit 100 including the vehicle lamp 1. FIG. 2 is a perspective view showing a configuration of the vehicle lamp 1. FIG. 3 is a perspective view showing a state in which a cover lens 4 is omitted in the configuration of the vehicle lamp 1. FIG. 4 is a front view showing the configuration of the vehicle lamp 1 shown in FIG. 3. FIG. 5 is a cross-sectional view of the vehicle lamp 1 along line segment A-A shown in FIG. 4. FIG. 6 is a cross-sectional view of the vehicle lamp 1 along line segment B-B shown in FIG. 4. FIG. 7 is a perspective view for describing a structure for emission by the vehicle lamp 1.

In addition, in the drawings shown below, an XYZ orthogonal coordinate system is set, an X-axis direction indicates a forward/rearward direction (a lengthwise direction) of the vehicle lamp 1, a Y-axis direction indicates a leftward/rightward direction (a widthwise direction) of the vehicle lamp 1, and a Z-axis direction indicates an upward/downward direction (a height direction) of the vehicle lamp 1.

The vehicle lamp 1 of the embodiment is an application of the present invention to tail lamps TLL1 and TLL2 that

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emit red light as function lamps in the vehicle lamp unit 100 including, for example, rear combination lamps RCL mounted on both corner parts on a rear end side of a vehicle (not shown) as shown in FIG. 1, and lid lamps LDL mounted on both sides of a back gate or a trunk lid of the vehicle.

The rear combination lamp RCL and the lid lamp LDL are provided side by side in the widthwise direction (Y-axis direction) of the vehicle.

The rear combination lamp RCL has a first tail lamp TLL1 configured to emit red light, a brake lamp BRL configured to emit red light, and a turn lamp TRL configured to emit orange light, as function lamps. The first tail lamp TLL1, the brake lamp BRL and the turn lamp TRL are provided side by side in the upward/downward direction (Z-axis direction) of the vehicle.

The lid lamp LDL has a second tail lamp TLL2 configured to emit red light, and a back lamp BCL configured to emit white light, as function lamps. The second tail lamp TLL2 and the back lamp BCL are provided side by side in the upward/downward direction of the vehicle.

In addition, the first tail lamp TLL1 and the second tail lamp TLL2 are provided side by side between the rear combination lamp RCL and the lid lamp LDL in the widthwise direction of the vehicle.

The vehicle lamp 1 of the embodiment is applied to the first tail lamp TLL1 and the second tail lamp TLL2 provided in the vehicle lamp unit 100 (the rear combination lamp RCL and the lid lamp LDL).

Specifically, as shown in FIG. 2 to FIG. 6, the vehicle lamp 1 includes a first light source 2a and a second light source 2b, a light guide body 3, and the cover lens 4, and the vehicle lamp 1 has a structure in which these are disposed inside lighting bodies (not shown) that constitute the rear combination lamp RCL and the lid lamp LDL.

Further, the lighting body is constituted by a housing with a front surface being opened, and a transparent outer lens configured to cover the opening of the housing. In addition, a shape of the lighting body can be appropriately changed depending on a design or the like of the vehicle.

The first light source 2a and the second light source 2b are symmetrically disposed on both sides with a central axis AX in the other direction (in the embodiment, the upward/downward direction) perpendicular to one direction (in the embodiment, the leftward/rightward direction) of the light guide body 3 sandwiched therebetween.

The first light source 2a and the second light source 2b are constituted by, for example, LEDs configured to emit red light, which are mounted on the side of one surface (in the embodiment, a front surface) of a circuit board 5 on which a driving circuit configured to drive the LEDs is provided. Accordingly, each of the first light source 2a and the second light source 2b radially emits light L forward.

Further, in the embodiment, although one LED is disposed for each of the first light source 2a and the second light source 2b, a plurality of LEDs may be disposed for each of the first light source 2a and the second light source 2b, and this can be changed as appropriate according to the size or the like of the light guide body 3. In addition, the first light source 2a and the second light source 2b are not limited to being mounted on separate circuit boards 5, and may be mounted on the same surface of the same circuit board 5.

Further, while the LEDs that constitute the first light source 2a and the second light source 2b and the driving circuit configured to drive the LEDs are mounted on the circuit board 5 in the embodiment, the mounting board on which the LEDs are mounted and the circuit board on which the driving circuit configured to drive the LEDs are provided

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may be separately provided, and the mounting board and the circuit board may be electrically connected via a wiring cord referred to as a harness to protect the driving circuit from heat emitted from the LEDs.

The light guide body 3 is integrally formed by, for example, two-color molding of a light transmitting member 31 formed of a transparent resin such as polycarbonate, acryl, or the like, and a light diffusing material 32 in which inorganic particles such as silica, calcium carbonate, or the like, or organic particles P such as silicon, acryl, or the like, having a different refractive index from the light transmitting member 31, are dispersed in a transparent resin. In addition, the light transmitting member 31 and the light diffusing material 32 are made of the same transparent resin so that they have the same refractive index.

The light guide body 3 has a pair of first light guide parts 3a extending in rod shapes in the forward/rearward direction, and a second light guide part 3b extending in a rod shape in the leftward/rightward direction, and front ends of the pair of first light guide parts 3a are connected (linked) by the second light guide part 3b. In addition, the light guide body 3 has a shape that is symmetrical with respect to the central axis AX.

In addition, the light guide body 3 has incidence parts 6 disposed on rear ends of the first light guide parts 3a, reflecting parts 7 disposed between front ends of the first light guide parts 3a and both ends of the second light guide part, and a plurality of light emitting parts 8 disposed side by side in one direction between one end side and the other end side of the second light guide part.

The incidence parts 6 are disposed to face the first light source 2a and the second light source 2b, respectively, and constituted by flat (planar) incidence surfaces 6a configured to cause light L emitted from the light sources 2a and 2b to enter the first light guide parts 3a, respectively.

Accordingly, the light L entering the first light guide parts 3a from each of the incidence surfaces 6a is guided toward the front ends of each of the first light guide parts 3a while repeating reflection in each of the first light guide parts 3a.

Further, the incidence parts 6a are not limited to the above-mentioned incidence surfaces 6a, and for example, may have lens shapes to cause the light L emitted from the first light source 2a and the second light source 2b to enter the first light guide parts 3a while parallelizing or condensing the light L.

The reflecting parts 7 are constituted by reflecting surfaces 7a inclined by a predetermined angle (in the embodiment, 45° with respect to a central axis of the first light guide parts 3a) in a direction in which front end sides of each of the first light guide parts 3a face each other.

Accordingly, the light L reflected by each of the reflecting surfaces 7a is guided in a direction in which the second light guide parts 3b face each other. That is, the light L on one side emitted from the first light source 2a is guided from one end side toward the other end side of the second light guide part 3b while repeating reflection in the second light guide part 3b. Meanwhile, the other light L emitted from the second light source 2b is guided from the other end side of the second light guide part 3b toward the one end side while repeating reflection in the second light guide part 3b.

The plurality of light emitting parts 8 are formed of the light diffusing material 32 in a block shape. Accordingly, each of the light emitting parts 8 can emit the light L in a block shape by diffusing (scattering) the light L using particles P in the light diffusing material 32.

In addition, the light diffusing material 32 has a first connecting part 9 that connects neighboring ones of the light

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emitting parts 8. The first connecting part 9 connects portions of the light emitting parts 8 among the neighboring light emitting parts 8 except at least front surface sides (in the embodiment, back surface sides) of the light emitting parts 8.

Although the first connecting part 9 is formed of the same light diffusing material 32 as the light emitting parts 8, it is sufficiently smaller than the light emitting parts 8 and is located on the back surface side of the light emitting parts 8, so that it is possible to suppress the first connecting part 9 from emitting light and becoming visible (make inconspicuous) when the light emitting parts 8 emit light.

Meanwhile, the light transmitting member 31 has transmissive parts 10 disposed between the neighboring light emitting parts 8, and a second connecting part 11 configured to connect neighboring ones of the transmissive parts 10.

The transmissive parts 10 are formed of the light diffusing material 32 in a block shape, and disposed in plural side by side in one direction between one end side and the other end side of the second light guide part 3b. Accordingly, the light emitting parts 8 and the transmissive parts 10 are alternately disposed side by side in one direction of the second light guide part 3b.

The second connecting part 11 connects at least portions of the transmissive parts 10 of the neighboring transmissive parts 10 (in the embodiment, front surface sides).

The cover lens 4 is formed of a transparent resin such as polycarbonate, acryl, or the like, and has a shape that covers an upper surface, a front surface and both side surfaces of the light guide body 3. Further, the cover lens 4 is not limited to being colorless and transparent, but may be red and transparent.

In the vehicle lamp 1 of the embodiment having the above-mentioned configuration, as shown in FIG. 7, the light L guided inside the second light guide part 3b passes between the transmissive parts 10 and the light emitting parts 8 in sequence, and emits red light in a block shape from the light emitting parts 8 formed of the light diffusing material 32.

Accordingly, in the vehicle lamp 1 of the embodiment, it is possible to create a three-dimensional effect of the emission. Further, by making the plurality of light emitting parts 8 emit red light in a block shape, it is possible to create the appearance of a plurality of light sources being lit up.

In addition, in the vehicle lamp 1 of the embodiment, by disposing the second light guide part 3b, in which the above-mentioned light emitting parts 8 and the transmissive parts 10 are arranged alternately, protruding forward via the pair of first light guide parts 3a, it is possible to create a floating feeling of emission as if the plurality of light emitting parts 8 are floating.

Further, in the vehicle lamp 1 of the embodiment, by covering the light guide body 3 with the cover lens 4 described above, the shape of the light guide body 3 becomes less noticeable when the light is not lit, and it is possible to improve the appearance when the light is not lit.

As described above, in the vehicle lamp 1 of the embodiment, by disposing the light emitting parts 8 formed of the light diffusing material 32 in the block shape in a part of the light transmitting member 31 that constitutes the second light guide part 3b (the light guide body 3), it is possible to create the three-dimensional effect or the floating feeling of the emission.

Further, the present invention is not particularly limited to the above-mentioned embodiment, and various modifications may be made without departing from the scope of the present invention.

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For example, the light emitting parts **8** may be configured to include a diffusion part **12** configured to diffuse the light **L** emitted from the light emitting parts **8** to the outside, as shown in FIG. **8**. The diffusion part **12** is formed by applying fine unevenness cutting or embossing to the surface of the light emitting part **8**. Accordingly, when the light emitting parts **8** emit light, the outline of the light emitting parts **8** formed in the block shape can be more emphasized.

In addition, the first connecting part **9** is not limited to the above-mentioned configuration in which the back surfaces of the neighboring light emitting parts **8** are connected together, but may be configured as shown in, for example, FIGS. **9A** and **9B**. Among these, the first connecting part **9** shown in FIG. **9A** is configured to connect the lower surfaces of the neighboring light emitting parts **8**. Meanwhile, the first connecting part **9** shown in FIG. **9B** is configured to connect parts of the lower surfaces of neighboring light emitting parts **8**.

In this way, the first connecting part **9** is necessary when two-color molding of the above-mentioned light transmitting member **31** and the light diffusing material **32** is performed, but by devising its shape and arrangement, it is possible to prevent the first connecting part **9** from being visible (conspicuous) by emitting light when the light emitting parts **8** emit light.

Further, the light guide body **3** is not necessarily limited to the two-color molding of the light transmitting member **31** and the light diffusing material **32** described above, but may be, for example, a combination of the transmissive parts **10** constituted by the light transmitting member **31** and the light emitting parts **8** constituted by the light diffusing material **32**, which are formed separately.

In addition, the shape of the light emitting parts **8** can also be modified as appropriate depending on the design of the actual vehicle, and for example, it is also possible to have the shapes shown in FIG. **10A** and FIG. **10B**. Among these, the light emitting part **8** shown in FIG. **10A** is formed in a semi-cylindrical shape. Meanwhile, the light emitting part **8** shown in FIG. **10B** is formed in a triangular prism shape.

In addition, the shape of the light guide body **3** can be modified as appropriate depending on the design of the actual vehicle. For example, as a first variant, like a light guide body **3A** shown in FIG. **11**, the reflecting surfaces **7a** (the reflecting parts **7**) disposed between the pair of first light guide parts **3a** and the second light guide part **3b** may be omitted, and the pair of first light guide parts **3a** and the second light guide part **3b** may be linearly connected.

In addition, as a second variant, like a light guide body **3B** shown in FIG. **12**, the reflecting surfaces **7a** (the reflecting parts **7**) disposed between the pair of first light guide parts **3a** and the second light guide part **3b** may be omitted, and the first light guide parts **3a** may be curved and connected to the second light guide part **3b**.

In addition, as a third variant, like a light guide body **3C** shown in FIG. **13**, any one of the pair of first light guide parts **3a** may be omitted, and after the light **L** emitted from the light source **2** enters the first light guide parts **3a** from the incidence surfaces **6a** (the incidence parts **6**), the light **L** may be guided from one end side toward the other end side of the second light guide part **3b**.

In the case of this configuration, it is preferable to vary the size of the light emitting parts **8** depending on the distance from the light source **2** of the light **L** guided from one end side toward the other end side of the second light guide part **3b**, so that there is no difference in the light intensity (brightness) of the light **L** diffused and emitted from the plurality of light emitting parts **8** due to differences in the

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optical path length of the light **L** guided from one end side toward the other end side of the second light guide part **3b**.

Specifically, it is preferable to make the width of the light emitting parts **8** gradually larger as the distance from the light source **2** increases. Accordingly, light intensity (brightness) of the light **L** diffused and emitted from the plurality of light emitting parts **8** can be uniformized between the one end side and the other end side of the second light guide part **3b**.

In addition, as a fourth variant, like a light guide body **3D** shown in FIG. **14**, a plurality of reflection cuts **13** configured to reflect the light **L** guided from one end side toward the other end side of the second light guide part **3b** toward the light emitting parts **8** may be provided on the second connecting part **11** and the transmissive parts **10**.

In the embodiment, the plurality of reflection cuts **13** configured to reflect the light **L** guided from one end side toward the other end side of the second light guide part **3b** toward the light emitting parts **8** located on the front surface side of the second light guide part **3b** are provided on the back surface side of the second connecting part **11** and the transmissive parts **10**.

The plurality of reflection cuts **13** are formed by groove parts having an approximately V-shaped cross section that are cut out in the other direction (upward/downward direction) of the second light guide part **3b** and are periodically arranged in one direction (leftward/rightward direction) of the second light guide part **3b**.

In order to dispose the plurality of reflection cuts **13** in the light transmitting member **31**, the light guide body **3D** is configured such that the second connecting part **11** connects the back surface sides of the transmissive parts **10** between neighboring transmissive parts **10**. Meanwhile, as shown in FIG. **9A** described above, the first connecting part **9** connects the lower surface sides of the neighboring light emitting parts **8**.

Further, the second connecting part **11** is not necessarily limited to the configuration described above in which the back surface sides of the neighboring transmissive parts **10** are connected, but may be configured to connect the neighboring transmissive parts **10** other than the front surface sides of the transmissive parts **10**. Accordingly, the plurality of reflection cuts **13** can be provided on side surfaces other than the front surfaces of the second connecting part **11** and the transmissive parts **10**.

In the case of this configuration, it is preferable to vary the size of the plurality of reflection cuts **13** depending on the distance from the light source **2** of the light **L** guided from one end side toward the other end side of the second light guide part **3b** so that no difference is occurred in the light intensity (brightness) of the light **L** diffused and emitted from the plurality of light emitting parts **8** due to differences in the optical path length of the light **L** which is guided from one end side toward the other end of the second light guide part **3b**.

Specifically, it is preferable that the depth of the groove parts constituting the plurality of reflection cuts **13** be gradually increased as the distance from the light source **2** increases. Accordingly, light intensity (brightness) of the light **L** diffused and emitted from the plurality of light emitting parts **8** can be uniformized between one end side and the other end side of the second light guide part **3b**.

In addition, as a fifth variant, like a light guide body **3E** shown in FIG. **15A** and FIG. **15B**, a configuration including a light shielding member **33** covering at least the first connecting part **9** may also be used.

The light shielding member **33** is made of a resin such as polycarbonate, acryl, or the like, that contains light blocking (for example, black) pigments. The light guide body **3E** is integrally formed by three-color molding of the light transmitting member **31**, the light diffusing material **32**, and the light shielding member **33**. Further, the light shielding member **33** is not limited to being formed integrally with the light transmitting member **31** and the light diffusing material **32** described above, but may be formed separately.

The first connecting part **9** connects upper surface sides of the neighboring light emitting parts **8**. The light shielding member **33** is disposed so as to cover the area that overlaps with the first connecting part **9** of the light guide body **3E** when seen in a front view, and the entire upper surface side of the light guide body **3E**.

Accordingly, during emission from the light emitting parts **8**, the light shielding member **33** prevents the first connecting part **9** from being visible, thereby creating a floating feeling of emission from the plurality of light emitting parts **8**.

In addition, the light guide body of the present invention is not limited to the configuration of the rod-shaped light guide body (light guide rod) **3**, **3A** to **3E** extending in one direction (leftward/rightward direction) as described above, but may also be, as a sixth variant, for example, a plate-shaped light guide body (light guide plate) extending in one direction (leftward/rightward direction) and also extending in the other direction (upward/downward direction) perpendicular to the one direction, such as a light guide body **3F** shown in FIG. **16**.

Specifically, the light guide body **3F** has a plate shape extending in the upward/downward direction from the rod-shaped light guide body **3** described above. In the case of this configuration, the first light source **2a** and the second light source **2b** are disposed side by side in the upward/downward direction.

Accordingly, in the plate-shaped light guide body **3F**, it is possible to create the three-dimensional effect or the floating feeling of the emission while emitting light from the plurality of light emitting parts **8** extending in the upward/downward direction.

Further, in the embodiment, although the present invention has been applied to the tail lamps **TLL1** and **TLL2** described above as an example, the present invention can be applied to a wide range of vehicle lamps, including, but not limited to, the tail lamps described above, headlights for vehicle (head lamps), width indicators (position lamps), auxiliary headlights (sub-head lamps), front (rear) fog lamps, daytime running lamps, brake lamps (stop lamps), back lamps, and direction indicators (winker lamps).

In addition, for the first light source **2a** and the second light source **2b**, in addition to the above-mentioned LEDs, it is also possible to use light emitting elements such as laser diodes (LDs) or the like. In addition, the color of the light emitted by the light source is not limited to the red light described above, but can be changed appropriately depending on the purpose of the vehicle lamp, such as white light, orange light, or the like.

REFERENCE SIGNS LIST

- 1 Vehicle lamp
- 2 Light source
- 2a First light source
- 2b Second light source
- 3, 3A to 3F Light guide body
- 3a First light guide part

- 3b Second light guide part
- 4 Cover lens
- 5 Circuit board
- 6 Incidence part
- 7 Reflecting part
- 8 Light emitting part
- 9 First connecting part
- 10 Transmissive part
- 11 Second connecting part
- 12 Diffusion part
- 13 Reflection cut
- 31 Light transmitting member
- 32 Light diffusing material
- 33 Light shielding member
- L Light

The invention claimed is:

1. A vehicle lamp comprising:

light sources; and

a light guide body configured to guide light emitted from the light sources from one end side toward an other end side of the light guide body,

wherein the light guide body has a shape in which a first light guide part located in front of the light source and a second light guide part extending in one direction between the one end side and the other end side are connected,

wherein the second light guide part has a plurality of light emitting parts, which are disposed side by side in the one direction and which are configured to emit the light by diffusing the light, and transmissive parts which are disposed between neighboring light emitting parts and which are configured to transmit the light,

wherein the light emitting parts are configured by disposing a light diffusing material in a part of a light transmitting member that constitutes the light guide body,

wherein the light diffusing material includes a first connecting part that connects neighboring ones of the light emitting parts,

wherein the first connecting part connects part of neighboring light emitting parts other than at least front surface sides of the light emitting parts, and

wherein the vehicle lamp further comprises a light shielding member disposed to cover a range overlapping with the first connecting part of the light guide body when seen in a front view and an entire surface of the light guide body on an upper surface side.

2. The vehicle lamp according to claim 1, wherein the light sources are disposed on both ends of the light guide body so as to face each other, and the light guide body guides one light emitted from one light source from the one end side toward the other end side of the light guide body, and guides other light emitted from an other light source from the other end side toward the one end side of the light guide body.

3. The vehicle lamp according to claim 1, wherein the light guide body is formed by two-color molding of the light transmitting member and the light diffusing material.

4. The vehicle lamp according to claim 1, wherein the light transmitting member includes a second connecting part that connects neighboring ones of the transmissive parts, and the second connecting part connects at least parts of the transmissive parts of neighboring transmissive parts.

5. The vehicle lamp according to claim 4, wherein the second light guide part has a plurality of reflection cuts that

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is disposed on the second connecting part and the transmissive parts and that is configured to reflect light toward the light emitting part.

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