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(54) **VEHICLE LIGHTING FIXTURE**

FAHRZEUGBELEUCHTUNGSHALTERUNG

FIXATION D'ÉCLAIRAGE DE VÉHICULE

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FR-A1- 3 016 684 JP-A- 2009 054 435
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Description

Technical Field

[0001] The present invention relates to a vehicle lighting fixture.

Background Art

[0002] For example, there have been known vehicle lighting fixtures that are to be mounted on a vehicle, and can include a light source, a reflector configured to reflect light emitted from the light source and a light guide lens configured to receive from its rear side the light reflected by the reflector and output the light from its front side (for example, see JP 3180180 B).

[0003] Specifically, JP 3180180 B discloses a vehicle lighting fixture having a lamp chamber in which the light source is disposed and which has a front opening that is covered with an outer lens located outside and an inner lens located inside. In this vehicle lighting fixture, a group of convex fisheye steps and a group of concave fisheye steps are formed in the outer lens, and polka dot steps having a circular front shape are formed in the inner lens.

[0004] The polka dot steps each have a convex semicircular cross-sectional shape, and are formed on the surface (rear surface) of the inner lens on the light source side. Recesses having a concave semicircular cross-sectional shape are formed at positions of the outer surface of the inner lens corresponding to the polka dot steps. The recesses have a circular shape smaller than that of the polka dot steps in the front view and are concave in the cross-sectional shape.

[0005] In such vehicle lighting fixtures, a three-dimensional feeling is emphasized by the difference between the appearance of the inside of the light chamber which is visible through the group of the convex fisheye steps and the appearance of the inside of the light chamber which is visible through the group of the concave fisheye steps. Further, when parallel light fluxes reflected by the reflector are incident on the polka dot steps, the parallel light fluxes are refracted so as to converge. As a result, a ring-shaped dark region having no transmitted light rays is generated in the peripheral edge portion of the polka dot step, and therefore, when the ring-shaped dark region is viewed through the outer lens, the stereoscopic effect described above can be emphasized more.

[0006] Incidentally, in the vehicle lighting fixture disclosed in the foregoing patent publication, only the parallel light fluxes reflected by the reflector are visually recognized through the outer lens. For this reason, when the viewing angle of the outer lens in a front view becomes large, the entire outer lens is visually recognized in a dark state due to the decrease of the parallel light fluxes that are visually recognized. In this case, the brightness difference from the ring-shaped dark region is reduced, and accordingly, it is difficult to emphasize the stereoscopic effect by the brightness difference of the light emission

described above.

[0007] CN 209101211 A discloses an automobile tail lamp. The automobile tail lamp comprises a bottom shell, a lampshade, an optical assembly and an automobile lamp inner accessory. An automobile lamp inner accessory of the automobile tail lamp comprises a transparent part and a diffusion part. Point-shaped light equalizing structures which are distributed in an array mode are evenly arranged on the transparent portion of the automobile lamp inner accessory and used for refracting incident light and then emitting the light out to form a dot matrix light emitting decoration effect, and the diffusion portion of the automobile lamp inner accessory is used for diffusing light emitted by the optical assembly to form a uniform light emitting effect. According to the automobile tail lamp, under the condition that a decorative light source is not added, the dot-shaped light uniformizing structure of the automobile lamp inner accessory is adopted, so that the transparent part achieves the decorative effect of dot matrix light emitting based on an existing light source.

Summary

[0008] The present invention has been proposed in view of these and other problems and features in association with the conventional art, and an object thereof is to provide a vehicle lighting fixture that suppresses a change in the brightness difference of light emission even when a viewing angle in a front view is increased.

[0009] In order to achieve the foregoing object, the present invention provides a vehicle lighting fixture as set forth in claim 1. Preferred embodiments of the present invention may be gathered from the dependent claims.

[0010] As described above, according to the present invention, there can be provided a vehicle lighting fixture that suppresses a change in the brightness difference of light emission even when a viewing angle in a front view is increased.

Brief Description of Drawings

[0011] These and other characteristics, features, and advantages of the present invention will become clear from the following description with reference to the accompanying drawings:

FIG. 1 is a side view illustrating a configuration of a vehicle lighting fixture according to an embodiment of the present invention.

FIG. 2 is a cross-sectional view taken along a first direction of the vehicle lighting fixture, taken along line A-A in FIG. 1.

FIG. 3 is a cross-sectional view illustrating a light ray trajectory when the viewing angle of the vehicle lighting fixture illustrated in FIG. 1 is 0°.

FIG. 4 is a photograph showing a light emission state by the vehicle lighting fixture in the case illustrated

in FIG. 3.

FIG. 5 is a cross-sectional view illustrating a light ray trajectory when the viewing angle of the vehicle lighting fixture illustrated in FIG. 1 is 15° above the horizon.

FIG. 6 is a photograph showing a light emission state by the vehicle lighting fixture in the case illustrated in FIG. 5.

FIG. 7 is a cross-sectional view illustrating a light ray trajectory when the viewing angle of the vehicle lighting fixture illustrated in FIG. 1 is 30° above the horizon.

FIG. 8 is a photograph illustrating a light emission state by the vehicle lighting fixture in the case illustrated in FIG. 7.

Description of Exemplary Embodiments

[0012] A description will now be made below to a vehicle lighting fixture of the present invention with reference to the accompanying drawings in accordance with an embodiment in detail.

[0013] In the drawings used in the following description, in order to make each component easy to see, the scale of the dimension may be shown differently depending on the components, and the dimensional ratio of each component is not necessarily the same as the actual one.

[0014] As an embodiment of the present invention, for example, a vehicle lighting fixture 1 illustrated in FIGS. 1 and 2 will be described.

[0015] FIG. 1 is a side view illustrating a configuration of the vehicle lighting fixture 1. FIG. 2 is a cross-sectional view in a first direction of the vehicle lighting fixture 1 taken along line A-A illustrated in FIG. 1.

[0016] In the description below with reference to the drawings, the XYZ orthogonal coordinate system is set, and the X-axis direction is indicated as the front-rear direction (lengthwise direction) of the vehicle lighting fixture 1, the Y-axis direction is indicated as the left-right direction (widthwise direction) of the vehicle lighting fixture 1, and the Z-axis direction is indicated as the up-down direction (height direction or vertical direction) of the vehicle lighting fixture 1.

[0017] As illustrated in FIG. 1, the vehicle lighting fixture 1 according to the present embodiment is configured by applying the present invention to a tail lamp TLL that emits red light on the side surface of the vehicle, out of rear combination lamps RCL mounted on both corner portions on the rear end side (the corner portion on the right rear end side is shown in the present embodiment) of a vehicle body (not illustrated).

[0018] It should be noted that, in the vehicle lighting fixture 1 of the present embodiment, out of the rear combination lamps RCL disposed symmetrically at both corners of the rear end side of the vehicle body, the rear combination lamp RCL mounted on the corner portion on the right rear end side is exemplified.

[0019] In the following description, the terms "front",

"rear", "left", "right", "upper" and "lower" mean directions when the vehicle lighting fixture 1 is viewed from the front thereof (from the rear of the vehicle body), unless otherwise specified. Therefore, the respective directions when the vehicle body is viewed from the front thereof (from the front of the vehicle body) has a direction in which the front, rear, left, and right are reversed.

[0020] Furthermore, in the vehicle lighting fixture 1 of the present embodiment, the direction in which the light L is outputted from the side surface of the vehicle body as a tail lamp TLL (+Y-axis direction) is defined as the first direction or its front direction.

[0021] As illustrated in FIGS. 1 and 2, the vehicle lighting fixture 1 of the present embodiment includes a light source 3 disposed inside a lamp body 2, a reflector 4, a light guide lens 5 and an extension 6.

[0022] The lamp body 2 is constituted by a housing 7 that has an opening in its front, and a transparent lens cover, or an outer lens, 8 that covers the opening of the housing 7. The shape of the lamp body 2 can be appropriately changed in accordance with the design of the vehicle body or the like.

[0023] The light source 3 has a plurality of light emitting elements 9 that emit red light L. Herein, the red light emitted from the light source 3 may be simply referred as "light". As the light emitting element 9, an LED can be used. The plurality of light emitting elements 9 are mounted on one surface of a circuit board 10 including a driving circuit for driving the LEDs. The circuit board 10 is disposed with one surface facing downward (-Z-axis side).

[0024] Although the circuit board 10 includes the driving circuit for driving the LEDs described above, the circuit board 10 is not limited to have this configuration. For example, the following configuration may be implemented. A mounting board on which LEDs are mounted, and a circuit board on which the drive circuit is mounted are separately disposed, and the mounting board and circuit board are electrically connected via a wiring cord called a harness, so that the LEDs are protected from heat generated by the drive circuit.

[0025] The plurality of light emitting elements 9 are arranged side by side in a direction intersecting a plane containing the first direction and a reference direction (i. e. arranged in the front-rear direction of the vehicle lighting fixture 1 in the present embodiment). Note that in FIG. 2, only one light-emitting element 9 is illustrated. The plurality of light emitting elements 9 are collectively described as the light source 3 unless otherwise specified. The light source 3 emits light L radially toward the direction perpendicular to one surface of the circuit board 10 (downward in the present embodiment), where the direction may be referred to as an optical axis of the light source 3.

[0026] The reflector 4 is configured to reflect the light L, emitted from the light source 3, in the first direction, and is constituted by, for example, a white reflective member. The reflector 4, which is opened on its front side (+Y-axis side), is disposed so as to cover the lower side

of the light source 3 mounted on the surface of the circuit board 10 (-Z-axis side). Further, the reflector 4 is designed to extend in the front-rear direction of the vehicle lighting fixture 1 in accordance with the direction in which the plurality of light emitting elements 9 are aligned.

[0027] The reflector 4 has a parabolic reflecting surface 4a. The parabolic reflecting surface 4a, when viewed in a cross section taken along a plane containing the first direction and a reference direction (herein, which is the optical axis of the light source), has a curved shape from its proximal end (rear end) side toward the distal end (front end) side so as to draw a parabola with the focal point at the position corresponding to the light source 3 (e.g., light emitting center of the light source 3). Thus, the reflector 4 reflects a major part of the light L emitted from the light source 3 toward the first direction by the parabolic reflecting surface 4a while collimating the light.

[0028] Further, the reflector 4 has a light diffusing property that reflects the light L incident on the parabolic reflecting surface 4a while diffusing a part of the light toward the first direction even with the parabolic surface. As for the light diffusing property, it is possible to impart certain directivity in the reflection direction of that part of the light L diffused by the surface shape of the above-described reflecting member colored white to the reflector 4.

[0029] The reflector 4 has a light shielding wall 4b facing the light source 3, and a hole portion 4c penetrating the light shielding wall 4b. The reflector 4 shields a part of the light L emitted from the light source 3 by the light shielding wall 4b and makes the light L having passing through the hole portion 4c be incident on the parabolic reflecting surface 4a, so as to regulate the light L to be incident on the parabolic reflecting surface 4a.

[0030] Further, the light shielding wall 4b is disposed so as not to cause the light L from the light source 3 to be incident directly on the light guide lens 5 and the lens cover 8. Thus, the light L is not incident on the recess portion 11 and the convex lens surface 12, and this configuration prevents the luminance unevenness from occurring in the dark portion.

[0031] The light guide lens 5, which serves as an inner lens, receives the light L reflected by the reflector 4 from its rear surface side, and outputs the light L from its front surface side, so that the light emitting surface 5a provided on the front surface side is allowed to output light. The light guide lens 5 is formed of a light transmissive member having a refractive index higher than that of air. Examples of the material therefor may include transparent resins such as a polycarbonate resin and an acrylic resin, and a glass material. The light guide lens 5 has a predetermined width in the up-down direction of the vehicle lighting fixture 1 while extending in the front-rear direction of the vehicle lighting fixture 1 in accordance with the direction in which the plurality of light emitting elements 9 are aligned.

[0032] The light guide lens 5 has a recess portion 11 in its front surface and a lens portion 12 in its rear surface that is opposite to the recess portion 11. Further, when

observing the light guide lens 5 in a front view, the region corresponding to the recess portion 11 is located inside the region corresponding to the lens portion 12. That is, the lens portion 12 is designed to be larger than the recess portion 11.

[0033] The recess portion 11, when viewed in a cross section taken along a plane containing the first direction and the optical axis of the light source, is constituted by a pair of reflecting surfaces 11b and 11c abutting against each other at its bottom 11a. Further, the recess portion 11 constitutes a groove portion extending in the front-rear direction of the vehicle lighting fixture 1 in accordance with the direction in which the plurality of light emitting elements 9 are aligned.

[0034] Out of a pair of reflecting surfaces 11b and 11c, one reflecting surface 11b (upper in this embodiment) is provided slightly inclined upward with respect to the first direction. On the other hand, the reflecting surface 11c - on the lower side in this embodiment - is provided so as to be largely inclined downward with respect to the first direction. The angle at which each of the pair of reflecting surfaces 11b and 11c is inclined with respect to the first direction may be appropriately changed.

[0035] The lens portion 12 is constituted by a convex lens surface 12a configured to condense the light L having been incident on the lens portion 12 toward the first direction. Further, the lens portion 12 constitutes a cylindrical lens which extends in the front-rear direction of the vehicle lighting fixture 1 in accordance with the direction in which the plurality of light emitting elements 9 are aligned. The lens surface 12a may be spherical or aspherical in cross section taken along a plane containing the first direction and the optical axis of the light source.

[0036] The extension 6 is made of a black resin molded body having a light shielding property. The extension 6 has an opening 6a that allows the light emitting surface 5a of the light guide lens 5 to be exposed outward (forward). The extension 6 is configured to cover the periphery of the front surface of the light guide lens 5 except for the light emitting surface 5a of the light guide lens 5.

[0037] In the vehicle lighting fixture 1 according to the present embodiment having the above-described configuration, a major part of the light L condensed by the lens portion 12 described above is totally reflected by the reflecting surfaces 11b and 11c of the recess portion 11. Thus, among the light emitting surface 5a of the light guide lens 5, it is possible to output light relatively darker from the region corresponding to the recess portion 11 than that from the peripheral area thereof. That is, a line-shaped dark portion corresponding to the recess portion 11 can be formed in the bright portion of the light emitting surface 5a.

[0038] Further, in the vehicle lighting fixtures 1 of the present embodiment, a major part of the light L having been incident on the parabolic reflecting surface 4a of the reflector 4 described above is reflected toward the first direction while a part thereof is diffused. Thereby, even when the viewing angle in a front view is increased,

the light emitting surface 5a of the light guide lens 5 can be prevented from being visually recognized as being dark.

[0039] In particular, in the vehicle lighting fixture 1 of the present embodiment, the reflector 4 having a directivity in the reflecting direction of the light L described above can prevent the light emitting surface 5a of the light guide lens 5 from being visually recognized as being darker even when the viewing angle is increased above the horizon.

[0040] Here, FIG. 3 illustrates the light ray trajectory of the light L when the viewing angle with respect to the first direction of the vehicle lighting fixture 1 is 0° (front view). Further, FIG. 4 illustrates the light emission state by the vehicle lighting fixture 1 when the viewing angle is 0° (front view).

[0041] On the other hand, FIG. 5 illustrates the ray trajectory of the light L when the viewing angle with respect to the first direction of the vehicle lighting fixture 1 is 15° above the horizon. Further, FIG. 6 illustrates the light emission state by the vehicle lighting fixture 1 when the viewing angle is 15° above the horizon.

[0042] On the other hand, FIG. 7 illustrates the ray trajectory of the light L when the viewing angle with respect to the first direction of the vehicle lighting fixture 1 is 30° above the horizon. Further, FIG. 8 illustrates the light emission state by the vehicle lighting fixture 1 when the viewing angle is 30° above the horizon.

[0043] As illustrated in FIGS. 3 to 8, even when the viewing angle is changed upward from the front view, the light emitting surface 5a of the light guide lens 5 can be prevented from being visually recognized as being dark. Further, it is possible to emphasize a line-shaped dark portion corresponding to the recess portion 11 in the bright portion of the light emitting surface 5a.

[0044] As described above, in the vehicle lighting device 1 of the present embodiment, even when the viewing angle from the front view is increased, it is possible to suppress the change in the brightness difference of the light emission between the light emitting surface 5a and the region corresponding to the recess portion 11.

[0045] The present invention is not necessarily limited to those of the foregoing embodiment, and various modifications may be made without departing from the scope of the appended claims.

[0046] Specifically, in the vehicle lighting fixture 1, the shape of the light guide lens 5 may be appropriately changed in accordance with the actual vehicle design and the like. For example, it may be configured to arrange a plurality of recess portions 11 and a plurality of lens portions 12 in the vertical (up-down) direction of the light guide lens 5 side by side. The shapes of the recess portion 11 and the lens portion 12 may also be appropriately changed.

[0047] In the foregoing embodiment, the case where the present invention is applied to the tail lamp TLL of the rear combination lamp RCL is exemplified, but the present invention may be applied not only to the rear side

vehicle lighting fixture but also to the front side vehicle lighting fixture to which the present invention is applied.

[0048] Further, the vehicle lighting fixture to which the present invention is applied is not limited to the tail lamp TLL described above, but for example, the present invention may be widely applied to various vehicle lighting fixtures such as a car width indicator (position lamp), a direction indicator (turn lamp), a daytime lighting lamp (DRL), a brake lamp (stop lamp), and a reverse lamp, etc. In addition, the color of the light emitted by the light source 3 may be changed as appropriate depending on the application, such as white light, red light, orange light, amber light, etc.

Claims

1. A vehicle lighting fixture (1) comprising:

a light source (3) configured to emit light and having an optical axis;
a reflector (4) configured to reflect light emitted from the light source (3) toward a first direction; and

a light guide lens (5) having a front surface (5a) and a rear surface, configured to receive from the rear surface the light reflected by the reflector (4) and output the light from the front surface (5a), the vehicle lighting fixture (1) **characterized in that**

the light guide lens (5) is an inner lens (5) formed by a light transmitting member having a refractive index higher than air, wherein the light guide lens (5) has a recess portion (11) in the front surface (5a) and a lens portion (12) in the rear surface, the lens portion (12) corresponding to the recess portion (11), and
a part of the light (L) condensed by the lens portion (12) is totally internally reflected by a pair of reflecting surfaces (11b, 11c) constituting the recess portion (11), so that a region corresponding to the recess portion (11) is caused to output light with an intensity relatively smaller than that in a periphery thereof.

2. The vehicle lighting fixture (1) according to claim 1, **characterized in that** when the light guide lens (5) is observed in a front view, the region corresponding to the recess portion (11) is located inside a region corresponding to the lens portion (12).

3. The vehicle lighting fixture (1) according to claim 1 or 2, **characterized in that** the lens portion (12) is constituted by a convex lens surface configured to condense light incident on the lens portion (12) toward the first direction, and the pair of reflecting surfaces (11b, 11c) abut against each other at the bottom (11a) of the recess portion (11) in a cross section

taken along a plane containing the first direction and a reference direction that is the optical axis of the light source (3).

4. The vehicle lighting fixture (1) according to claim 3, **characterized in that** the reflector (4) has a parabolic reflecting surface (4a) having a focal point at a position corresponding to the light source (3), and has a light diffusing property for reflecting the light incident on the parabolic reflecting surface while diffusing toward the first direction.
5. The vehicle lighting fixture (1) according to claim 3 or 4, **characterized in that** the light source (3) has a plurality of light emitting elements (9) that are aligned in a direction intersecting the plane containing the first direction and the reference direction, and the recess portion (11) and the lens portion (12) are provided so as to extend in accordance with the direction in which the plurality of light emitting elements (9) are aligned.

Patentansprüche

1. Fahrzeugbeleuchtungsanordnung (1), die Folgendes aufweist:

eine Lichtquelle (3), die konfiguriert ist, um Licht zu emittieren und die eine optische Achse hat; einen Reflektor (4), der konfiguriert ist, um Licht, welches von der Lichtquelle (3) emittiert wurde, in eine erste Richtung zu reflektieren; und eine Lichtführungslinse (5) mit einer Vorderseite (5a) und einer Rückseite, die konfiguriert ist, um von der Rückseite das Licht aufzunehmen, welches von dem Reflektor (4) reflektiert wurde, und um das Licht aus der Vorderseite (5a) auszugeben, wobei die Fahrzeugbeleuchtungsanordnung (1) **dadurch gekennzeichnet ist, dass** die Lichtführungslinse (5) eine innere Linse (5) ist, die durch ein Lichtdurchlasselement geformt ist, das einen höheren Brechungsindex hat als Luft, wobei die Lichtführungslinse (5) einen Vertiefungsteil (11) in der Vorderseite (5a) und einen Linsenteil (12) in der Rückseite hat, wobei der Linsenteil (12) dem Vertiefungsteil (11) entspricht, und ein Teil des Lichtes (L), der durch den Linsenteil (12) kondensiert bzw. zusammengeführt wird, intern durch ein Paar von reflektierenden Oberflächen (11b, 11c), welche den Vertiefungsteil (11) bilden, total reflektiert wird, so dass eine Region entsprechend dem Vertiefungsteil (11) veranlasst wird, Licht mit einer Intensität auszugeben, die vergleichsweise kleiner ist als in einer Umgebung davon.

2. Fahrzeugbeleuchtungsanordnung (1) nach Anspruch 1, **dadurch gekennzeichnet, dass**, wenn die Lichtführungslinse (5) in einer Frontansicht betrachtet wird, die Region entsprechend dem Vertiefungsteil (11) innerhalb einer Region entsprechend dem Linsenteil (12) angeordnet ist.

3. Fahrzeugbeleuchtungsanordnung (1) nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** der Linsenteil (12) durch eine konvexe Linsenoberfläche gebildet wird, die konfiguriert ist, um Licht, welches auf den Linsenteil (12) auftrifft, zu der ersten Richtung zu kondensieren bzw. zusammenzuführen, und dass das Paar von reflektierenden Oberflächen (11b, 11c) aneinander am Unterteil (11a) des Vertiefungsteils (11) anliegt, und zwar in einem Querschnitt, der entlang einer Ebene aufgenommen ist, welche die erste Richtung und eine Referenzrichtung enthält, welche die optische Achse der Lichtquelle (3) ist.

4. Fahrzeugbeleuchtungsanordnung (1) nach Anspruch 3, **dadurch gekennzeichnet, dass** der Reflektor (4) eine parabolförmige reflektierende Oberfläche (4a) mit einem Brennpunkt an einer Position entsprechend der Lichtquelle (3) hat, und eine Lichtdiffusions- bzw. Lichtstreuungseigenschaft hat, um das Licht, welches auf die parabolförmige reflektierende Oberfläche auftrifft, zu reflektieren, während es zur ersten Richtung gestreut wird.

5. Fahrzeugbeleuchtungsanordnung (1) nach Anspruch 3 oder 4 **dadurch gekennzeichnet, dass** die Lichtquelle (3) eine Vielzahl von lichtemittierenden Elementen (9) hat, die in einer Richtung ausgerichtet sind, welche die Ebene schneidet, welche die erste Richtung und die Referenzrichtung enthält, und der Vertiefungsteil (11) und der Linsenteil (12) so vorgesehen sind, dass sie sich in Übereinstimmung mit der Richtung erstrecken, in welcher die Vielzahl von lichtemittierenden Elementen (9) ausgerichtet ist bzw. sind.

Revendications

1. Appareil d'éclairage de véhicule (1) comprenant :
 une source de lumière (3) configurée pour émettre de la lumière et ayant un axe optique ;
 un réflecteur (4) configuré pour réfléchir la lumière émise par la source de lumière (3) vers une première direction ; et
 une lentille guide de lumière (5) ayant une surface avant (5a) et une surface arrière, configurée pour recevoir, en provenance de la surface arrière, la lumière réfléchie par le réflecteur (4)

et pour fournir en sortie la lumière par la surface avant (5a), l'appareil d'éclairage du véhicule (1) étant **caractérisé en ce que**

la lentille guide de lumière (5) est une lentille interne formée par un élément de transmission de lumière ayant un indice de réfraction supérieur à l'air, dans lequel la lentille guide de lumière (5) comporte une partie évidée (11) dans la surface avant (5a) et une partie lentille (12) dans la surface arrière, la partie lentille (12) correspondant à la partie évidée (11), et une partie de la lumière (1) condensée par la partie lentille (12) est totalement réfléchie en interne par une paire de surfaces réfléchissantes (11b, 11c) qui constitue la partie évidée (11), de sorte qu'une région correspondant à la partie évidée (11) soit amenée à fournir en sortie une lumière avec une intensité relativement inférieure à celle de sa périphérie.

minescents (9) sont alignés.

2. Appareil d'éclairage de véhicule (1) selon la revendication 1, **caractérisé en ce que**, lorsque la lentille guide de lumière (5) est observée en vue de face, la région correspondant à la partie évidée (11) est située à l'intérieur d'une région correspondant à la partie lentille (12). 20
3. Appareil d'éclairage de véhicule (1) selon la revendication 1 ou 2, **caractérisé en ce que** la partie de lentille (12) est constituée par une surface de lentille convexe configurée pour condenser la lumière incidente sur la partie de lentille (12) vers la première direction, et la paire de surfaces réfléchissantes (11b, 11c) viennent en butée l'une contre l'autre au niveau du bas (11a) de la partie évidée (11) dans une section transversale prise le long d'un plan contenant la première direction et une direction de référence qui est l'axe optique de la source de lumière (3). 30 35 40
4. Appareil d'éclairage de véhicule (1) selon la revendication 3, **caractérisé en ce que** le réflecteur (4) a une surface réfléchissante parabolique (4a) ayant un point focal à une position correspondant à la source de lumière (3), et a une propriété de diffusion de la lumière pour réfléchir la lumière incidente sur la surface réfléchissante parabolique tout en la diffusant vers la première direction. 45
5. Appareil d'éclairage de véhicule (1) selon la revendication 3 ou 4, **caractérisé en ce que** la source de lumière (3) comporte une pluralité d'éléments électroluminescents (9) qui sont alignés dans une direction coupant le plan contenant la première direction et la direction de référence, et la partie évidée (11) et la partie lentille (12) sont prévues de sorte à s'étendre conformément à la direction dans laquelle la pluralité d'éléments électrolu- 50 55

FIG. 1

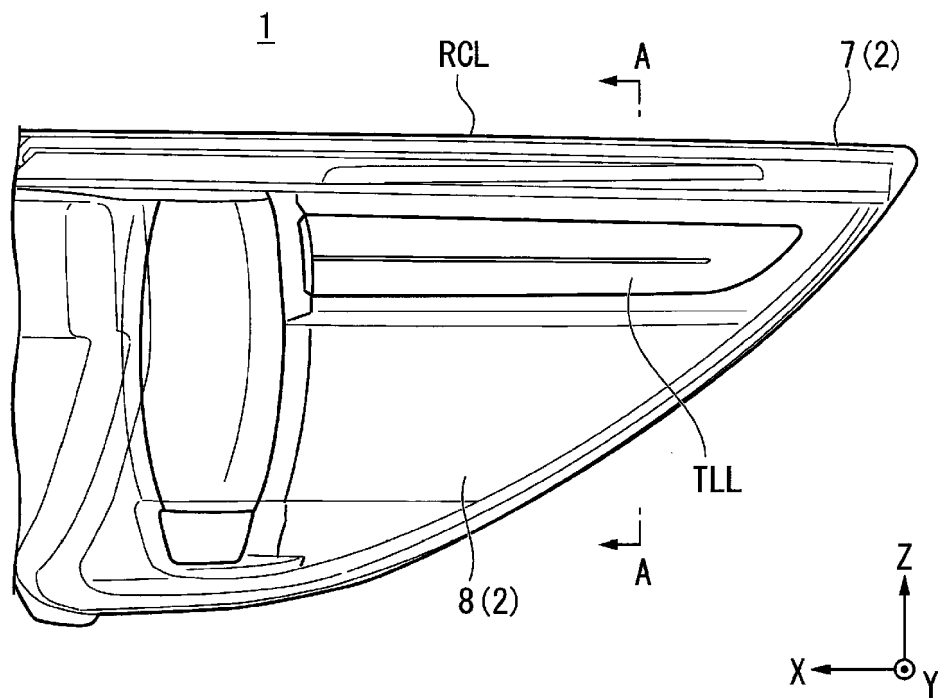


FIG. 2

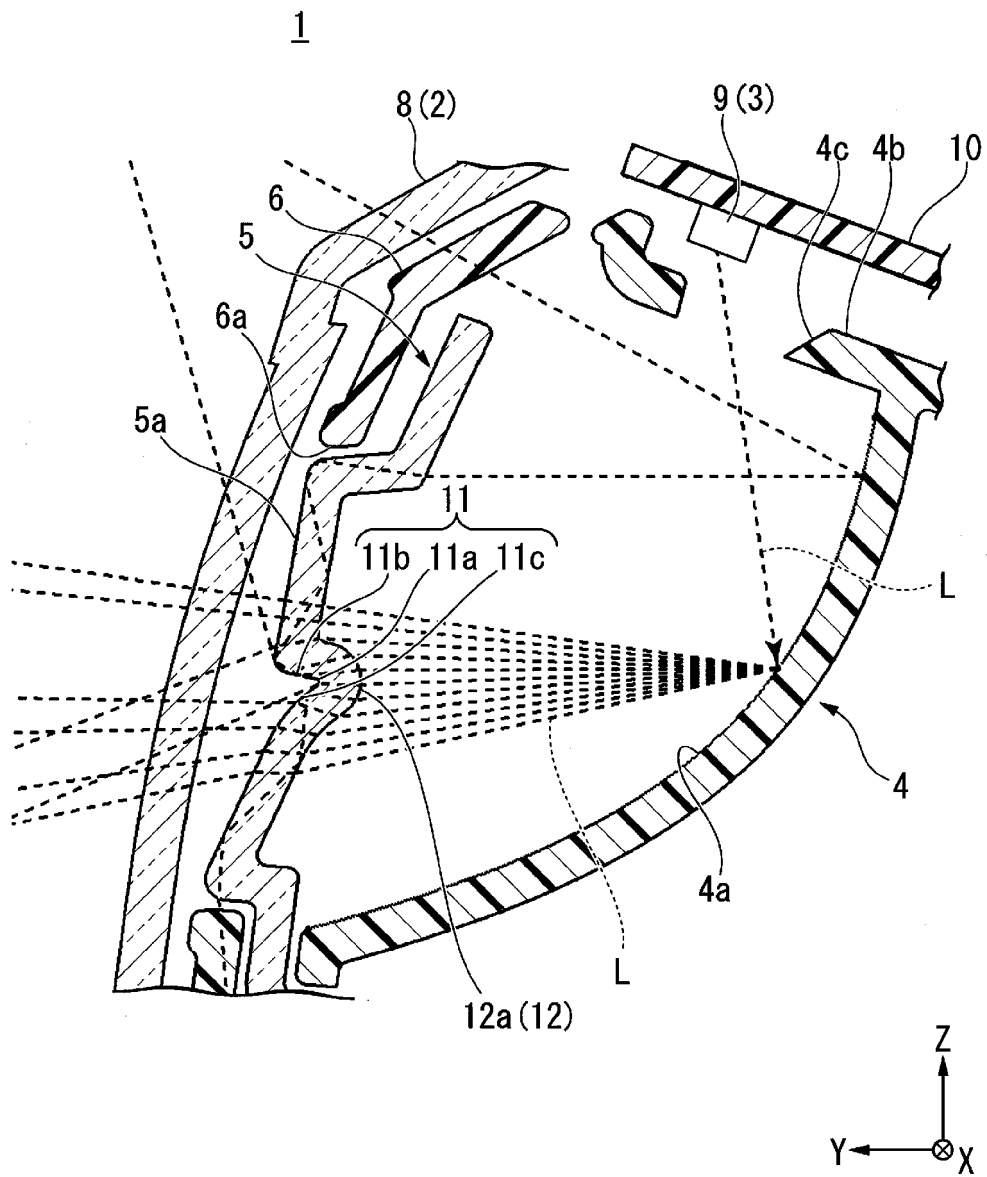


FIG. 3

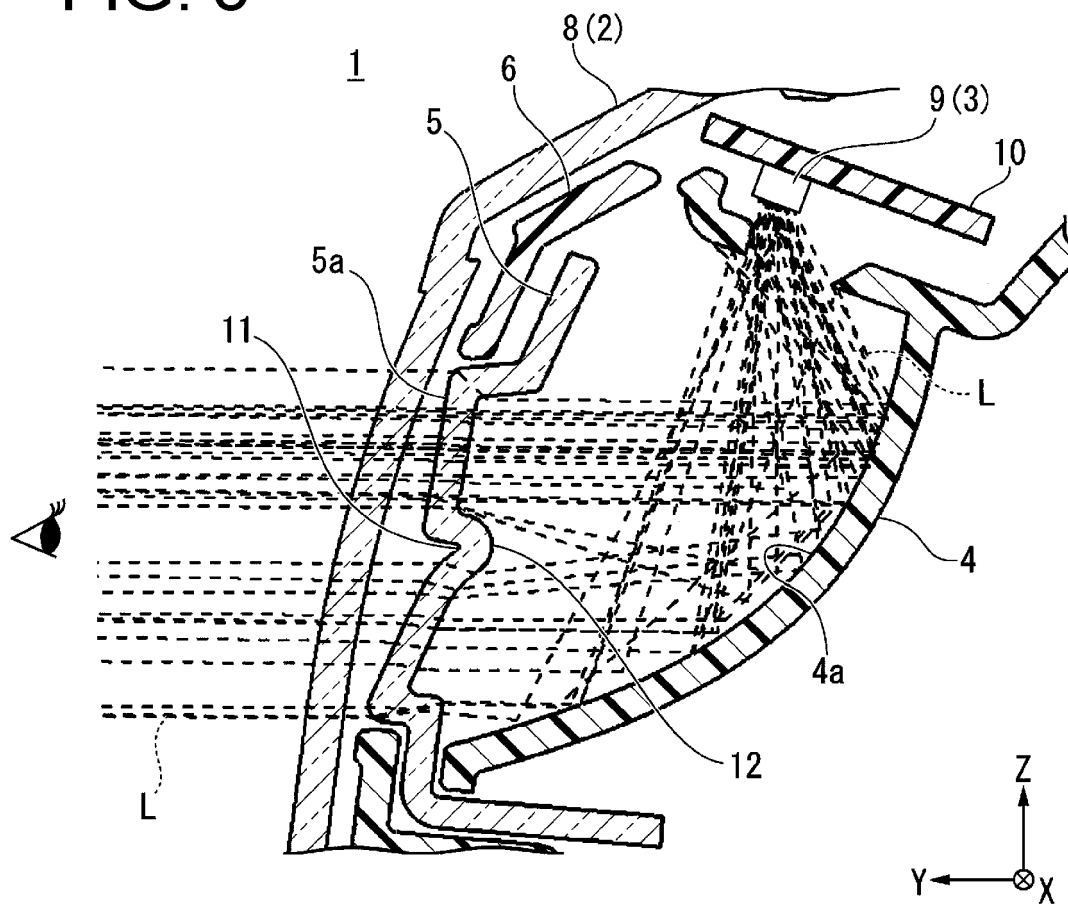


FIG. 4

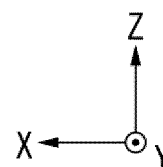
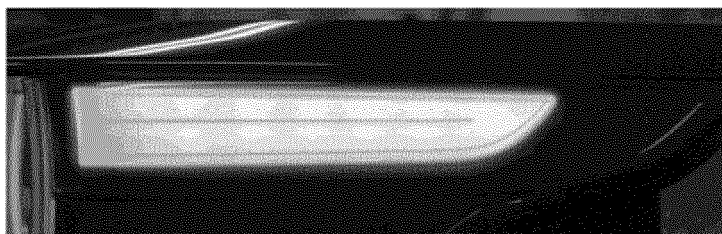


FIG. 5

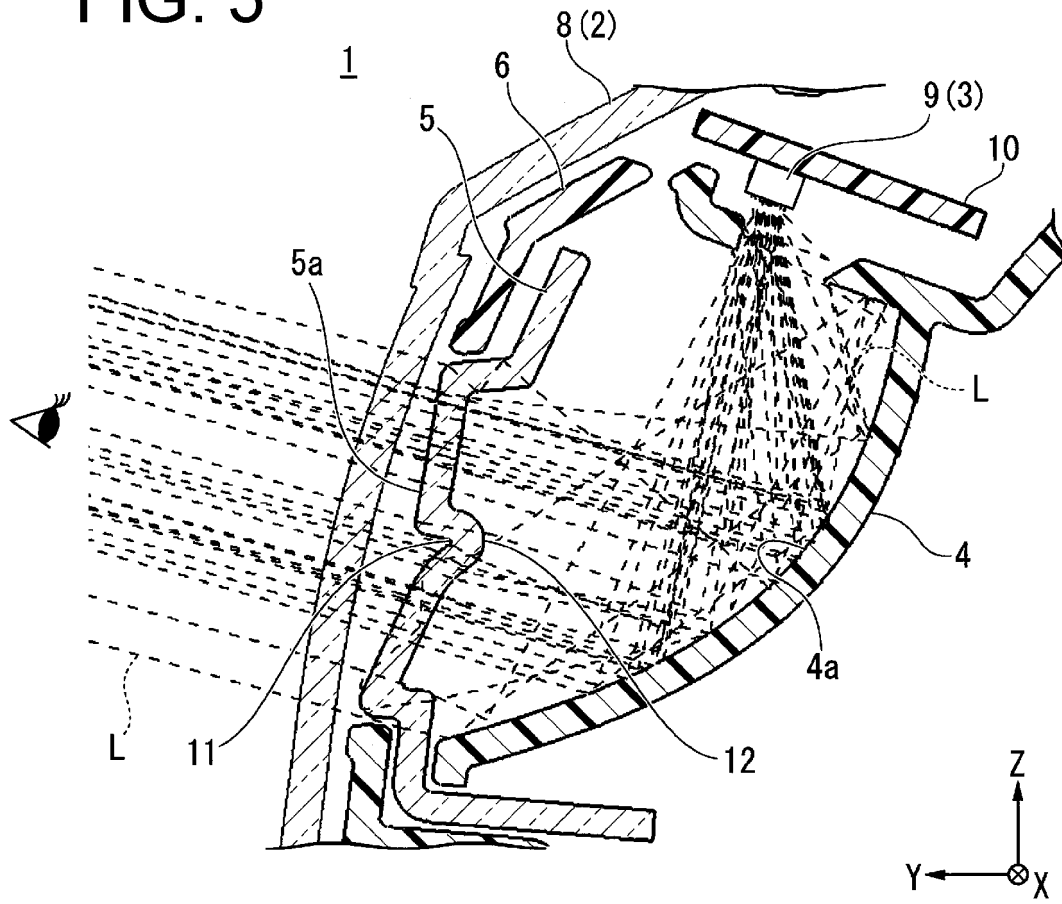


FIG. 6

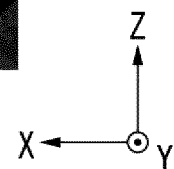
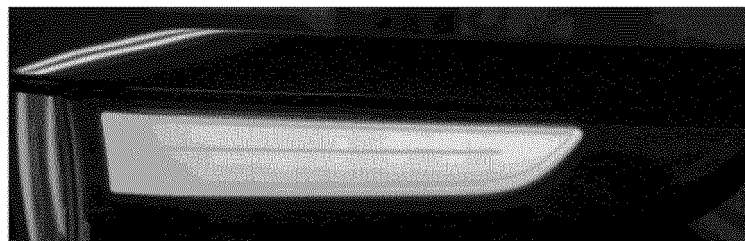


FIG. 7

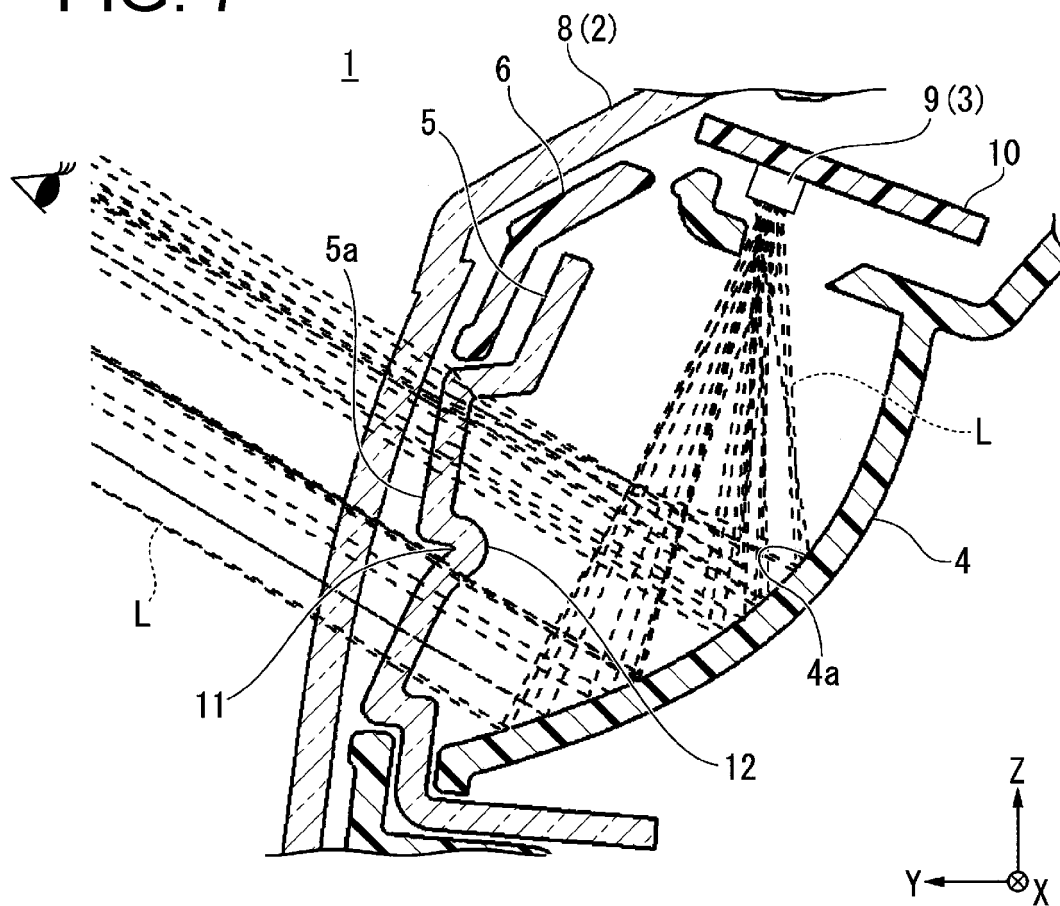
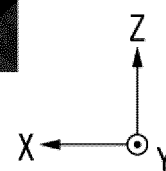
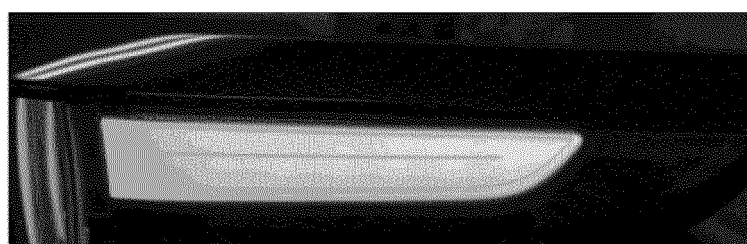


FIG. 8



REFERENCES CITED IN THE DESCRIPTION

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