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(54) Title of Invention Vehicle Lamp

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## SPECIFICATION

### 1. Title of the Invention

Vehicle Lamp

### 5 2. Scope of Claim for Utility Model Registration

(1) A vehicle lamp in which a light guiding space of a substantially L-shaped sectional configuration and consisting of a front space situated in front of a light source and a side space by the side thereof is formed by a lamp body and a front surface lens, wherein a stippling light guiding plate is arranged  
10 in the side space.

### 3. Detailed Description of the Invention

[Industrial Field of Application]

The present invention relates to a vehicle lamp in which a light guiding space of a substantially L-shaped configuration and consisting of a front space  
15 in front of a bulb and a side space by the side of the bulb is formed between a lamp body and a front surface lens, and, in particular, to a vehicle lamp structure in which light is guided to a predetermined side space region that the light from the bulb does not reach sufficiently by a light guiding plate having a light reflection portion.

20 [Prior Art]

Conventionally, various vehicle lamps of this type have been realized; Fig. 7 shows an example of such vehicle lamps.

Fig. 7 is a main portion sectional view of the vehicle lamp as disclosed in JP S58-49522 Y2; this vehicle lamp has a light guiding space 3 of a  
25 substantially L-shaped sectional configuration formed by a lamp body 1 and an

outer lens 2; a light guiding plate 4 is arranged beside this light guiding space 3, and a saw-teeth-like prism steps 5 are formed on the inner side of this light guiding plate 4; light from a bulb 6 enters the light guiding plate 4 as indicated by the arrows, and is guided to a light guiding plate distal end portion 4b after  
5 repeating reflection in the light guiding plate 4; and, at the same time, the light is reflected by the prism steps 5 to be applied to the outer lens side, thus making the visibility at the side portion of the outer lens satisfactory.

[Problems that the Invention is to Solve]

However, in the construction of the above-described vehicle lamp,  
10 when the light guiding plate 4 is long, the light guided is attenuated, and, the closer to the forward end portion of the light guiding plate, the more reduced is the light quantity, which means sufficient light does not reach the forward end portion of the side space, resulting in a rather insufficient illumination at the lamp side portion, and, in particular, in a rather poor visibility at the side portion  
15 of the lamp.

Further, it is necessary to adjust the light quantity according to the depth, interval, angle, etc. of the prism steps, which means the light quantity adjustment is very bothersome.

Further, the light guiding plate is formed in a mold; and, the  
20 configuration of the prism steps is regulated by the releasing direction of the forming mold; the prism steps cannot be made high at the curved portion of the light guiding plate, so that the illumination of the lamp side portion is insufficient, resulting in deterioration in visibility. In particular, when the kind of vehicle lamp differs, the configuration of the prism steps differs, so that it is necessary  
25 to adjust the mold each time the kind of lamp is changed, which means the light

quantity adjustment is rather difficult.

[Means for Solving the Problems]

The present invention has been made with a view toward solving the above-problems in the prior-art technique; it is an object of the present invention to provide a vehicle lamp which can sufficiently illuminate down to the side portion, and which allows easy light quantity adjustment.

According to the present invention, there is provided a vehicle lamp in which a light guiding space of a substantially L-shaped sectional configuration and consisting of a front space situated in front of a light source and a side space by the side thereof is formed by a lamp body and a front surface lens, wherein a stippling light guiding plate is arranged in the side space; even when the light is attenuated in the light guiding plate, reflection light is dense if the stippling is dense, making it possible to obtain a sufficient quantity of light, so that it is possible to guide a sufficient quantity of light via the stippling light guiding plate to the side space which is difficult for the light from the bulb to reach, whereby it is possible to uniformly illuminate the entire lamp.

[Embodiments]

Next, embodiments of the present invention will be described with reference to the drawings.

Fig. 1 is a main portion sectional view of a direct illumination type vehicle lamp according to a first embodiment of the present invention.

In Fig. 1, a light guiding space 12 is defined by an outer lens 10, which is a front surface lens, and a lamp body 11. This light guiding space 12 is composed of a front space 12a situated in front of a bulb 13 and a side space 12b situated by the side of the bulb 13, and extends in a substantially L-shaped

sectional configuration. Numeral 14 indicates a stippling light guiding plate guiding the light from the bulb 13 to the side space 12b; one end portion 14a thereof faces the bulb 13, and the entire light guiding plate extends along the side space 12b, and is fixedly mounted to the lamp body 11 by an appropriate  
5 means such as bonding, fusion-bonding, or screws, which are not shown. This stippling light guiding plate 14 is formed of a transparent synthetic resin in a substantially L-shaped sectional configuration, and is curved in a curvature substantially equivalent to that of the outer lens portion curve corresponding to the light guiding space 12 extending from the side portion of the outer lens 10,  
10 that is, one end portion of the front space 12a, to the side space 12b, with its thickness dimension being diminished as it extends toward the forward end.

Further, the back surface of the stippling light guiding plate 14, that is, the lamp body 11 side surface thereof, has a stippling reflection portion 15 configured to reflect the light guided into the light guiding plate to the outer lens  
15 side. This stippling reflection portion 15 is formed by a large number of stipples 16, with the stipples 16 becoming denser as the light guiding plate extends toward the forward end portion 14b. Generally speaking, the nearer to the forward end portion of the side space 12b, the more difficult it is for the light from the bulb 13 to reach, i.e., it is darker there; further, the light introduced  
20 into the light guiding plate is also gradually attenuated, with the light quantity thereof decreasing. Thus, the nearer to the forward end side of the side space 12b, the higher the stipple density so that the reflection light at the stippling reflection portion 15 may be largely secured, whereby it is possible to attain a uniform illumination throughout the entire lamp. Thus, due to the stippling  
25 reflection portion 15, much light is guided to the side portion 10a of the outer

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