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(54) Title: METHOD FOR RESTORING LAMP COVER OF VEHICLE HEADLIGHT

(57) Abstract: Disclosed herein is a method for restoring a lamp cover of a vehicle headlight, the method including: applying a cleaner to the surface of the lamp cover, rubbing the lamp cover surface either with abrasive sand paper having a particle of 15-40 micron or with a cleaning member having abrasive sand paper, and then wiping the lamp cover surface; applying a cleaner to the lamp cover surface, rubbing the surface either with abrasive sand paper having a particle size of 1-12 micron or with a cleaning member having abrasive sand paper, and then wiping the lamp cover surface; applying a first polishing solution to the lamp cover surface, and then wiping the lamp cover surface applied with the first polishing solution; applying a second polishing solution to the lamp cover surface, and then wiping the lamp cover surface applied with the second polishing solution; and applying a third polishing solution to the lamp cover surface, and then wiping the lamp cover surface applied with the third polishing solution.

# Description

## METHOD FOR RESTORING LAMP COVER OF VEHICLE HEADLIGHT

### Technical Field

- [1] The present invention relates to a method for restoring a lamp cover of a vehicle headlight, and more particularly to a method for restoring a lamp cover of a vehicle headlight, which can simply remove flaws, defects, colored contaminants, etc. formed on the surface of the lamp cover, by a simple process of applying a cleaner and a polishing solution to the surface and then wiping the surface, and can be carried out in an easy and simple way even in a place where it is difficult to work.

### Background Art

- [2] Generally, a motor vehicle is provided with headlights for illuminating the road ahead of the vehicle, turn signal lamps for indicating the direction of motion of the vehicle, clearance lamps for indicating the size of the vehicle, room lights for illuminating the interior, etc. In addition, the vehicle is provided with fog lights, instrument panel lights, etc., which function to deliver the intention of drivers and to provide information.
- [3] Particularly, the headlight for illuminating the road ahead of the vehicle is most important from the aspect of driving the vehicle, and this vehicle headlight generally comprises a lamp and a lamp cover for protecting the lamp.
- [4] Hereinafter, the vehicle headlight will be described with reference to the accompanying drawings.
- [5] As shown in FIG. 1, the vehicle headlight generally comprises a lamp 10 connected with a vehicle power source, and a lamp cover 20 covering the top of the lamp 10 so as to protect the lamp 10.
- [6] At night, if the vehicle headlight does not turn on due to any problem, the driving of the vehicle becomes impossible and increases the risk of a rear-end collision with a vehicle traveling in front.
- [7] When checking headlight functioning, even when the lamp itself is in good condition, the performance of the headlight may not be sufficient due to problems which occur on the outer surface of the lamp cover. For example, a lamp cover made of glass to correspond to the material of the headlight is not changed with the passage of time, but a lamp cover made of a plastic or transparent acrylic resin is discolored due to heat emitted from the lamp or is damaged due to the exposure of the surface to rain and wind, thus reducing the luminous efficiency of the headlight.
- [8] To overcome this problem, the vehicle headlight itself is replaced or the lamp cover

of the headlight is replaced. In the latter case, troublesome processes of disassembling and assembling the lamp cover are required. In addition, the lamp cover must be sealed with silicon after the replacement thereof, such that moisture does not penetrate into the lamp cover.

- [9] Furthermore, the cost of replacing the vehicle headlight itself or the lamp cover in order to increase the luminous efficiency of the headlight is incurred, thus increasing the maintenance cost of the vehicle.

## **Disclosure of Invention**

### **Technical Problem**

- [10] The present invention has been made in order to solve the above-described problems occurring in the prior art, and it is an object of the present invention to provide a method for restoring a lamp cover of a vehicle headlight, which can simply restore the surface of the lamp cover by a simple process of applying a cleaner and a polishing solution to the surface and wiping the surface, when flaws, defects, etc. have occurred on the surface or when contaminants discolor the surface.

- [11] Another object of the present invention is to provide a method for restoring a lamp cover of a vehicle headlight, which does not require an additional working process of disassembling and assembling the lamp cover, and thus can increase the work efficiency.

### **Technical Solution**

- [12] To achieve the above objects, the present invention provides a method for restoring a lamp cover of a vehicle headlight, the method comprising: a first lamp-cover-cleaning step of applying a cleaner to the surface of the lamp cover, rubbing the cleaner-applied lamp cover surface either with abrasive sand paper having a particle size of 15-40 micron or with a cleaning member having abrasive sand paper attached thereto, and then wiping the lamp cover surface; a second lamp-cover-cleaning step of applying a cleaner to the lamp cover surface resulting from the first cleaning step, rubbing the surface either with abrasive sand paper having a particle size of 1-12 micron or with a cleaning member having abrasive sand paper attached thereto, and then wiping the lamp cover surface; a first polishing step of applying a first polishing solution to the lamp cover surface resulting from the second cleaning step, and then wiping the lamp cover surface applied with the first polishing solution; a second polishing step of applying a second polishing solution to the lamp cover surface resulting from the first polishing step, and then wiping the lamp cover surface applied with the second polishing solution; and a third polishing step of applying a third polishing solution to the lamp cover surface resulting from the second polishing step, and then wiping the lamp cover surface applied with the third polishing solution.

- [13] In the method of the present invention, the first polishing solution in the first

polishing step contains abrasive particles having a particle size ranging from #1000 to #2500. Moreover, the second polishing solution in the second polishing step contains abrasive particles having a particle size ranging from #3000 to #4000. In addition, the third polishing solution in the third polishing step contains abrasive particles having a particle size ranging from #4000 to #7000.

### **Advantageous Effects**

- [14] The present invention has the following effects.
- [15] First, even when the surface of a lamp cover of a vehicle headlight becomes discolored yellow due to aging, the lamp cover can be easily restored without being replaced, thus increasing the luminous efficiency of the vehicle headlight.
- [16] Second, because the lamp cover of the vehicle headlight can be restored in a simple process of applying a cleaner and a polishing solution to the lamp cover surface and rubbing the applied surface, the expenditure resulting from the replacement of the vehicle headlight can be avoided, thus reducing the maintenance cost of vehicles.
- [17] Third, because the lamp cover of the vehicle headlight can be restored by a simple process of applying a cleaner and a polishing solution to the lamp cover surface and rubbing the applied surface, an additional working process of disassembling and assembling the lamp cover upon deterioration of the lamp cover is not required, thus increasing the efficiency of working.

### **Brief Description of the Drawings**

- [18] FIG. 1 is a partial perspective view showing the lamp and lamp cover of a vehicle headlight.
- [19] FIG. 2 is a process flowchart showing a method for restoring a lamp cover of a vehicle headlight according to the present invention.
- [20] \* Description of important reference numerals used in the drawings \*
- [21] 100: first cleaning step for headlight lamp cover;
- [22] 200: second cleaning step for headlight lamp cover;
- [23] 300: first polishing step for headlight lamp cover;
- [24] 400: second polishing step for headlight lamp cover; and
- [25] 500: third polishing step for headlight lamp cover.

### **Best Mode for Carrying Out the Invention**

- [26] Specific features and other advantages of the present invention will be more apparent from the following description of a preferred embodiment.
- [27] In the present invention, a cleaner and a polishing solution are preferably products containing abrasive particles having a particle size ranging from #1000 to #7000, and abrasive sand paper is preferably a product having a particle size of 1-40 micron.
- [28] 1) First cleaning step for headlight lamp cover (S100)

[29] In this step, a cleaner is applied to the surface of a lamp cover of a vehicle headlight, and the lamp cover surface is rubbed either with abrasive sand paper having a particle size of 15-40 micron or with a sponge member having abrasive sand paper attached thereto. Herein, the rubbing is preferably carried out in one direction for less than 5 minutes.

[30] After completion of this step, the cleaner on the lamp cover surface is wiped off clean with dry cloth.

[31] With respect to the particle size of the abrasive sand paper, the higher the particle size, the denser the abrasive sand paper. Namely, as the value of the particle size becomes higher, the surface of an object is polished more roughly, and as it becomes lower, the surface is polished more smoothly.

[32] 2) Second cleaning step for headlight lamp cover (S200)

[33] In this step, a cleaner is applied to the lamp cover surface resulting from the first cleaning step (S100), and the lamp cover surface is rubbed either with abrasive sand paper having a particle size of 1-12 micron or with a sponge member having abrasive sand paper attached thereto. Herein, the rubbing is carried out for 1-3 minutes.

[34] After completion of this step, the second cleaner on the lamp cover surface is wiped off clean with dry cloth.

[35] After completion of the above process, the second cleaning step (S200) may also be repeated 1-2 times depending on the preferences of a user.

[36] In the first cleaning step (S100) and the second cleaning step (S200), the abrasive sand paper may be used in a state in which it is attached to the surface of a sponge, in order to make it easy to grasp with the user's hand and increase the efficiency of the abrasive sand paper.

[37] 3) First polishing step for headlight lamp cover (S300)

[38] In this step, a first polishing solution containing abrasive particles having a particle size ranging from #1000 to #2500 is applied to the lamp cover surface resulting from the second cleaning step (S200), and then the lamp cover surface is wiped with, for example, a micro-fiber towel covered sponge, in one direction for 2-3 minutes, and the above process is repeated 1~3 times. After completion of the above-described first polishing step (S300), the first polishing step (S300) may also be repeated 1-3 times depending on the preferences of a user. After the above-described process, the first cleaning step (S100), the second cleaning step (S200) and the first polishing step (S300) may be repeated depending on the judgment of a user.

[39] After the above-described process, the surface of the headlight lamp cover is free of defects, and the outer surface is transparent.

[40] 4) Second polishing step for headlight lamp cover (S400)

[41] In this step, a second polishing solution containing abrasive particles having a

particle size ranging from #3000 to #4000 is applied to the lamp cover surface resulting from the first polishing step (S300), and then the lamp cover surface is wiped with, for example, a micro-fiber towel covered sponge, in one direction for 2-3 minutes. This second polishing step is repeated 1-2 times.

[42] After completion of the second polishing step (S400), the surface of the headlight lamp cover is glossy.

[43] 5) Third polishing step for headlight lamp cover (S500)

[44] A third polishing solution containing abrasive particles having a particle size ranging from #4000 to #7000 is applied to the lamp cover surface resulting from the second polishing step (S400), and then the lamp cover surface is wiped with, for example, a micro-fiber towel covered sponge, in one direction for 2-3 minutes. This second polishing step is repeated 1-2 times. Then, the third polishing solution on the headlight lamp surface is wiped off with a clean towel covered sponge.

[45] As used herein, the term "abrasive particles" refers to very fine powdery particles, which rub the surface of the lamp cover to grind the outer surface of the lamp cover, thus removing contaminants from the surface and making the surface glossy.

[46] Also, in the first polishing step (S300), the second polishing step (S400) and the third polishing step (S500), the sponge covered with the towel is used to make the user's work convenient. In addition to a sponge, any object may be used, as long as it has elasticity similar to sponge.

[47] Although the first polishing step (S300), the second polishing step (S400) and the third polishing step (S500) have been described as being carried out by hand, these steps may also be carried out through a mechanical process in which the lamp cover surface is wiped with a pad attached to a wire or wireless electric drill at a speed of 100-900 rpm or with a pad attached to a wire or wireless polisher at a speed of 1000-1700 rpm.

[48] Although the preferred embodiment of the present invention has been described for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.

### **Industrial Applicability**

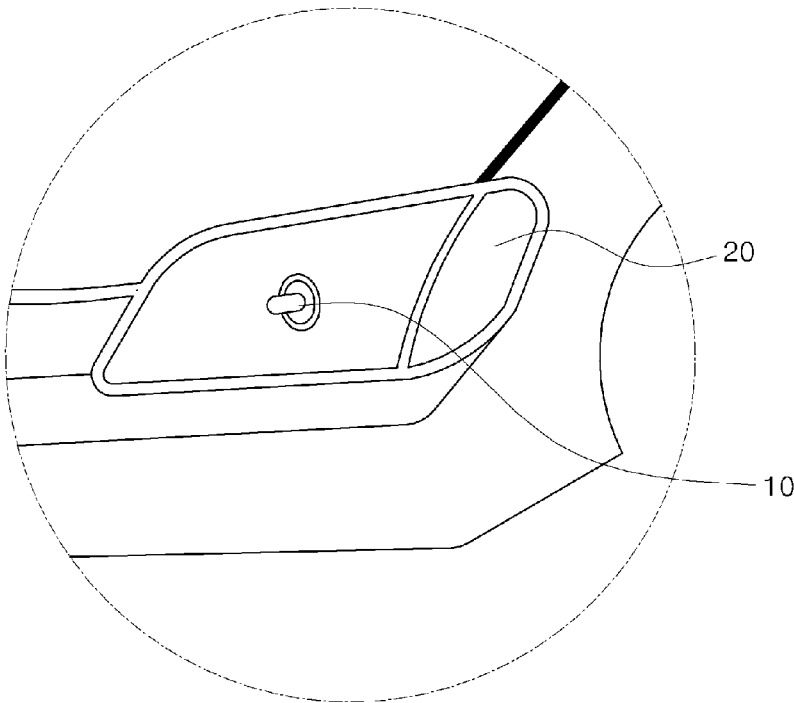
[49] The present invention can be applied in the automotive industry.

[50]

## Claims

- [1] A method for restoring a lamp cover of a vehicle headlight, the method comprising:  
a first lamp-cover-cleaning step of applying a cleaner to the surface of the lamp cover, rubbing the cleaner-applied lamp cover surface either with abrasive sand paper having a particle size of 15-40 micron or with a cleaning member having abrasive sand paper attached thereto, and then wiping the lamp cover surface;  
a second lamp-cover-cleaning step of applying a cleaner to the lamp cover surface resulting from the first cleaning step, rubbing the surface either with abrasive sand paper having a particle size of 1-12 micron or with a cleaning member having abrasive sand paper attached thereto, and then wiping the lamp cover surface;  
a first polishing step of applying a first polishing solution to the lamp cover surface resulting from the second cleaning step, and then wiping the lamp cover surface applied with the first polishing solution;  
a second polishing step of applying a second polishing solution to the lamp cover surface resulting from the first polishing step, and then wiping the lamp cover surface applied with the second polishing solution; and  
a third polishing step of applying a third polishing solution to the lamp cover surface resulting from the second polishing step, and then wiping the lamp cover surface applied with the third polishing solution.
- [2] The method of Claim 1, wherein the first polishing solution in the first polishing step contains abrasive particles having a particle size ranging from #1000 to #2500.
- [3] The method of Claim 1, wherein the second polishing solution in the second polishing step contains abrasive particles having a particle size ranging from #3000 to #4000.
- [4] The method of Claim 1, wherein the third polishing solution in the third polishing step contains abrasive particles having a particle size ranging from #4000 to #7000.

[Fig. 1]



[Fig. 2]

