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(54) **VEHICLE HIGH-BEAM LENS AND LOW-BEAM LENS HIDING MECHANISM AND VEHICLE LAMP**

(57) A vehicle high-beam lens and low-beam lens hiding mechanism and a vehicle lamp, related to the technical field of vehicle lighting. The high-beam lens and low-beam lens hiding mechanism comprises a rack (2), a driving assembly (3), a connecting rod mechanism and a plurality of decorative plates (4); the rack (2) is provided with a through hole through which high- and low-beam lenses (1) are exposed, and the plurality of decorative plates (4) are movably arranged on the rack (2) and are uniformly distributed along the circumference of the through hole; and the driving assembly (3) is connected to the plurality of decorative plates (4) by means of the connecting rod mechanism, and the driving assembly (3) drives the connecting rod mechanism to move, causing the plurality of decorative plates (4) to move synchronously, achieving switching between the plurality of decorative plates (4) being joined together or separated from one another. When the high- and low-beam lenses (1) are turned on, the plurality of decorative plates (4) first synchronously move to be separated from one another, and after the decorative plates (4) have finished moving, the high- and low-beam lenses (1) are exposed and illuminated; when the high- and low-beam lenses (1) are turned off, the plurality of decorative plates (4) synchronously move to be joined together so as to hide the high- and low-beam lenses (1), thus making it so that the opening and closing process of the high- and low-beam lenses (1) feels more technologically advanced.

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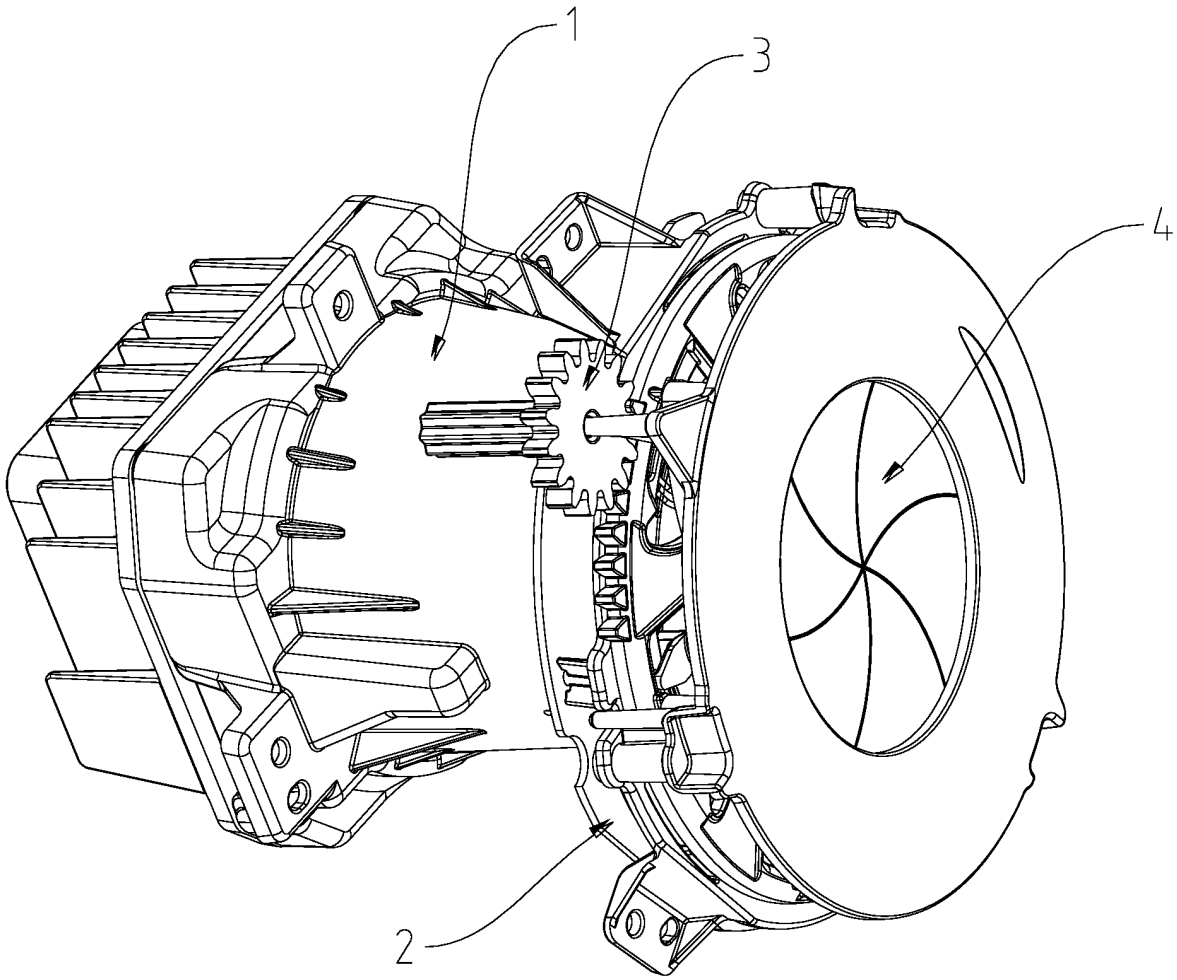

Fig. 1

Description

[0001] The present application claims the priority to Chinese Patent Application No. 202210793939.2, titled "VEHICLE HIGH-BEAM LENS AND LOW-BEAM LENS HIDING MECHANISM AND VEHICLE LAMP", filed with the China National Intellectual Property Administration on July 5th, 2022, the entire content of which is incorporated herein by reference.

FIELD

[0002] The present application relates to the technical field of vehicle lighting, and in particular to high and low beam lens hiding mechanism and a vehicle lamp.

BACKGROUND

[0003] With the development of vehicle industry, more and more emphasis is placed on vehicle styling and technological sense to meet the increasingly diverse market demands. The styling or technological enhancement to headlights, which are directly observable parts of a vehicle, obviously contributes to improving the quality of the entire vehicle.

SUMMARY

[0004] An object of the present application is to provide a vehicle high and low beam lens hiding mechanism and a vehicle lamp, to improve the technological sense of the vehicle lamp to a certain extent.

[0005] The present application provides a vehicle high and low beam lens hiding mechanism, which includes a bracket, and a driving assembly, a connecting rod mechanism and multiple decorative sheets arranged on the bracket. The bracket is configured to be arranged in front of a high and low beam lens, and a through hole configured to allow the high and low beam lens to be exposed is formed in the bracket. The multiple decorative sheets are movably arranged in sequence at the through hole along a circumferential direction of the through hole, and a driving end of the driving assembly is connected to the multiple decorative sheets through the connecting rod mechanism. The driving assembly can drive the connecting rod mechanism to move, to further drive the multiple decorative sheets to move synchronously via the connecting rod mechanism, to make the multiple decorative sheets be pieced together to block the through hole, or be separated from one another to expose the through-hole.

[0006] Further, the multiple decorative sheets are rotatably connected to the bracket respectively, the connecting rod mechanism can move to drive the multiple decorative sheets to rotate synchronously, to make the multiple decorative sheets be pieced together or separated from one another.

[0007] Further, the connecting rod mechanism includes multiple connecting rods, the multiple connecting rods are distributed at intervals in the circumferential direction of the through hole and are provided in one-to-one correspondence with the multiple decorative sheets. One end of each of the multiple connecting rods is rotatably connected to the driving end of the driving assembly, and the other end of each of the multiple connecting rods is rotatably connected to the corresponding decorative sheet; the driving assembly can drive the multiple connecting rods to move synchronously, so as to drive the multiple decorative sheets to rotate synchronously through the movement of the multiple connecting rods.

[0008] Further, the driving assembly includes a rotatable plate, the rotatable plate is arranged to surround an outside of the through hole, the rotatable plate can rotate around an axis of the through hole, and the multiple connecting rods are rotatably connected to the rotatable plate respectively.

[0009] Further, the driving assembly further includes a gear and a driving motor, where the driving motor is mounted on the bracket, and a driving end of the driving motor is connected to the gear to drive the gear to rotate around an axis thereof; a rack is provided on an outer side wall of the rotatable plate, and the gear is engaged with the rack.

[0010] Further, the vehicle high and low beam lens hiding mechanism further includes multiple connecting members, the multiple connecting members are distributed at intervals in the circumferential direction of the through hole and are provided in one-to-one correspondence with the multiple decorative sheets; each of the multiple connecting members is provided with a first shaft hole, each of the multiple decorative sheets is provided with a first rotary shaft, and each decorative sheet is rotatably connected to the corresponding first shaft hole through the respective first rotary shaft, so that each decorative sheet can rotate with the respective first rotary shaft.

[0011] Further, the rotatable plate is provided with multiple guide slide grooves at positions in correspondence with the multiple connecting members respectively, a guide post is formed on each of the multiple connecting members, and the guide post is slidably inserted into the corresponding guide slide groove.

[0012] Further, each of the multiple decorative sheets is provided with a second rotary shaft; the rotatable plate is provided with multiple third rotary shafts, the multiple third rotary shafts are distributed at intervals in a circumferential direction of the rotatable plate and are provided in one-to-one correspondence with the multiple connecting rods; where one end of each connecting rod is rotatably sleeved on the corresponding first rotary shaft, and the other end of each

connecting rod is rotatably sleeved on the corresponding second rotary shaft.

[0013] Further, each decorative sheet is provided with a coating film having a pattern; or,

each decorative sheet is a light-transmitting plate being provided with an opaque coating layer, and a light-transmitting region is formed in the opaque coating layer; and a side projecting light source is provided at an edge of one side of the light-transmitting plate facing the high and low beam lens; or,

each decorative sheet is a light-transmitting plate being provided with an opaque coating layer, and a light-transmitting region is formed in the opaque coating layer; and the high and low beam lens can operate in a low current state to be used as a front projecting light source.

[0014] The present application also provides a vehicle lamp, including the vehicle high and low beam lens hiding mechanism according to any one of the above solutions.

[0015] The present application has the following beneficial effects compared with the prior art.

[0016] The high and low beam lens hiding mechanism according to the present application includes a bracket, a driving assembly, a connecting rod mechanism and multiple decorative sheets, where the bracket is arranged in front of a high and low beam lens, and the bracket is provided with a through hole through which the high and low beam lens can be exposed. The multiple decorative sheets are movably arranged on the bracket and are uniformly distributed along a circumferential direction of the through hole. The driving assembly is arranged on the bracket, and a driving end of the driving assembly is connected to the multiple decorative sheets via the connecting rod mechanism. The driving assembly can drive the connecting rod mechanism to reciprocate along a predetermined trajectory, to further drive the multiple decorative sheets to move synchronously through the connecting rod mechanism, so that the multiple decorative sheets can be switched between a state of being pieced together and a state of being separated apart.

[0017] In the actual use, when the high and low beam lens is turned on, the high and low beam lens hiding mechanism is first activated, and the multiple decorative sheets move synchronously to be separated from one another, and after the decorative sheets have finished moving, the high and low beam lens is exposed and illuminated; when the high and low beam lens is turned off, the high and low beam lens hiding mechanism is activated again, and the multiple decorative sheets move synchronously to be pieced together, so as to hide the high and low beam lens, so that the opening and closing processes of the high and low beam lens are more technologically advanced.

[0018] The present application also provides a vehicle lamp including the vehicle high and low beam lens hiding mechanism, and the vehicle lamp also has the beneficial effects of the vehicle high and low beam lens hiding mechanism.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] For more clearly illustrating embodiments of the present application or the technical solutions in the conventional technology, drawings referred to describe the embodiments or the conventional technology will be briefly described hereinafter. Apparently, the drawings in the following description are only some examples of the present application, and for those skilled in the art, other drawings may be obtained based on these drawings without any creative efforts.

FIG. 1 is a schematic view showing the structure that a vehicle high and low beam lens hiding mechanism according to an embodiment of the present application is assembled to a high and low beam lens;

FIG. 2 is a schematic view showing the structure of the vehicle high and low beam lens hiding mechanism according to the embodiment of the present application from a first perspective;

FIG. 3 is a schematic view showing the structure of the vehicle high and low beam lens hiding mechanism according to the embodiment of the present application from a second perspective a first perspective;

FIG. 4 is a schematic view showing the structure of a decorative sheet according to an embodiment of the present application;

FIG. 5 is a schematic view showing the structure of a rotatable plate according to an embodiment of the present application; and

FIG. 6 is a schematic view showing the structure of a connecting member according to an embodiment of the present application.

Reference numerals:

[0020]

1	high and low beam lens,	2	bracket,
3	driving assembly,	31	gear,

(continued)

4	decorative sheet,	41	first rotary shaft,
42	second rotary shaft,	5	connecting rod,
6	rotatable plate,	61	rack,
62	third rotary shaft,	63	guide slide groove,
7	connecting member,	71	guide post,
72	assembly shaft hole.		

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0021] The technical solutions according to the embodiments of the present application are described clearly and comprehensively below in conjunction with the accompanying drawings. It is apparent that the described embodiments are only some of the embodiments according to the present application, rather than all of the embodiments.

[0022] In general, assemblies in the embodiments of the present application, which are described and illustrated herein in the accompanying drawings, may be arranged and designed in a variety of different configurations. Accordingly, the following detailed description of the embodiments of the present application as provided in the accompanying drawings is not intended for limiting the scope as claimed by the present application, but for showing the embodiments selected for the present application.

[0023] Based on the embodiments of the present application, all other embodiments obtained by those skilled in the art without any creative work will fall into the protection scope of the present application.

[0024] In the description of the present application, it should be noted that the orientations or positional relationships indicated by the terms such as "central", "upper", "lower", "left", "right", "vertical", "horizontal", "inner", and "outer", are based on the orientations or positional relationships shown in the accompanying drawings, which are only used to facilitate the description of the present application and to simplify the description, and are not intended to indicate or imply that the devices or elements referred to must have a particular orientation or can only be configured and operated in a particular orientation. Therefore the above-mentioned terms should not be construed as a limitation to the present application. In addition, terms such as "first", "second", "third" and the like are merely for description, and should not be construed as indicating or implying relative importance.

[0025] In the description of the present application, it should be noted that, unless otherwise clearly specified and limited, the terms "mount", "connected to" and "connection" should be understood in a broad sense. For example, it may refer to a fixed connection, a detachable connection, or an integral connection; it may refer to a mechanical connection, or an electrical connection; it may refer to a direct connection, or an indirect connection through an intermediate medium, or internal communication between two elements. For those skilled in the art, the specific meanings of the above terms in the present application may be understood according to specific situations.

[0026] A vehicle high and low beam lens hiding mechanism and a vehicle lamp according to some embodiments of the present application will be described below with reference to FIG. 1 to FIG. 6.

[0027] As shown in FIG. 1, the present application provides a high and low beam lens hiding mechanism, which is configured to be arranged in front of a high and low beam lens 1 of a vehicle lamp, to cover and hide the high and low beam lens 1 when the high and low beam lens 1 is turned off; and the high and low beam lens hiding mechanism can be opened when the high and low beam lens 1 is turned on, to expose the high and low beam lens 1 for illumination, to improve the technological sense of the vehicle lamp.

[0028] As shown in FIG. 2 and FIG. 3, the high and low beam lens hiding mechanism includes a bracket 2, a driving assembly 3, a connecting rod mechanism and multiple decorative sheets 4. The bracket 2 is arranged in front of a high and low beam lens 1, the bracket 2 is provided with a through hole facing the high and low beam lens 1 behind the through hole, so that the high and low beam lens 1 can be exposed from the through hole. The multiple decorative sheets 4 are movably arranged on the bracket 2, and are uniformly distributed in a circumferential direction of the through hole. The movement of the multiple decorative sheets 4 enables the multiple decorative sheets 4 to be pieced together with one another or separated from one another. The multiple decorative sheets 4 being pieced together with one another can perform blocking in front of the through hole, to hide the through hole and the high and low beam lens 1 located behind the through hole. The multiple decorative sheets 4 being separated from one another can release the above blocking, to expose the through hole and the high and low beam lens 1 located behind the through hole.

[0029] The driving assembly 3 is arranged on the bracket 2, and the multiple decorative sheets 4 are connected to a driving end of the driving assembly 3 via the connecting rod mechanism. The driving assembly 3 is configured to drive the connecting rod mechanism to reciprocate along a predetermined trajectory, to further drive the multiple decorative sheets 4 to move synchronously through the connecting rod mechanism, so that the multiple decorative sheets 4 can be switched between a state of being pieced together and a state of being separated apart.

[0030] In the actual use, when the high and low beam lens 1 is turned on, the high and low beam lens hiding mechanism is

first activated, and the multiple decorative sheets 4 move synchronously to get to the state of being separated apart; after the decorative sheets 4 have finished moving, the high and low beam lens 1 is exposed and illuminated. When the high and low beam lens 1 is turned off, the high and low beam lens hiding mechanism is activated again, and the multiple decorative sheets 4 synchronously move to get to the state of being pieced together, to hide the high and low beam lens 1, making the opening and closing processes of the high and low beam lens 1 be more technologically advanced.

[0031] In an embodiment of the present application, as shown in FIG. 2 and FIG. 3, preferably, the multiple decorative sheets 4 are uniformly distributed in the circumferential direction of the through hole on the bracket 2, and are rotatably connected to the bracket 2 respectively, to enable the multiple decorative sheets 4 to rotate synchronously about their respective own rotation axes. When the driving assembly 3 drives the connecting rod mechanism to move, the movement of the connecting rod mechanism can drive the multiple decorative sheets 4 to rotate synchronously, so that the multiple decorative sheets 4 can be opened by rotation to get to the state of being separated apart, or be closed by rotation to get to the state of being pieced together, thereby making the opening and closing processes of the multiple decorative sheets 4 have an advanced technological sense and better visual effects.

[0032] Preferably, as shown in FIG. 2 and FIG. 3, the connecting rod mechanism includes multiple connecting rods 5, which are also uniformly distributed at intervals in the circumferential direction of the through hole, and the multiple connecting rods 5 are arranged at the multiple decorative sheets 4 in one-to-one correspondence. For a set of connecting rod 5 and decorative sheet 4 corresponding to each other, one end of the connecting rod 5 is rotatably connected to the decorative sheet 4, and the other end of the connecting rod 5 is rotatably connected to the driving end of the driving assembly 3. The driving assembly 3 can drive the multiple connecting rods 5 to move synchronously, to make the multiple connecting rods 5 reciprocate along their own motion trajectories respectively, so as to further drive the multiple decorative sheets 4 to rotate synchronously through the synchronous movement of the multiple connecting rods 5, thereby realizing the opening and closing of the multiple decorative sheets 4 through rotation.

[0033] In one embodiment of the present application, as shown in FIG. 3 and FIG. 5, preferably, the driving assembly 3 includes a rotatable plate 6 being arranged to surround the outside of the through hole, and the rotatable plate 6 can rotate clockwise or counterclockwise relative to the bracket 2 around the axis of the through hole. The rotatable plate 6 is the driving end of the driving assembly 3 that acts on the connecting rod mechanism, and the multiple connecting rods 5 are rotatably connected to the rotatable plate 6, to enable the reciprocating rotation of the rotatable plate 6 to drive the multiple connecting rods 5 to reciprocate synchronously along their own trajectories, to further drive the multiple decorative sheets 4 to perform reciprocating rotation through the reciprocating movement of the multiple connecting rods 5, thereby realizing the opening and closing of the multiple decorative sheets 4 through rotation.

[0034] With respect to the rotation of the rotatable plate 6, in one embodiment of the present application, as shown in FIG. 3 and FIG. 5, an outer side wall of the rotatable plate 6 is preferably provided with a rack 61, and the driving assembly 3 further includes a driving motor and a gear 31. The driving motor is fixedly mounted on the bracket 2, the gear 31 is engaged with the rack 61, and the gear 31 is connected to a driving end of the driving motor, and the driving motor can drive the gear 31 to rotate around its own axis, so that the rotatable plate 6 is rotated through the engagement transmission of the gear 31 and the rack 61.

[0035] It should be noted that the specific form of the driving motor is not specifically limited, as long as it can be used to drive the gear 31 to rotate. The driving motor may be a rotary motor or a direct drive motor.

[0036] With respect to the rotational connection between the multiple decorative sheets 4 and the bracket 2, in one embodiment of the present application, as shown in FIG. 3 and FIG. 6, the bracket 2 is preferably provided with multiple connecting members 7, which are uniformly distributed at intervals in the circumferential direction of the through hole and are in one-to-one correspondence with the multiple decorative sheets 4. For a set of connecting member 7 and decorative sheet 4 corresponding to each other, the connecting member 7 is provided with an assembly shaft hole 72, the decorative sheet 4 is provided with a first rotary shaft 41 on one side facing the bracket 2, and the first rotary shaft 41 is rotatably inserted into the assembly shaft hole 72, so that the decorative sheet 4 is rotatably connected to the bracket 2 via the connecting member 7, and the decorative sheet 4 can rotate with its own first rotary shaft 41.

[0037] In this embodiment, preferably, as shown in FIG. 5 and FIG. 6, the rotatable plate 6 is further provided with multiple guide slide grooves 63, the multiple guide slide grooves 63 are uniformly distributed at intervals in a circumferential direction of the rotatable plate 6 and are provided in one-to-one correspondence with the multiple connecting members 7. A length direction of each of the guide slide grooves 63 is along the circumferential direction of the rotatable plate 6, one side of each connecting member 7 facing the rotatable plate 6 is provided with a guide post 71 matching the guide slide groove 63, and thus the guide post 71 of each connecting member 7 can be inserted into the corresponding guide slide groove 63. When the rotatable plate 6 rotates, the guide post 71 can slide back and forth in the guide slide groove 63 in the length direction of the guide slide groove 63. Therefore, the connecting member 7 can be used not only for mounting the decorative sheet 4, but also for guiding the rotation of the rotatable plate 6, to prevent deviation of the rotatable plate 6.

[0038] With respect to the rotational connection of the connecting rods 5 with the rotatable plate 6 and the decorative sheets 4, in one embodiment of the present application, preferably, as shown in FIG. 5, the rotatable plate 6 is provided with multiple third rotary shafts 62, the multiple third rotary shafts 62 are uniformly distributed at intervals in the circumferential

direction of the rotatable plate 6 and are provided in one-to-one correspondence with the multiple connecting rods 5. Each of the multiple decorative sheets 4 is provided with a second rotary shaft 42. For a set of second rotary shaft 42, connecting rod 5 and decorative sheet 4 corresponding to one another, one end of the connecting rod 5 is rotatably sleeved on the third rotary shaft 62, and the other end of the connecting rod 5 is rotatably sleeved on the second rotary shaft 42 of the decorative sheet 4.

[0039] In one embodiment of the present application, preferably, each of the multiple decorative sheets 4 may be provided with a coating film having a pattern, to make the appearance of the decorative sheet better.

[0040] In one embodiment of the present application, preferably, each of the multiple decorative sheets 4 may be a light-transmitting plate that allows light to pass through, and one side of the light-transmitting plate is provided with an opaque coating layer. The opaque coating layer may be of chromatic or monochromatic metallic color, and a portion of the coating layer is removed by laser engraving or the like, to form a light-transmitting region.

[0041] When the multiple decorative sheets 4 are pieced together, a small current can be supplied to the high and low beam lens 1, to enable the high and low beam lens 1 to emit light at a low light intensity, so that the high and low beam lens 1 can be used as a front projecting light source, and enable the multiple decorative sheets 4 to emit light through their own light-transmitting regions, to function as an ambient light, a daytime light or a position light. Alternatively, a side projecting light source may also be provided at an edge of an inner side of the decorative sheet 4, where the inner side of the decorative sheet 4 refers to one side of the light-transmitting plate facing the high and low beam lens 1; when the side projecting light source is turned on, the decorative sheet 4 can also emit light through its own light-transmitting region, to function as an ambient light, a daytime light or a position light.

[0042] The present application also provides a vehicle lamp, including the vehicle high and low beam lens hiding mechanism according to any one of the above embodiments.

[0043] In this embodiment, the vehicle lamp includes the vehicle high and low beam lens hiding mechanism, so the vehicle lamp has all the beneficial effects of the vehicle high and low beam lens hiding mechanism, which will not be repeated here.

[0044] Finally, it should be noted that the above embodiments are only used to illustrate the technical solutions of the present application, but not to limit the present application. Although the present application has been described in detail with reference to the above embodiments, it should be understood by those skilled in the art that modifications can be made to the technical solutions recorded in the above embodiments or equivalent replacements can be made to some or all of the technical features thereof, which modifications and equivalent replacements will not make the corresponding technical solutions deviate from the scope of the technical solutions of the embodiments of the present application.

Claims

1. A vehicle high and low beam lens hiding mechanism, comprising a bracket (2), and a driving assembly (3), a connecting rod mechanism and a plurality of decorative sheets (4) all arranged on the bracket (2); wherein

   the bracket (2) is configured to be arranged in front of a high and low beam lens (1), and a through hole configured to allow the high and low beam lens (1) to be exposed is formed in the bracket (2);
   the plurality of decorative sheets (4) are movably arranged in sequence at the through hole along a circumferential direction of the through hole, and a driving end of the driving assembly (3) is connected to the plurality of decorative sheets (4) through the connecting rod mechanism;
   the driving assembly (3) is configured to drive the connecting rod mechanism to move, to further drive the plurality of decorative sheets (4) to move synchronously via the connecting rod mechanism, and the plurality of decorative sheets (4) are configured to be driven to be pieced together to block the through hole, or be separated from one another to expose the through hole.

2. The vehicle high and low beam lens hiding mechanism according to claim 1, wherein the plurality of decorative sheets (4) are rotatably connected to the bracket (2) respectively;
   the connecting rod mechanism is configured to move to drive the plurality of decorative sheets (4) to rotate synchronously, to make the plurality of decorative sheets (4) be pieced together or separated from one another.

3. The vehicle high and low beam lens hiding mechanism according to claim 2, wherein the connecting rod mechanism comprises a plurality of connecting rods (5);

   the plurality of connecting rods (5) are distributed at intervals in the circumferential direction of the through hole, and the plurality of connecting rods (5) are provided in one-to-one correspondence with the plurality of decorative sheets (4);

one end of each of the plurality of connecting rods (5) is rotatably connected to the driving end of the driving assembly (3), and the other end of each of the plurality of connecting rods (5) is rotatably connected to the corresponding decorative sheet (4); and
the driving assembly (3) is configured to drive the plurality of connecting rods (5) to move synchronously, to drive the plurality of decorative sheets (4) to rotate synchronously through the movement of the plurality of connecting rods (5).

4. The vehicle high and low beam lens hiding mechanism according to claim 3, wherein the driving assembly (3) comprises a rotatable plate (6);

the rotatable plate (6) is arranged to surround an outside of the through hole, and the rotatable plate (6) is configured to rotate around an axis of the through hole; and
the plurality of connecting rods (5) are rotatably connected to the rotatable plate (6) respectively.

5. The vehicle high and low beam lens hiding mechanism according to claim 4, wherein the driving assembly (3) further comprises a gear (31) and a driving motor;

the driving motor is mounted on the bracket (2), and a driving end of the driving motor is connected to the gear (31) to drive the gear (31) to rotate around an axis of the gear (31); and
a rack (61) is provided on an outer side wall of the rotatable plate (6), and the gear (31) is engaged with the rack (61).

6. The vehicle high and low beam lens hiding mechanism according to claim 4, further comprising a plurality of connecting members (7);

the plurality of connecting members (7) are distributed at intervals in the circumferential direction of the through hole, and the plurality of connecting members (7) are provided in one-to-one correspondence with the decorative sheets (4);
each of the plurality of connecting members (7) is provided with an assembly shaft hole (72), each of the plurality of decorative sheets (4) is provided with a first rotary shaft (41), and each of the plurality of decorative sheets (4) is rotatably connected to the corresponding assembly shaft hole (72) through the respective first rotary shaft (41), to allow each of the plurality of decorative sheets (4) to rotate with the respective first rotary shaft.

7. The vehicle high and low beam lens hiding mechanism according to claim 6, wherein the rotatable plate (6) is provided with a plurality of guide slide grooves (63) at positions in correspondence with the plurality of connecting members (7); and
a guide post (71) is formed on each of the plurality of connecting members (7), and the guide post (71) is slidably inserted into the corresponding guide slide groove (63).

8. The vehicle high and low beam lens hiding mechanism according to claim 6, wherein each of the plurality of decorative plates (4) is provided with a second rotary shaft (42);

the rotatable plate (6) is provided with a plurality of third rotary shafts (62) being distributed at intervals in a circumferential direction of the rotatable plate (6), and the plurality of third rotary shafts (62) are in one-to-one correspondence with the plurality of connecting rods (5); and
one end of each of the plurality of connecting rods (5) is rotatably sleeved on the corresponding first rotary shaft (41), and the other end of each of the plurality of connecting rods (5) is rotatably sleeved on the corresponding second rotary shaft (42).

9. The vehicle high and low beam lens hiding mechanism according to claim 1, wherein each of the plurality of decorative sheets (4) is provided with a coating film having a pattern; or,

each of the plurality of decorative sheets (4) is a light-transmitting plate being provided with an opaque coating layer, and a light-transmitting region is formed in the opaque coating layer; and a side projecting light source is provided at an edge of one side of the light-transmitting plate facing the high and low beam lens; or,
each of the plurality of decorative sheets (4) is a light-transmitting plate being provided with an opaque coating layer, and a light-transmitting region is formed in the opaque coating layer; the high and low beam lens (1) is configured to operate in a low current state to be used as a front projecting light source.

10. A vehicle lamp, comprising the vehicle high and low beam lens hiding mechanism according to any one of claims 1 to 9.

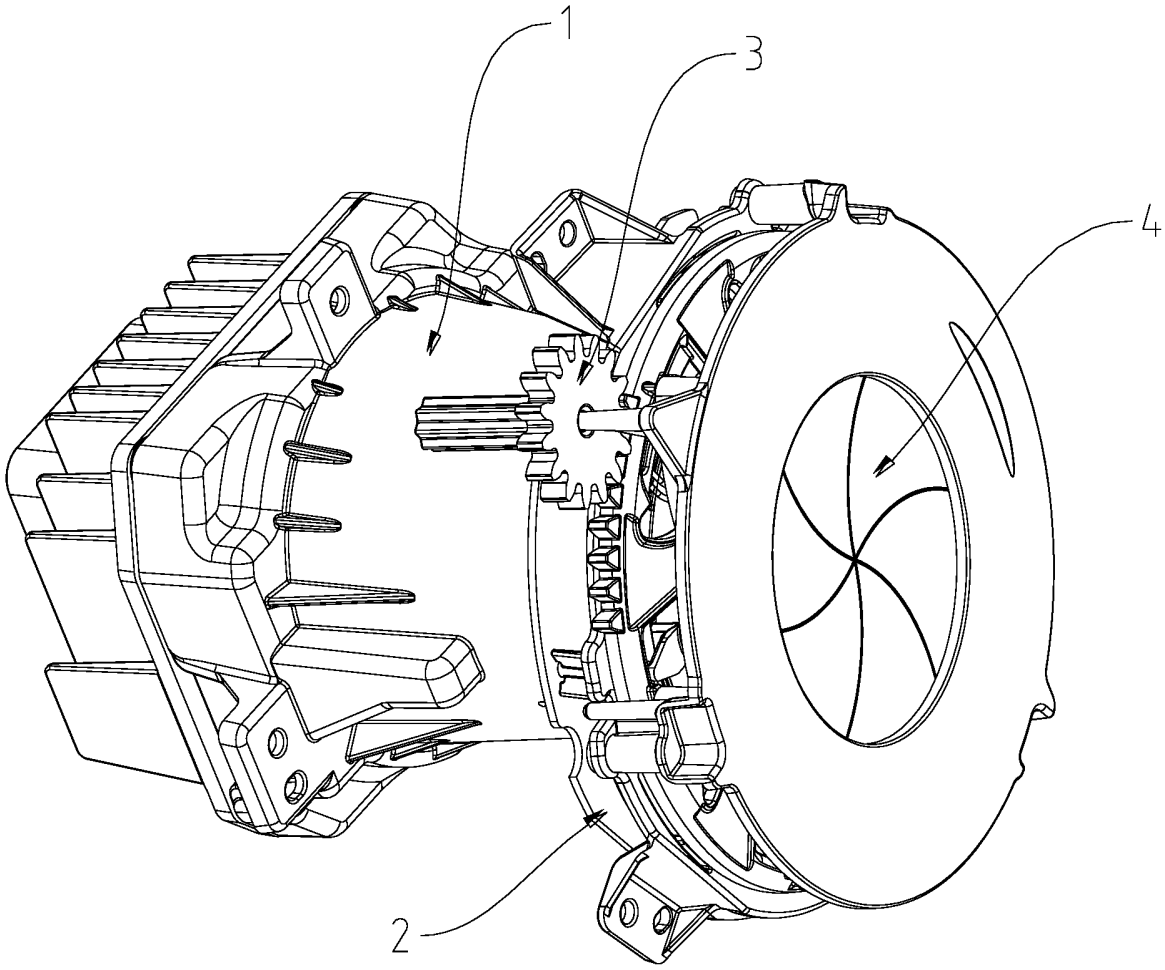

Fig. 1

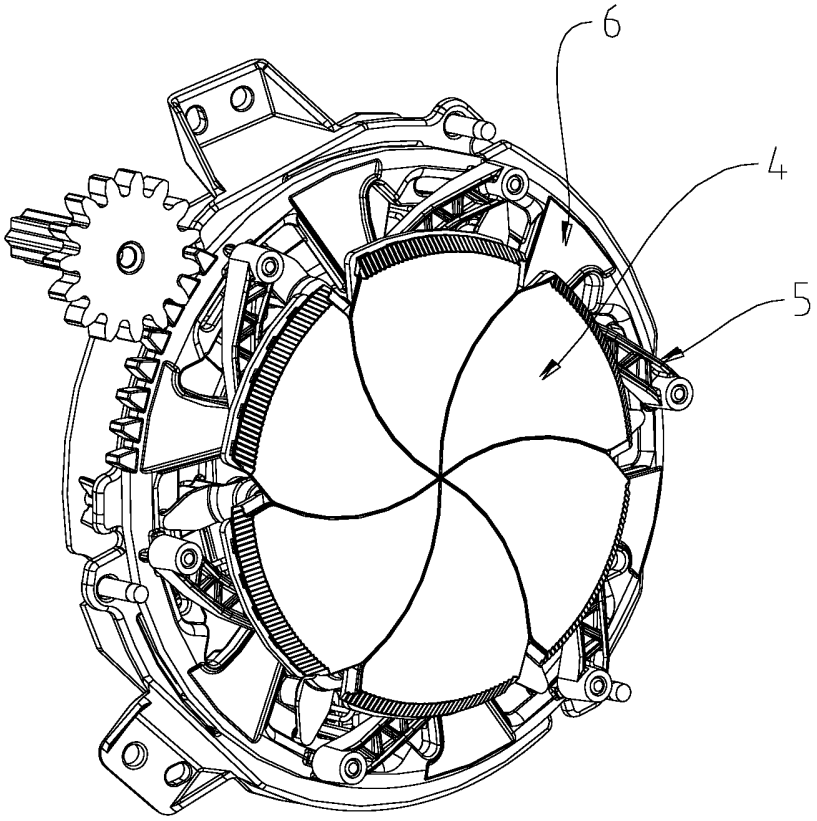

Fig. 2

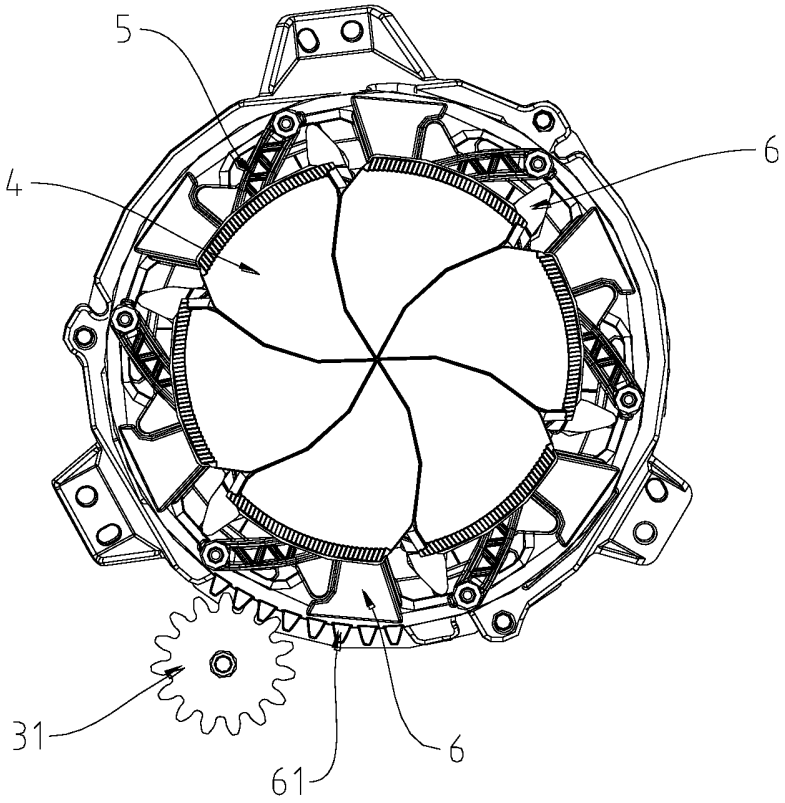

Fig. 3

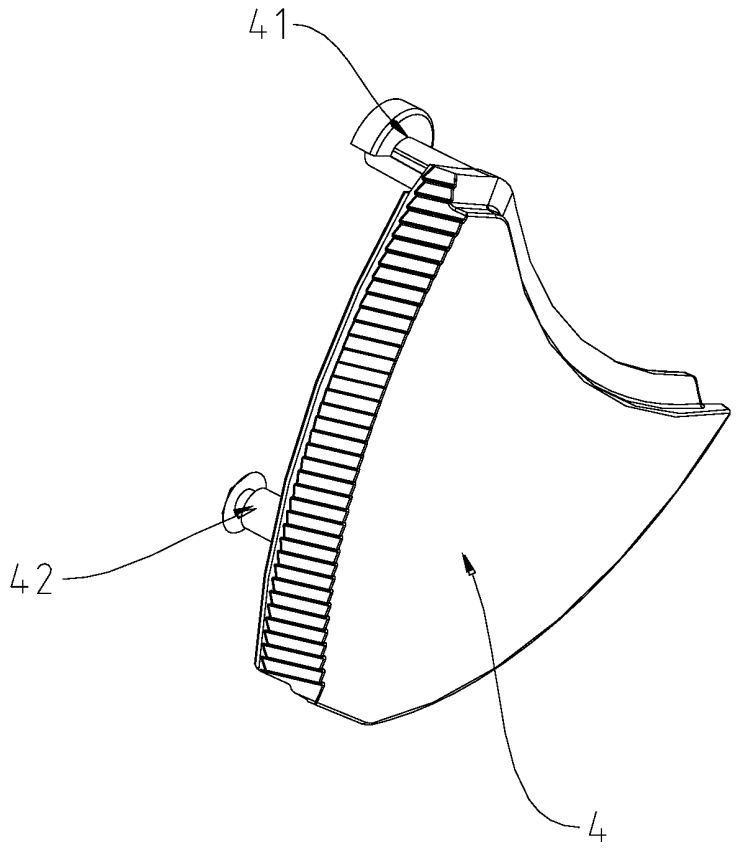

Fig. 4

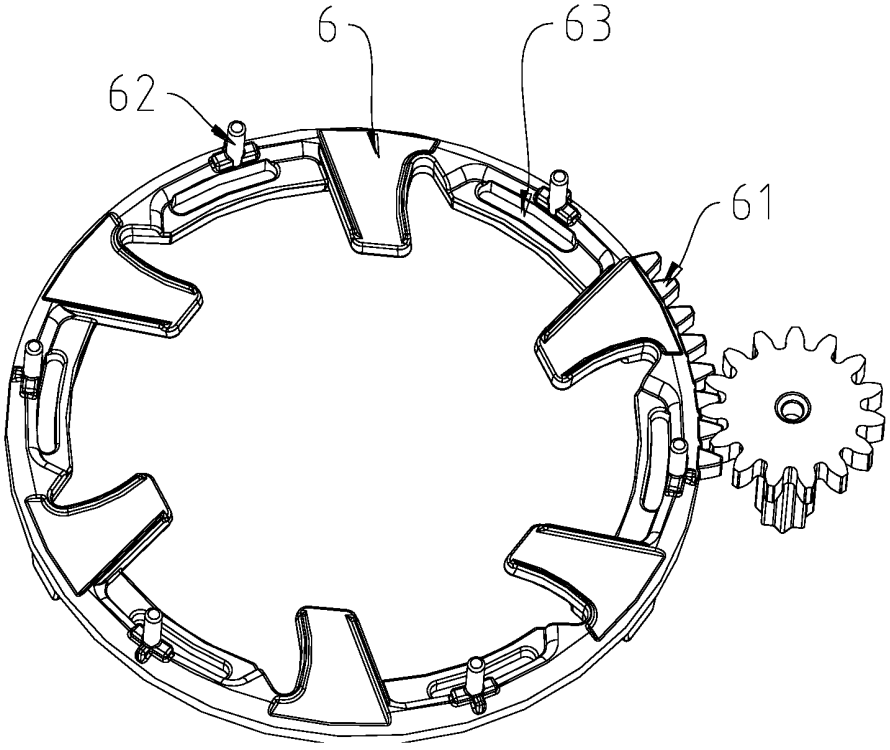

Fig. 5

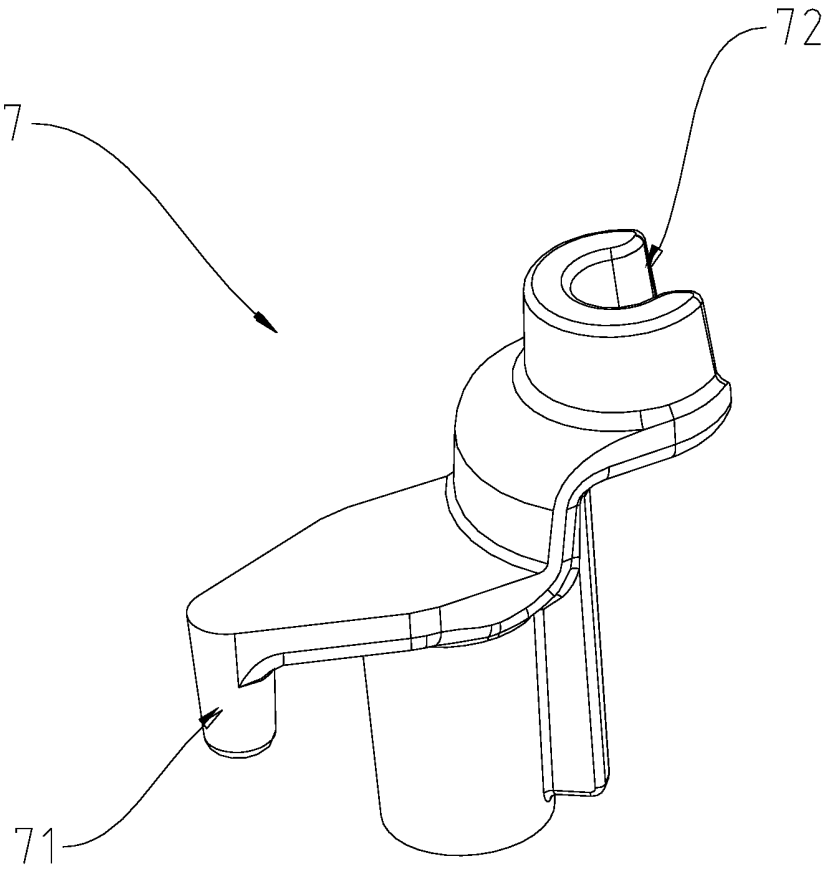

Fig. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2023/105803

A. CLASSIFICATION OF SUBJECT MATTER

F21S41/50(2018.01)i; F21S41/55(2018.01)i; F21S41/20(2018.01)i; F21S41/00(2018.01)i; F21W107/10(2018.01)i; B60Q1/00(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: F21S, F21W, B60Q1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNTXT, ENTXTC, VEN, CNKI: 车, 灯, 隐藏, 装饰, 叶, 片, 板, 转动, 旋转, 打开, 关闭, vehicle, lamp, dynamo, headlight, hide, ensconce, flabellum, sheet, slice, piece, flake, running, rotate, revolve, open, close, shut.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 115218159 A (MIND ELECTRONICS APPLIANCE CO., LTD.) 21 October 2022 (2022-10-21) claims 1-10	1-10
PX	CN 115164168 A (MIND ELECTRONICS APPLIANCE CO., LTD.) 11 October 2022 (2022-10-11) description, paragraphs [0043]-[0073], and figures 1-5	1-10
PX	CN 217455809 U (GREAT WALL MOTOR CO., LTD.) 20 September 2022 (2022-09-20) description, paragraphs [0037]-[0073], and figures 1-5	1-10
PX	CN 217835540 U (GREAT WALL MOTOR CO., LTD.) 18 November 2022 (2022-11-18) description, paragraphs [0033]-[0046], and figures 1-6	1-10
Y	CN 101311619 A (VALEO VISION) 26 November 2008 (2008-11-26) description, pages 3-10, and figures 1-18	1-10
Y	CN 110507212 A (ZHUHAI GREE ELECTRIC APPLIANCES INC.) 29 November 2019 (2019-11-29) description, paragraphs [0039]-[0044], and figures 1-2	1-10

☑ Further documents are listed in the continuation of Box C. ☑ See patent family annex.

* Special categories of cited documents:
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"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
08 October 2023	**12 October 2023**
Name and mailing address of the ISA/CN **China National Intellectual Property Administration (ISA/CN)** **China No. 6, Xitucheng Road, Jimenqiao, Haidian District, Beijing 100088**	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2023/105803

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 114215290 A (SHANGHAI MECHANIZED CONSTRUCTION GROUP CO., LTD.) 22 March 2022 (2022-03-22) entire document	1-10
A	CN 207106324 U (SHANGHAI KOITO AUTOMOTIVE LAMP CO., LTD.) 16 March 2018 (2018-03-16) entire document	1-10
A	CN 210462863 U (ZHENJIANG CHUNQIU ELECTRONIC TECHNOLOGY CO., LTD.) 05 May 2020 (2020-05-05) entire document	1-10
A	CN 215294803 U (GUANGZHOU AUTOMOBILE GROUP CO., LTD.) 24 December 2021 (2021-12-24) entire document	1-10
A	KR 101397588 B1 (SL SEOBONG CORP. et al.) 20 May 2014 (2014-05-20) entire document	1-10

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2023/105803

Patent document cited in search report	Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN 115218159 A	21 October 2022	None	
CN 115164168 A	11 October 2022	None	
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CN 217835540 U	18 November 2022	None	
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CN 114215290 A	22 March 2022	None	
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CN 210462863 U	05 May 2020	None	
CN 215294803 U	24 December 2021	None	
KR 101397588 B1	20 May 2014	None	

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 202210793939 **[0001]**