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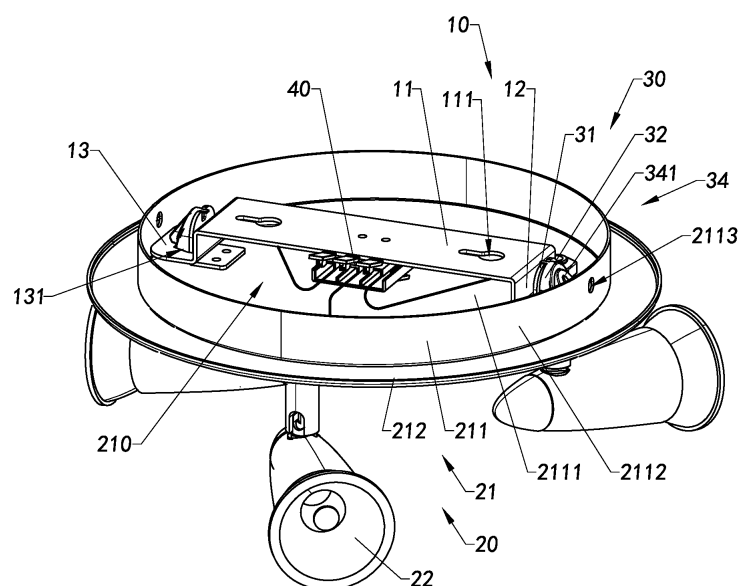
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(54) **LAMP, AND AUTOMATIC MOUNTING DEVICE AS WELL AS APPLICATION THEREOF**

(57) A lamp including an automatic mounting device as well as the application thereof is provided. The lamp (100) comprises a lamp body (20), a support body (10), and at least one automatic mounting device (30). The automatic mounting device (30) is used for detachably mounting the lamp body (20) on the support body (10).

According to the lamp (100), during the process of mounting the lamp body (20) on the support body (10), bare-handed operation of an installer is allowed, thereby improving the mounting efficiency of the lamp (100), and reducing the labor costs.



**Fig.2**

## Description

### BACKGROUND OF THE PRESENT INVENTION

#### FIELD OF INVENTION

**[0001]** The invention relates to a lighting device, and more particularly to a lamp, automatic mounting device, and application thereof.

#### DESCRIPTION OF RELATED ARTS

**[0002]** The ceiling lamp is a light fixture mounted on a roof or ceiling, which can be held at the top of the room to provide illumination light for the indoor environment of the room. Because the ceiling lamp is decorative, it is popular in the market. Figs. 1A-1D show a prior art ceiling lamp including a bracket device 10P and a lamp body device 20P, wherein the lamp body device 20P is mounted on the bracket device 10P before the bracket device 10P is mounted on a roof or ceiling, so that the lamp body device 20P is kept at the top of the room by the bracket device 10P to provide illumination light for the indoor environment. Specifically, the bracket device 10P includes a bracket body 11P and two screws 12P, wherein the bracket body 11P has a bracket main body 111P and a bracket side arm 112P integrally and bently extending at two ends of the bracket body 111P, wherein the threaded end 121P of each screw 12P is respectively in threaded connection with each of the bracket side arms 112P of the bracket body 11P. The lamp body device 20P includes a mounting body 21P and a lamp main body 22P. The mounting body 21P has a mounting main body 211P and a mounting wall 212P integrally extended from the mounting main body 211P, wherein the lamp main body 22P is disposed on the mounting body 211P of the mounting body 21P. The mounting wall 212P of the mounting body 21P further has two mounting channels 212P and a positioning space 2122P respectively communicated with each of the mounting channels 2121P, wherein the mounting channel 2121P and the positioning space 2122P are formed in an L-shape or an approximate L-shape. When the ceiling lamp is installed on a roof or a ceiling, the threaded end 121p of each screw 12p is first threaded to each of the bracket side arms 112p of the bracket body 11p. Secondly, the bracket main body 111p of the bracket body 11p is mounted on a roof or a ceiling through an expansion screw or a similar mechanism and is connected with an associated electric wire. Third, after the mounting channels 2121P of the mounting body 21P are aligned with the free ends 122P of the screws 12P of the bracket device 10P, the lamp body device 20P is pushed upwards and the free end 122p of each screw 12P is held in the positioning space 2122P of the mounting wall 212P by rotating the lamp body device 20P. Fourthly, the screws 12P are tightened on the side through a tool such as a screwdriver, so that the mounting wall 212P is clamped by the screw 12P and the bracket

side arm 112P, thereby completing the installation of the ceiling lamp. It is understandable that the reverse operation process needs to be performed when the ceiling lamp needs to be detached from the roof or ceiling. The structure of the ceiling lamp in the prior art results in a plurality of drawbacks of the ceiling lamp.

**[0003]** Firstly, the mode that the lamp body device 20P is installed on the bracket device 10P is installed by adopting the screw 12P, so that when the lamp body device 20P is installed in the bracket device 10P, an installer needs to manually install the lamp body device 20P by using tools such as a screwdriver, in which more labor cost is taken, the operation process is very inconvenient, and the efficiency is low. Especially after the free end 122p of the screw 12P is positioned in the positioning space 2122 P of the mounting wall 212P, an installer needs to manually use a tool such as a screwdriver to tighten the screw 12P. However, because the ceiling lamp is mounted at a high position, such as a roof or a ceiling and the distance between the mounting body 211p and a convenient position or the ceiling is narrow, it is difficult for an installer to use a tool such as a screwdriver to tighten the screw 12p. This process not only results in the installer being very tired, but also having the installer to determine whether the screws 12p have been tightened enough, resulting in the installation of the ceiling lamp with a potential safety hazard, such as that if the screw 12P is not tightened enough, the ceiling lamp may have a risk of dropping from the roof or ceiling.

**[0004]** Besides, since the bracket device 10P and the lamp body device 20P of the ceiling lamp both have a certain manufacturing error, after the screws 12P of the bracket device 10P are positioned behind the positioning spaces 2122P of the lamp body device 20P, a certain gap may occur between the mounting wall 212P of the lamp body device 20P and the roof or the ceiling. That is, the mounting wall 212P of the lamp body device 20P is not fully attached to a roof or a ceiling, which impacts the visual aesthetics of the ceiling lamp after installation to a certain extent.

#### SUMMARY OF THE PRESENT INVENTION

**[0005]** An object of the present invention is to provide a lamp and an automatic mounting device and application thereof, wherein the lamp includes a support body and a lamp body, wherein the support body can be mounted on a lamp attachment, wherein the lamp body can be conveniently mounted on the support body, so that the mounting difficulty of the lamp is reduced, and the mounting efficiency of the lamp is improved.

**[0006]** An object of the present invention is to provide a lamp and an automatic mounting device and application thereof, wherein the lamp body can be conveniently detached from the support body, which facilitates the maintenance of the lamp.

**[0007]** An object of the present invention is to provide a lamp and an automatic mounting device and application

thereof, wherein tool is not required for installing the lamp body on the support body, which means that the installer can install the lamp body on the support body by hand, so that the mounting process of the lamp body is simple and convenient, the manual operation is simplified, and the labor cost and labor time are saved.

**[0008]** An object of the present invention is to provide a lamp and an automatic mounting device and application thereof, wherein comparing with conventional ceiling lamp, the lamp body of the lamp disclosed by the present invention is also simpler and more convenient in disassemble from the support body, so that the lamp is easier to maintain.

**[0009]** An object of the present invention is to provide a lamp and an automatic mounting device and application thereof, wherein after the lamp body is installed on the support body, no gap exists between the lamp body and the lamp attachment, which means that the lamp body can be fully attached to the lamp attachment, so that the decorative performance of the lamp is improved.

**[0010]** An object of the present invention is to provide a lamp and an automatic mounting device and application thereof, wherein after the lamp body is installed on the support body, no gap exists between the lamp body and the lamp attachment, which means that the lamp body can be fully attached to the lamp attachment, so that dust can be prevented from entering the interior of the lamp body.

**[0011]** An object of the present invention is to provide a lamp and an automatic mounting device and application thereof, wherein the lamp body can be stably and reliably installed on the lamp attachment, so that the safety of the lamp is improved.

**[0012]** An object of the present invention is to provide a lamp and an automatic mounting device and an application thereof, wherein the lamp provides at least one automatic mounting device, wherein the automatic mounting device allows the lamp body to be mounted on the support body by a bare-handed installer.

**[0013]** An object of the present invention is to provide a lamp and an automatic mounting device and application thereof, wherein the automatic mounting device is capable of preventing the lamp body from falling automatically from the support body so as to ensure the safety of the lamp.

**[0014]** An object of the present invention is to provide a lamp and an automatic mounting device and application thereof, wherein the automatic mounting device can be capable of guiding the lamp body to be mounted on the support body, so as to avoid unwanted phenomena such as jamming and etc., thereby ensuring the smoothness of the installation process of the lamp.

**[0015]** An object of the present invention is to provide a lamp and an automatic mounting device and application thereof, wherein the two automatic mounting devices are capable of mounting the lamp body and the support body on two sides which are symmetrical to each other, so as to ensure the stability and reliability of the lamp.

**[0016]** An object of the present invention is to provide a lamp and an automatic mounting device and an application thereof, wherein the two automatic mounting devices are capable of mounting the lamp body and the support body on two sides which are symmetrical to each other, so that when the lamp body is installed on the support body, the lamp body can be kept horizontal, and the lamp body is mounted on the support body by being pushed upwards, so that after the lamp is installed on the lamp attachment, the lamp body of the lamp can be kept horizontal, which enhances the decorative performance of the lamp.

**[0017]** An object of the present invention is to provide a lamp and an automatic mounting device and an application thereof, wherein after the lamp body is installed on the support body, the automatic mounting device(s) will be concealed so as to enhance the decorative performance of the lamp.

**[0018]** An object of the present invention is to provide a lamp and an automatic mounting device and application thereof, wherein the automatic mounting device(s) is arranged on the lamp body,

**[0019]** An object of the present invention is to provide a lamp and an automatic mounting device and application thereof, wherein the automatic mounting device(s) is arranged on the support body, so as for mounting the lamp body on the support body through mounting the automatic mounting device(s) on the lamp body.

**[0020]** According to an aspect of the present invention, the present invention provides a lamp, including:

a support body;

a lamp body; and

at least an automatic mounting device, allowing the lamp body to be detachably mounted on the support body.

**[0021]** According to an embodiment of the present invention, two automatic mounting devices are arranged on the lamp body in a mutually symmetrical manner, wherein each of the automatic mounting devices is detachably mounted on the support body so as to allow the lamp body to be detachably mounted on the support body.

**[0022]** According to an embodiment of the present invention, two automatic mounting devices are arranged on the support body in a mutually symmetrical manner, wherein each of the automatic mounting devices is detachably mounted on the lamp body so as to allow the lamp body to be detachably mounted on the support body.

**[0023]** According to an embodiment of the present invention, the support body has two mounting channels, wherein each of the automatic mounting devices includes a mounting mechanism and a communication channel having a holding space and communicating the external

environment with the holding space, wherein the mounting mechanism includes a mounting element which extends from the holding space to the external environment in a movable manner through the communication channel, wherein the mounting element of the automatic mounting device is adapted to be automatically return to an installation state after passing through the mounting channel of the support body, so as for mounting the lamp body on the support body.

**[0024]** According to an embodiment of the present invention, the lamp further includes a mounting buckle, wherein the mounting buckle and the automatic mounting device are arranged on the lamp body in a mutually symmetrical manner, wherein the support body has two mounting channels, wherein the automatic mounting device includes a mounting mechanism and a communication channel having a holding space and communicating the external environment with the holding space, wherein the mounting mechanism includes a mounting element which extends from the holding space to the external environment in a movable manner through the communication channel, wherein the mounting buckle is adapted to be mounted on one of the mounting channels of the support body, wherein the mounting element of the automatic mounting device is adapted to be restored to an installed state after passing through the other the mounting channel of the support body, so as for mounting the lamp body on the support body.

**[0025]** According to an embodiment of the present invention, the lamp body has an annular space and two mounting channels respectively communicated with the annular space, wherein each of the automatic mounting devices includes a mounting mechanism and a communication channel having a holding space and communicating the external environment with the holding space, wherein the mounting mechanism includes a mounting element which extends from the holding space to the outside in a movable manner through the communication channel, wherein the mounting element enters the annular space after passing through the mounting channels of the lamp body and be restored to an installation state in the annular space, so that the lamp body is mounted on the support body.

**[0026]** According to an embodiment of the present invention, the automatic mounting device further includes a mounting base, a holding shell, and an elastic restoration mechanism, wherein the mounting base is arranged on the lamp body, wherein the holding shell is mounted on the mounting base and the holding space is formed and defined between the holding shell and the mounting base, wherein the holding shell is provided with the communication channel, wherein the elastic reset mechanism is kept between the mounting base and the mounting element.

**[0027]** According to an embodiment of the present invention, the automatic mounting device includes a mounting base, a holding shell, and an elastic restoration mechanism, wherein the mounting base is arranged on

the support body, wherein the holding shell is arranged on the mounting base and the holding space is formed and defined between the holding shell and the mounting base, wherein the holding shell is provided with the communication channel, wherein the elastic reset mechanism is kept between the mounting base and the mounting element.

**[0028]** According to an embodiment of the present invention, the mounting base is mounted on the lamp body or the mounting base is integrally formed on the lamp body.

**[0029]** According to an embodiment of the present invention, the mounting element has a holding groove, wherein part of the support body is adapted to be held in the holding groove of the mounting element.

**[0030]** According to an embodiment of the present invention, the groove bottom of the holding groove is an inclined surface.

**[0031]** According to an embodiment of the present invention, the mounting element has a bulge structure for defining the retention slot, wherein the bulge structure is located at a high end of the retention slot.

**[0032]** According to an embodiment of the present invention, the mounting element has a guide surface.

**[0033]** According to an embodiment of the present invention, the mounting mechanism includes at least one retaining element integrally extending to from the mounting element, wherein the retaining element prevents the mounting element from disengaging the holding space via the communication channel of the retaining housing in a manner that the retaining element is obstructed by the retaining housing.

**[0034]** According to an embodiment of the present invention, the lamp body has an accommodating space, wherein each of the automatic mounting devices is respectively accommodated in the accommodating space.

**[0035]** According to an embodiment of the present invention, the lamp body has at least one disassembling channel, adapted for corresponding to the mounting element.

**[0036]** According to an embodiment of the present invention, the mounting element has a groove, adapted for corresponding to the disassembling channel of the lamp body.

**[0037]** According to an embodiment of the present invention, the mounting element is movable along an extending direction of the mounting channel.

**[0038]** According to an embodiment of the present invention, the support body includes a support element, two extension arms, and two mounting arms, wherein each of the extension arms extends integrally downward from the two ends of the support element respectively, wherein each of the mounting arms integrally extends outward from the lower end of each of the extension arms respectively, wherein each of the mounting arms respectively has one the mounting channel arranged thereon.

**[0039]** According to an embodiment of the present invention, the support body includes a support element,

two extension arms, and two mounting arms, wherein each of the extension arms extends integrally downward from the two ends of the support element respectively, wherein each of the mounting arms integrally extends inward from the lower end of each of the extension arms respectively, wherein each of the mounting arms respectively has one the mounting channel arranged thereon.

**[0040]** According to an embodiment of the present invention, the support body includes a support element, two extension arms, and two mounting arms, wherein each of the extension arms extends integrally downward from the two ends of the support element respectively, wherein one of the mounting arms integrally extends outward from the lower end of one of the extension arms, while the other of the mounting arms integrally extends inward from the lower end of the other of the extension arms, wherein each of the mounting arms respectively has one the mounting channel arranged thereon.

**[0041]** According to an embodiment of the present invention, the support body includes a support element, wherein the mounting seat extends downwardly from an end of the support element; or the support body includes a support element, wherein the mounting seat is mounted at an end of the bracket element.

**[0042]** According to an embodiment of the present invention, the lamp body includes a lamp disc and at least one luminous part arranged on the lamp disc, wherein the lamp disc further includes a high-end lamp disc and a low-end lamp disc, wherein the high-end lamp disc includes a lamp disc main body, a lamp disc wall integrally extended from the outer periphery of the lamp disc main body, and a lamp disc top integrally extended from the upper periphery of the lamp disc wall, wherein the lamp disc top has the mounting channel, wherein the lamp disc main body of the high-end lamp disc is disposed on the low-end lamp disc to form the annular space among the lamp disc wall, the lamp disc top, and the low-end lamp disc.

**[0043]** According to an embodiment of the present invention, the high-end lamp disc further includes an annular wall integrally extended downward from an outer periphery of the lamp disc top, wherein a lower periphery of the annular wall abuts the low-end lamp disc.

**[0044]** According to an embodiment of the present invention, the lamp disc has at least one disassembling channel provided and formed on the annular wall, wherein the disassembling channel is communicated with the annular space.

**[0045]** According to an embodiment of the present invention, the lamp body has two mounting channels, wherein each of the automatic mounting devices includes a mounting mechanism and a communication channel having a holding space and communicating the external environment with the holding space, wherein the mounting mechanism includes a mounting element which extends from the holding space to the external environment in a movable manner through the communication channel, wherein the mounting element of the automatic

mounting device is adapted to be automatically return to an installation state after passing through the mounting channel of the lamp body, so as for mounting the lamp body on the support body.

**[0046]** According to an embodiment of the present invention, the automatic mounting device includes a mounting base, a holding shell, and an elastic restoration mechanism, wherein the mounting base is mounted on the holding shell, wherein the holding space is formed and defined between the mounting base and the holding shell, wherein the holding shell is has the communicating channel arranged thereon, wherein the elastic resetting mechanism is kept between the mounting base and the mounting element, wherein the holding shell is arranged on the support body.

**[0047]** According to an embodiment of the present invention, the holding shell is arranged on the support body in a manner that the holding shell is mounted on the support body; or the holding shell is arranged on the support body in a manner that the holding shell is integrally formed on the support body.

**[0048]** According to an embodiment of the present invention, the mounting element has at least one sliding groove, wherein the holding shell has at least one sliding block, wherein the sliding block of the holding shell is movably held in the sliding groove of the mounting element.

**[0049]** According to an embodiment of the present invention, the mounting element has a holding groove, wherein part of the lamp body is adapted to be held in the holding groove of the mounting element.

**[0050]** According to an embodiment of the present invention, the groove bottom of the holding groove is an inclined surface.

**[0051]** According to an embodiment of the present invention, the mounting element has a bulge structure for defining the retention slot, wherein the bulge structure is located at a low end of the retention slot.

**[0052]** According to an embodiment of the present invention, the mounting element has a guide surface.

**[0053]** According to an embodiment of the present invention, the lamp body has an accommodating space, wherein each of the automatic mounting devices is respectively accommodated in the accommodating space.

**[0054]** According to an embodiment of the present invention, the lamp body has at least one disassembling channel, wherein the disassembling channel is communicated with the accommodating space, wherein the mounting element is adapted to be corresponding to the disassembling channel.

**[0055]** According to an embodiment of the present invention, the mounting element has a groove, adapted for corresponding to the disassembling channel of the lamp body.

**[0056]** According to an embodiment of the present invention, the lamp body has two mounting channels, wherein each of the automatic mounting devices includes a mounting mechanism and an outer opening which is

communicated with the holding space and the outside, wherein the mounting mechanism is movably arranged in the holding space, wherein the outer end of the mounting mechanism is adapted to be held in the mounting channels of the lamp body after extending to the outside through the outer end opening so as to allow the lamp body to be mounted on the support body.

**[0057]** According to an embodiment of the present invention, the automatic mounting device includes a mounting base, a holding case, and a key mechanism, wherein the mounting base is arranged on the support body, wherein the holding shell is mounted on the mounting base, wherein the holding space, the outer opening, and an inner opening that communicates the holding space and the outside are formed and defined between the mounting base and the holding shell, wherein the holding shell has a first through hole communicating the holding space with the outside, wherein the lamp body has at least one lamp disc perforation, wherein the first through hole of the holding shell is communicated with the lamp disc perforation of the lamp body, wherein the mounting mechanism has a second through hole and a limiting groove communicated with the second through hole, wherein either of the second through hole and the limiting groove of the mounting mechanism selectively communicates with the first through hole of the holding shell, wherein when the displacement of the mounting mechanism relative to the holding shell is performed within the holding space, the key mechanism is allowed to slide to the second through hole from the limiting groove of the mounting mechanism, and when the second through hole of the mounting mechanism is corresponding to the first perforation of the holding shell, different positions of the key mechanism are kept at the second through hole of the mounting mechanism, the first through hole of the holding shell, and the lamp disc perforation of the lamp body at the same time.

**[0058]** According to an embodiment of the present invention, the automatic mounting device includes an elastic restoration mechanism, wherein the elastic restoration mechanism includes a tension spring element and a compression spring element, wherein the tension spring element is retained between the mounting base and the mounting mechanism, while the tension spring element is retained between the mounting base and the key mechanism.

**[0059]** According to an embodiment of the present invention, the mounting mechanism has a tongue buckle arranged at the inner end thereof, wherein the lamp body includes a lamp disc and at least one luminous part and at least one limiting baffle which are respectively arranged on the lamp disc, wherein the limiting baffle drives the mounting mechanism to move in the holding space through pressing the tongue buckle.

**[0060]** According to an embodiment of the present invention, the limiting baffle includes a baffle seat and a baffle element which integrally extends upwards in an inclined manner from the baffle seat, wherein the baffle

seat is arranged on the lamp disc, wherein the tongue buckle extends inwards in an inclined manner, wherein the inclination direction of the baffle element is consistent with the inclination direction of the tongue buckle.

**[0061]** According to an embodiment of the present invention, the lamp body has an accommodating space, wherein the limiting baffle is held in the accommodating space of the lamp body.

**[0062]** According to an embodiment of the present invention, the outer end of the mounting mechanism is an inclined outer end.

**[0063]** According to another aspect, the present invention further provides a lamp mounting method, including the following steps:

(a) mounting a support body on a lamp attachment; and

(b) allowing a mounting element of at least an automatic mounting device arranged on a lamp body to automatically return to the installation state after passing through a mounting channels of the support body, so as to mount the lamp body on the support body and, therefore, mount the lamp on the lamp attachment.

**[0064]** According to an embodiment of the present invention, the step (b) further includes the following steps:

keeping the two automatic mounting devices on the lower part of the support body respectively through corresponding the mounting element of each of the automatic mounting devices to each of the mounting channels of the support body;

pushing the lamp body toward the support body, so as to have the mounting element of each of the automatic mounting devices be respectively inserted into each of the mounting channels of the support body; and

After the mounting element of each of the automatic mounting devices respectively passes through each of the mounting channels of the support body, the mounting element of each of the automatic mounting devices will automatically return to the installation state.

**[0065]** According to an embodiment of the present invention, the step (b) further includes the following steps:

keeping the lamp body at the lower part of the support body through inserting a mounting buckle that is arranged on the lamp body into one of the mounting channels of the support body and corresponding the mounting element of the automatic mounting device to the other of the mounting channels of the support body.

pushing the lamp body toward the support body, so as to have the mounting elements of the automatic mounting devices be inserted into the mounting channels of the support body; and

After the mounting elements of the automatic mounting devices pass through the mounting channels of the support body, the mounting elements of the automatic mounting devices will automatically return to the installation state.

**[0066]** According to another aspect, the present invention further provides a lamp mounting method, including the following steps:

(A) mounting a support body on a lamp attachment; and

(B) allowing a mounting element of at least an automatic mounting device arranged on the support body to automatically return to the installation state after passing through a mounting channels of the lamp body, so as to mount the lamp body on the support body and, therefore, mount the lamp on the lamp attachment.

**[0067]** According to an embodiment of the present invention, the step (B) further includes the following steps:

keeping the two automatic mounting devices on the upper part of the support body respectively through corresponding the mounting element of each of the automatic mounting devices to each of the mounting channels of the lamp body;

pushing the lamp body toward the support body, so as to have the mounting element of each of the automatic mounting devices be respectively inserted into each of the mounting channels of the lamp body; and

after the mounting element of each of the automatic mounting devices respectively passes through each of the mounting channels of the lamp body, allowing the mounting element of each of the automatic mounting devices to automatically return to the installation state.

**[0068]** According to an embodiment of the present invention, according to the step (B), driving the mounting element to rotate in the mounting channels through driving the lamp body to rotate relatively with the support body.

BRIEF DESCRIPTION OF THE DRAWINGS

**[0069]**

FIG. 1A is a perspective view illustrating the first mounting step of a ceiling lamp according to PRIOR ART.

FIG. 1B is a perspective view illustrating the second mounting step of the ceiling lamp according to PRIOR ART.

FIG. 1C is a perspective view illustrating the third mounting step of the ceiling lamp according to PRIOR ART.

FIG. 1D is a perspective view illustrating the installed ceiling lamp according to PRIOR ART.

FIG. 2 is a perspective view of a lamp according to a first preferred embodiment of the present invention.

FIG. 3 is an exploded view of the lamp according to the above first preferred embodiment of the present invention.

FIG. 4 is a sectional view of the lamp along the middle position thereof according to the above first preferred embodiment of the present invention.

FIG. 5 is a partially enlarged view of FIG. 4.

FIG. 6A is a perspective view illustrating a first step of the lamp being mounted on a lamp attachment according to the above first preferred embodiment of the present invention.

FIG. 6B is a perspective view illustrating a second step of the lamp being mounted on the lamp attachment according to the above first preferred embodiment of the present invention.

FIG. 6C is a perspective view illustrating a third step of the lamp being mounted on the lamp attachment according to the above first preferred embodiment of the present invention.

FIG. 6D is a perspective view illustrating a fourth step of the lamp being mounted on the lamp attachment according to the above first preferred embodiment of the present invention.

FIG. 6E is a perspective view illustrating a first step of a lamp body of the lamp being dismantled from a support body according to the above first preferred embodiment of the present invention.

FIG. 6F is a perspective view illustrating a second step of the lamp body of the lamp being dismantled from the support body according to the above first preferred embodiment of the present invention.

FIG. 6G is a perspective view illustrating a third step of the lamp body of the lamp being dismounted from the support body according to the above first preferred embodiment of the present invention.

FIG. 7 is an exploded view of the lamp according to an alternative mode of the above first preferred embodiment of the present invention.

FIG. 8A is a sectional view of a lamp disc of the lamp according to an alternative mode of the above first preferred embodiment of the present invention.

FIG. 8B is a sectional view of the lamp disc of the lamp according to another alternative mode of the above first preferred embodiment of the present invention.

FIG. 9 is a perspective view of the lamp according to an alternative mode of the above first preferred embodiment of the present invention.

FIG. 10 is a sectional view of the lamp along the middle position thereof according to the above alternative mode of the above first preferred embodiment of the present invention.

FIG. 11A is a perspective view illustrating a first step of the lamp being mounted on a lamp attachment according to the above first preferred embodiment of the present invention.

FIG. 11B is a perspective view illustrating a second step of the lamp being mounted on the lamp attachment according to the above first preferred embodiment of the present invention.

FIG. 11C is a perspective view illustrating a third step of the lamp being mounted on the lamp attachment according to the above first preferred embodiment of the present invention.

FIG. 11D is a perspective view illustrating a fourth step of the lamp being mounted on the lamp attachment according to the above first preferred embodiment of the present invention.

FIG. 11E is a perspective view illustrating a first step of a lamp body of the lamp being dismounted from a support body according to the above first preferred embodiment of the present invention.

FIG. 11F is a perspective view illustrating a second step of the lamp body of the lamp being dismounted from the support body according to the above first preferred embodiment of the present invention.

FIG. 11G is a perspective view illustrating a third step

of the lamp body of the lamp being dismounted from the support body according to the above first preferred embodiment of the present invention.

FIG. 12 is a perspective view of a lamp according to a second preferred embodiment of the present invention.

FIG. 13 is an exploded view of the lamp according to the above second preferred embodiment of the present invention.

FIG. 14 is a sectional view of the lamp along the middle position thereof according to the above second preferred embodiment of the present invention.

FIG. 15 is a partially enlarged view of FIG. 14.

FIG. 16A is a perspective view illustrating a first step of the lamp being mounted on a lamp attachment according to the above second preferred embodiment of the present invention.

FIG. 16B is a perspective view illustrating a second step of the lamp being mounted on the lamp attachment according to the above second preferred embodiment of the present invention.

FIG. 16C is a perspective view illustrating a third step of the lamp being mounted on the lamp attachment according to the above second preferred embodiment of the present invention.

FIG. 16D is a perspective view illustrating a fourth step of the lamp being mounted on the lamp attachment according to the above second preferred embodiment of the present invention.

FIG. 16E is a perspective view illustrating a fifth step of the lamp being mounted on the lamp attachment according to the above second preferred embodiment of the present invention.

FIG. 16F is a perspective view illustrating a first step of a lamp body of the lamp being dismounted from a support body according to the above second preferred embodiment of the present invention.

FIG. 16G is a perspective view illustrating a second step of the lamp body of the lamp being dismounted from the support body according to the above second preferred embodiment of the present invention.

FIG. 16H is a perspective view illustrating a third step of the lamp body of the lamp being dismounted from the support body according to the above second preferred embodiment of the present invention.



FIG. 16I is a perspective view illustrating a fourth step of the lamp body of the lamp being dismounted from the support body according to the above second preferred embodiment of the present invention.

FIG. 17 is a perspective view of a lamp according to a third preferred embodiment of the present invention.

FIG. 18 is an exploded view of the lamp according to the above third preferred embodiment of the present invention.

FIG. 19 is a sectional view of the lamp along the middle position thereof according to the above third preferred embodiment of the present invention.

FIG. 20 is a partially enlarged view of FIG. 19.

FIG. 21A is a perspective view illustrating a first step of the lamp being mounted on a lamp attachment according to the above third preferred embodiment of the present invention.

FIG. 21B is a perspective view illustrating a second step of the lamp being mounted on the lamp attachment according to the above first preferred embodiment of the present invention.

FIG. 21C is a perspective view illustrating a third step of the lamp being mounted on the lamp attachment according to the above third preferred embodiment of the present invention.

FIG. 21D is a perspective view illustrating a fourth step of the lamp being mounted on the lamp attachment according to the above third preferred embodiment of the present invention.

FIG. 21E is a perspective view illustrating a first step of a lamp body of the lamp being dismounted from a support body according to the above third preferred embodiment of the present invention.

FIG. 21F is a perspective view illustrating a second step of the lamp body of the lamp being dismounted from the support body according to the above third preferred embodiment of the present invention.

FIG. 21G is a perspective view illustrating a third step of the lamp body of the lamp being dismounted from the support body according to the above third preferred embodiment of the present invention.

FIG. 22 is a perspective view of a lamp according to a fourth preferred embodiment of the present invention.

FIG. 23 is an exploded view of the lamp according to the above fourth preferred embodiment of the present invention.

FIG. 24 is a sectional view of the lamp along the middle position thereof according to the above fourth preferred embodiment of the present invention.

FIG. 25 is a partially enlarged view of FIG. 24.

FIG. 26A is a perspective view illustrating a first step of the lamp being mounted on a lamp attachment according to the above fourth preferred embodiment of the present invention.

FIG. 26B is a perspective view illustrating a second step of the lamp being mounted on the lamp attachment according to the above fourth preferred embodiment of the present invention.

FIG. 26C is a perspective view illustrating a third step of the lamp being mounted on the lamp attachment according to the above fourth preferred embodiment of the present invention.

FIG. 26D is a perspective view illustrating a fourth step of the lamp being mounted on the lamp attachment according to the above fourth preferred embodiment of the present invention.

FIG. 26E is a perspective view illustrating a first step of a lamp body of the lamp being dismounted from a support body according to the above fourth preferred embodiment of the present invention.

FIG. 26F is a perspective view illustrating a second step of the lamp body of the lamp being dismounted from the support body according to the above fourth preferred embodiment of the present invention.

FIG. 26G is a perspective view illustrating a third step of the lamp body of the lamp being dismounted from the support body according to the above fourth preferred embodiment of the present invention.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

**[0070]** The technical solutions of the present invention are, according to the disclosures of the specification and claims of the present invention, specifically as follows.

**[0071]** Those skilled in the art should understand that, in the disclosure of the present invention, terminologies of "longitudinal," "lateral," "upper," "front," "back," "left," "right," "perpendicular," "horizontal," "top," "bottom," "inner," "outer," and etc. just indicate relations of direction or position are based on the relations of direction or position shown in the appended drawings, which is only to

facilitate descriptions of the present invention and to simplify the descriptions, rather than to indicate or imply that the referred device or element must apply specific direction or to be operated or configured in specific direction. Therefore, the above-mentioned terminologies shall not be interpreted as confine to the present invention.

**[0072]** It is understandable that the term "a" should be understood as "at least one" or "one or more". In other words, in one embodiment, the number of an element can be one and in other embodiment the number of the element can be greater than one. The term "a" is not construed as a limitation of quantity.

**[0073]** Referring to Figs. 2-5, a lamp 100 according to a preferred embodiment of the present invention is disclosed and described in the following description, wherein the lamp 100 comprises a support body 10, a lamp body 20, and two automatic mounting devices 30, wherein the automatic mounting device 30 is used for conveniently and detachably mounting the lamp body 20 onto the support body 10. For example, when the lamp 100 is installed on a lamp attachment 200, an installer may affix the support body 10 of the lamp 100 on the lamp attachment 200 by using an expansion screw or a similar mechanism, and then, with bare hands, install the lamp body 20 on the support body 10 by means of the automatic mounting device 30 to mount the lamp 100 to the lamp attachment 200. A installer can install the lamp body 20 on the support body 10 to complete the installation of the lamp 100 without any tool, which is unexpected in the prior art lamp and is particularly useful for improving the installation efficiency of the lamp 100. In addition, the installation mode provided by the lamp 100 of the present invention can simplify the installation process and greatly reduce the labor intensity of the workers.

**[0074]** Besides, the lamp 100 of the present invention provides a mounting mode for mounting the lamp body 20 to the support body 10 through the automatic mounting device 30, so that an installer without a lamp mounting experience is also allowed to conveniently and reliably mount the lamp body 20 to the support body 10, which is particularly important to the installation of the lamp 100 and the use security of the lamp 100.

**[0075]** It is worth mentioning that the type of the lamp attachment 200 is not limited in the lamp 100 of the present invention as long as it can be utilized for mounting the lamp 100. For example, the lamp attachment 200 can be, but is not limited to, a roof, a ceiling, etc..

**[0076]** Referring to Figs. 2-5, two automatic mounting devices 30 are symmetrically arranged at the two sides of the lamp body 20. After the support body 10 is installed on the lamp attachment 200, two automatic mounting devices 30 are mounted on the support body 10, so as to subsequently mount the lamp body 20 onto the support body 10. Namely, two automatic mounting devices 30 are symmetrically mounted on the two sides of the lamp body 20 respectively and two automatic mounting devices 30 are mounted on the support body 10 respectively. In this way, the lamp body 20 is mounted on the support

body 10. It is understandable that after the two automatic mounting devices 30 are detached and dismantled from the support body 10, the lamp body 20 is detached and dismantled from the support body 10. Person skilled in the art should be able to understand that after the lamp body 20 is detached from the support body 10, an installer can also install the lamp body 20 on the support body 10 through the automatic mounting devices 30, so as to complete the installation of the lamp 100 again. In other words, the automatic mounting devices 30 allow the lamp body 20 to be repeatedly mounted on the support body 10 several times, or, namely, to dismount the lamp body 20 from the support body 10 several times.

**[0077]** Specifically, referring to Fig. 3, the support body 10 comprises a support element 11, two extension arms 12, and two mounting arms 13. Each of the extension arms 12 integrally extends downwardly from an end of the support body 11 respectively. Each of the mounting arms 13 integrally extends outward from an end of each of the extension arms 12 respectively. That is, the support element 11, the extension arms 12, and the mounting arms of the support body 10 are an integrated structure. According to an alternative mode of the lamp 100 as illustrated in Fig. 7, each of the mounting arms 13 may also be integrally extended inward from an end of each of the extension arms respectively. According to another alternative mode of the lamp 100 of the present invention, one of the mounting arms 13 may also be integrally extended outward from an end of one of the extension arms 12, while the other of the mounting arms 13 is integrally extended inward from an end of the other of the extension arms 12.

**[0078]** It is worth mentioning that the included angle formed and defined by the extending direction of the extension arms 12 of the support body 10 and the extending direction of the support element 11 shall not be limited. For instance, according to an embodiment of the lamp 100 of the present invention, the included angle formed and defined by the extending direction of the extension arms 12 and the extending direction of the support element 11 is 90°, which means that the extension arms 12 are extended vertically downward from the ends of the support element 11. Nonetheless, person skilled in the art should be able to understand that, for the lamp 100 according to some other embodiments of the present invention, the extension arms 12 may also be extended downward in an inclined manner from an end of the support element 11.

**[0079]** The support element 11 has at least one fixing channel 111 for allowing an expansion screw or similar mechanism to mount the support element 11 of the support body 10 onto the lamp attachment 200. Besides, after the support element 11 is mounted on the lamp attachment 200, an accommodation space 300 is formed and defined among the mounting arms of the support body 10 and the lamp attachment 200. Correspondingly, according to the embodiment of the lamp 100 as illustrated in Fig. 7, the accommodation space 300 is formed

and defined among the mounting arms 13, the extension arms 12, and the support element 11. Person skilled in the art should be able to understand that, for the lamp 100 according to some other potential embodiments of the present invention, the support element 11 may also have no preset fixing channel 111. Rather, during the process of mounting the support body 10 on the lamp attachment 200, it may have an expansion screw pass through the support element 11 of the support body 10 and affixed on the lamp attachment 200, so as to mount the support body 10 on the lamp attachment 200.

**[0080]** Each of the mounting arms 13 of the support body 10 respectively has a mounting channel 131, so as for allowing part of the automatic mounting device 30 to mount the lamp body 20 on the support body 10 through passing through the mounting channels 131 of the mounting arms 13 respectively. The part of the automatic mounting device 30 that has passed through the mounting arms 13 is kept in the accommodation space 300.

**[0081]** Person skilled in the art should understand that in order to ensure that the support body 10 is able to be stably mounted on the lamp attachment 200, the fixing channels 111 of the support element 11 of the support body 10 have to be arranged on the two ends of the support element 11. Nonetheless, for the 100 according to the embodiment illustrated in Fig. 7, in order to arrange the fixing channels 111 on the ends of the support element 11 and make it easier for expansion screws or a similar mechanisms to pass through later, the fixing channels 111 of the support element 11 are corresponding to the mounting channels 131 of the mounting arms 13, such that when expansion screws or a similar mechanisms can sequentially pass through the mounting channels 131 of the mounting arms 13 and the fixing channels 111 of the support element 11 respectively.

**[0082]** The lamp body 20 comprises a lamp disc 21 and at least one luminous part 22, wherein each the luminous part 22 is disposed on the lamp disc 21 respectively. For example, each the luminous part 22 may be respectively disposed on the lamp disc 21 in a manner of being mounted on the lamp disc 21.

**[0083]** It is worth mentioning that the quantity of the luminous parts 22 of the lamp body 20 shall not be a limit to the lamp 100 of the present invention. For instance, according to a specific embodiment of the lamp 100, as illustrated in Figs. 2-5, the content and features of the lamp 100 of the present invention are set forth and disclosed in an example of three luminous parts 22, but the quantity of three of the luminous parts 22 shall not be considered to be a limitation to the content and the scope of the lamp 100 of the present invention. Preferably, the three luminous parts 22 are arranged on the lamp disc 21 at a distance from each other and are equally spaced from each other. Alternatively, according to some other potential embodiments of the lamp 100 of the present invention, the quantity of the luminous part 22 may also be implemented as one, wherein when the number of the luminous part 22 is one, the luminous part 22 is preferably

disposed at the center of the lamp disc 21 in order to enhance the decorative performance of the lamp 200.

**[0084]** It is also worth mentioning that the shape of the lamp disc 21 of the lamp body 20 shall not be a limit to the lamp 100 of the present invention as well. For example, according to a specific embodiment of the lamp 100, as illustrated in Figs. 2- 5, the contents and features of the lamp 100 of the present invention are set forth and disclosed in an example of the lamp disc 21 in a round shape, but the shape of the lamp disc 21 being implemented as a circle shall not be viewed as a limitation of the content and scope of the lamp 100 of the present invention. According to some other possible embodiments of the lamp 100 of the present invention, the shape of the lamp disc 21 may also be, but is not limited to, square, oval, triangular, pentagonal, hexagonal, irregular, and etc..

**[0085]** Further, referring to Fig. 3, the lamp disc 21 has an accommodating space 210, wherein each of the automatic mounting devices 30 is respectively arranged in the accommodating space 210 of the lamp disc 21. After the lamp body 20 is installed on the support body 10, the support body 10 will be held in the accommodating space 210 of the lamp disc 21. Through this way, the lamp disc 21 can be tightly attached to the lamp attachment 200, so as to avoid a gap from occurring between the lamp disc 21 and the lamp attachment 200, so that it is able to prevent dust from being accumulated on the lamp disc 21. In addition, the automatic mounting device 30 and the support body 10 can both be hidden in the accommodating space 210 of the lamp disc 21, which enhances the decorative performance of the lamp 100.

**[0086]** It is worth mentioning that for the lamp 100 according to the embodiment as illustrated in Fig. 3, the mounting arms 13 are respectively extended outward from the ends of the extension arms 12. Nevertheless, for the lamp 100 according to the embodiment as illustrated in Fig. 7, the mounting arms 13 are respectively extended inward from the ends of the extension arms 12. Hence, the distance between the mounting channels 131 of the two mounting arms 13 of the lamp 100 illustrated in Fig. 3 is greater than the distance between the mounting channels 131 of the two mounting arms 13 of the lamp 100 illustrated in Fig. 7. As a result, the distance between the two automatic mounting devices 30 of the lamp 100 illustrated in Fig. 3 is greater than the distance between the two automatic mounting devices 30 of the lamp 100 illustrated in Fig. 7.

**[0087]** For the lamp 100 according to this particular embodiment as illustrated in Figs. 2-5, the lamp disc 21 comprises a high-end lamp disc 211 and a low-end lamp disc 212. The high-end lamp disc 211 further comprises a lamp disc main body 2111 and a lamp disc wall 2112 extended from the outer periphery of the lamp disc main body 2111. Besides, the accommodating space 210 is formed and defined between the lamp disc main body 2111 and the lamp disc wall 2112. Preferably, the lamp disc main body 2111 and the lamp disc wall 2112 of the

high-end lamp disc 211 are integrally formed. The automatic mounting devices 30 are mounted on the lamp disc main body 2111 of the high-end lamp disc 211, so as to hold the automatic mounting devices 30 in the accommodating space 210. The lamp disc body 2111 and the low-end lamp disc 212 of the high-end lamp disc 211 are overlapped with each other and mounted together. The lamp body 20 is mounted on the support body 10. The support body 10 is held in the accommodating space 210 formed and defined by the high-end lamp disc 211, such that the top edge 21120 of the lamp disc wall 2112 of the high-end lamp disc 211 clings to the lamp attachment 200, thereby avoiding a gap from occurring between the top edge 21120 of the lamp disc wall 2112 of the high-end lamp disc 211 and the lamp attachment 200. That is, the lamp attachment 200 can close the upper opening of the accommodating space 210 of the high-end lamp disc 211, so as to avoid dust from entering the accommodating space 210 from the outside via the gap formed between the top edge 21120 of the lamp disc wall 2112 of the high-end lamp disc 211 and the lamp attachment 200. In addition, after the lamp body 20 is installed on the support body 10, the low-end lamp disc 212 faces the lower part. That is, the low-end lamp disc 212 of the lamp body 20 affects the decorative performance of the lamp 100 when it is mounted on the lamp attachment 200. Preferably, the high-end lamp disc 211 has two disassembling channels 2113. Each the disassembling channels 2113 is respectively formed on the lamp disc wall 2113, and each of the disassembling channels is respectively connected and communicated with the accommodating space 210 and the outside. Besides, the disassembling channels 2113 of the high-end lamp disc 211 are corresponding to the automatic mounting devices 30 respectively.

**[0088]** It is worth mentioning that for the lamp 100 according to the embodiment illustrated in Figs. 2-5, the high-end lamp disc 211 and the low-end lamp disc 212 of the lamp disc 21 are split type of structures. In other words, the high-end lamp disc 211 and the low-end lamp disc 212 are separately provided and the high-end lamp disc 211 and the low-end lamp disc 212 are mounted with each other through mounting the lamp disc main body 2111 of the high-end lamp disc 211 on the low-end lamp disc 212. According to another embodiment of the present invention, the lamp disc 21 of the lamp 100 may also include the low-end lamp disc 212 and the lamp disc wall 2112 integrally extended from the low-end lamp disc 212 and the accommodating space 210 formed and defined between the low-end lamp disc 212 and the lamp disc wall 2112, wherein the automatic mounting device 30 is mounted on the low-end lamp disc 212, and the automatic mounting device 30 is located in the accommodating space 210. Specifically speaking, for the lamp 100 according to an alternative mode as illustrated in Figs. 8A and 8B, the high-end lamp disc 211 and the low-end lamp disc 212 of the lamp disc 21 may be an integral structure and the accommodating space 210 is formed

and defined between the high-end lamp disc 211 and the low-end lamp disc 212. More specifically, for the lamp 100 according the embodiment as illustrated in Fig. 8A, the lamp disc 21 is a sheet metal piece. Namely, the high-end lamp disc 211 and the low-end lamp disc 212 of the lamp disc 21 can be one integrally formed structure formed through bending or stamping a plate. However, for the lamp 100 according this embodiment as illustrated in Figs. 8B, the lamp disc 21 is an injection molded piece. Namely, the high-end lamp disc 211 and the low-end lamp disc 212 of the lamp disc 21 can be integrally formed through injection molding technology. It should be noted that, for the lamp 100 according some other embodiments, the lamp disc 21 may also be a printed piece. In other words, the high-end lamp disc 211 and the low-end lamp disc 212 of the lamp disc 21 may be integrally printed and formed through 3D printing technology.

**[0089]** Further, referring to Figs. 2-5, the automatic mounting device 30 comprises a mounting base 31, a holding shell 32, an elastic restoration mechanism 33, and a mounting mechanism 34, and has a holding space 35. The mounting base 31 is mounted on the lamp disc 21 of the lamp body 20. Preferably, the mounting base 31 is mounted on the high-end lamp disc 211 of the lamp disc 21 of the lamp body 20. The holding shell 32 has a communication channel 321 and is mounted on the mounting base 31 so as to form the holding space 35 between the holding shell 32 and the mounting base 31, wherein the communication channel 321 of the holding shell 32 is communicated with the holding space 35 and the outside. The mounting mechanism 34 comprises a mounting element 341 and at least one retaining element 342 disposed on the mounting element 341. The mounting element 341 extends from the holding space 35 to the outside via the communication channel 321 of the holding shell 32, and the retaining element 342 is held in the holding space 35 to prevent the mounting mechanism 34 from being disengaged from the mounting base 31 and the holding shell 32, that is, from leaving the holding space 35. In other words, the retaining element 342 is utilized for having the mounting mechanism 34 be kept within the holding space 35, so as to avoid the mounting mechanism 34 from disengaging from the inside of the holding space 35 through the communication channel 321 of the holding shell 32, such that the reliability of the lamp 100 can be ensured. The elastic restoration mechanism 33 is arranged between the mounting mechanism 34 and the mounting base 31, such that the mounting mechanism 34 can be kept in an installed state by the elastic restoration mechanism 33 when there is no external force applied. Preferably, the elastic restoration mechanism 33 is a compression spring element.

**[0090]** Preferably, the quantity of the holding elements 342 is two. The two retaining elements 342 respectively extend integrally from the upper end and the lower end of the mounting element 341. Therefore, it can have the retaining element 342 held in the holding space 35 through having the two retaining elements 342 of the

mounting mechanism 34 be blocked by the wall of the holding shell 32, thereby preventing the mounting mechanism 34 from disengaging from the holding space 35 formed by the mounting base 31 and the holding shell 32. Nevertheless, the implementation of the two retaining elements 342 being respectively integrally extended from the two sides of the mounting element 341 may also possibly be implemented on the lamp 100 of the present invention. Preferably, the mounting mechanism 34 comprises a reference column 343, integrally extended from the mounting element 341, wherein the reference column 343 is held in the holding space 35, and kept at an end of the elastic restoration mechanism 33. Through this way, it allows the elastic restoration mechanism 33 be reliably held between the mounting element 341 and the mounting base 31.

**[0091]** It is worth mentioning that for the lamp 100 of the present invention, the disassembling channels 2113 of the high-end lamp disc 211 will be corresponding to the mounting elements 341 of the automatic mounting devices 30. Therefore, an installer can insert a tool such as a screwdriver into the disassembling channel 213B of the high-end lamp disc 211, so as to utilize the tool to abut and push against the automatic mounting element 341. When the installer applies a force on the tool so as to push against the mounting element 341 through the tool in order to drive the mounting element 341 to move toward the mounting base 31, the mounting element 341 will gradually be hidden and concealed in the holding space 35. During this process, the size of the part of the mounting element 341 protruded from the outer side of the holding shell 32 will become smaller and smaller and the elastic restoration mechanism 33 will become elastically deformed due to the extrusion and pressing by the mounting element 341. When an external force applied to the mounting element 341 is revoked, the elastic restoration mechanism 33 will drive the mounting element 341 to move in a direction away from the mounting base 341 to restore the mounting element 341 to an installed state. During this process, the size of the part of the mounting element 341 protruded from the outer side of the holding shell 32 will become bigger and bigger. Preferably, the mounting element 341 has a groove 3411. The detachable channel 2113 of the high-end lamp disc 211 is corresponding to the groove 3411 of the mounting element 341. When the tool is pressed against the mounting element 341 via the disassembling channel 2113 of the high-end lamp disc 211, the end of the tool is held in the groove 3411, so that when the tool is utilized to act on the mounting element 341, it can prevent unwanted phenomena like "slipping" of the end portion of the tool from occurring on the surface of the mounting element 341.

**[0092]** Referring to Figs. 4 and 5, the mounting element 341 has a guide surface 3412 for guiding the mounting element 341 to be mounted at the mounting channel 131 of the mounting arm 13 of the support body 10. It is worth mentioning that the guide surface 3412 of the mounting

element 341 is an incline surface or curvy surface.

**[0093]** In addition, the mounting element 341 further has a holding groove 3413, so as for having part of the mounting arm 13 of the support body 10 be held in the holding groove 3413 of the mounting element 341 subsequently and therefore having the lamp body 20 be mounted on the support body 10. Preferably, the holding groove 3413 of the mounting element 341 is formed through denting the lower end of the mounting element 341. Namely, the holding groove 3413 of the mounting element 341 is a groove for holding, so as to provide a bulge structure 3414 of the mounting element 341 at the upper part of the holding groove 3413 of the mounting element 341. The bulge structure 3414 is able to prevent the mounting element 341 from automatically disengaging from the inside of the mounting channels 131 of the mounting arms 13 without external force, so as to ensure the security of the lamp 100.

**[0094]** Further, the lamp 100 comprises a wiring terminal 40. The wiring terminal 40 is disposed on the support element 11 of the support body 10. The luminous part 22 of the lamp body 20 is electrically connected to the wiring terminal 40. The wiring terminal 40 is adapted to be connected to an external power supply. For example, the wiring terminal 40 can be electrically connected to a city power network so as to supply electric energy to the luminous part 22 through the wiring terminal 40 and the city power network. It is worth mentioning that after the lamp body 20 is mounted on the support body 10, the wiring terminal 40 will become hidden and concealed by being accommodated in the accommodating space 210.

**[0095]** Figs. 6A-6D illustrate a process of the lamp 100 being mounted to the lamp attachment 200. Specifically, in the stage as illustrated in Fig. 6A, the support element 11 of the support body 10 is mounted onto the lamp attachment 200 through an expansion screw or similar mechanism. In the stage as illustrated in Fig. 6B, the installer is capable of support the lamp body 20 with bare hand and aligns the high end of the mounting elements 341 of the two automatic mounting devices 30 arranged on the lamp body 20 with the mounting channel 131 of the each mounting arms 13 of the support body 10. In the stage as illustrated in Fig. 6C, an installer applies a force on the lamp body 20 at a lower portion of the lamp body 20, so as to drive the lamp body 20 to move toward the lamp attachment 200. At this time, the high end of the mounting element 341 begins to be inserted into the mounting channels 131 of the mounting arms 13. The inner wall of the mounting arms 13 for forming the mounting channels 131 applies force on the mounting element 341 so as to drive the mounting element 341 to move toward the mounting base 31. At this moment, the mounting element 341 is gradually hidden and concealed into the holding space 35, and the elastic restoration mechanism 33 is elastically deformed due to being pressed and extruded by the mounting element 341. Meanwhile, because the guide surface 3412 of the mounting element 341 is an inclined surface or a curvy surface, therefore

during the process of the mounting element 341 being gradually inserted into the mounting channel 131 of the mounting arm 13, the guide surface 3412 of the mounting element 341 can guide the mounting element 341 to be mounted to the mounting channel 131 of the mounting arm 13. At a stage as illustrated in Fig. 6D, when the mounting element 341 passes through the mounting channel 131 of the mounting arm 13, because the inner wall of the mounting arm 13 for forming the mounting channel 131 does not continue to apply force to the mounting element 341, therefore under the action of the elastic restoration mechanism 33, the mounting element 341 will automatically return to the installed state. At this moment, part of the mounting arm 13 will be retained in the holding groove 3413 of the mounting element 341 so as to mount the lamp body 20 onto the support body 10.

**[0096]** It is worth mentioning that the upper portion of the holding groove 3413 of the mounting element 341 is the bulge structure 314 of the mounting element 341. Therefore, when no external force is applied to the lamp body 20, for example, when there is no external force pulling the lamp body 20 toward the lamp attachment 200, the bulge structure 3414 can prevent the mounting arms 13 from disengaging from the holding grooves 3413 of the mounting elements 341, thereby preventing the lamp body 20 from being automatically disengaged from the support body 10 so as to ensure the safety of the lamp 100 when being used.

**[0097]** Preferably, the groove bottom of the holding groove 3413 of the mounting element 341 is an inclined surface. Under the action of the elastic restoration mechanism 33, the mounting arm 13 is able to abut against the inclined surface of the mounting element 341, so that the lamp body 20 is able to stay mounted on the support body 10, and a gap is prevented from occurring between the top edge of the lamp disc wall 2112 of the high-end lamp disc 211 and the lamp attachment 200. Hence, the top edge of the lamp disc wall 2112 will be completely and tight attached on the lamp attachment 200 in appearance. For example, the top edge of the lamp disc wall 2112 can be kept fully attached on a ceiling, wall, and etc..

**[0098]** Figs. 6E-6G illustrate the process of the lamp body 20 being detached from the support body 10. Specifically, in the stage as illustrated in Fig. 6E, an installer can insert a tool such as a screwdriver into the accommodating space 210 via the disassembling channel 2113 of the high-end lamp disc 211 from the outside of the lamp body 20, and the end of the tool can abut the mounting element 341 in a manner of being retained in the groove 3411 of the mounting element 341. In the stage as illustrated in Fig. 6F, an installer applies an external force to the tool so as to drive the mounting element 341 to move toward the mounting base 31 by having the tool abut against the mounting element 341, so that the mounting element 341 is gradually hidden and concealed in the holding space 35. At this moment, the elastic restoration mechanism 33 generates elastic deformation due to the extrusion of the mounting element 341. In the

stage as illustrated in Fig. 6G, under the effect of the self-gravity of the lamp body 20, the mounting elements 341 of the automatic mounting devices 30 can be detached from the inside of the mounting channels 131 of the mounting arms 13 automatically so as to detach the lamp body 20 from the support body 10. At this moment, since there is no external force continues to act on the mounting elements 341, under the action of the elastic restoration mechanism 33, the mounting elements 341 can return to the installation state.

**[0099]** Figs. 9 and 10 illustrate an alternative mode of the lamp 100, which is different from the lamp 100 illustrated in Figs. 2-5 in that, for the lamp 100 according to the embodiment illustrated in Figs. 9 and 10, it may only arrange one automatic mounting device 30 on one side of the lamp disc 21 of the lamp body 20 and the lamp 100 further comprises a mounting buckle 60, which is arranged at the other side of the lamp disc 21. It is worth mentioning that the way of the mounting buckle 60 being arranged on the lamp disc 21 shall not be limited for the lamp 100 of the present invention. For instance, the mounting buckle 60 may be arranged on the lamp disc 21 through being soldered and welded or installed on the high-end lamp disc 211 of the lamp disc 21 or the mounting buckle 60 may be integrally formed on the high-end lamp disc 211 of the lamp disc 21 so as to be arranged on the lamp disc 21.

**[0100]** Figs. 11A-11D illustrate a process of the lamp 100 being mounted to the lamp attachment 200. Specifically, in the stage as illustrated in Fig. 11A, the support element 11 of the support body 10 is mounted onto the lamp attachment 200 through an expansion screw or similar mechanism. In the stage as illustrated in Fig. 11B, the mounting buckle 60 is mounted on the mounting channel 131 of one of the mounting arms 13 in the manner that the lamp body 20 is oblique. Here, the high end of the mounting element 341 of the automatic mounting device 30 will be aligned with the mounting channel 131 of the other of the mounting arms 13. In the stage as illustrated in Fig. 11C, an installer applies a force on a lower side of the lamp body 20 from the lower portion of the lamp body 20, so as to drive the lower side of the lamp body 20 to move toward the lamp attachment 200. At this moment, the high end of the mounting element 341 begins to be inserted into the mounting channels 131 of the mounting arms 13. The inner wall of the mounting arms 13 for forming the mounting channels 131 applies force on the mounting element 341 so as to drive the mounting element 341 to move toward the mounting base 31. At this moment, the mounting element 341 is gradually hidden and concealed into the holding space 35, and the elastic restoration mechanism 33 is elastically deformed due to being pressed and extruded by the mounting element 341. Meanwhile, because the guide surface 3412 of the mounting element 341 is an inclined surface or a curvy surface, therefore during the process of the mounting element 341 being gradually inserted into the mounting channel 131 of the mounting arm 13, the guide sur-

face 3412 of the mounting element 341 can guide the mounting element 341 to be mounted to the mounting channel 131 of the mounting arm 13. At a stage as illustrated in Fig. 11D, when the mounting element 341 passes through the mounting channel 131 of the mounting arm 13, because the inner wall of the mounting arm 13 for forming the mounting channel 131 does not continue to apply force to the mounting element 341, therefore under the action of the elastic restoration mechanism 33, the mounting element 341 will automatically return to the installed state. At this moment, part of the mounting arm 13 will be retained in the holding groove 3413 of the mounting element 341 so as to mount the lamp body 20 onto the support body 10.

**[0101]** Figs. 11E-11G illustrate the process of the lamp body 20 being detached from the support body 10. Specifically, in the stage as illustrated in Fig. 11E, an installer can insert a tool such as a screwdriver into the accommodating space 210 via the disassembling channel 2113 of the high-end lamp disc 211 from the outside of the lamp body 20, and the end of the tool can abut the mounting element 341 in a manner of being retained in the groove 3411 of the mounting element 341. In the stage as illustrated in Fig. 11F, an installer applies an external force to the tool so as to drive the mounting element 341 to move toward the mounting base 31 by having the tool abut against the mounting element 341, so that the mounting element 341 is gradually hidden and concealed in the holding space 35. At this moment, the elastic restoration mechanism 33 generates elastic deformation due to the extrusion of the mounting element 341. In the stage as illustrated in Fig. 11G, under the effect of the self-gravity of the lamp body 20, the mounting element 341 of the automatic mounting device 30 can automatically disengage from the mounting channel 131 of the mounting arm 13. After the mounting element 341 is disengaged from the mounting channel 131 of the mounting arm 13, the lamp body 20 will become inclined, and under the further action of the self-gravity of the lamp body 20, the mounting buckle 60 will be disengaged from the mounting channel 131 of the mounting arm 13 to detach the lamp body 20 from the support body 10. At this time, since there is no external force continuing to act on the mounting element 341, under the action of the elastic restoration mechanism 33, the mounting element 341 can return to the installation state.

**[0102]** Referring to Figs. 12-15, a lamp 100A according to a second preferred embodiment of the present invention is disclosed and described in the following description, wherein the lamp 100A comprises a support body 10A, a lamp body 20A, and two automatic mounting devices 30A, wherein the automatic mounting device 30A is used for conveniently and detachably mounting the lamp body 20A onto the support body 10A. For example, when the lamp 100A is installed on a lamp attachment 200A, an installer may affix the support body 10A of the lamp 100A on the lamp attachment 200A by using an expansion screw or a similar mechanism, and then, with

bare hands, install the lamp body 20A on the support body 10A by means of the automatic mounting device 30A to mount the lamp 100A to the lamp attachment 200A. That is, the installer can install the lamp body 20A on the support body 10A without any tool so as to complete the installation of the lamp 100A. This is unexpected in the prior art lamp, and is particularly useful for improving the installation efficiency of the lamp 100A and reducing the installation difficulty of the lamp 100A. In addition, the installation mode provided by the lamp 100A of the present invention can simplify the installation process and greatly reduce the labor intensity of the workers.

**[0103]** Besides, the lamp 100A of the present invention provides a mounting mode for mounting the lamp body 20A to the support body 10A through the automatic mounting device 30A, so that an installer without a lamp mounting experience is also allowed to conveniently and reliably mount the lamp body 20A to the support body 10A, which is particularly important to the installation of the lamp 100A and the use security of the lamp 100A.

**[0104]** It is worth mentioning that the type of the lamp attachment 200A is not limited in the lamp 100A of the present invention as long as it can be utilized for mounting the lamp 100A. For example, the lamp attachment 200A can be, but is not limited to, a roof, a ceiling, etc..

**[0105]** Referring to Figs. 12-15, two automatic mounting devices 30A are symmetrically arranged at the two ends of the support body 10A. After the support body 10A is installed on the lamp attachment 200A, the symmetrical two sides of the lamp body 20A are mounted with the automatic mounting devices 30A respectively so as for mounting the lamp body 20A on the support body 10A. It is understandable that after the two sides of the lamp body 20A are detached from each of the automatic mounting devices 30A subsequently, the lamp body 20A is detached from the support body 10A. For the lamp 100A of the present invention, after the lamp body 20A is detached from the support body 10A, an installer can also install the lamp body 20A on the support body 10A through the automatic mounting devices 30A, so as to complete the installation of the lamp 100A again. In other words, the automatic mounting devices 30A allow the lamp body 20A to be repeatedly mounted on the support body 10A several times, or the automatic mounting devices 30A allow the lamp body 20A to be repeatedly detached from the support body 10A several times.

**[0106]** Referring to Figs. 12-15, the support body 10A includes a support element 11A, wherein each of the automatic mounting devices 30A is respectively disposed at the two ends of the support element 11A of the support body 10A. The support element 11A can be mounted on the lamp attachment 200A. For instance, according to a specific embodiment of the lamp 100A of the present invention, the support element 11A has at least one fixing channel 111A to allow an expansion screw or similar mechanism to mount the support element 11A of the support body 10A to the lamp attachment 200A.

**[0107]** Referring to Figs. 12-15, the lamp body 20A

comprises a lamp disc 21A and at least one luminous part 22A, wherein each the luminous part 22A is disposed on the lamp disc 21A respectively. For example, each the luminous part 22A may be respectively disposed on the lamp disc 21A in a manner of being mounted on the lamp disc 21A.

**[0108]** It is worth mentioning that the quantity of the luminous parts 22A of the lamp body 20A shall not be a limit to the lamp 100A of the present invention. For instance, according to a specific embodiment of the lamp 100A, as illustrated in Figs. 12-15, the content and features of the lamp 100A of the present invention are set forth and disclosed in an example of three luminous parts 22A, but the quantity of three of the luminous parts 22A shall not be considered to be a limitation to the content and the scope of the lamp 100A of the present invention. Preferably, the three luminous parts 22A are arranged on the lamp disc 21A at a distance from each other and are equally spaced from each other. Alternatively, according to some other potential embodiments of the lamp 100A of the present invention, the quantity of the luminous part 22A may also be implemented as one, wherein when the number of the luminous part 22A is one, the luminous part 22A is preferably disposed at the center of the lamp disc 21A in order to enhance the decorative performance of the lamp 100A.

**[0109]** It is also worth mentioning that the shape of the lamp disc 21A of the lamp body 20A shall not be a limit to the lamp 100A of the present invention as well. For example, according to a specific embodiment of the lamp 100A, as illustrated in Figs. 12-15, the contents and features of the lamp 100A of the present invention are set forth and disclosed in an example of the lamp disc 21A in a round shape, but the shape of the lamp disc 21A being implemented as a circle shall not be viewed as a limitation of the content and scope of the lamp 100A of the present invention. According to some other possible embodiments of the lamp 100A of the present invention, the shape of the lamp disc 21A may also be, but is not limited to, square, oval, triangular, pentagonal, hexagonal, irregular, and etc..

**[0110]** Further, the lamp 100A comprises a wiring terminal 40A. The wiring terminal 40A is disposed on the support element 11A of the support body 10A. The luminous part 22A of the lamp body 20A is electrically connected to the wiring terminal 40A. The wiring terminal 40A is adapted to be electrically connected to an external power supply. For example, the wiring terminal 40A can be electrically connected to a city power network so as to supply electric energy to the luminous part 22A through the wiring terminal 40A and the city power network.

**[0111]** The lamp disc 21A of the lamp body 20A has an accommodating space 210A. After the lamp body 20A is mounted on the support body 10A through the automatic mounting devices 30A, the wiring terminal 40A arranged on the support element 11A will further be kept in the accommodating space 210A of the lamp disc 21A, so that the wiring terminal 40A can be hidden and con-

cealed by means of being kept in the accommodating space 210A of the lamp disc 21A. Through this way, the lamp disc 21A can be tight and completely attached on the lamp attachment 200A, so as to avoid gap from occurring between the lamp disc 21A and the lamp attachment 200A afterwards and therefore to prevent dust from being accumulated on the lamp disc 21A. In addition, the way that the wiring terminal 40A being hidden in the accommodating space 210A of the lamp disc 21A is able to avoid the wiring terminal 40A from being exposed in the outside, such that it is able to not only protect the wiring terminal 40A, but also enhance the decorative performance of the lamp 100A.

**[0112]** For the lamp 100A according to this particular embodiment as illustrated in Figs. 12-15, the lamp disc 21A comprises a high-end lamp disc 211A and a low-end lamp disc 212A. The high-end lamp disc 211A further comprises a lamp disc main body 2111A, a lamp disc wall 2112A, and a lamp disc top 2114A, wherein the lamp disc wall 2112A is integrally extended upward from the outer periphery of the lamp disc main body 2111A, wherein the lamp disc top 2114A is integrally extended outward from the upper periphery of the lamp disc wall 2112A. Besides, the accommodating space 210A is formed and defined between the lamp disc main body 2111A and the lamp disc wall 2112A. The lamp disc main body 2111A of the high-end lamp disc 211A and the low-end lamp disc 212A are mounted together in an overlapping manner, and an annular space 2115A is formed and defined between the lamp disc top 2114A of the high-end lamp disc 211A and the low-end lamp disc 212A. The lamp disc top 2114A has two mounting channels 21140A symmetrical to each other, wherein each of the mounting channels 21140A is communicated with the annular space 2115A respectively. Further, the high-end lamp disc 211A further comprises an annular wall 2116A integrally extended downward from an outer periphery of the lamp disc top 2114A, wherein a lower periphery 2116A of the annular wall 2116A abuts the low-end lamp disc 212A, so as to utilize the annular wall 2116A to close the annular space 2115A. Part of the automatic mounting devices 30A can respectively pass through the mounting channels 21140A of the lamp disc top 2114A of the high-end lamp disc 211A to be held in the annular space 2115A, so as to mount the lamp body 20A on the support body 10A and therefore to mount the lamp 100A on the lamp attachment 200A.

**[0113]** In addition, the high-end lamp disc 211A of the lamp disc 21A has two disassembling channels 2113A, which are arranged symmetrically to each other and both formed on the annular wall 2116A of the high-end lamp disc 211A. Besides, the two disassembling channels 2113A are respectively connected and communicated with the annular space 2115A.

**[0114]** Further, referring to Figs. 12-15, the automatic mounting device 30A comprises a mounting base 31A, a holding shell 32A, an elastic restoration mechanism 33A, and a mounting mechanism 34A, and has a holding



space 35A. The mounting base 31A is integrally extended downward from an end of the support element 11A of the support body 10A. In other words, the mounting base 31A and the support element 11A of the support body 10A are integrally formed. For the lamp 100A according to some embodiments of the present invention, the mounting base 31A may also be mounted on the support element 11A of the support body 10A. The holding shell 32A has a communication channel 321A and is mounted on the mounting base 31A so as to form the holding space 35A between the holding shell 32A and the mounting base 31A, wherein the communication channel 321A of the holding shell 32A is communicated with the holding space 35A and the outside. The mounting mechanism 34A comprises a mounting element 341A and at least one retaining element 342A disposed on the mounting element 341A. The mounting element 341A extends from the holding space 35A to the outside via the communication channel 321A of the holding shell 32A, and the retaining element 342A is held in the holding space 35A so as to prevent the mounting mechanism 34A from being disengaged from the holding space 35A formed and define between the mounting base 31A and the holding shell 32A. In other words, the retaining element 342A is utilized for having the mounting mechanism 34A be kept within the holding space 35A, so as to avoid the mounting mechanism 34A from disengaging from the inside of the holding space 35A through the communication channel 321A of the holding shell 32A, such that the reliability of the lamp 100A can be ensured. The elastic restoration mechanism 33A is kept between the mounting mechanism 34A and the mounting base 31A, such that the mounting mechanism 34A can be kept in an installed state by the elastic restoration mechanism 33A when there is no external force applied. Preferably, the elastic restoration mechanism 33A is a compression spring element.

**[0115]** Preferably, the quantity of the holding elements 342A is two. The two retaining elements 342A respectively extend integrally from the upper end and the lower end of the mounting element 341A. Therefore, it can have the retaining element 342A held in the holding space 35A through having the two retaining elements 342A of the mounting mechanism 34A be blocked by the wall of the holding shell 32A, thereby preventing the mounting mechanism 34A from slidingly disengaging from the holding space 35A formed by the mounting base 31A and the holding shell 32A. Nevertheless, the implementation of the two retaining elements 342A being respectively integrally extended from the two sides of the mounting element 341A may also possibly be implemented on the lamp 100A of the present invention.

**[0116]** Preferably, the mounting element 341A has a groove 3411A, wherein the groove 3411A of the mounting element 341A is adapted for corresponding to the disassembling channel 2113A of the lamp disc 21. The mounting element 341A further has a guiding surface 3412A and an inclined surface 3415A. The guide surface

3412A of the mounting element 341A is used for guiding the mounting element 341A to be mounted on the mounting channels 2140A of the high-end lamp disc 211A of the lamp disc 21, wherein the guide surface 3412A of the mounting element 341A is an inclined surface or a curvy surface. The inclined surface 3415A of the mounting element 341A is used for preventing a gap from occurring between the high-end lamp disc 211A of the lamp disc 21 and the lamp attachment 200A so as to enhance the aesthetics of the lamp 100A.

**[0117]** Figs. 16A-16E illustrate a process of the lamp 100A being mounted to the lamp attachment 200A. Specifically, in the stage as illustrated in Fig. 16A, the support element 11A of the support body 10A is mounted onto the lamp attachment 200A through an expansion screw or similar mechanism. In the stage as illustrated in Fig. 16B, the installer is capable of support the lamp body 20A with bare hand and align each of the mounting elements 341A of the automatic mounting devices 30A arranged on the support element 11A of the support body 10A with each of the mounting channels 21140A of the high-end lamp disc 211A of the lamp disc 21 of the lamp body 20A. In the stage as illustrated in Fig. 16C, an installer applies a force on the lamp body 20A at a lower portion of the lamp body 20A, so as to drive the lamp body 20A to move toward the lamp attachment 200A. At this time, the low end of the mounting element 341A begins to be inserted into the mounting channel 21140A of the lamp disc top 2114A of the high-end lamp disc 211A. The inner wall of the lamp disc top 2114A of the high-end lamp disc 211A is for forming the mounting channels 21140A, so as to make the mounting element 341A move toward the mounting base 31A because the guide surface 3412A of the mounting element 341A is an inclined surface or a curvy surface. Therefore, the guide surface 3412A of the mounting element 341A can guide the mounting element 341A to be smoothly inserted into the mounting channel 21140A of the lamp disc top 2114A of the high-end lamp disc 211A and avoid unwanted phenomena such as jamming and etc.. Meanwhile, the mounting element 341A is gradually hidden and concealed into the holding space 35A, and the elastic restoration mechanism 33A is elastically deformed by being pressed and extruded by the mounting element 341A. In the stage as illustrated in Fig. 16D, after the mounting element 341A passes through the mounting channel 21140A of the lamp disc top 2114A of the high-end lamp disc 211A, the inner wall of the lamp disc top 2114A of the high-end lamp disc 211A for forming the mounting channel 21140A is not continuously pushing the mounting element 341A. Therefore, under the action of the elastic restoration mechanism 33A, the mounting element 341A will automatically return to the installation state, and at this moment, the mounting element 341A will be held in the annular space 2115A so as to mount the lamp body 20A on the support body 10A. In other words, the lamp 100A is mounted on the lamp attachment 200A.

**[0118]** Preferably, the mounting element 341A pro-

vides the inclined surface 3415A. Thus, under the action of the elastic restoration mechanism 33A, the inner wall of the lamp disc top 2114A of the high-end lamp disc 211A for forming the mounting channels 21140A can abut and hold against the inclined surface 3415A of the mounting element 341A, so as to have the lamp body 20A be mounted on the support body 10A. Meanwhile, it can also avoid a gap from occurring between the high-end lamp disc 211A and the lamp attachment 200A, so that when observing from the outside of the lamp 100A, the high-end lamp disc 211A can stay in the state of being completely attached on the lamp attachment 200A. For example, the top edge of the high-end lamp disc 211A can be kept attached on a ceiling, wall, and etc..

**[0119]** Referring to Fig. 16E, after the automatic mounting device 30A mounted the lamp body 20A on the support body 10A through having the mounting element 341A of the automatic mounting device 30A be held in the annular space 2115A of the high-end lamp disc 211A, the lamp body 20A can be driven to rotate the automatic mounting devices 30A within the mounting channels 21140A of the lamp disc top 2114A of the high-end lamp disc 211A for adjusting the mounting position of the lamp body 20A relative to the support body 10A. For example, the mounting channel 21140A may be an annular groove to allow the mounting element 341A of the automatic mounting device 30A to rotate therewithin.

**[0120]** Figs. 16F-16I illustrate the process of the lamp body 20A being detached from the support body 10A. Specifically, in the stage as illustrated in Fig. 16F, the lamp body 20A is driven to rotate relatively to the support body 10A making the groove 3411A of the mounting element 341A of the automatic mounting device 30A be corresponding to the disassembling channel 2113A of the high-end lamp disc 211A. In the stage as illustrated in Fig. 16G, an installer can insert a tool such as a screwdriver into the annular space 2115A via the disassembling channel 2113A of the high-end lamp disc 211A from the outside of the lamp body 20A, and the end of the tool can abut the mounting element 341A in a manner of being retained in the groove 3411A of the mounting element 341A. In the stage as illustrated in Fig. 16H, an installer applies an external force to the tool so as to drive the mounting element 341A to move toward the mounting base 31A by having the tool abut against the mounting element 341A, so that the mounting element 341A is gradually hidden and concealed in the holding space 35A. At this moment, the elastic restoration mechanism 33A generates elastic deformation due to the extrusion of the mounting element 341A. In the stage as illustrated in Fig. 16I, under the effect of the self-gravity of the lamp body 20A, the mounting element 341A of the automatic mounting device 30A can be detached from the lamp disc top 2114A of the high-end lamp disc 211A so as to detach the lamp body 20A from the support body 10A. At the moment, no external force continues to act on the mounting element 341A, so that under the action of the elastic restoration mechanism 33A, the mounting element 341A

can return to the installation state.

**[0121]** Referring to Figs. 17-20, a lamp 100b according to a third preferred embodiment of the present invention is disclosed and described in the following description, the lamp 100B comprises a support body 10B, a lamp body 20B and two automatic mounting devices 30B, wherein each automatic mounting device 30B is arranged on the support body 10B, and each automatic mounting device 30B is used for detachably mounting the lamp body 20B to the support body 10B. For example, when the lamp 100B is installed on a lamp attachment 200B, an installer may affix the support body 10B of the lamp 100B on the lamp attachment 200B by using an expansion screw or a similar mechanism, and then, with bare hands, install the lamp body 20B on the support body 10B by means of the automatic mounting device 30B to mount the lamp 100B to the lamp attachment 200B. A installer can install the lamp body 20B on the support body 10B to complete the installation of the lamp 100B without any tool, which is unexpected in the prior art lamp and is particularly useful for improving the installation efficiency of the lamp 100B. In addition, the installation mode provided by the lamp 100B of the present invention can simplify the installation process and greatly reduce the labor intensity of the workers.

**[0122]** Besides, the lamp 100B of the present invention provides a mounting mode for mounting the lamp body 20B to the support body 10B through the automatic mounting device 30B, so that an installer without a lamp mounting experience is also allowed to conveniently and reliably mount the lamp body 20B to the support body 10B, which is particularly important to the installation of the lamp 100B and the use security of the lamp 100B.

**[0123]** Referring to Figs. 17-20, two automatic mounting devices 30B are symmetrically arranged at the two ends of the support body 10B. After the support body 10B is installed on the lamp attachment 200B, the two sides of the lamp body 20B are mounted with the automatic mounting devices 30B respectively so as for mounting the lamp body 20B on the support body 10B. It is understandable that after the lamp body 20B is detached from the two automatic mounting devices 30B, the lamp body 20B is detached from the support body 10B.

**[0124]** Specifically speaking, the support body 10B comprises a support element 11B, wherein the support element 11B has at least one fixing channel 111B for allowing an expansion screw or similar mechanism to pass through the fixing channel 111B of the support element 11B so as for mounting the support element 11B onto the lamp attachment 200B, wherein the automatic mounting devices 30B are mounted on the ends of the support element 11B. Preferably, the support body 10B further comprises two extension arms 12B, wherein each of the extension arms 12B is integrally extended downward from an end of the support element 11B respectively and each of the extension arms 12B respectively has a channel 121B, wherein part of the automatic mounting

devices 30B can pass through the channel 121B of the extension arms 12B respectively, so as for mounting the lamp body 20B on the support body 10B.

**[0125]** It is worth mentioning that for the lamp 100B according to some embodiments of the present invention, the automatic mounting device 30B may not be mounted on the ends of the support element 11B, but be mounted on the extension arms 12B of the support body 10B. For the lamp 100B according to some other embodiments of the present invention, the automatic mounting device 30B may also be mounted on the extension arms 12B of the support element 11B at the same time.

**[0126]** The lamp body 20B comprises a lamp disc 21B and at least one luminous part 22B, wherein each the luminous part 22B is disposed on the lamp disc 21B respectively. For example, each the luminous part 22B may be respectively disposed on the lamp disc 21 in a manner of being mounted on the lamp disc 21B.

**[0127]** It is worth mentioning that the quantity of the luminous parts 22B of the lamp body 20B shall not be a limit to the lamp 100B of the present invention. For instance, according to a specific embodiment of the lamp 100B, as illustrated in Figs. 17-20, the content and features of the lamp 100B of the present invention with set forth and disclosed in an example of three luminous parts 22B, but the quantity of three of the luminous parts 22B shall not be considered to be a limitation to the content and the scope of the lamp 100B of the present invention. Preferably, the three luminous parts 22B are arranged on the lamp disc 21B at a distance from each other and are equally spaced from each other. Alternatively, according to some other embodiments, the quantity of the luminous parts 22B may also be implemented as one.

**[0128]** It is also worth mentioning that the shape of the lamp disc 21B of the lamp body 20B shall not be a limit to the lamp 100B of the present invention as well. For example, according to a specific embodiment of the lamp 100B, as illustrated in Figs. 17-20, the contents and features of the lamp 100B of the present invention are set forth and disclosed in an example of the lamp disc 21B in a round shape, but the shape of the lamp disc 21B being implemented as a circle shall not be viewed as a limitation of the content and scope of the lamp 100B of the present invention. According to some other possible embodiments of the lamp 100B of the present invention, the shape of the lamp disc 21 may also be, but is not limited to, square, oval, triangular, pentagonal, hexagonal, and etc..

**[0129]** In addition, the lamp body 20B further comprises two mounting arms 13B, wherein each of the mounting arms 13B is disposed on the lamp disc 21B respectively. Each of the mounting arms 13B has a mounting channel 131B so that the mounting channel 131B of the mounting arm 13B allows a portion of the automatic mounting device 30B to be retained therein, so as for mounting the lamp body 20B to the support body 10B through coupling the automatic mounting device 30B and the mounting arm 13B of the lamp body 20B.

**[0130]** Further, the lamp disc 21 has an accommodating space 210B, wherein each of the mounting arms 13B is respectively located in the accommodating space 210B. Therefore, when the lamp body 20B is installed on the support body 10B, the automatic mounting device 30B and the support body 10B can both be held in the accommodating space 210B of the lamp disc 21B. In this way, the lamp disc 21B can be tightly attached to the lamp attachment 200B so as to avoid a gap from occurring between the lamp disc 21B and the lamp attachment 200B, which not only prevents dust from being accumulated on the lamp disc 21B, but also enhances the decorative performance of the lamp 100B.

**[0131]** For the lamp 100B according to this particular embodiment as illustrated in Figs. 17-20, the lamp disc 21B comprises a high-end lamp disc 211B and a low-end lamp disc 212B. The high-end lamp disc 211B further comprises a lamp disc main body 2111B and a lamp disc wall 2112B extended from the outer periphery of the lamp disc main body 2111B. Besides, the accommodating space 210B is formed and defined between the lamp disc main body 2111B and the lamp disc wall 2112B. Preferably, the lamp disc main body 2111B and the lamp disc wall 2112B of the high-end lamp disc 211B are integrally formed. The mounting arm 13B is mounted on the lamp disc wall 2112B of the high-end lamp disc 211B, and the mounting arm 13B is located in the accommodating space 210B. However, person skilled in the art should be able to understand that, for the lamp 100B according to some other embodiments of the present invention, the mounting arm 13B and the lamp disc wall 2112B of the high-end lamp disc 211B may also be integrally formed. The lamp disc body 2111B and the low-end lamp disc 212B of the high-end lamp disc 211B are overlapped with each other and mounted together. The lamp body 20B is mounted on the support body 10B. The support body 10B and the automatic mounting device 30B are both held in the accommodating space 210B of the lamp body 20B, so that the top edge of the lamp disc wall 2112B of the high-end lamp disc 211B clings to the lamp attachment 200B, thereby avoiding a gap from occurring between the top edge of the lamp disc wall 2112B of the high-end lamp disc 211B and the lamp attachment 200B. That is, the lamp attachment 200B can close the upper opening of the accommodating space 210B of the high-end lamp disc 211B. In addition, after the lamp body 20B is installed on the support body 10B, the low-end lamp disc 212B faces the lower part. That is, the low-end lamp disc 212B of the lamp body 20B affects the decorative performance of the lamp 100B when it is mounted on the lamp attachment 200B.

**[0132]** Preferably, the high-end lamp disc 211B has two dismounting channels 2113B. Each of the disassembly channels 2113B is formed on the lamp disc wall 2112B, and each of the disassembling channels 2113B corresponds to the mounting channel 131B of each of the mounting arms 13B respectively, so that after a portion of the automatic mounting devices 30B are mounted on

the mounting channels 131B of the mounting arms 13B, the disassembling channels 213B of the high-end lamp disc 211B will be corresponding to the portion of the automatic mounting devices 30B.

**[0133]** According to another embodiment of the present invention, the lamp disc 21B of the lamp 100B may also include the low-end lamp disc 212B and the lamp disc wall 2112B integrally extended from the low-end lamp disc 212B and the accommodating space 210B formed and defined between the low-end lamp disc 212B and the lamp disc wall 2112B, wherein the mounting arm 13B is mounted on the lamp disc wall 2112B, and the mounting arm 13B is located in the accommodating space 210B.

**[0134]** Further, referring to Figs. 17-20, the automatic mounting device 30B comprises a mounting base 31B, a holding shell 32B, an elastic restoration mechanism 33B, and a mounting mechanism 34B, and has a holding space 35B. The holding shell 32B has a communication channel 321B and is mounted on the mounting base 31B so as to form the holding space 35B between the holding shell 32B and the mounting base 31B, wherein the communication channel 321B of the holding shell 32B is communicated with the holding space 35B and the outside. The mounting mechanism 34B comprises a mounting element 341B and at least one retaining element 342B disposed on the mounting element 341B. The mounting element 341B extends from the holding space 35B to the outside via the communication channel 321B of the holding shell 32B, and the retaining element 342B is held in the holding space 35B to prevent the mounting mechanism 34B from being disengaged from the mounting base 31B and the holding shell 32B, that is, from leaving the holding space 35B. The elastic restoration mechanism 33B keeps the mounting mechanism 34B always in an installed state when there is no external force applied. Preferably, the elastic restoration mechanism 33B is a compression spring element.

**[0135]** The holding shell 32B of the automatic mounting devices 30B are mounted at the ends of the support element 11B of the support body 10B, so that the automatic mounting devices 30B are mounted on the support body 10B.

**[0136]** Preferably, the quantity of the holding elements 342B is two. The two retaining elements 342B respectively extend integrally from the upper end and the lower end of the mounting element 341B. Therefore, it can have the retaining element 342B held in the holding space 35B through having the two retaining elements 342B of the mounting mechanism 34B be blocked by the wall of the holding shell 32B, thereby preventing the mounting mechanism 34B from disengaging from the holding space 35B formed by the mounting base 31B and the holding shell 32B. Preferably, the mounting mechanism 34B comprises a reference column 343B, integrally extended from the mounting element 341B. The reference column 343B is kept in the holding space 35B. Correspondingly, the mounting base 31B has a reference block

311B, wherein the reference block 311B is held in the holding space 35B, and the reference column 343B and the reference block 311B are corresponding to each other. The reference column 343B and the reference block 311B are respectively held at the end of the elastic restoration mechanism 33B. In this way, the elastic restoration mechanism 33B can be reliably held between the mounting element 341B and the mounting base 31B.

**[0137]** Preferably, the two side portions of the mounting element 341B respectively have a sliding groove 3415B. The holding shell 32B has two sliding blocks 322B. Each of the sliding blocks 322B of the holding shell 32B is held in each of the sliding grooves 3415B of the mounting element 341B respectively. When the mounting element 341B moves relative to the holding shell 32B, each of the sliding blocks 322B of the holding shell 32B slides in each of the sliding grooves 3415B of the mounting element 341B respectively. In this way, unwanted phenomena like deflection of the mounting element 341B can be avoided, thereby ensuring the safety and the reliability of the lamp 100B when being used.

**[0138]** It is worth mentioning that after the lamp body 20B of the present invention is mounted on the support body 10B, the disassembling channel 2113B of the high-end lamp disc 211B will be corresponding to the mounting element 341B of the automatic mounting device 30B. Therefore, an installer can insert a tool such as a screwdriver into the disassembling channel 213B of the high-end lamp disc 211B, so as to utilize the tool to abut and push against the mounting element 341B. When the mounting element 341B moves toward the mounting base 31B, the mounting element 341B will gradually be hidden and concealed in the holding space 35B. At the moment, the elastic restoration mechanism 33B will become elastic deformation due to the extrusion and pressing of the mounting element 341B. When an external force applied to the mounting element 341B is revoked, the elastic restoration mechanism 33B will drive the mounting element 341B to move in a direction away from the mounting base 31B to return the mounting element 341B to an installed state. Preferably, the mounting element 341B has a groove 3411B. The detachable channel 2113B of the high-end lamp disc 211B can correspond to the groove 3411B of the mounting element 341B. When the tool is pressed against the mounting element 341B via the disassembling channel 2113B of the high-end lamp disc 211B, the end of the tool is held in the groove 3411B, so that when the tool is utilized to act on the mounting element 341B, it can prevent unwanted phenomena like "slipping" of the end portion of the tool from occurring on the surface of the mounting element 341B.

**[0139]** Referring to Figs. 19 and 20, the mounting element 341B has a guide surface 3412B for guiding the mounting element 341B to be mounted at the mounting channel 131B of the mounting arm 13B of the lamp body 20B. It is worth mentioning that the guide surface 3412B of the mounting element 341B is an incline surface or

curvy surface.

**[0140]** In addition, the mounting element 341B further has a holding groove 3413B, so as for having part of the mounting arm 13B of the lamp body 20B be held in the holding groove 3413B of the mounting element 341B subsequently and therefore having the lamp body 20B be mounted on the support body 10B. Preferably, the holding groove 3413B of the mounting element 341B is formed through denting the lower end of the mounting element 341B. Namely, the holding groove 3413B of the mounting element 341B is a groove for holding, so as to provide a bulge structure 314B of the mounting element 341B formed at the lower part of the holding groove 3413B of the mounting element 341B. The bulge structure 314B is able to prevent the mounting element 341B from automatically disengaging from the inside of the mounting channels 131B of the mounting arms 13B without external force, so as to ensure the security of the lamp 100B.

**[0141]** Further, the lamp 100B comprises a wiring terminal 40B. The wiring terminal 40B is disposed on the support element 11B of the support body 10B. The luminous part 22B of the lamp body 20B is electrically connected to the wiring terminal 40B. The wiring terminal 40B is adapted to be connected to an external power supply. For example, the wiring terminal 40B can be electrically connected to a city power network so as to supply electric energy to the luminous part 22B through the wiring terminal 40B and the city power network. It is worth mentioning that after the lamp body 20B is mounted on the support body 10B, the wiring terminal 40B will become hidden and concealed by being accommodated in the accommodating space 210B.

**[0142]** Figs. 21A-21D illustrate a process of the lamp 100B being mounted to the lamp attachment 200B. Specifically, in the stage as illustrated in Fig. 21A, the support element 11B of the support body 10B is mounted onto the lamp attachment 200B through an expansion screw or similar mechanism. In the stage as illustrated in Fig. 21B, the installer is capable of support the lamp body 20B with bare hand and aligns the low ends of the mounting elements 341B of the two automatic mounting devices 30B arranged on the support body 10B with the mounting channels 131B of the two mounting arms 13B of the lamp body 20B. In the stage as illustrated in Fig. 21C, an installer applies a force on the lamp body 20B at a lower portion of the lamp body 20B, so as to drive the lamp body 20B to move toward the lamp attachment 200B. At this time, the low end of the mounting element 341B begins to be inserted into the mounting channels 131B of the mounting arms 13B. The inner wall of the mounting arms 13B for forming the mounting channels 131B applies force on the mounting element 341B so as to drive the mounting element 341B to move toward the mounting base 31B. At this moment, the mounting element 341B is gradually hidden and concealed into the holding space 35B, and the elastic restoration mechanism 33B is elastically deformed due to being pressed and extruded by

the mounting element 341B. Meanwhile, because the guide surface 3412B of the mounting element 341B is an inclined surface or a curvy surface, therefore during the process of the mounting element 341B being gradually inserted into the mounting channel 131B of the mounting arm 13B, the guide surface 3412B of the mounting element 341B can guide the mounting element 341B to be mounted to the mounting channel 131B of the mounting arm 13B. At a stage as illustrated in Fig. 21D, when the mounting element 341B passes through the mounting channel 131B of the mounting arm 13B, because the inner wall of the mounting arm 13B for forming the mounting channel 131B does not continue to apply force to the mounting element 341B, therefore under the action of the elastic restoration mechanism 33B, the mounting element 341B will automatically return to the installed state. At this moment, part of the mounting arm 13B will be retained in the holding groove 3413B of the mounting element 341B so as to mount the lamp body 20B onto the support body 10B.

**[0143]** It is worth mentioning that the lower portion of the holding groove 3413B of the mounting element 341B is the bulge structure 314B of the mounting element 341B. Therefore, when no external force is applied to the lamp body 20B, for example, when there is no external force pulling the lamp body 20B toward the lamp attachment 200B, the bulge structure 314B can prevent the mounting arms 13B from disengaging from the holding grooves 3413B of the mounting elements 341B, thereby preventing the lamp body 20B from being automatically disengaged from the support body 10B so as to ensure the safety of the lamp 100B when being used.

**[0144]** Preferably, the groove bottom of the holding groove 3413B of the mounting element 341B is an inclined surface. Under the action of the elastic restoration mechanism 33B, the mounting arm 13B is able to abut against the inclined surface of the mounting element 341B, so that the lamp body 20B is able to stay mounted on the support body 10B, and a gap is prevented from occurring between the top edge of the lamp disc wall 2112B of the high-end lamp disc 211B and the lamp attachment 200B.

**[0145]** Figs. 21E-21G illustrate the process of the lamp body 20B being detached from the support body 10B. Specifically, in the stage as illustrated in Fig. 21E, an installer can insert a tool such as a screwdriver into the accommodating space 210B via the disassembling channel 2113B of the high-end lamp disc 211B from the outside of the lamp body 20B, and the end of the tool can abut the mounting element 341B in a manner of being retained in the groove 3411B of the mounting element 341B. In the stage as illustrated in Fig. 21F, an installer applies an external force to the tool so as to drive the mounting element 341B to move toward the mounting base 31B by having the tool abut against the mounting element 341B, so that the mounting element 341B is gradually hidden and concealed in the holding space 35B. At this moment, the elastic restoration mechanism

33B generates elastic deformation due to the extrusion of the mounting element 341B. In the stage as illustrated in Fig. 21G, under the effect of the self-gravity of the lamp body 20B, the mounting elements 341B of the automatic mounting devices 30B can be detached from the inside of the mounting channels 131B of the mounting arms 13B automatically so as to detach the lamp body 20B from the support body 10B. At this moment, since there is no external force continues to act on the mounting elements 341B, under the action of the elastic restoration mechanism 33B, the mounting elements 341B can return to the installation state.

**[0146]** Referring to Figs. 22-25, a lamp 100b according to a third preferred embodiment of the present invention is disclosed and described in the following description, the lamp 100C comprises a support body 10C, a lamp body 20C and two automatic mounting devices 30C, wherein each automatic mounting device 30C is arranged on the support body 10C, and each automatic mounting device 30C is used for detachably mounting the lamp body 20C to the support body 10C. For example, when the lamp 100C is installed on a lamp attachment 100C, an installer may affix the support body 10C of the lamp 100C on the lamp attachment 200C by using an expansion screw or a similar mechanism, and then, with bare hands, install the lamp body 20C on the support body 10C by means of the automatic mounting device 30C to mount the lamp 100C to the lamp attachment 200C. A installer can install the lamp body 20C on the support body 10C to complete the installation of the lamp 100C without any tool, which is unexpected in the prior art lamp and is particularly useful for improving the installation efficiency of the lamp 100C. In addition, the installation mode provided by the lamp 100C of the present invention can simplify the installation process and greatly reduce the labor intensity of the workers.

**[0147]** Besides, the lamp 100C of the present invention provides a mounting mode for mounting the lamp body 20C to the support body 100C through the automatic mounting device 30C, so that an installer without a lamp mounting experience is also allowed to conveniently and reliably mount the lamp body 20C to the support body 10C, which is particularly important to the installation of the lamp 100C and the use security of the lamp 100C.

**[0148]** Referring to Figs. 22-25, two automatic mounting devices 30C are symmetrically arranged at the two ends of the support body 10C. After the support body 10C is installed on the lamp attachment 200C, the two sides of the lamp body 20C are mounted with the automatic mounting devices 30C respectively so as for mounting the lamp body 20C on the support body 10C. It is understandable that after the lamp body 20C is detached from the two automatic mounting devices 30C, the lamp body 20C is detached from the support body 10C.

**[0149]** Specifically, the support body 10C comprises a support element 11C and two extension arms 12C. Each extension arm 12C extends downwardly from an end of

the support element 11C respectively. The automatic mounting device 30C is arranged on the extension arms 12C. The support element 11C has at least one fixing channel 111C to allow an expansion screw or similar mechanism to pass through the fixing channel 111C of the support element 11C so as for mounting the support element 11C onto the lamp attachment 200C.

**[0150]** The automatic mounting device 30C comprises a mounting base 31C, a holding shell 32C, an elastic restoration mechanism 33C, a mounting mechanism 34C, and a key mechanism 36C, and the automatic mounting device 30C has a holding space 35C, an outer opening 37C, and an inner opening 38C.

**[0151]** The mounting base 31C is integrally extended outwardly from an end portion of the extension arm 12C of the support body 10C. That is, the support element 11C and the extension arm 12C of the support body 10C and the mounting base 31C of the automatic mounting device 30C are of an integrated structure. The holding shell 32C is mounted on the mounting base 31C so as to form and define the holding space 35C between the holding shell 32C and the mounting base 31C, the outer opening 37C, and the inner opening 38C. Besides, the outer opening 37C and the inner opening 38C are respectively communicated with the holding space 35C and the outside at the two ends of the holding shell 32C. In addition, the holding shell 32C has a first through hole 33C, wherein the first through hole 33C of the holding shell 32C is communicated with the holding space 35C and the outside.

**[0152]** The mounting mechanism 34C has an outer end 344C, an inner end 345C, a second through hole 346C, and a limiting groove 347C, wherein the outer end 344C and the inner end 345C of the mounting mechanism 34C are corresponding to each other, the second through hole 346C and the limiting groove 347C are communicated with each other, and the extending direction of the limiting groove 347C is consistent with the extending direction of the mounting mechanism 34C. Preferably, the second through hole 346C is formed at the inner end 345C of the mounting mechanism 34C, and the limiting groove 347C is extended from the second through hole 346C of the mounting mechanism 34C toward the outer end 344C. Preferably, the outer end 344C of the mounting mechanism 34C is an inclined surface.

**[0153]** Further, the mounting mechanism 34C includes a mounting bottom wall 348C and two mounting side walls 349C integrally extended from the two sides of the mounting bottom wall 348C respectively, wherein the second through hole 346C and the limiting groove 347C are both formed on the mounting bottom wall 348C of the mounting mechanism 34C, and the extending direction of the limiting groove 347C is consistent with the extending direction of the mounting bottom wall 348C. The mounting mechanism 34C is held within the holding space 35C formed by the holding shell 32C and the mounting base 31C. Besides, the first through hole 323C of the holding shell 32C is able to communicate with var-

ious positions of the second through hole 346C and the limiting groove 347C of the mounting mechanism 34C. It is understandable that the outer end 344C and the inner end 345C of the mounting mechanism 34C can be extended from the holding space 35C to the outside through the outer opening 37C and the inner opening 38C respectively.

**[0154]** The mounting mechanism 34C further comprises a tongue buckle 350C, wherein the tongue buckle 350C is integrally extended inwardly and obliquely upward from the mounting bottom wall 348C, wherein the tongue buckle 350C and each of the mounting side arms 349C are located on the same side of the mounting bottom wall 348C.

**[0155]** The mounting mechanism 34C further comprises a first hook 351C, wherein the first hook 351C is integrally formed on the mounting bottom wall 348C, and the first hook 351C is located at the outer end 344C of the mounting mechanism 34C.

**[0156]** Preferably, each of the mounting side arms 349C of the mounting mechanism 34C respectively has a sliding groove 3415C. The holding shell 32C has two sliding blocks 322C. Each of the sliding blocks 322C of the holding shell 32C is held in each of the sliding grooves 3415C of the mounting mechanism 34C respectively. When the mounting element 341C moves relative to the holding shell 32C, each of the sliding blocks 322C of the holding shell 32C slides in each of the sliding grooves 3415C of the mounting element 341C respectively. In this way, unwanted phenomena like deflection of the mounting mechanism 34C can be avoided, thereby ensuring the safety and the reliability of the lamp 100C when being used.

**[0157]** The key mechanism 36C comprises a key main body 361C and a locking cover 362C, wherein the key main body 361C comprises a limiting element 3611C and a key element 312C integrally extended from the limiting element 3611C. The locking cover 362C has a central through hole 3621C, wherein the key element 312C is operatively connected to the central through hole 3621C of the locking cover 362C. The diameter dimension of the limiting element 3611C is slightly smaller than the diameter dimension of the second through hole 346C of the mounting mechanism 34C, the diameter dimension of the limiting element 3611C is larger than the width dimension of the limiting groove 347C of the mounting mechanism 34C, and the diameter dimension of the key element 3612C is smaller than the width dimension of the limiting groove 347C of the mounting mechanism 34C, so that the limiting element 3611C cannot enter the limiting groove 347C of the mounting mechanism 34C and the key element 3612C can enter the limiting groove 347C of the mounting mechanism 34C. Correspondingly, the diameter dimension of the limiting element 3611C is slightly smaller than the diameter dimension of the first through hole 322C of the holding shell 32C, so that the limiting element 3611C can enter the first through hole 322C of the holding shell 32C.

**[0158]** The mounting base 31C has a reference block 311C and a second hook 312C, wherein the reference block 311C and the second hook 312C are respectively located in the holding space 35C. The elastic restoration mechanism 33C comprises a tension spring element 331C and a compression spring element 332C, wherein two ends of the tension spring element 331C are respectively hung on the first hook 351C of the mounting mechanism 34C and the second hook 312C of the mounting base 31C, so that the tension spring element 331C is arranged between the mounting base 31C and the mounting mechanism 34C. The reference block 311C of the mounting base 31C is arranged at one end of the compression spring element 332C, while the other end of the compression spring element 332C is held within a cavity 3613C of the key main body 361C such that the compression spring element 332C is held between the mounting base 31C and the key main body 361C of the key mechanism 36C.

**[0159]** The lamp body 20C comprises a lamp disc 21C and at least one luminous part 22C, wherein each the luminous part 22C is disposed on the lamp disc 21C respectively. For example, each the luminous part 22C may be respectively disposed on the lamp disc 21C in a manner of being mounted on the lamp disc 21C.

**[0160]** It is worth mentioning that the quantity of the luminous parts 22C of the lamp body 20C shall not be a limit to the lamp 100C of the present invention. For instance, according to a specific embodiment of the lamp 100C, as illustrated in Figs. 22-25, the content and features of the lamp 100C of the present invention with set forth and disclosed in an example of three luminous parts 22C, but the quantity of three of the luminous parts 22C shall not be considered to be a limitation to the content and the scope of the lamp 100C of the present invention. Preferably, the three luminous parts 22C are arranged on the lamp disc 21C at a distance from each other and are equally spaced from each other. Alternatively, according to some other embodiments, the quantity of the luminous parts 22C may also be implemented as one.

**[0161]** It is also worth mentioning that the shape of the lamp disc 21C of the lamp body 20C shall not be a limit to the lamp 100C of the present invention as well. For example, according to a specific embodiment of the lamp 100C, as illustrated in Figs. 22-25, the contents and features of the lamp 100C of the present invention are set forth and disclosed in an example of the lamp disc 21C in a round shape, but the shape of the lamp disc 21C being implemented as a circle shall not be viewed as a limitation of the content and scope of the lamp 100C of the present invention. According to some other possible embodiments of the lamp 100C of the present invention, the shape of the lamp disc 21C may also be, but is not limited to, square, oval, triangular, pentagonal, hexagonal, and etc..

**[0162]** In addition, the lamp body 20C further comprises two mounting arms 13C and two limiting baffles 14C, wherein each of the mounting arms 13C and each of the

limiting baffles 14C are disposed on the lamp disc 21C respectively. Each of the mounting arms 13C has a mounting channel 132C so that the mounting channel 132C of the mounting arm 13C allows a portion of the automatic mounting device 30C to be retained therein so as for mounting the lamp body 20C to the support body 20C through coupling the automatic mounting device 30C and the mounting arm 13C of the lamp body 20C. Each of the limiting baffles 14C comprises a baffle seat 141C and a baffle element 142C integrally extended obliquely upward from the baffle seat 141C, wherein the baffle seat 141C is mounted on the lamp disc 12C.

**[0163]** Further, the lamp disc 21C has an accommodating space 210C and a lamp disc perforation 213C, wherein the lamp disc perforation 213C is communicated with the accommodating space 210C. When the lamp body 20C is installed on the support body 10C, the automatic mounting device 30C and the support body 10C can both be held in the accommodating space 210C of the lamp disc 21C. In this way, the lamp disc 21C can be tightly attached to the lamp attachment 200C so as to avoid a gap 210C occurring between the lamp disc 21C and the lamp attachment 200C, which not only prevents dust from being accumulated on the lamp disc 21C, but also enhances the decorative performance of the lamp 100C.

**[0164]** For the lamp 100C according to this particular embodiment as illustrated in Figs. 22-25, the lamp disc 21C comprises a high-end lamp disc 211C and a low-end lamp disc 212C. The high-end lamp disc 211C further comprises a lamp disc main body 2111C and a lamp disc wall 2112C extended from the outer periphery of the lamp disc main body 2111C. Besides, the accommodating space 210C is formed and defined between the lamp disc main body 2111C and the lamp disc wall 2112C. Preferably, the lamp disc main body 2111C and the lamp disc wall 2112C of the high-end lamp disc 211C are integrally formed. The mounting arms 13C are mounted on the lamp disc wall 2112C of the high-end lamp disc 211C. The baffle seat 141C of the limiting baffle 14C are mounted on the lamp disc main body 2111C of the high-end lamp disc 211C, so that the mounting arms 13C and the limiting baffles 14C are both held in the accommodating space 210C. The lamp disc main body 2111C of the high-end lamp disc 211C and the low-end lamp disc 212C are mounted together in an overlapping manner, wherein the lamp disc perforation 213C penetrates through the lamp disc main body 2111C of the high-end lamp disc 211C and the low-end lamp disc 212C. The lamp body 20C is mounted on the support body 10C. The support body 10C and the automatic mounting device 30C are both held in the accommodating space 210C of the lamp body 20C, so that the top edge of the lamp disc wall 2112C of the high-end lamp disc 211C clings to the lamp attachment 200C, thereby avoiding a gap from occurring between the top edge of the lamp disc wall 2112C of the high-end lamp disc 211C and the lamp attachment 200C. That is, the lamp attachment 200C can close the upper

opening of the accommodating space 210C of the high-end lamp disc 211C. In addition, after the lamp body 20C is installed on the support body 10C, the low-end lamp disc 212C faces the lower part. That is, the low-end lamp disc 212C of the lamp body 20C affects the decorative performance of the lamp 100C when it is mounted on the lamp attachment 200C.

**[0165]** In addition, the mounting mechanism 34C has a holding groove 3413C, so as for having part of the mounting arm 13C of the lamp body 20C be held in the holding groove 3413C of the mounting mechanism 34C subsequently and therefore having the lamp body 20C be mounted on the support body 10C. Preferably, the groove bottom of the holding groove 3413C is an inclined surface. Therefore, under the action of the elastic restoration mechanism 33C, the mounting arm 13C is able to abut against the inclined surface of the mounting mechanism 34C, so that the lamp body 20C is able to stay mounted on the support body 10C, and a gap is prevented from occurring between the top edge of the lamp disc wall 2112C of the high-end lamp disc 211C and the lamp attachment 200C.

**[0166]** Further, the lamp 100C comprises a wiring terminal 40C. The wiring terminal 40C is disposed on the support element 11C of the support body 10C. The luminous part 22C of the lamp body 20C is electrically connected to the wiring terminal 40C. The wiring terminal 40C is adapted to be connected to an external power supply. For example, the wiring terminal 40C can be electrically connected to a city power network so as to supply electric energy to the luminous part 22C through the wiring terminal 40C and the city power network. It is worth mentioning that after the lamp body 20C is mounted on the support body 10C, the wiring terminal 40C will become hidden and concealed by being accommodated in the accommodating space 210C.

**[0167]** Figs. 26A-26D illustrate a process of the lamp 100C being mounted to the lamp attachment 200C. Specifically, in the stage as illustrated in Fig. 26A, the support element 11C of the support body 10C is mounted onto the lamp attachment 200C through an expansion screw or similar mechanism. In the stage as Fig. 26B illustrated, the installer can support the lamp body 20C with bare hand, and has the outer ends 344C of the mounting mechanisms 34C of the two automatic mounting devices 30C arranged on the support body 10C to align with the mounting channels 132C of the two mounting arms 13C of the lamp body 20C respectively. Here, the lamp disc perforation 213C of the lamp body 20C is corresponding to the key element 3612C of the automatic mounting device 30C, the baffle element 142C of the lamp body 20C is corresponding to the tongue buckle 350C of the mounting mechanism 34C, and the inclined surface of the baffle element 142C of the lamp body 20C and the inclined surface of the tongue buckle 350C of the mounting mechanism 34C are attached with each other. In the stage as illustrated in Fig. 26C, an installer applies a force on the lamp body 20C at a lower portion thereof, so as to drive



the baffle element 142C of the lamp body 20C to move relatively to the tongue buckle 350C of the mounting mechanism 34C. The baffle element 142C of the lamp body 20C can push the mounting mechanism 34C to slide outwards in the holding space 35C by means of the tongue buckle 350C of the mounting mechanism 34C, so that the outer end 344C of the mounting mechanism 34C can be coupled in the mounting channel 132C of the mounting arm 13C, and a portion of the mounting arm 13C can be positioned in the holding groove 3413C of the mounting mechanism 34C. At this time, under the action of the compression spring element 332C, the key element 312C passes through the lamp disc perforation 213C and extends to a lower portion of the low-end lamp disc 212C, so as to block the mounting mechanism 34C from sliding inwards under the action of the tension spring element 331C, so that the outer end 344C of the mounting mechanism 34C is retained in the mounting channel 132C of the mounting arm 13C so as to mount the lamp body 20C to the support body 10C, as illustrated in Fig. 26D.

**[0168]** Figs. 26E-26G illustrate the process of the lamp body 20C being detached from the support body 10C. Specifically, in the stage as illustrated in Fig. 26E, the installer may push the key element 3612C up against the lower portion of the low-end lamp disc 212C by hand or with a tool. In the stage as illustrated in Fig. 26F, when the key element 3612C is disengaged from the lamp disc perforation 213C, the mounting mechanism 34C will be pulled to slide inward under the action of the tension spring element 331C to disengage the outer end 344C of the mounting mechanism 34C from the mounting channel 132C of the mounting arm 13C, thereby detaching the lamp body 20C from the support body 10C, as illustrated in Fig. 26G.

**[0169]** Person skilled in the art should be able to understand that the above embodiments are only to provide examples, and by that the features of various embodiments may be combined with each other to obtain embodiments that are readily conceivable in accordance with the present disclosure, but are not expressly indicated in the accompanying drawings.

**[0170]** One skilled in the art will understand that the embodiment of the present invention as shown in the drawings and described above is exemplary only and not intended to be limiting. It will thus be seen that the objects of the present invention have been fully and effectively accomplished. The embodiments have been shown and described for the purposes of illustrating the functional and structural principles of the present invention and is subject to change without departure from such principles. Therefore, this invention includes all modifications encompassed within the spirit and scope of the following claims.

## Claims

1. A lamp, comprising:
  - a support body;
  - a lamp body; and
  - at least an automatic mounting device arranged to detachably mount said lamp body on said support body.
2. The lamp, as recited in claim 1, wherein two said automatic mounting devices are arranged on said lamp body in a symmetrical manner, wherein each of said automatic mounting devices is detachably mounted on said support body so as to allow said lamp body to be detachably mounted on said support body.
3. The lamp, as recited in claim 1, wherein two said automatic mounting devices are arranged on said support body in a symmetrical manner, wherein each of said automatic mounting devices is detachably mounted on said lamp body so as to allow said lamp body to be detachably mounted on said support body.
4. The lamp, as recited in claim 2, wherein said support body has two mounting channels, wherein each of said automatic mounting devices comprises a mounting mechanism and a communication channel having a holding space and communicating an external environment with said holding space, wherein said mounting mechanism comprises a mounting element which extends from said holding space to the external environment in a movable manner through said communication channel, wherein said mounting element of said automatic mounting device is adapted to automatically return to an installation state after passing through said mounting channel of said support body, so as for mounting said lamp body on said support body.
5. The lamp, as recited in claim 1, further comprising a mounting buckle, wherein said mounting buckle and said automatic mounting device are arranged on said lamp body in a symmetrical manner, wherein said support body has two mounting channels, wherein said automatic mounting device comprises a mounting mechanism and a communication channel having a holding space and communicating an external environment with said holding space, wherein said mounting mechanism comprises a mounting element which extends from said holding space to the external environment in a movable manner through said communication channel, wherein said mounting buckle is adapted to be mounted on one of said mounting channels of said support body, wherein said mounting element of said automatic mounting

device is adapted to be restored to an installed state after passing through the other said mounting channel of said support body, so as for mounting said lamp body on said support body.

6. The lamp, as recited in claim 3, wherein said lamp body has an annular space and two mounting channels communicated with said annular space, wherein each of said automatic mounting devices comprises a mounting mechanism and a communication channel having a holding space and communicating an external environment with said holding space, wherein said mounting mechanism comprises a mounting element which extends from said holding space to outside in a movable manner through said communication channel, wherein said mounting element enters said annular space after passing through said mounting channels of said lamp body and be restored to an installation state in said annular space, so that said lamp body is mounted on said support body.
7. The lamp, as recited in claim 4 or claim 5, wherein said automatic mounting device further comprises a mounting base, a holding shell, and an elastic restoration mechanism, wherein said mounting base is arranged on said lamp body, wherein said holding shell is mounted on said mounting base and said holding space is formed and defined between said holding shell and said mounting base, wherein said holding shell is provided with said communication channel, wherein said elastic reset mechanism is kept between said mounting base and said mounting element.
8. The lamp, as recited in claim 6, wherein said automatic mounting device comprises a mounting base, a holding shell, and an elastic restoration mechanism, wherein said mounting base is arranged on said support body, wherein said holding shell is arranged on said mounting base and said holding space is formed and defined between said holding shell and said mounting base, wherein said holding shell is provided with said communication channel, wherein said elastic reset mechanism is kept between said mounting base and said mounting element.
9. The lamp, as recited in claim 7, wherein said mounting base is mounted on said lamp body or said mounting base is integrally formed on said lamp body.
10. The lamp, as recited in claim 4 or claim 5, wherein said mounting element has a holding groove, wherein a part of said support body is adapted to be held in said holding groove of said mounting element.

11. The lamp, as recited in claim 10, wherein a groove bottom of said holding groove is an inclined surface.
12. The lamp, as recited in claim 11, wherein said mounting element has a bulge structure for defining said retention slot, wherein said bulge structure is located at a high end of said retention slot.
13. The lamp, as recited in claim 4 or claim 5, wherein said mounting element has a guide surface.
14. The lamp, as recited in claim 7, wherein said mounting mechanism comprises at least one retaining element integrally extending at said mounting element, wherein said retaining element prevents said mounting element from disengaging said holding space via said communication channel of said retaining housing in a manner that said retaining element is obstructed by said retaining housing.
15. The lamp, as recited in claim 8, wherein said mounting mechanism comprises at least one retaining element integrally extending at said mounting element, wherein said retaining element prevents said mounting element from disengaging said holding space via said communication channel of said retaining housing in a manner that said retaining element is obstructed by said retaining housing.
16. The lamp, as recited in claim 4 or claim 5, wherein said lamp body has an accommodating space, wherein each of said automatic mounting devices is respectively accommodated in said accommodating space.
17. The lamp, as recited in any of claims 4-6, wherein said lamp body has at least one disassembling channel arranged to be corresponding to said mounting element.
18. The lamp, as recited in claim 17, wherein said mounting element has a groove arranged to be corresponding to said disassembling channel of said lamp body.
19. The lamp, as recited in claim 6, wherein said mounting element is movable along an extending direction of said mounting channel.
20. The lamp, as recited in claim 4 or claim 5, wherein said support body comprises a support element, two extension arms, and two mounting arms, wherein said extension arms extend integrally downward from two ends of said support element respectively, wherein said mounting arms integrally extend outward from lower ends of said extension arms respectively, wherein each of said mounting arms has one said mounting channel arranged thereon.

21. The lamp, as recited in claim 4 or claim 5, wherein said support body comprises a support element, two extension arms, and two mounting arms, wherein said extension arms extend integrally downward from two ends of said support element respectively, wherein said mounting arms integrally extend inward from lower ends of said extension arms respectively, wherein each of said mounting arms has one said mounting channel arranged thereon.
22. The lamp, as recited in claim 4 or claim 5, wherein said support body comprises a support element, two extension arms, and two mounting arms, wherein said extension arms extend integrally downward from two ends of said support element respectively, wherein one of said mounting arms integrally extends outward from a lower end of one of said extension arms, while another one of said mounting arms integrally extends inward from a lower end of another one of said extension arms, wherein each of said mounting arms has one said mounting channel arranged thereon.
23. The lamp, as recited in claim 8, wherein said support body comprises a support element, wherein said mounting seat extends downwardly from an end of said support element; or said support body comprises a support element, wherein said mounting seat is mounted at an end of said bracket element.
24. The lamp, as recited in claim 6, wherein said lamp body comprises a lamp disc and at least one luminous part arranged on said lamp disc, wherein said lamp disc further comprises a high-end lamp disc and a low-end lamp disc, wherein said high-end lamp disc comprises a lamp disc main body, a lamp disc wall integrally extended from the outer periphery of said lamp disc main body, and a lamp disc top integrally extended from the upper periphery of said lamp disc wall, wherein said lamp disc top has said mounting channel, wherein said lamp disc main body of said high-end lamp disc is disposed on said low-end lamp disc to form said annular space among said lamp disc wall, said lamp disc top, and said low-end lamp disc.
25. The lamp, as recited in claim 24, wherein said high-end lamp disc further comprises an annular wall integrally extended downward from an outer periphery of said lamp disc top, wherein a lower periphery of said annular wall abuts said low-end lamp disc.
26. The lamp, as recited in claim 25, wherein said lamp disc has at least one disassembling channel provided and formed on said annular wall, wherein said disassembling channel is communicated with said annular space.
27. The lamp, as recited in claim 3, wherein said lamp body has two mounting channels, wherein each of said automatic mounting devices comprises a mounting mechanism and a communication channel having a holding space and communicating the external environment with said holding space, wherein said mounting mechanism comprises a mounting element which extends from said holding space to the external environment in a movable manner through said communication channel, wherein said mounting element of said automatic mounting device is adapted to automatically return to an installation state after passing through said mounting channel of said lamp body, so as for mounting said lamp body on said support body.
28. The lamp, as recited in claim 27, wherein said automatic mounting device comprises a mounting base, a holding shell, and an elastic restoration mechanism, wherein said mounting base is mounted on said holding shell, wherein said holding space is formed and defined between said mounting base and said holding shell, wherein said holding shell is has said communicating channel arranged thereon, wherein said elastic resetting mechanism is kept between said mounting base and said mounting element, wherein said holding shell is arranged on said support body.
29. The lamp, as recited in claim 28, wherein said holding shell is arranged on said support body in a manner that said holding shell is mounted on said support body; or said holding shell is arranged on said support body in a manner that said holding shell is integrally formed on said support body.
30. The lamp, as recited in claim 29, wherein said mounting element has at least one sliding groove, wherein said holding shell has at least one sliding block, wherein said sliding block of said holding shell is movably held in said sliding groove of said mounting element.
31. The lamp, as recited in claim 27, wherein said mounting element has a holding groove, wherein a part of said lamp body is adapted to be held in said holding groove of said mounting element.
32. The lamp, as recited in claim 31, wherein a groove bottom of said holding groove is an inclined surface.
33. The lamp, as recited in claim 32, wherein said mounting element has a bulge structure for defining said retention slot, wherein said bulge structure is located at a low end of said retention slot.
34. The lamp, as recited in claim 33, wherein said mounting element has a guide surface.

35. The lamp, as recited in any of claims 27-34, wherein said lamp body has an accommodating space, wherein each of said automatic mounting devices is accommodated in said accommodating space.
36. The lamp, as recited in claim 35, wherein said lamp body has at least one disassembling channel, wherein said disassembling channel is communicated with said accommodating space, wherein said mounting element is adapted to be corresponding to said disassembling channel.
37. The lamp, as recited in claim 36, wherein said mounting element has a groove arranged to be corresponding to said disassembling channel of said lamp body.
38. The lamp, as recited in claim 3, wherein said lamp body has two mounting channels, wherein each of said automatic mounting devices comprises a mounting mechanism and an outer opening which is communicated with said holding space and the outside, wherein said mounting mechanism is movably arranged in said holding space, wherein an outer end of said mounting mechanism is adapted to be held in said mounting channels of said lamp body after extending to outside through said outer end opening so as to allow said lamp body to be mounted on said support body.
39. The lamp, as recited in claim 38, wherein said automatic mounting device comprises a mounting base, a holding case and a key mechanism, wherein said mounting base is arranged on said support body, wherein said holding shell is mounted on said mounting base, wherein said holding space, said outer opening, and an inner opening that communicates said holding space and the outside are formed and defined between the mounting base and said holding shell, wherein said holding shell has a first through hole communicating said holding space with the outside, wherein said lamp body has at least one lamp disc perforation, wherein said first through hole of said holding shell is communicated with said lamp disc perforation of said lamp body, wherein said mounting mechanism has a second through hole and a limiting groove communicated with said second through hole, wherein one of said second through hole and said limiting groove of said mounting mechanism is selectively communicated with said first through hole of said holding shell, wherein when a displacement of said mounting mechanism relative to said holding shell is performed within said holding space, said key mechanism is allowed to slide to said second through hole from said limiting groove of said mounting mechanism, and when said second through hole of said mounting mechanism is corresponding to said first perforation of said holding shell, different positions of said key mechanism are kept
- at said second through hole of said mounting mechanism, said first through hole of said holding shell, and said lamp disc perforation of said lamp body at the same time.
40. The lamp, as recited in claim 39, wherein said automatic mounting device comprises an elastic restoration mechanism, wherein said elastic restoration mechanism comprises a tension spring element and a compression spring element, wherein said tension spring element is retained between said mounting base and said mounting mechanism, while said compression spring element is retained between said mounting base and said key mechanism.
41. The lamp, as recited in claim 40, wherein said mounting mechanism has a tongue buckle arranged at the inner end thereof, wherein said lamp body comprises a lamp disc and at least one luminous part and at least one limiting baffle which are respectively arranged on said lamp disc, wherein said limiting baffle drives said mounting mechanism to move in said holding space through pressing said tongue buckle.
42. The lamp, as recited in claim 41, wherein said limiting baffle comprises a baffle seat and a baffle element which integrally extends upwards in an inclined manner from said baffle seat, wherein said baffle seat is arranged on said lamp disc, wherein said tongue buckle extends inwards in an inclined manner, wherein the inclination direction of said baffle element is consistent with the inclination direction of said tongue buckle.
43. The lamp, as recited in claim 41, wherein said lamp body has an accommodating space, wherein said limiting baffle is held in said accommodating space of said lamp body.
44. The lamp, as recited in any of claims 38-43, wherein the outer end of said mounting mechanism is an inclined outer end.

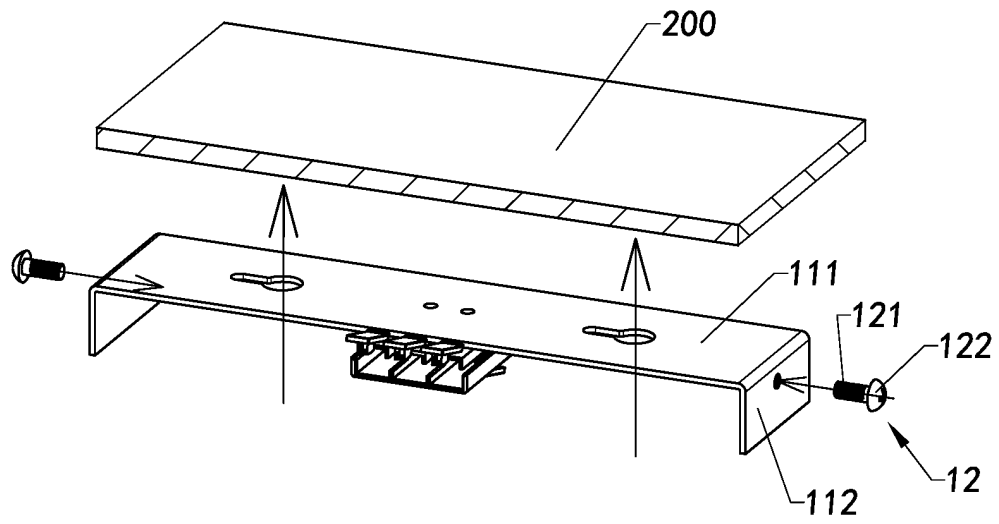


Fig.1A

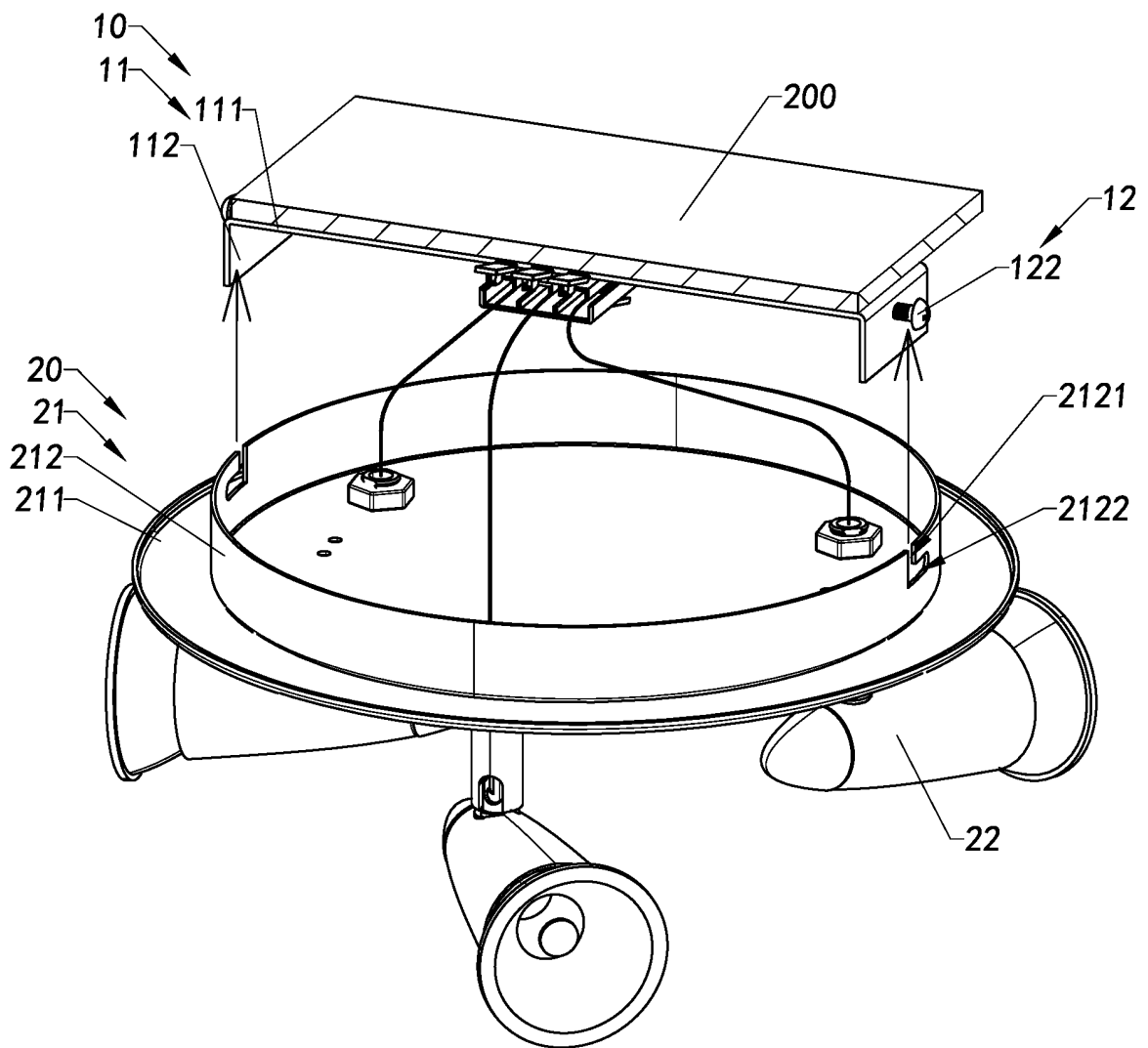


Fig.1B

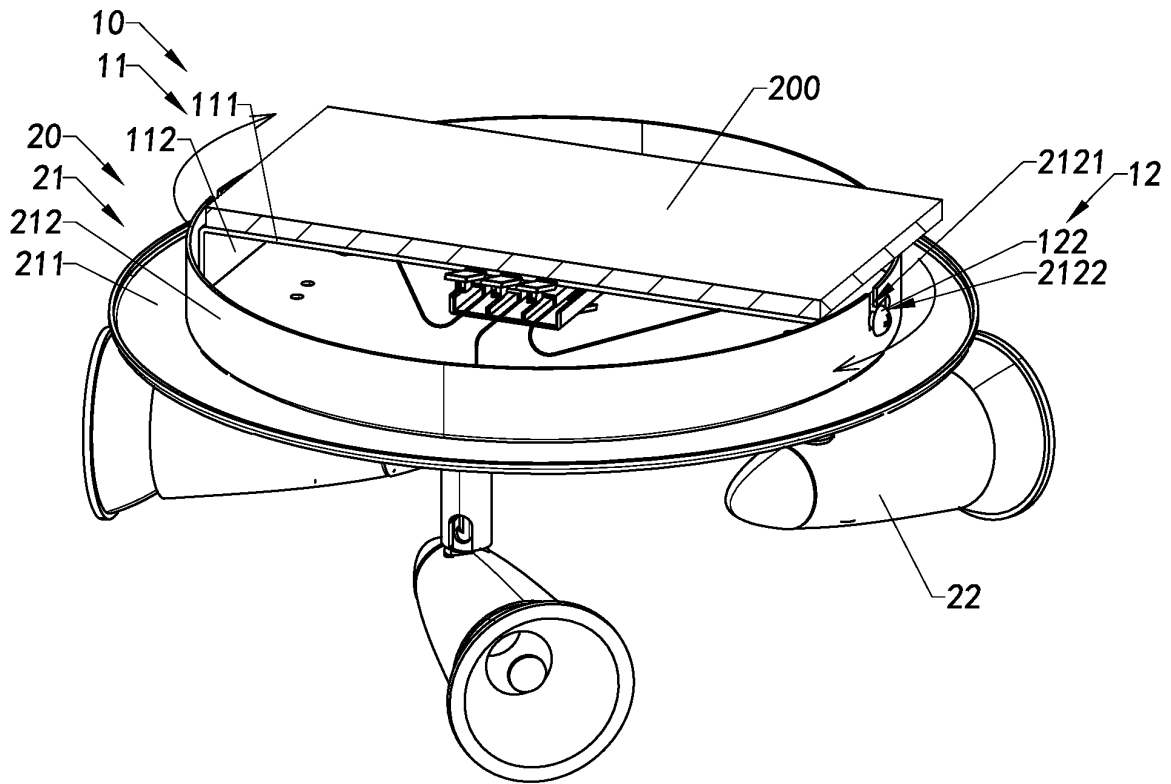


Fig.1C

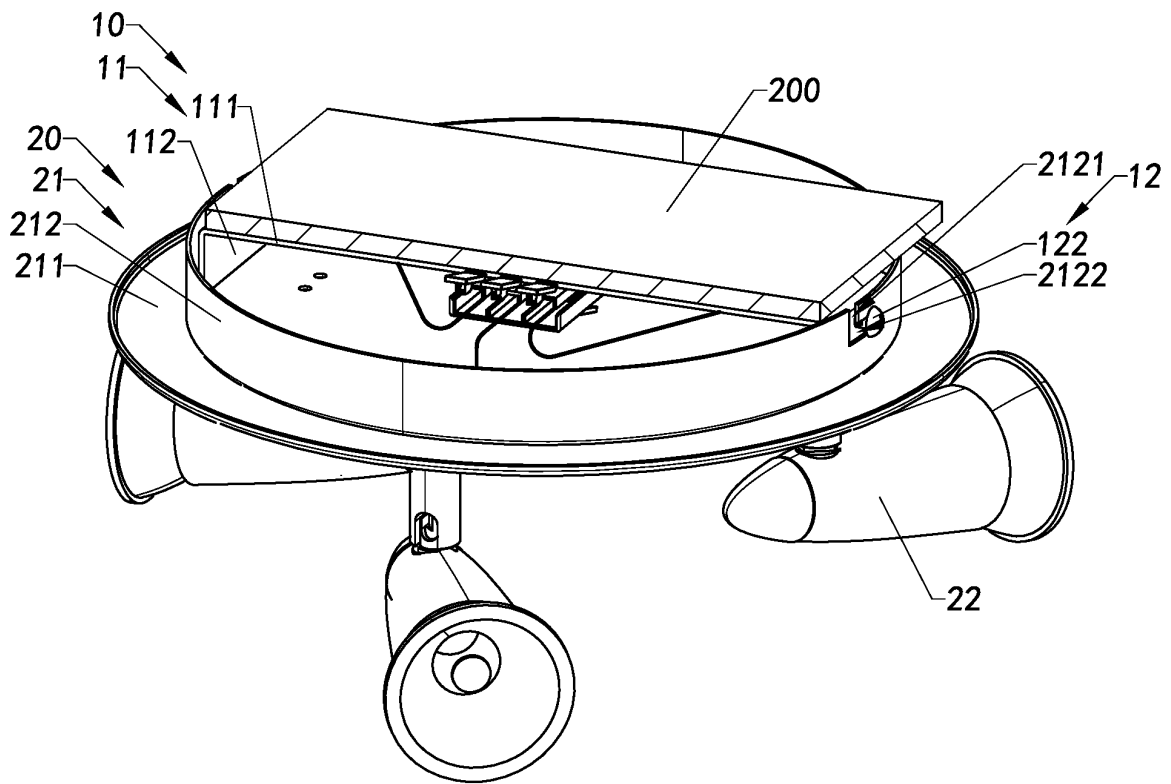


Fig.1D

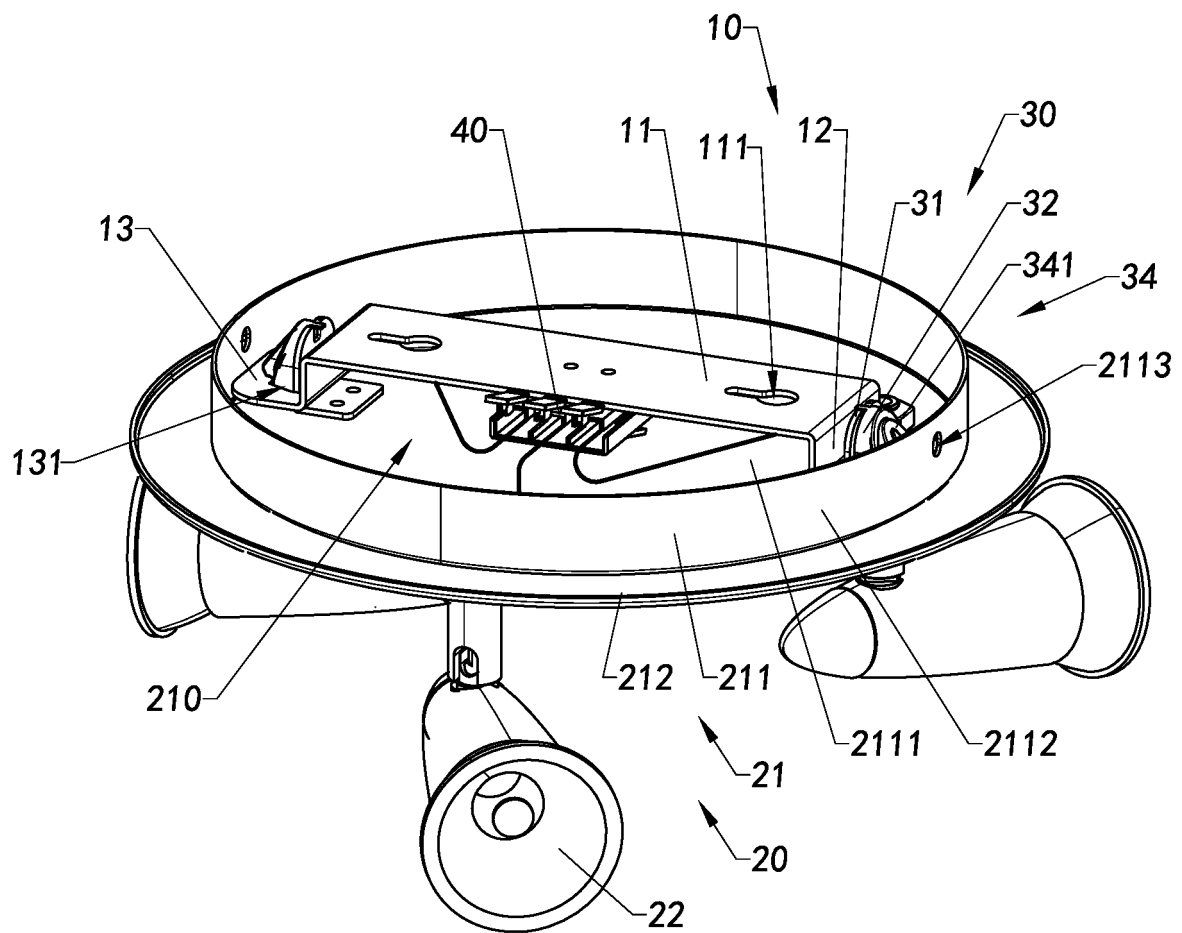


Fig.2

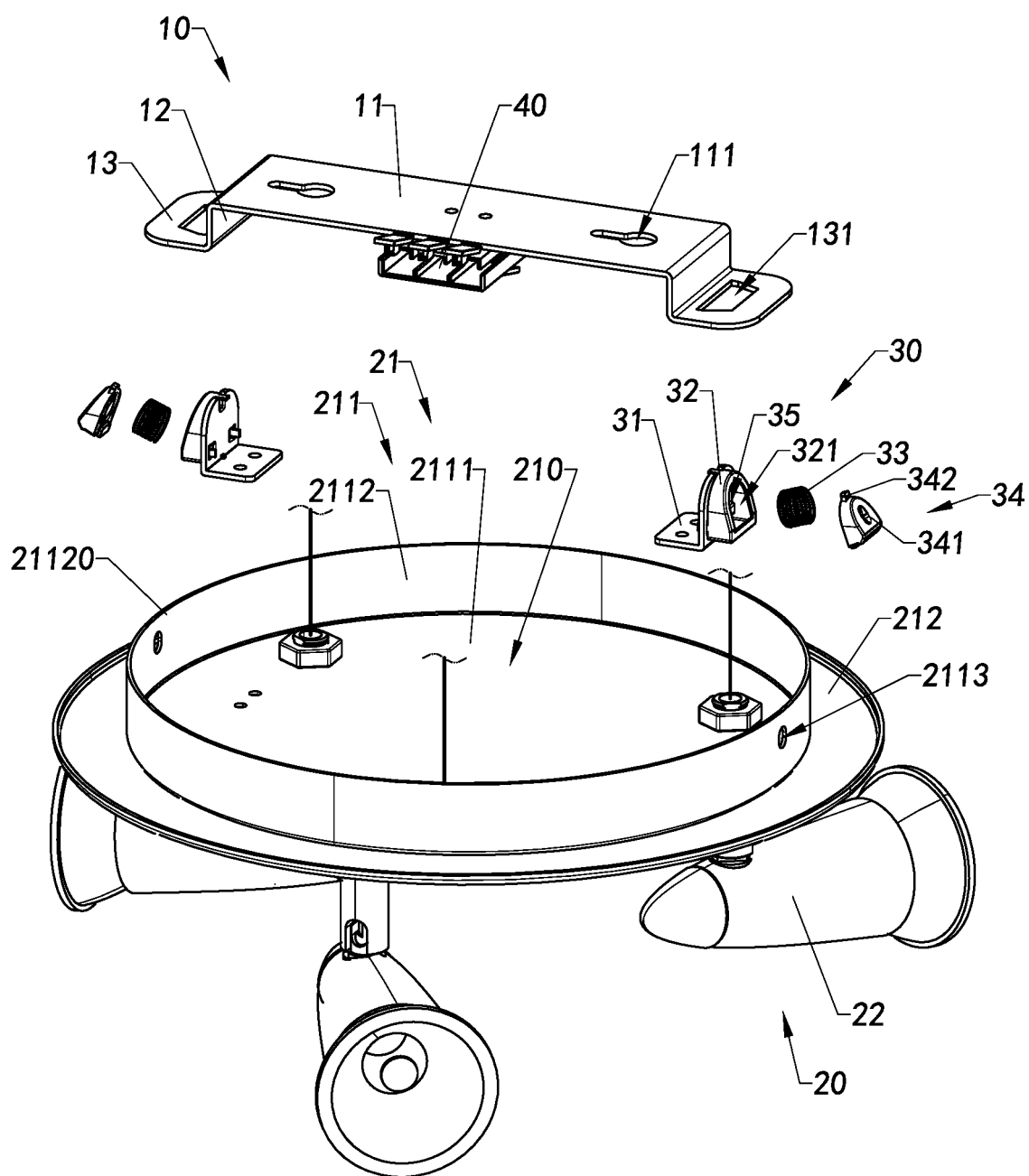


Fig.3



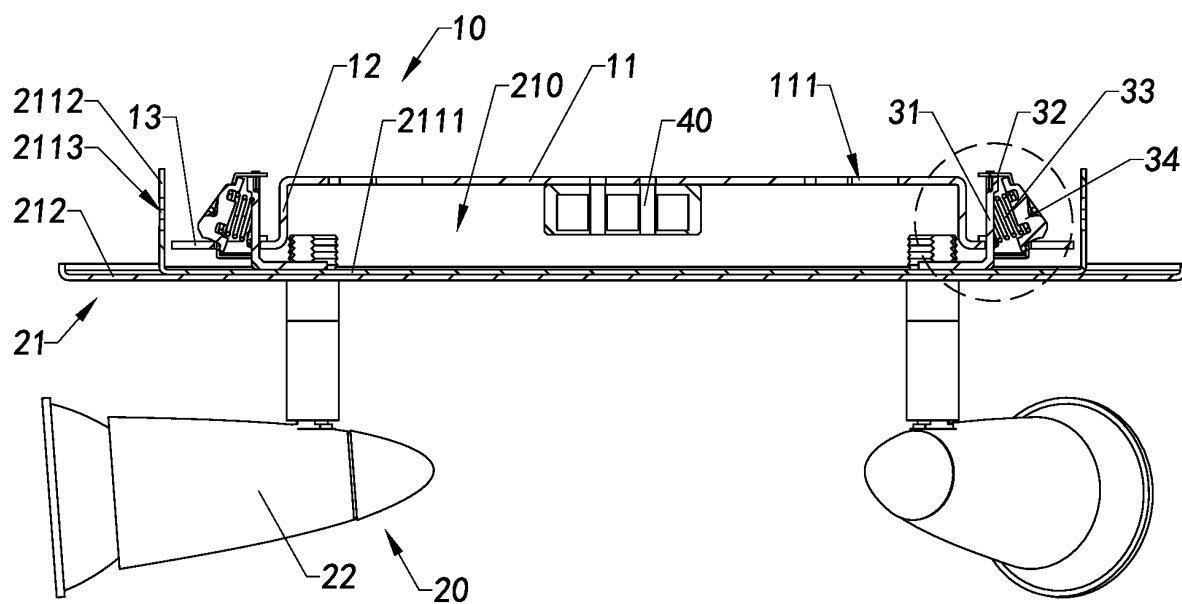


Fig. 4

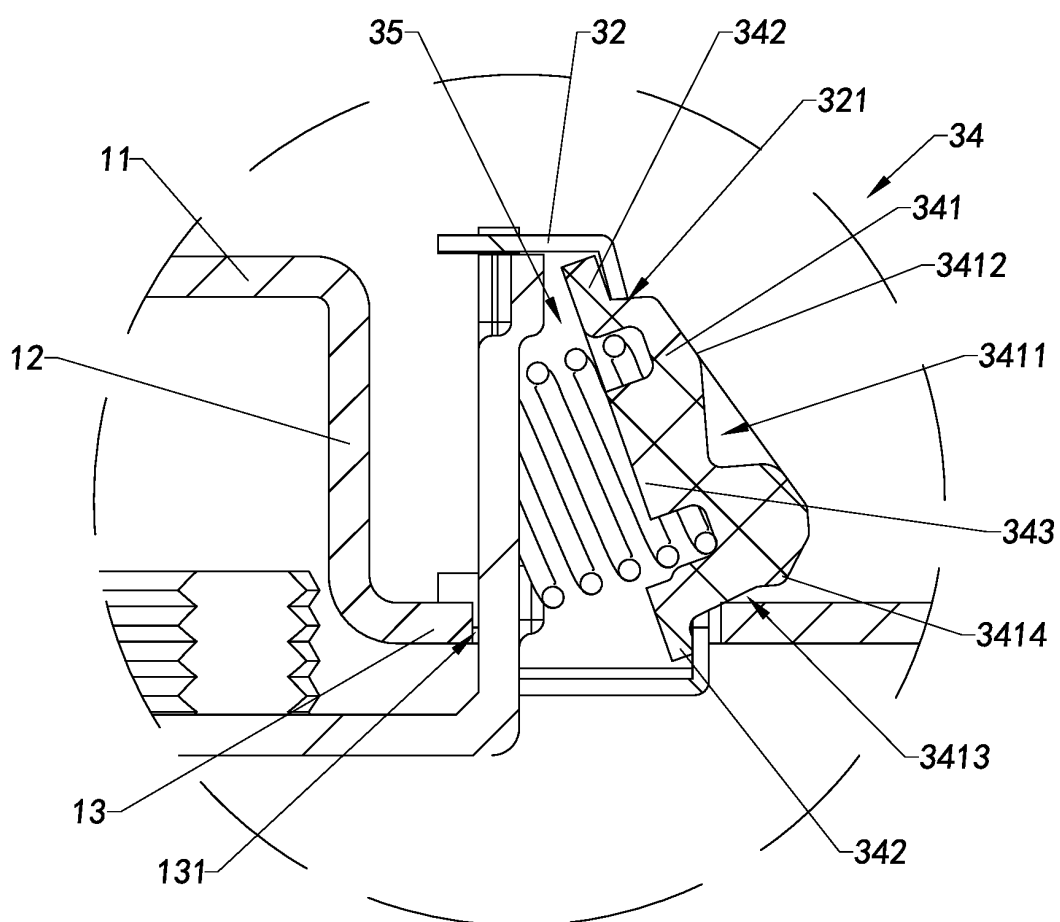


Fig. 5

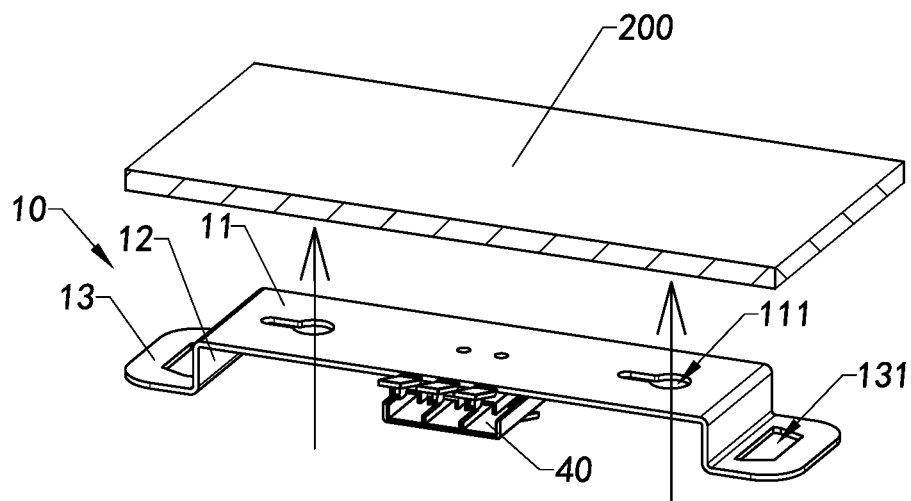


Fig.6A

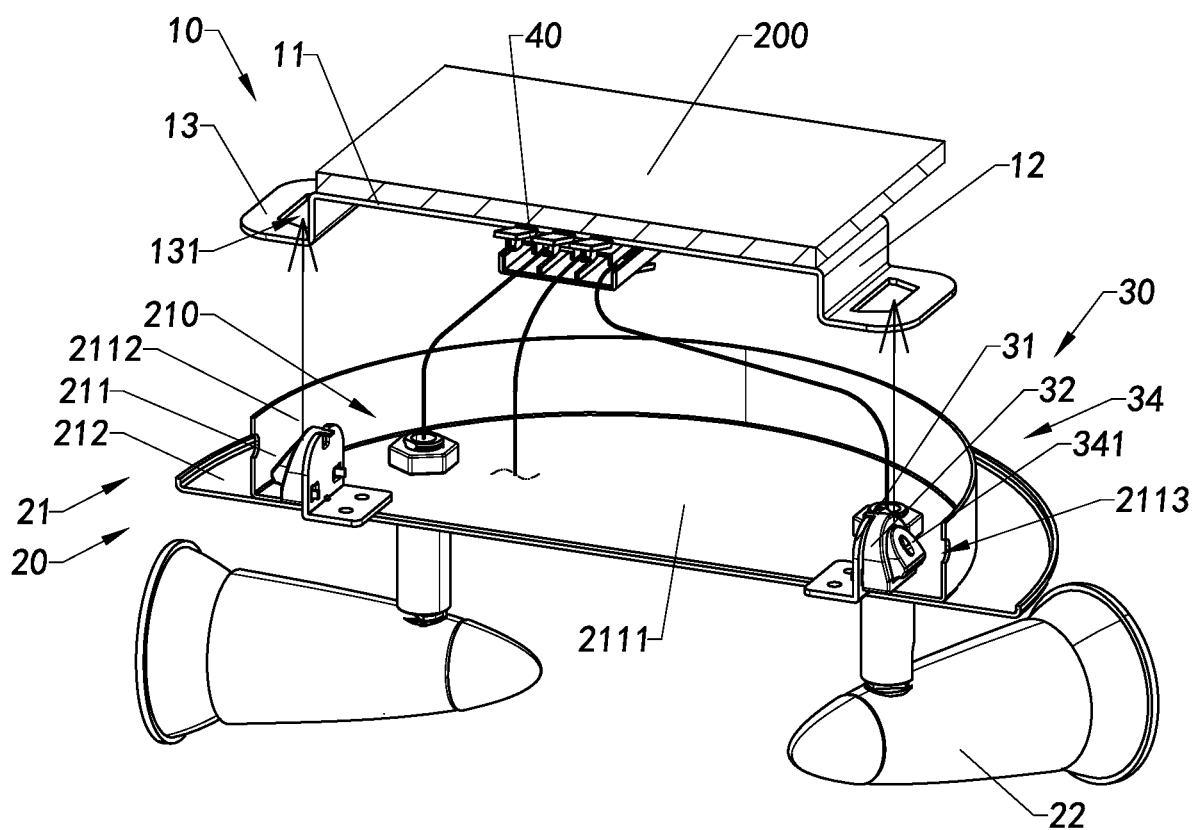


Fig.6B

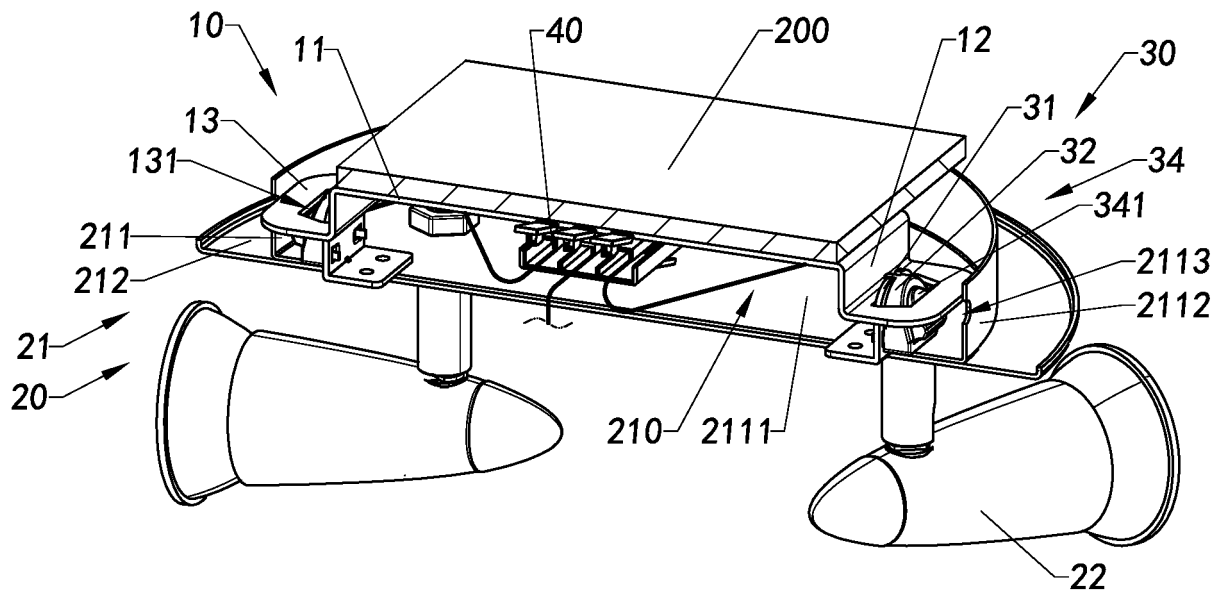


Fig.6C

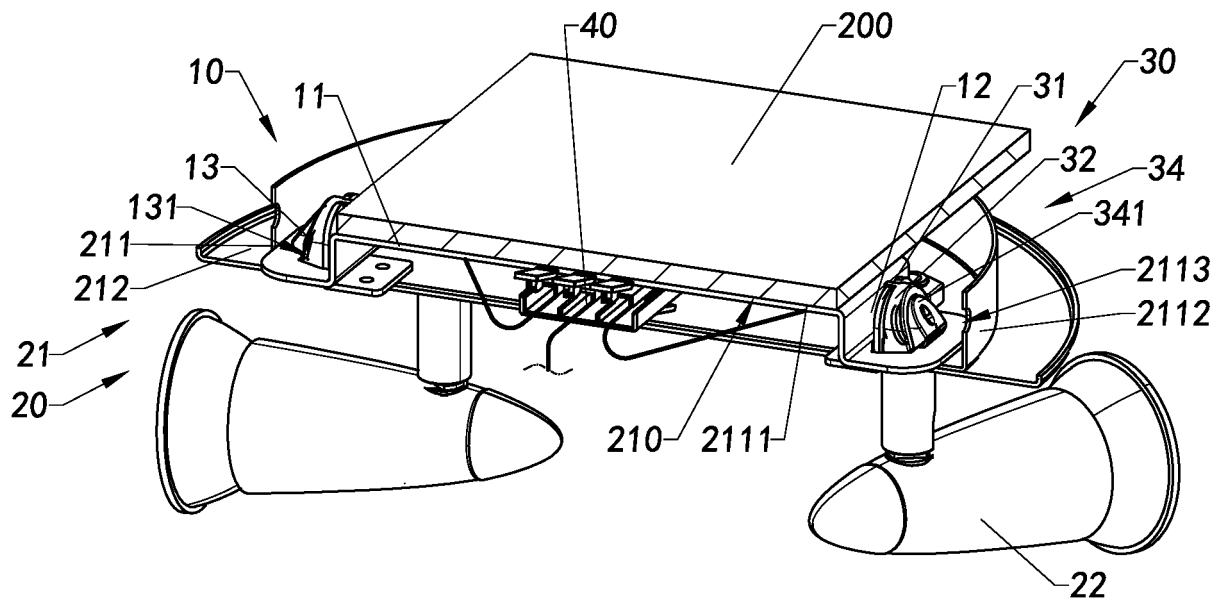


Fig.6D

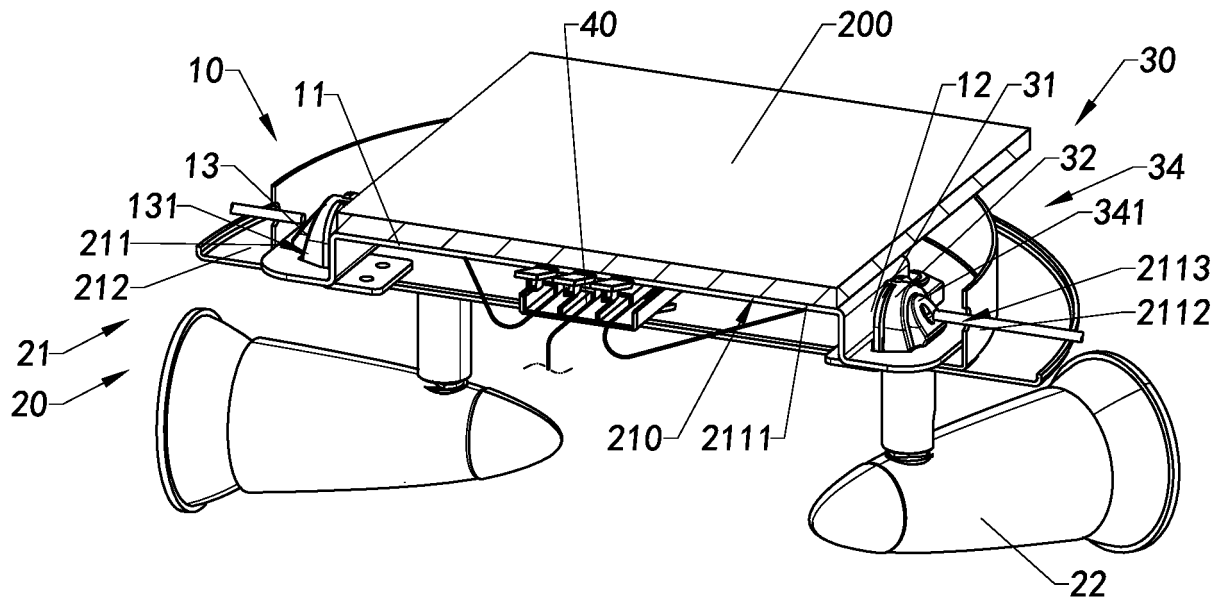


Fig. 6E

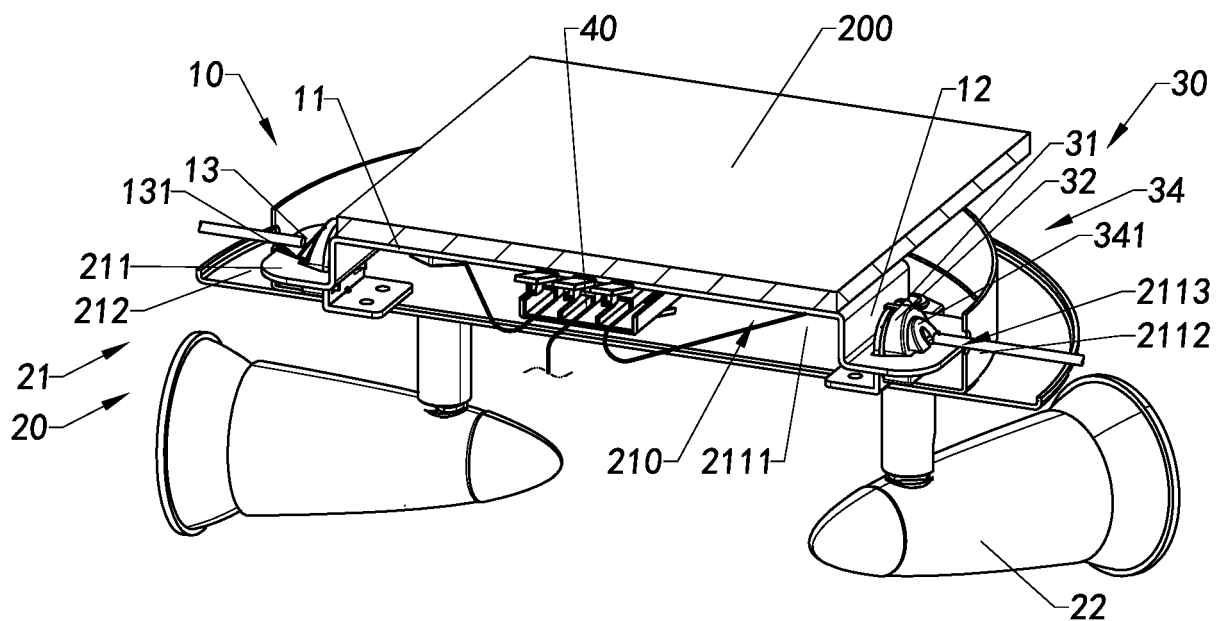


Fig. 6F

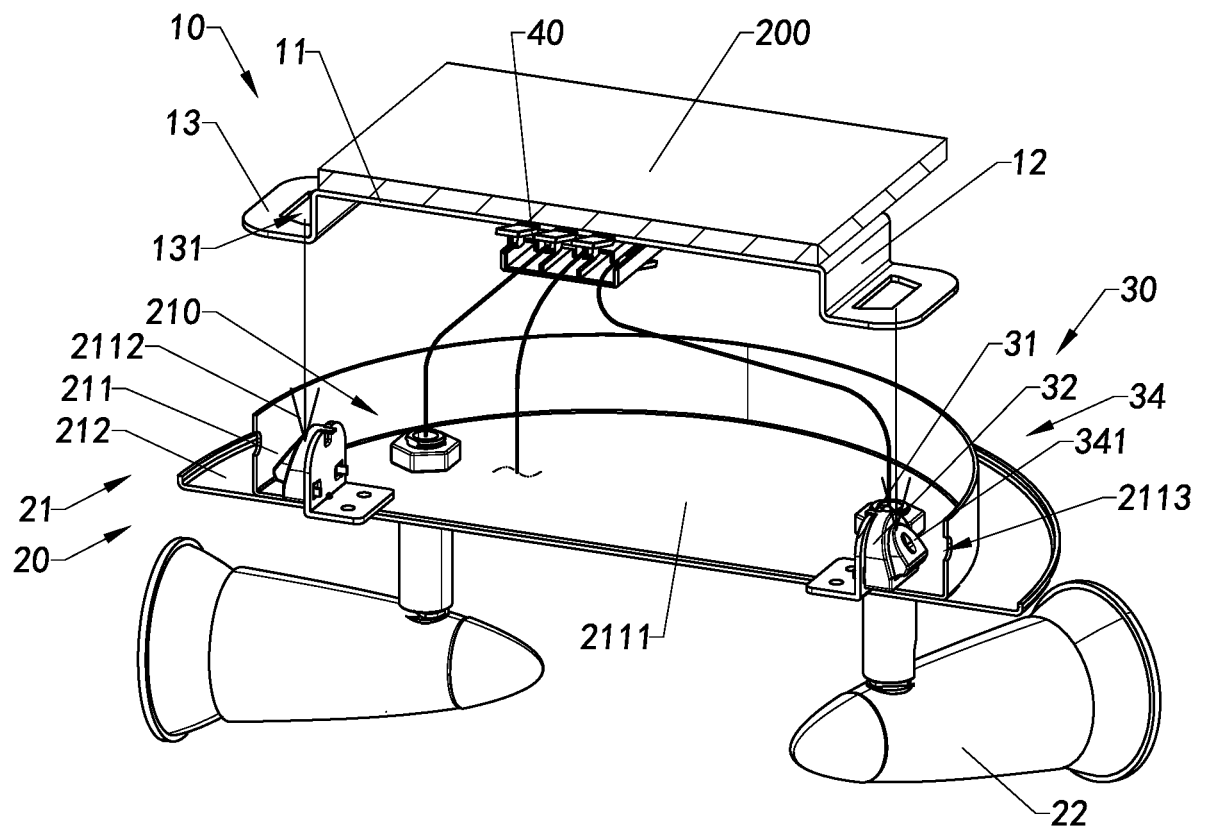


Fig.6G

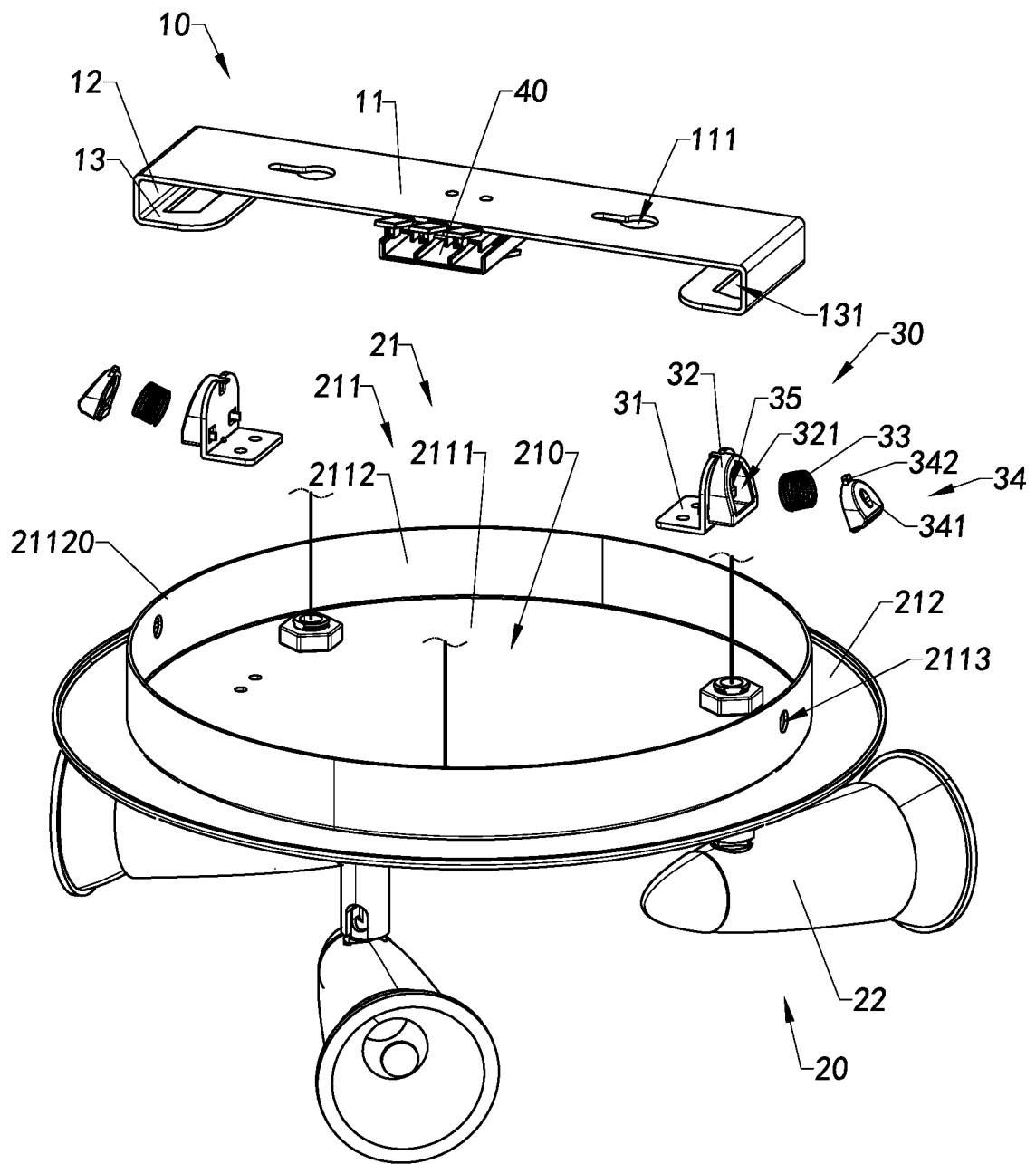


Fig.7

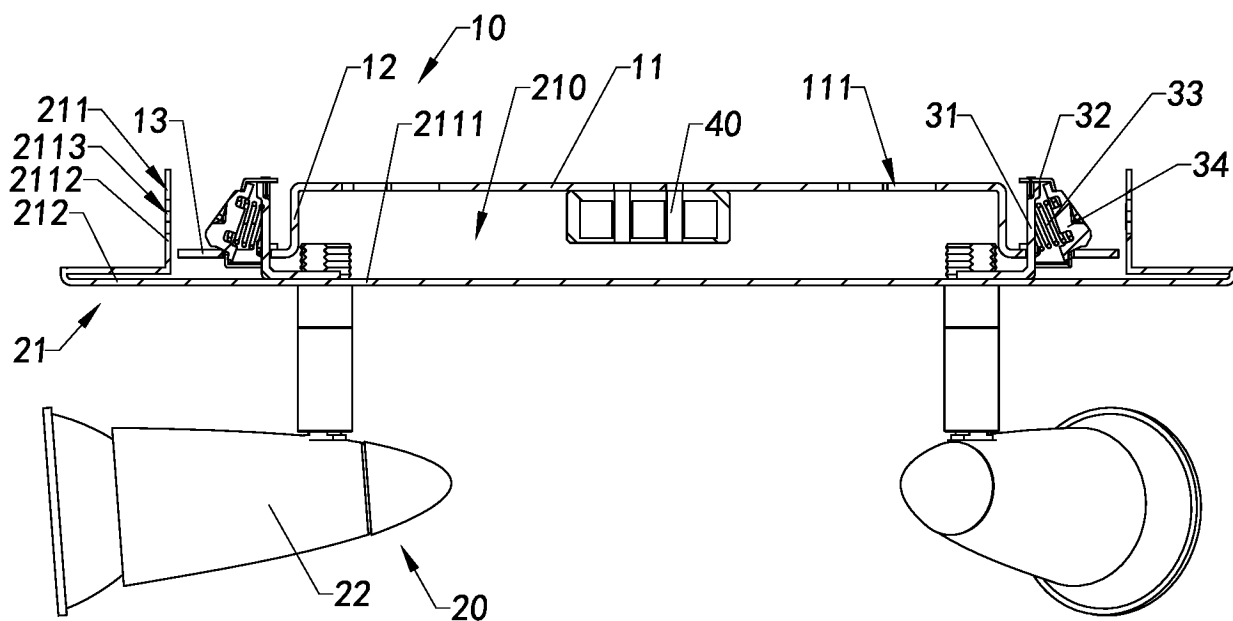


Fig.8A

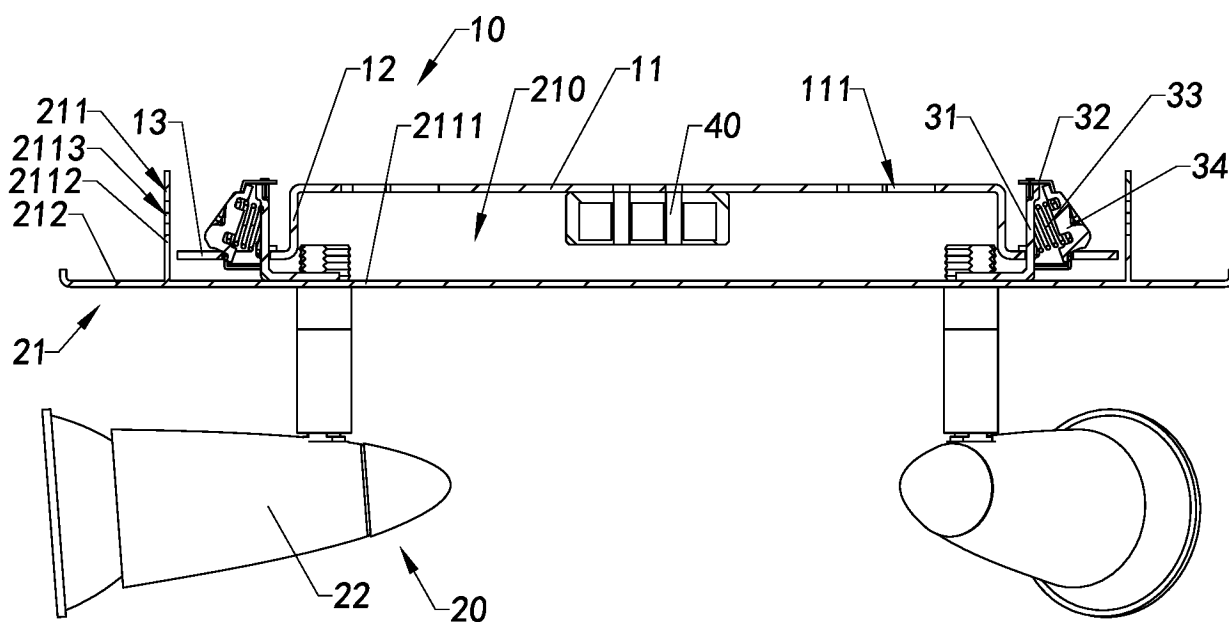


Fig.8B

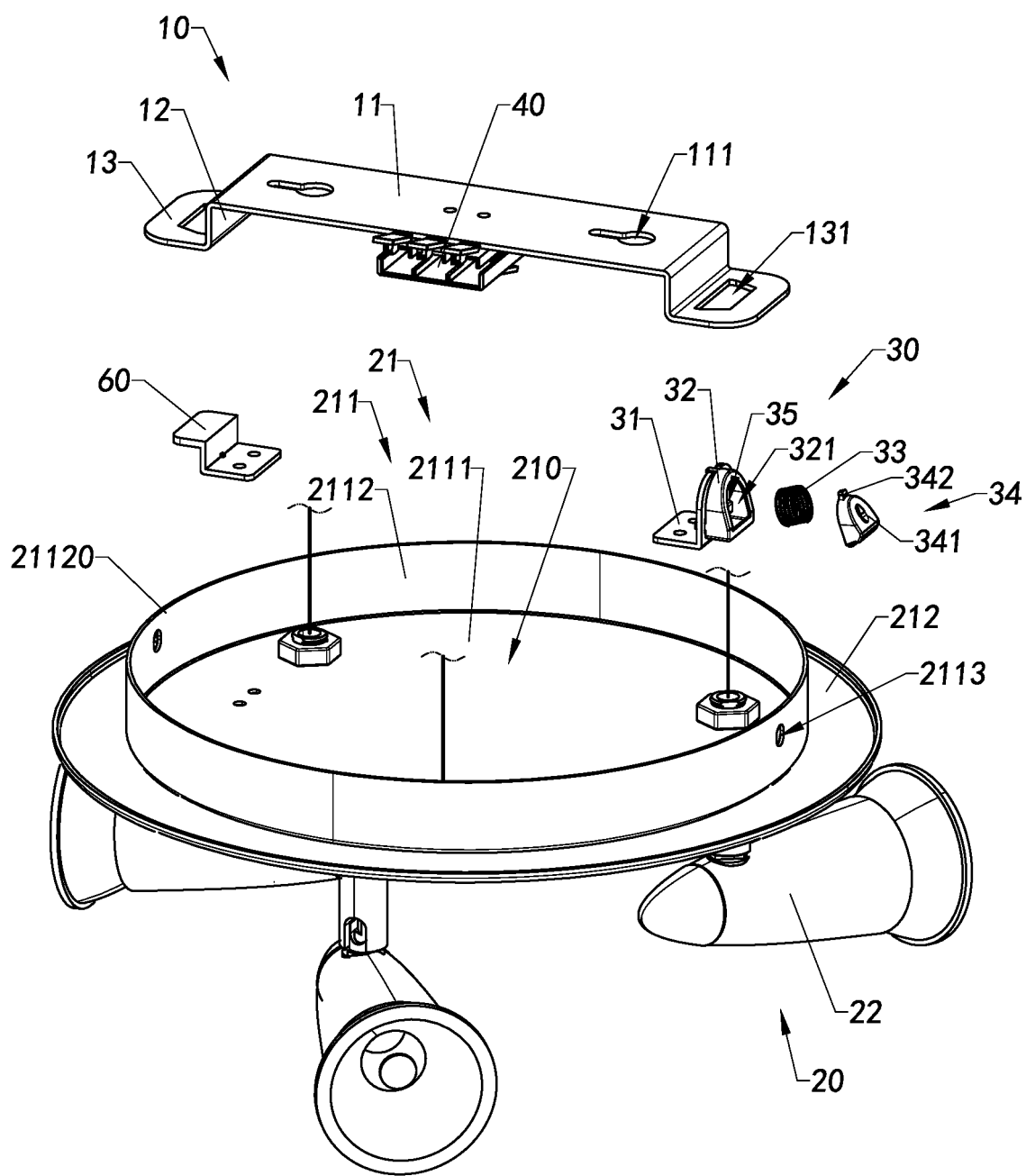


Fig.9



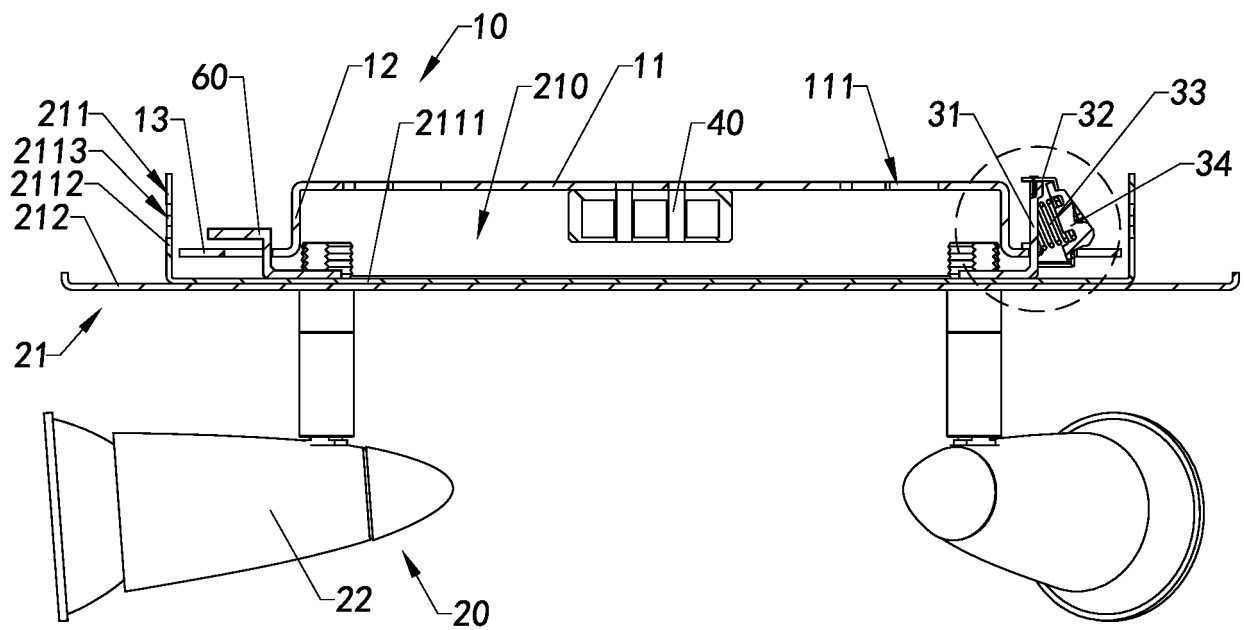


Fig.10

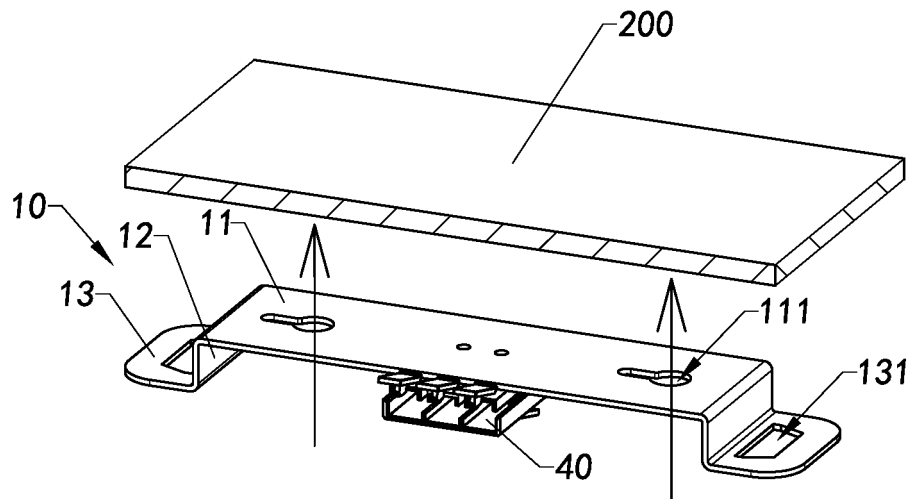


Fig.11A

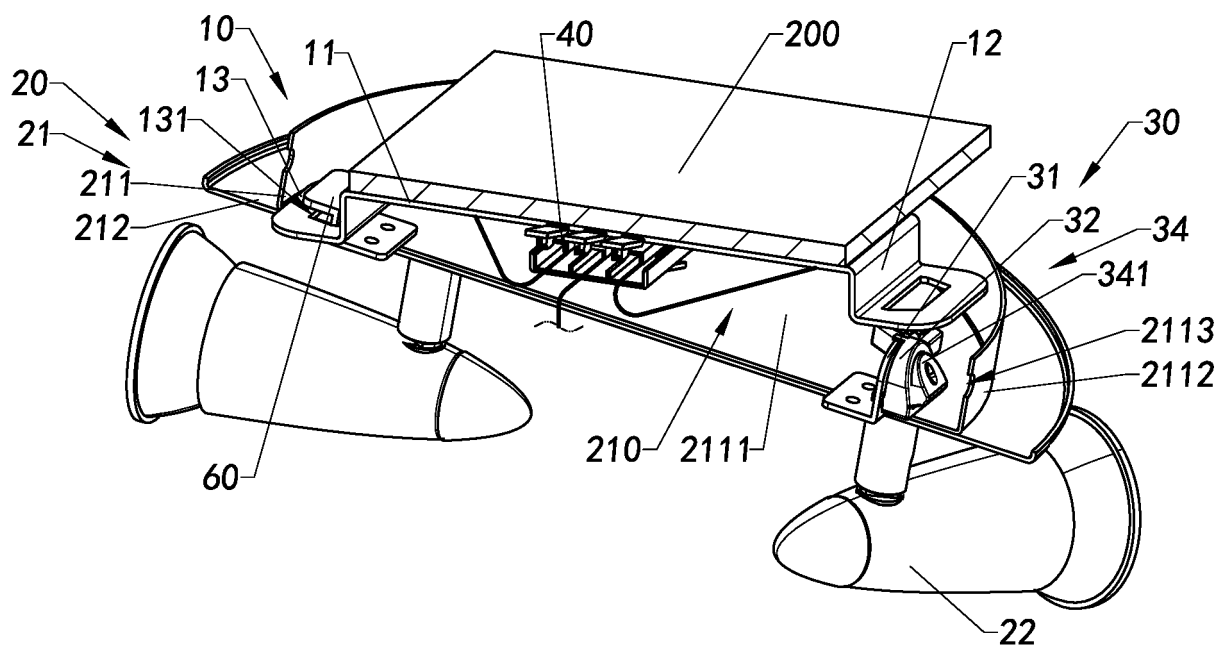


Fig.11B

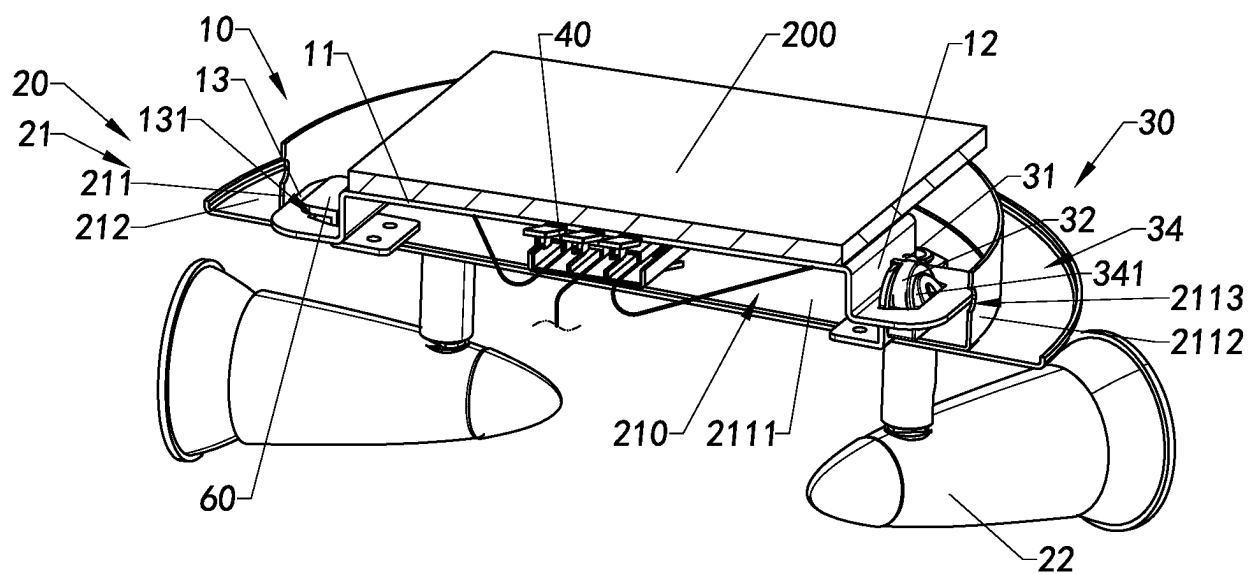


Fig.11C

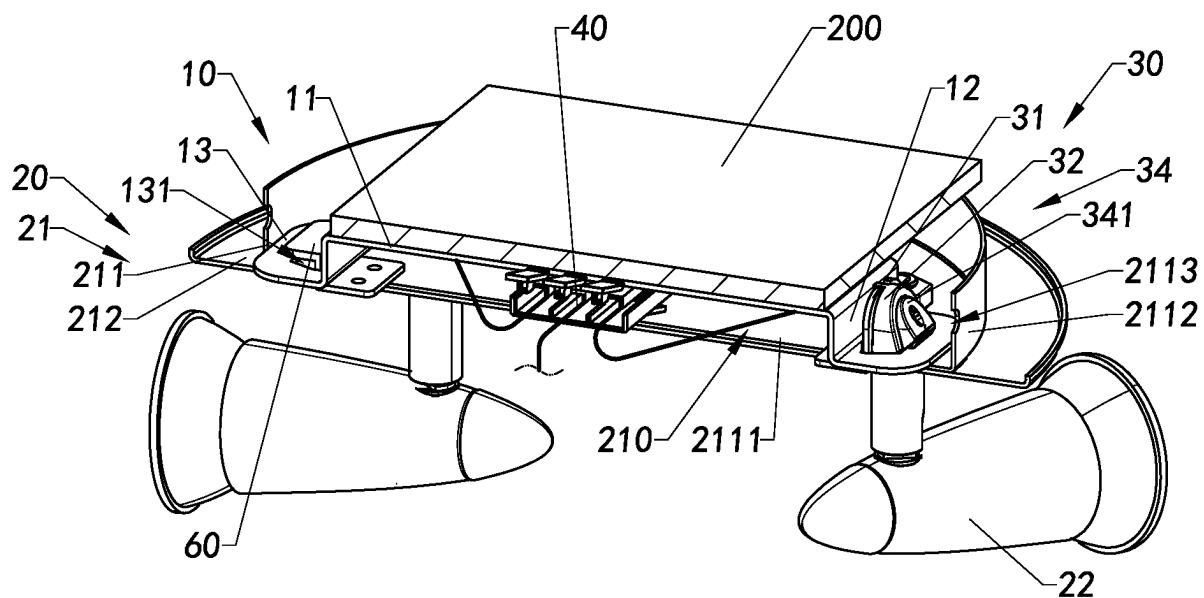


Fig.11D

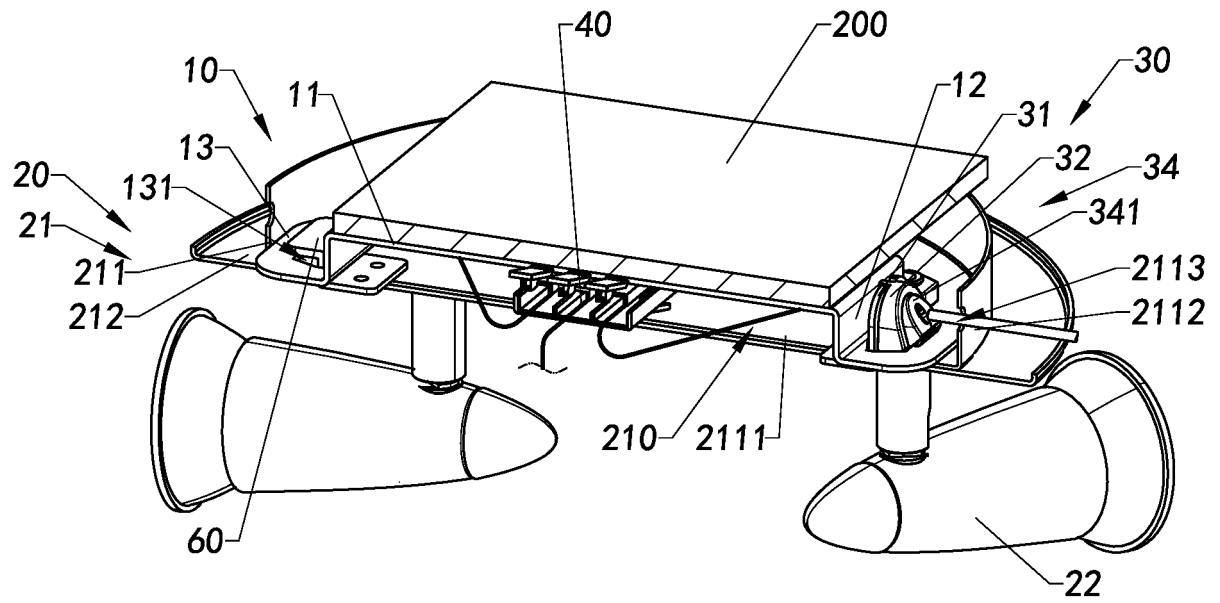


Fig.11E

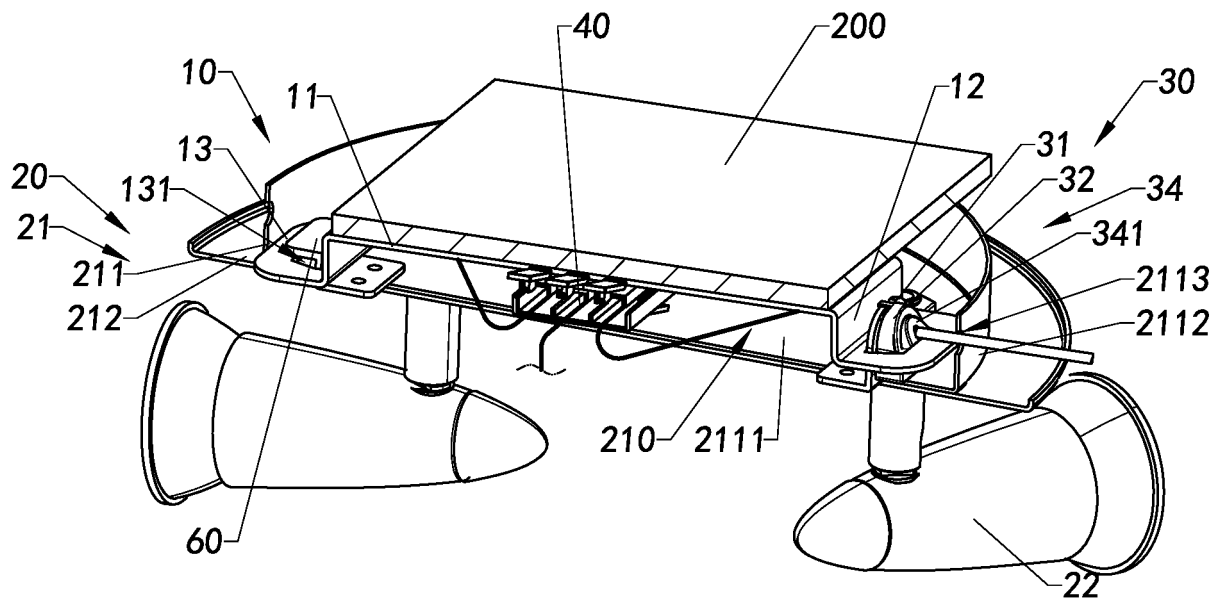


Fig.11F

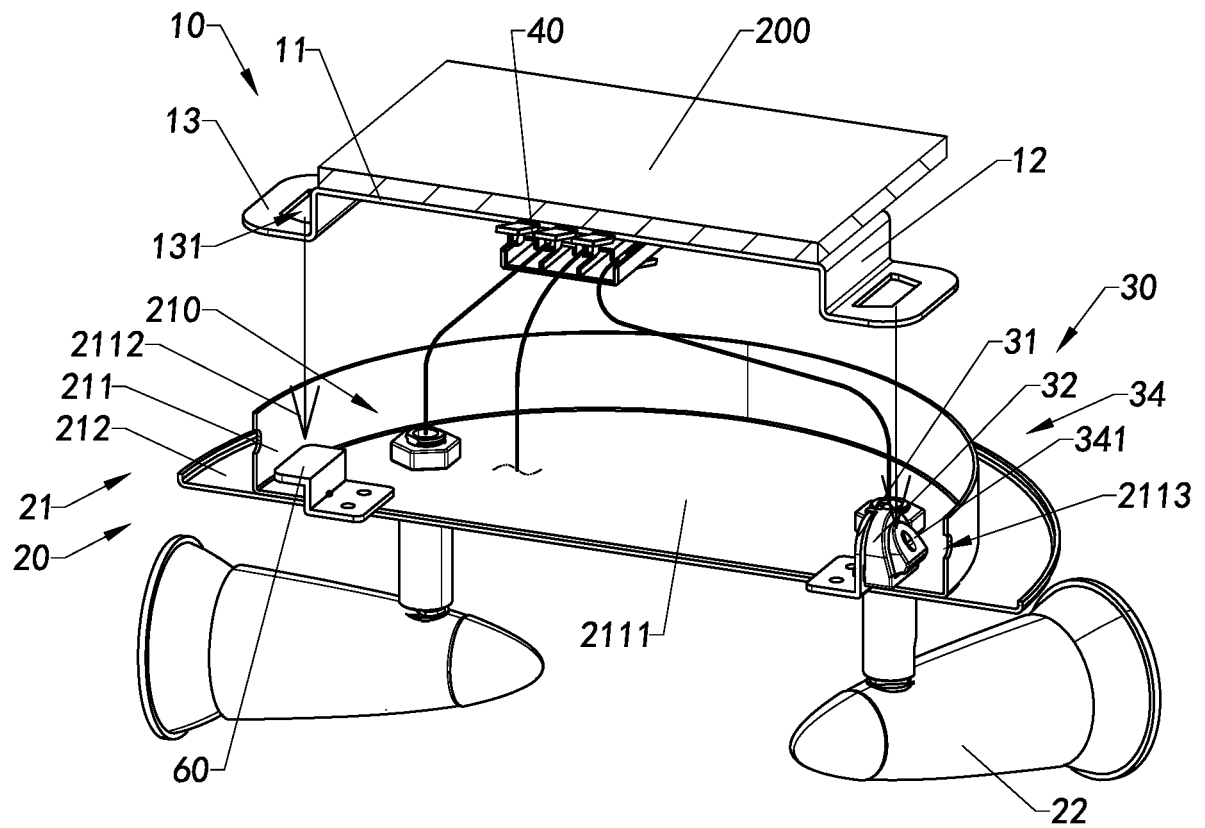


Fig.11G

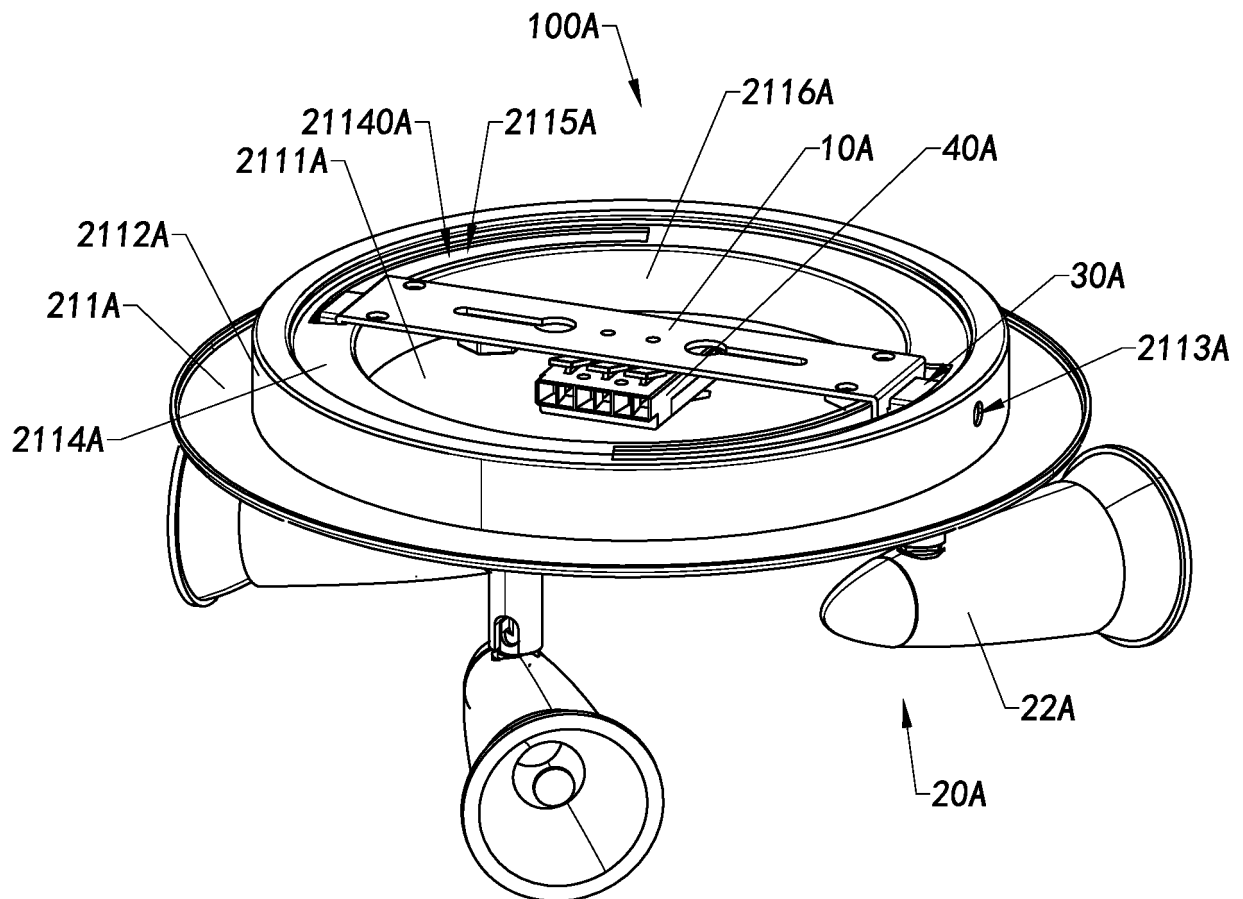


Fig.12

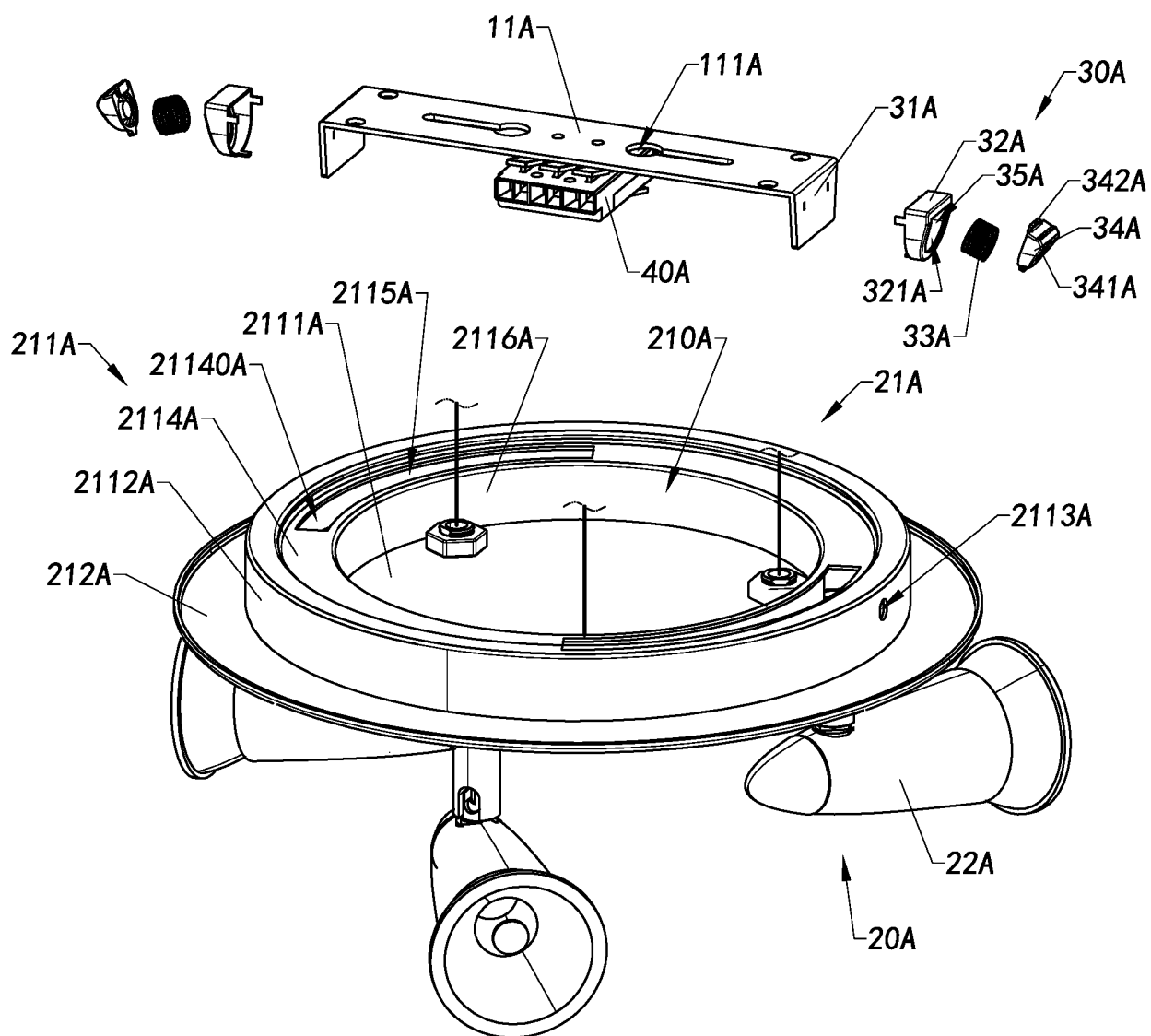


Fig.13

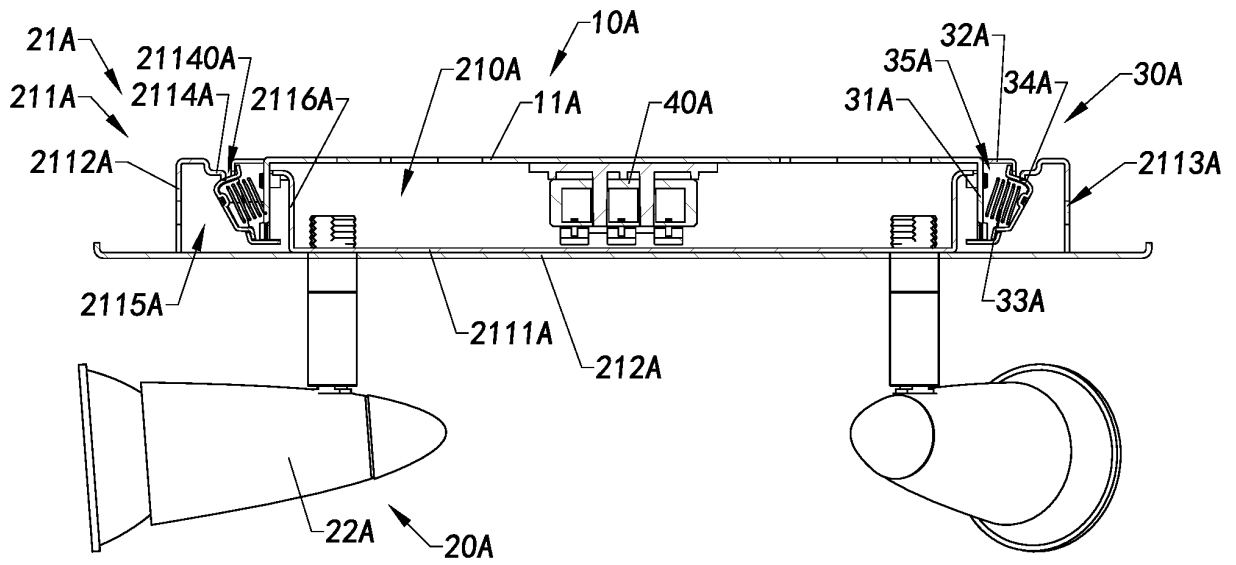


Fig.14

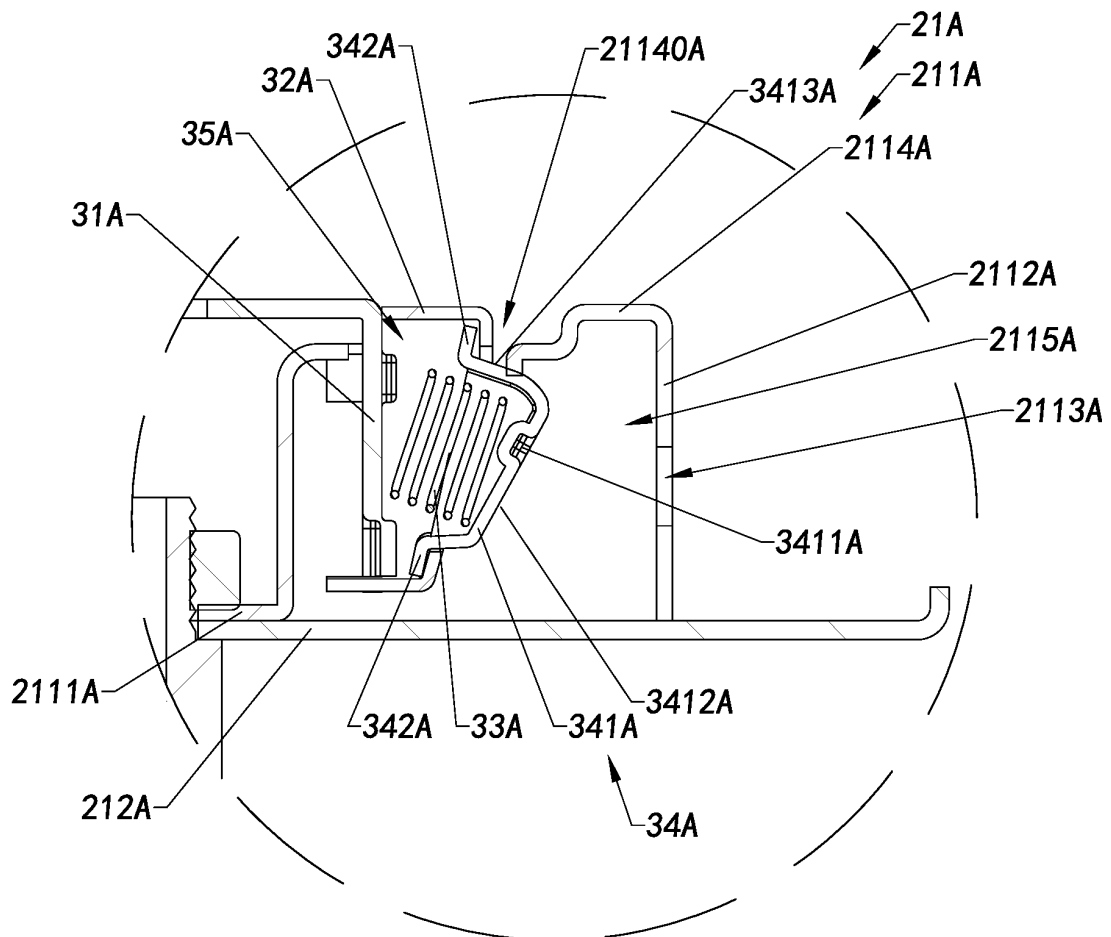


Fig.15



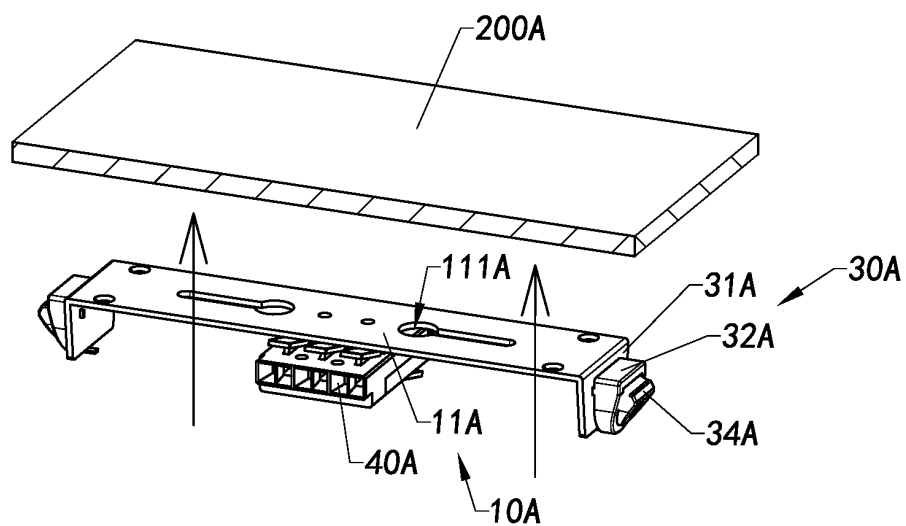


Fig.16A

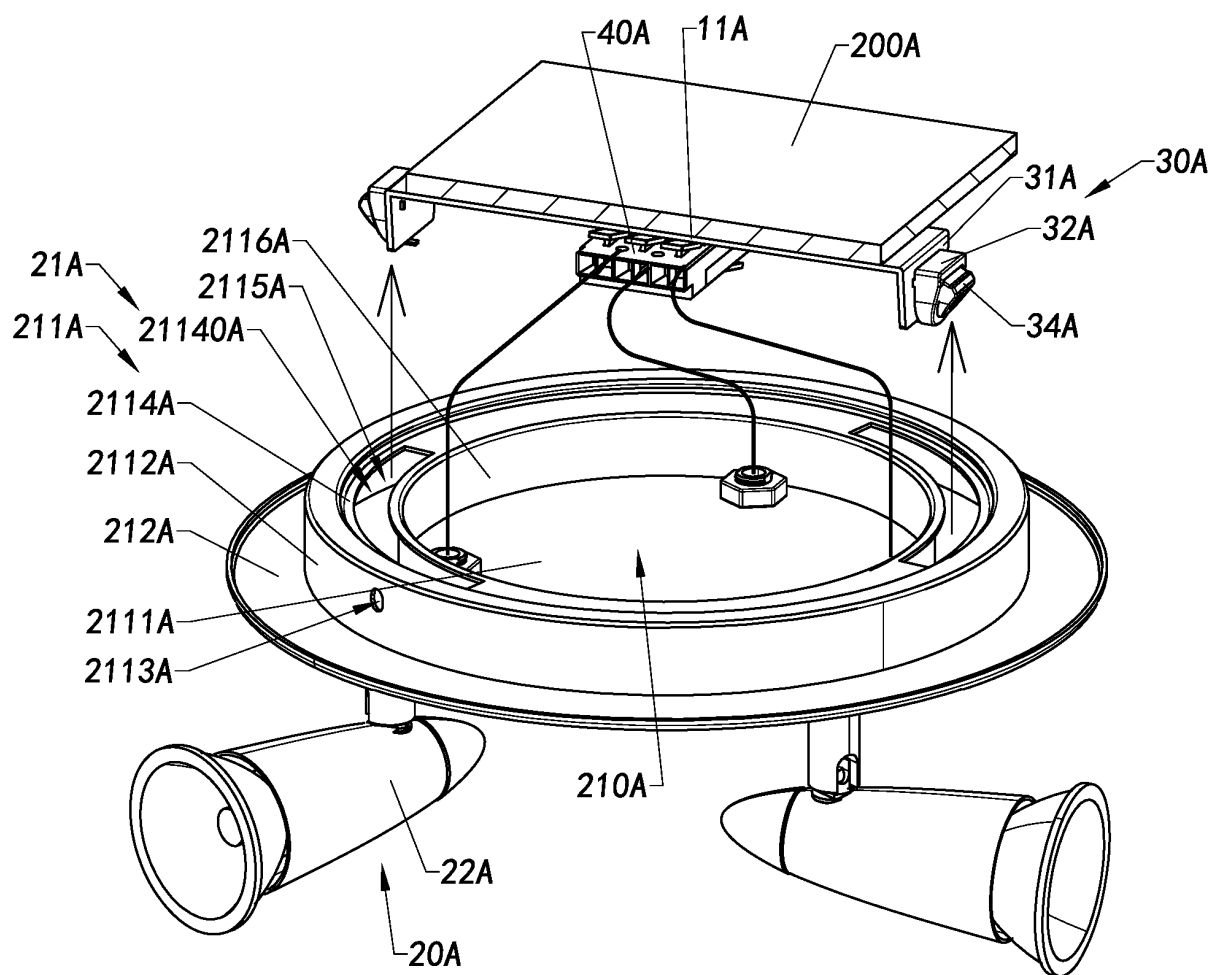
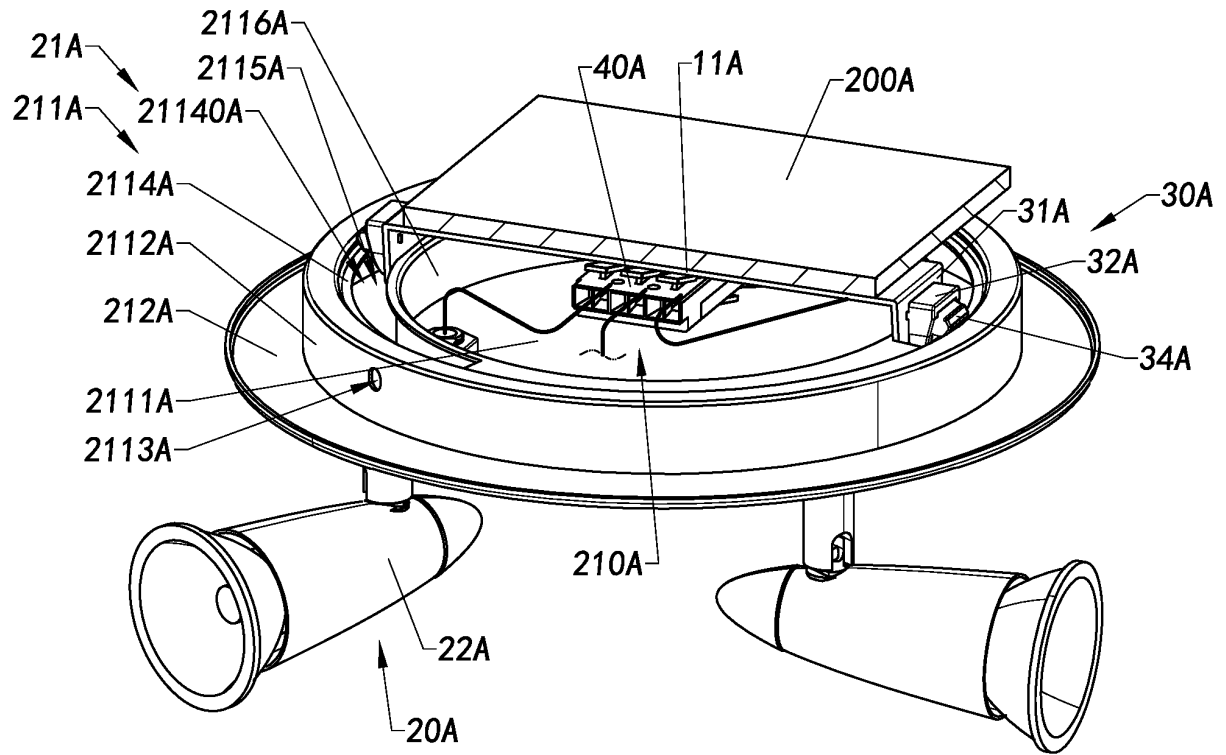
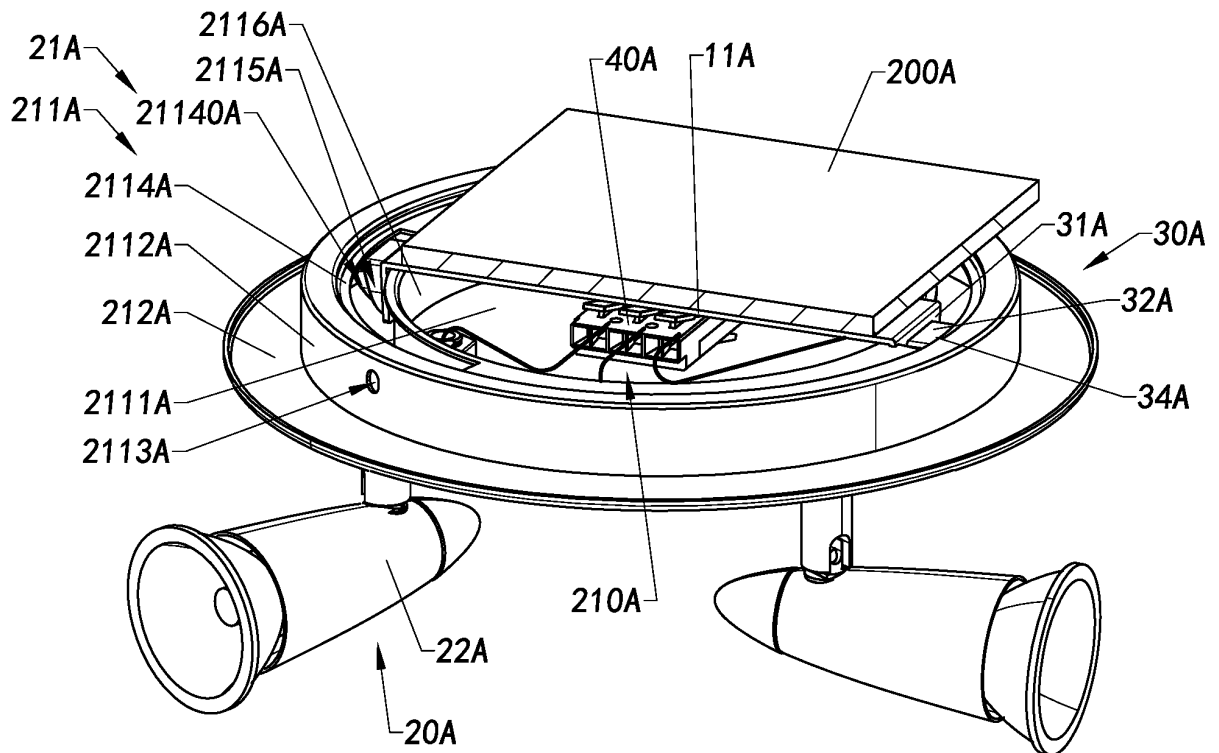


Fig.16B



**Fig.16C**



**Fig.16D**

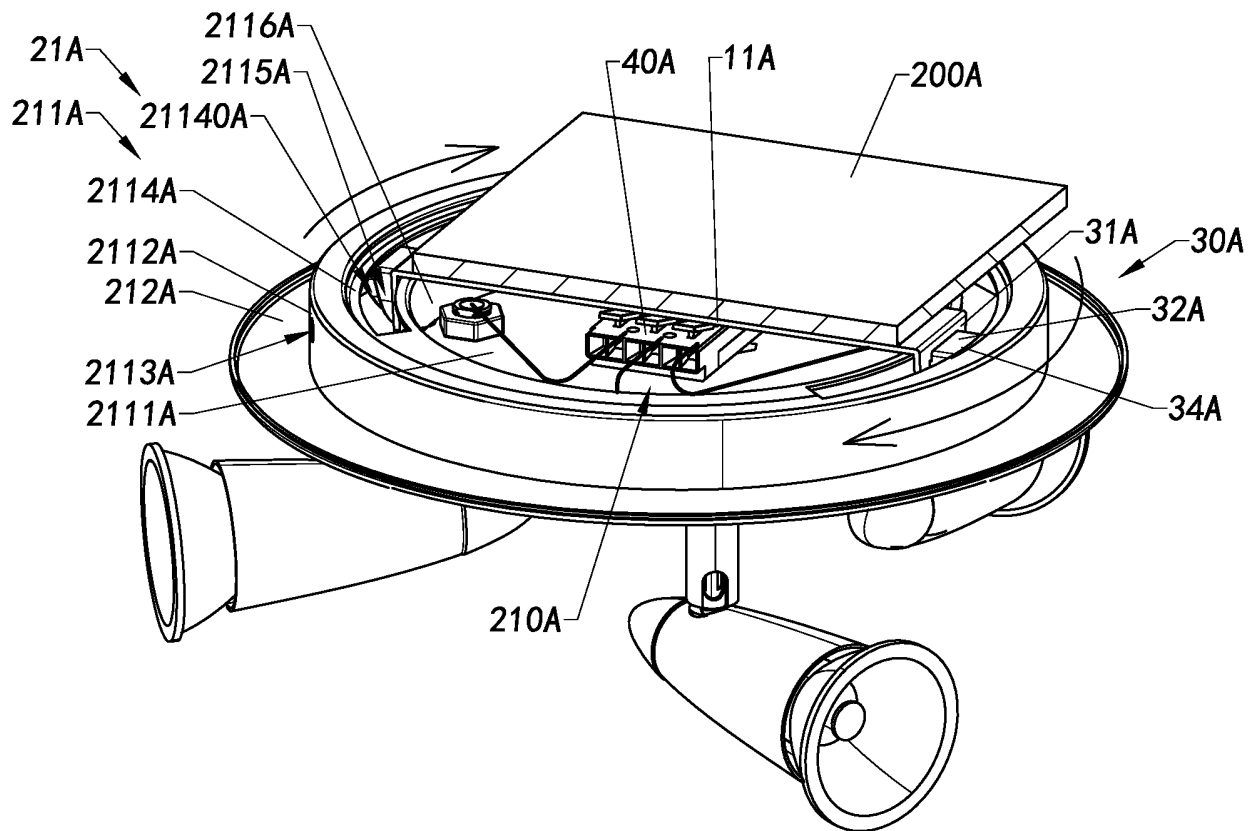


Fig.16E

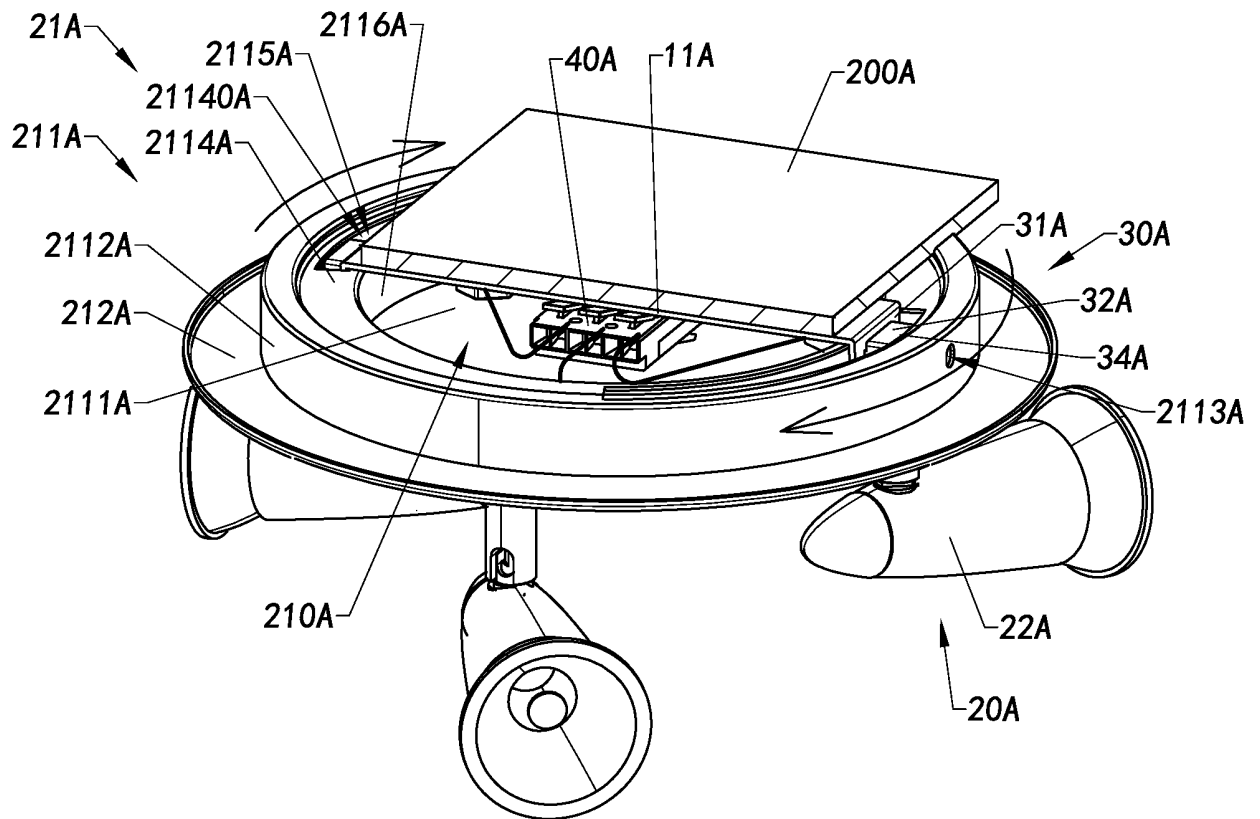
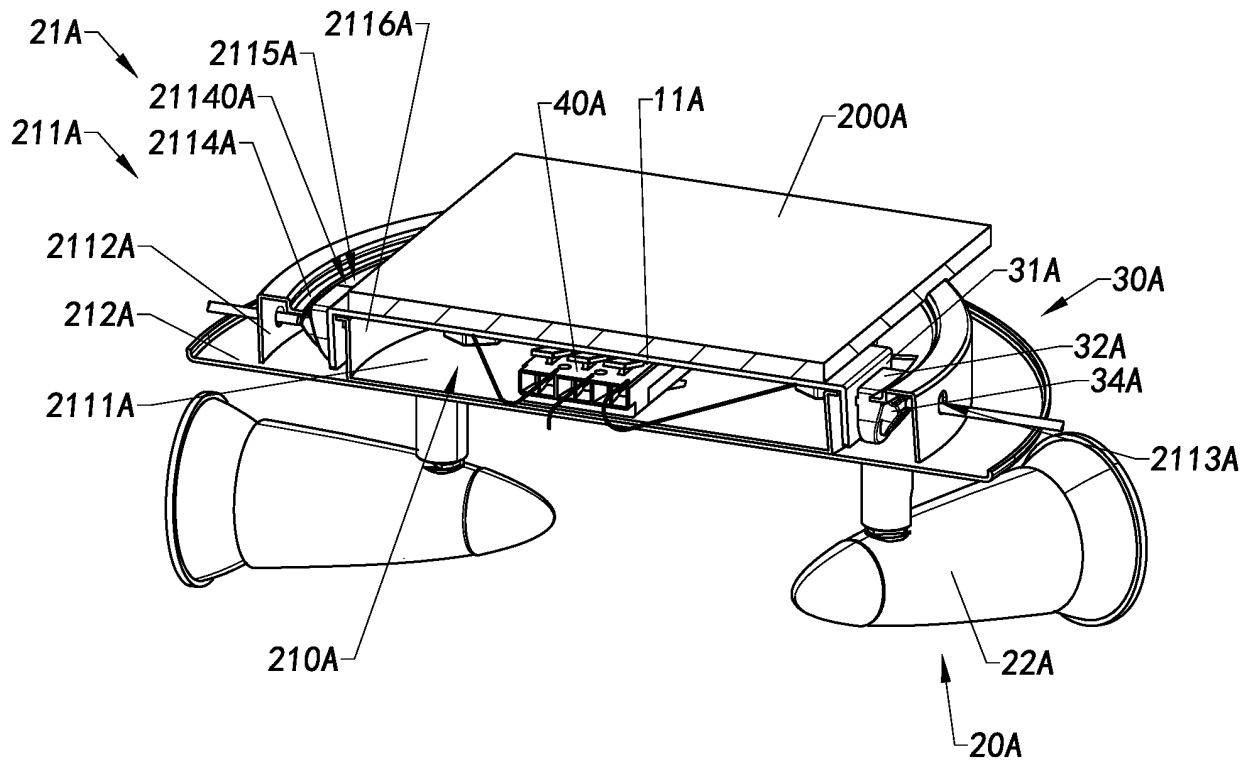
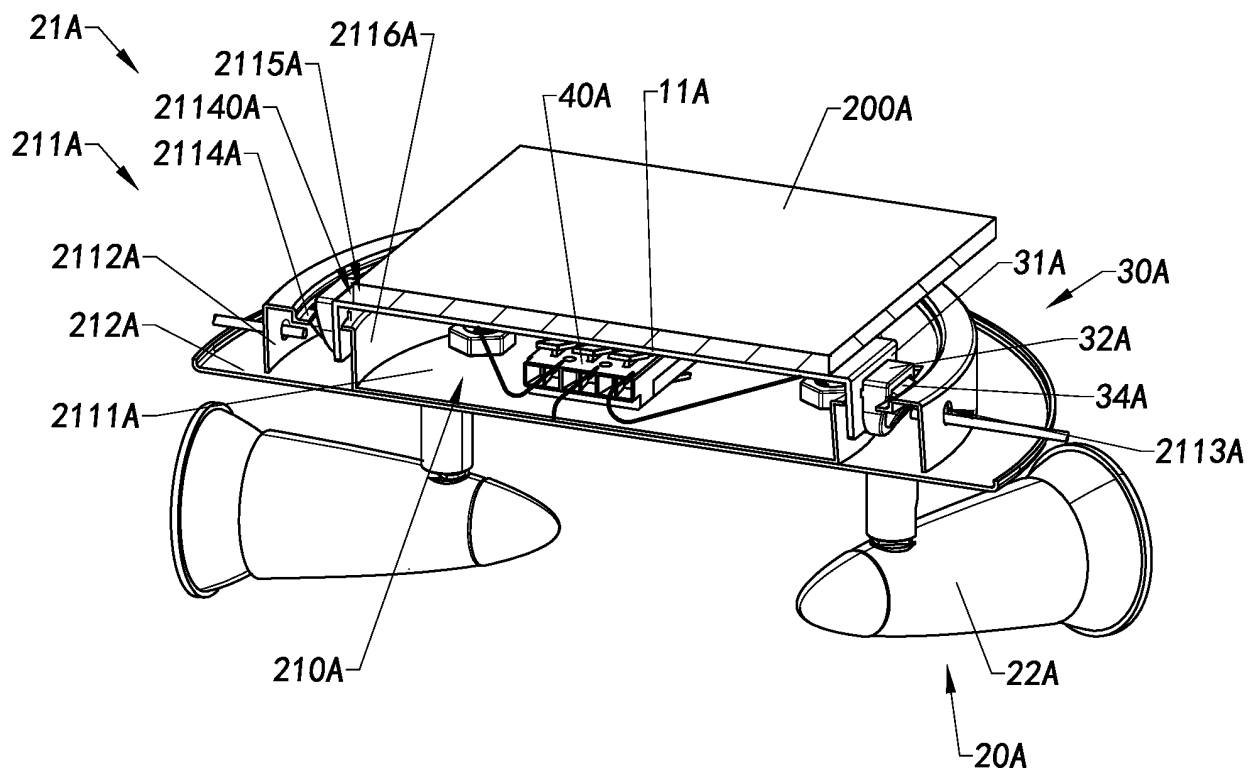


Fig.16F



**Fig.16G**



**Fig.16H**

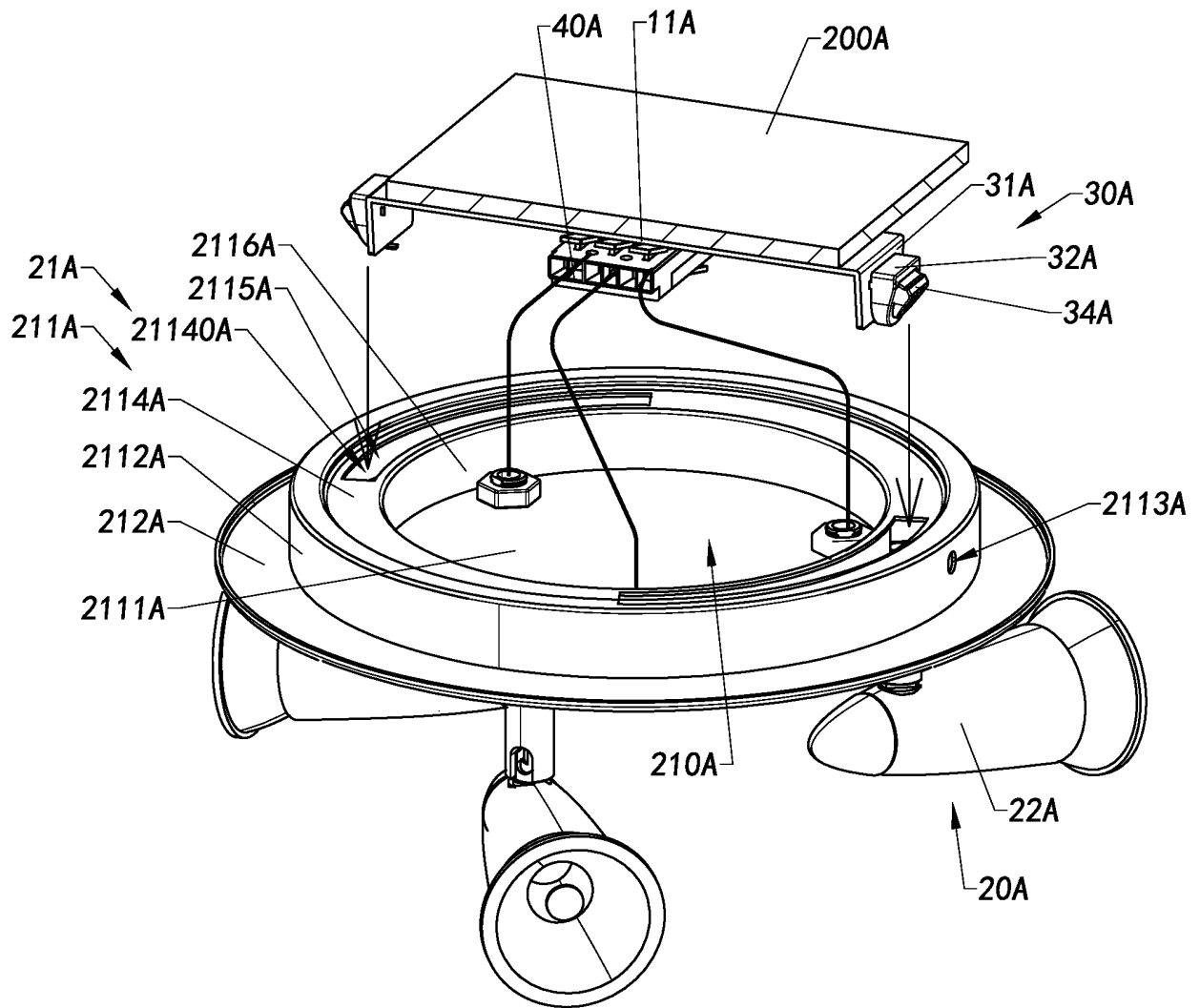


Fig.16I

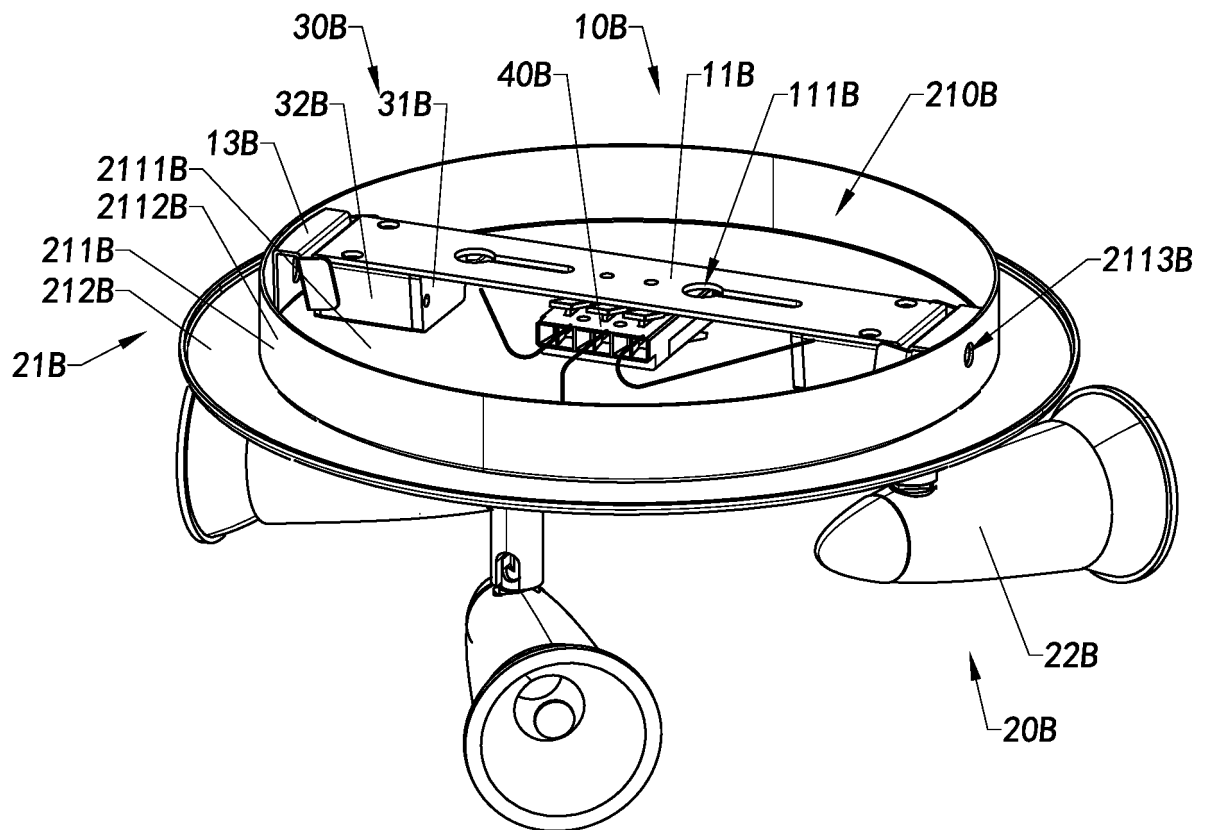


Fig.17

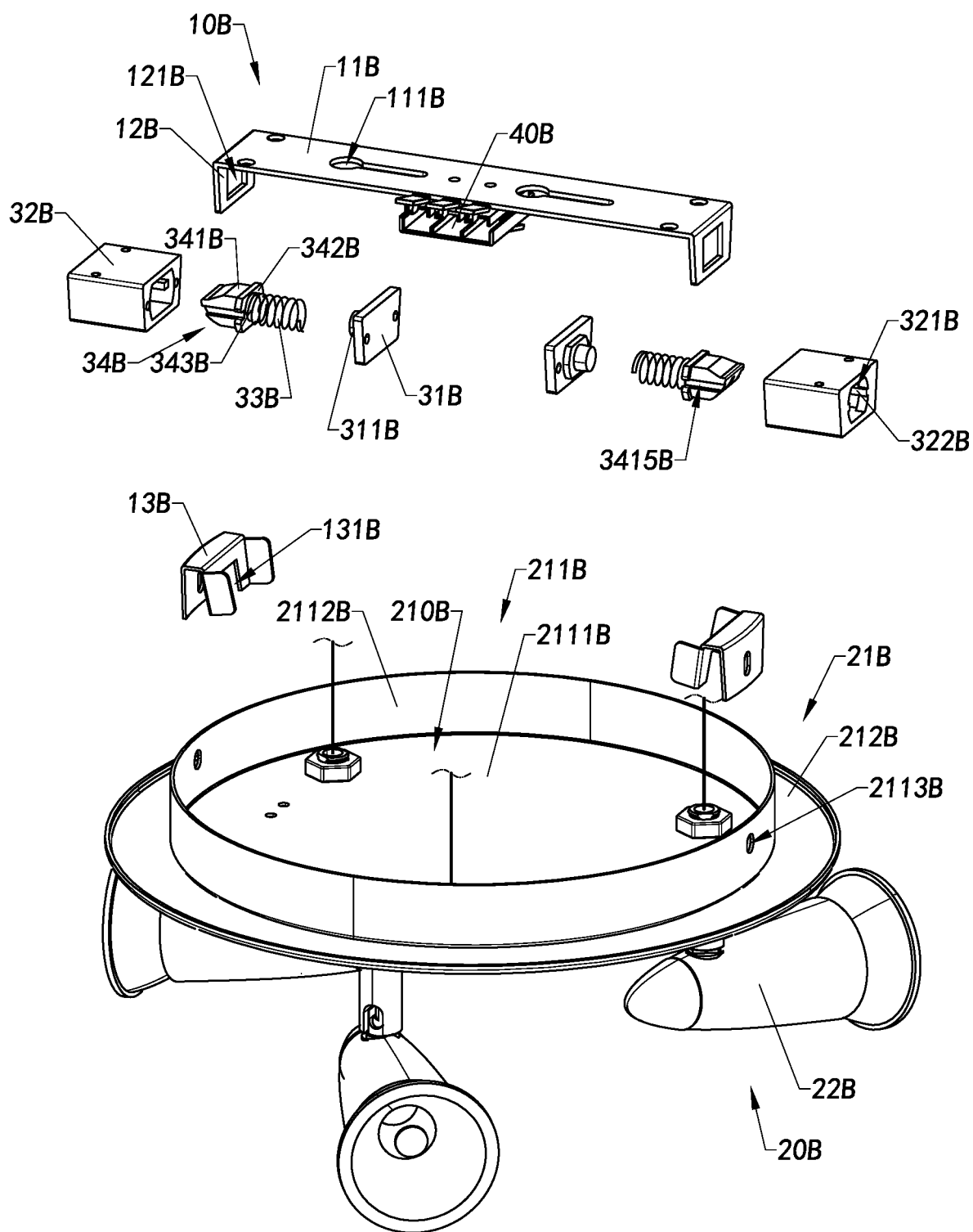


Fig.18



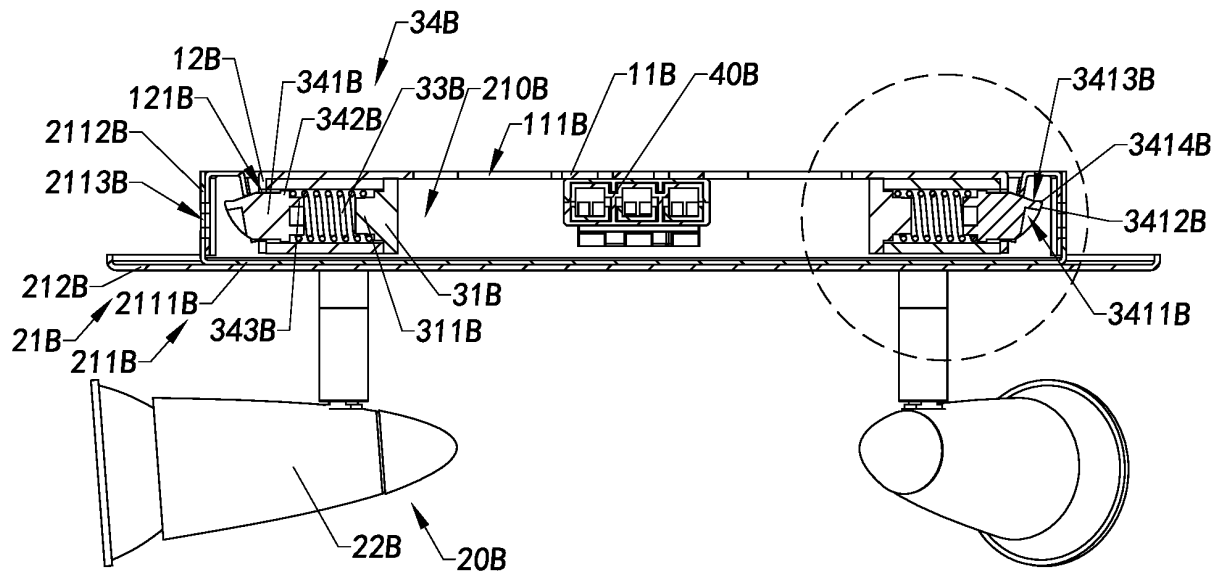


Fig.19

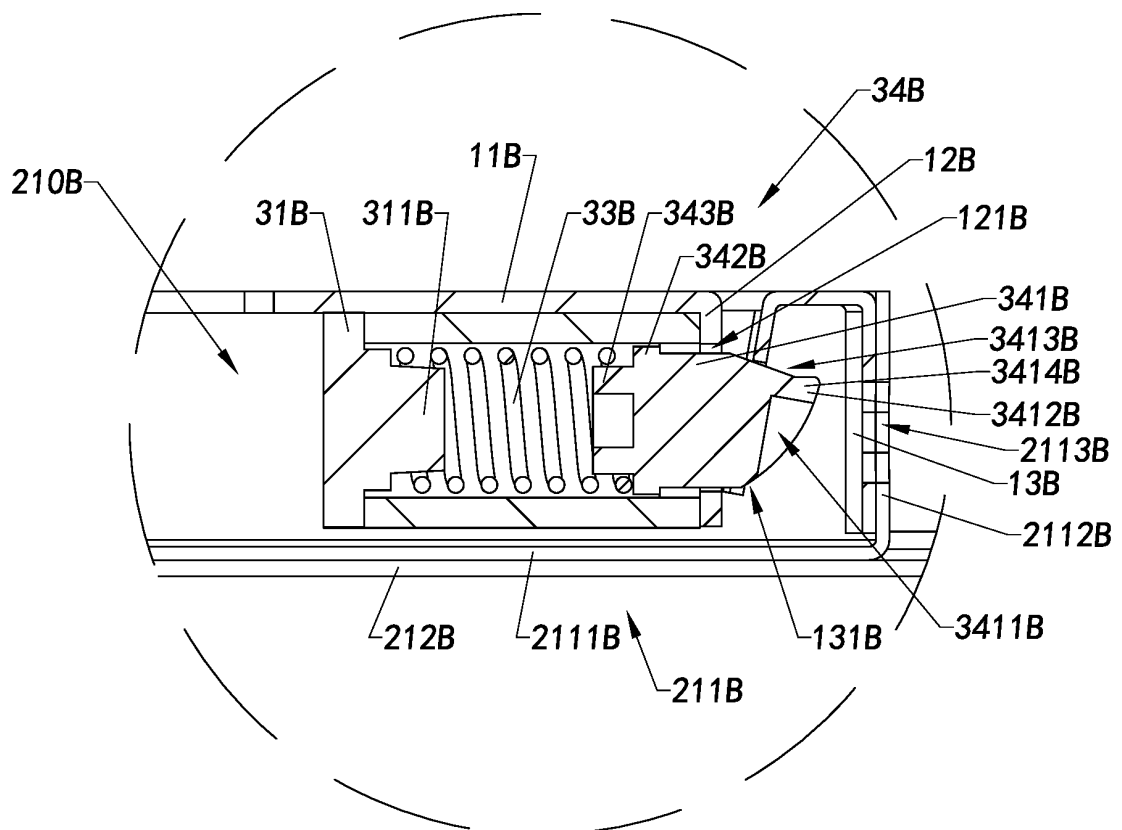


Fig.20

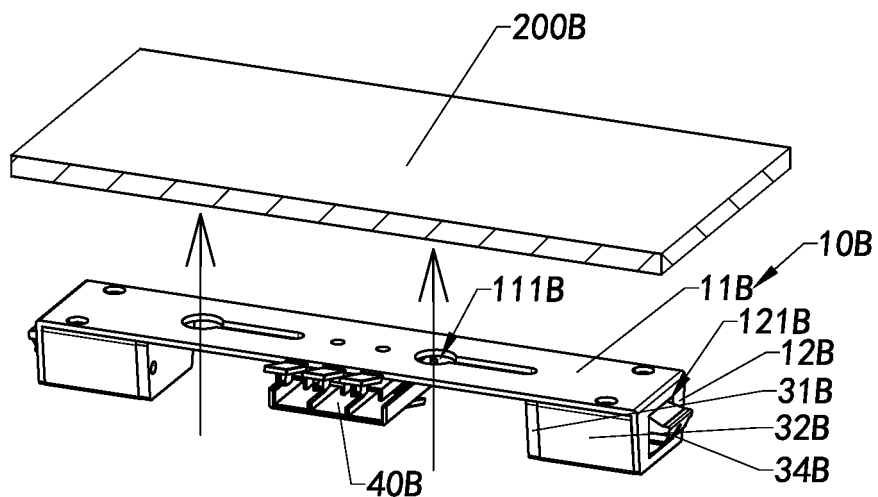


Fig. 21A

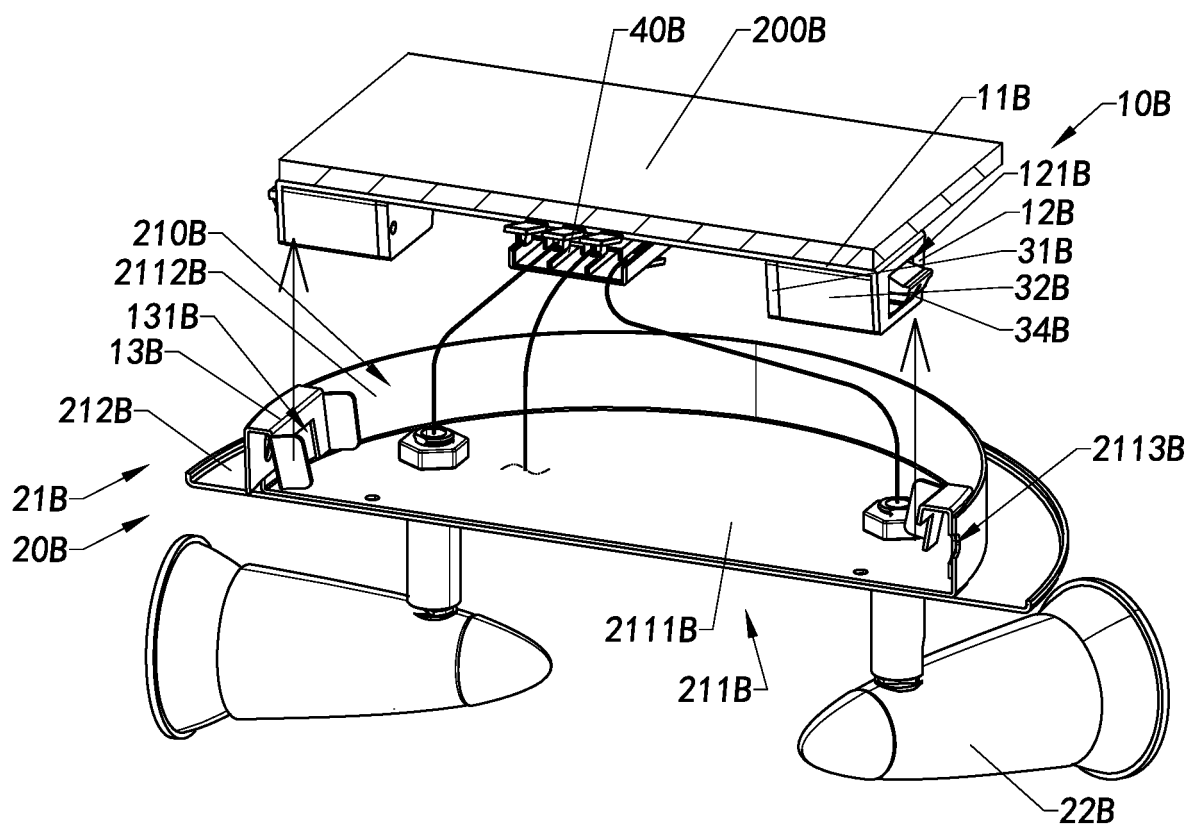


Fig. 21B

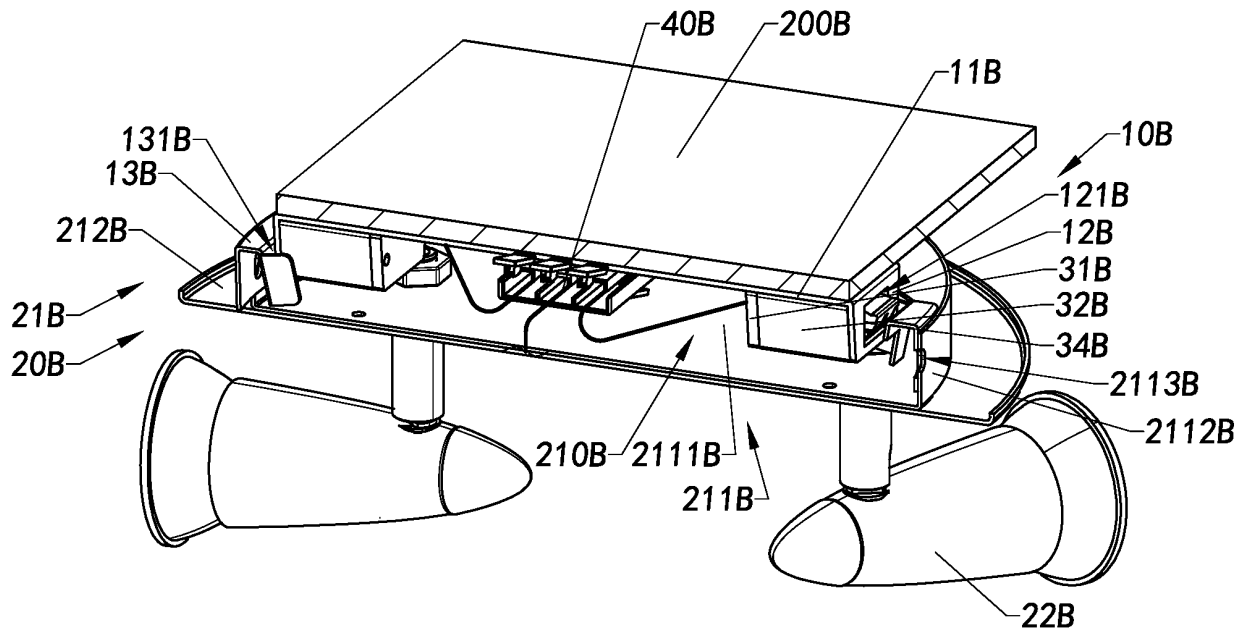


Fig. 21C

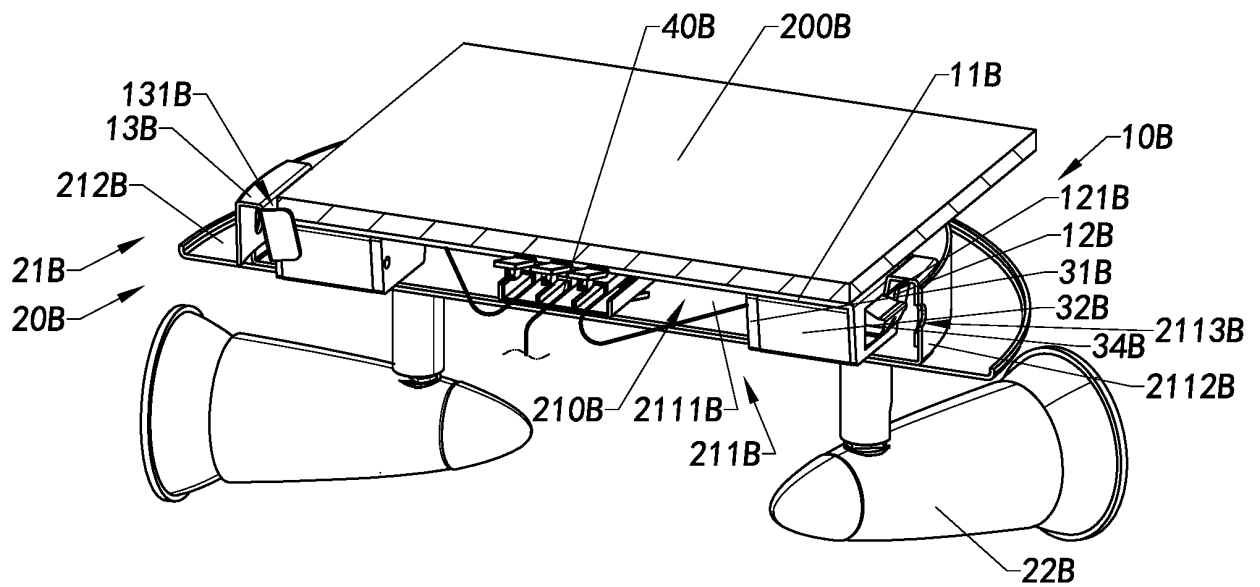


Fig. 21D

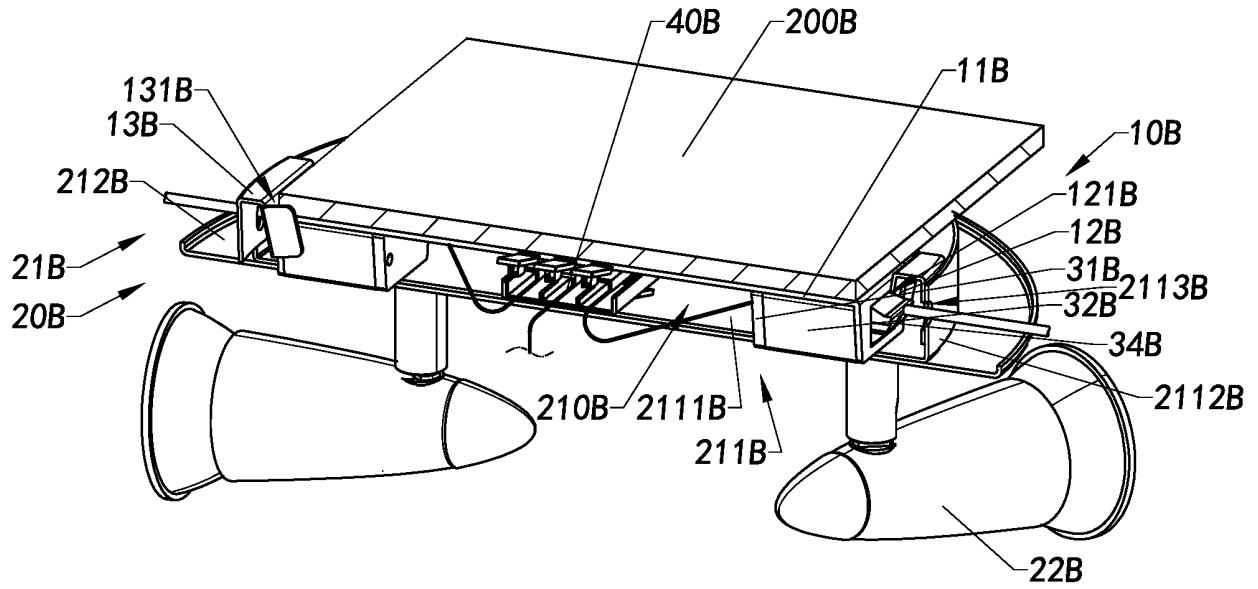


Fig.21E

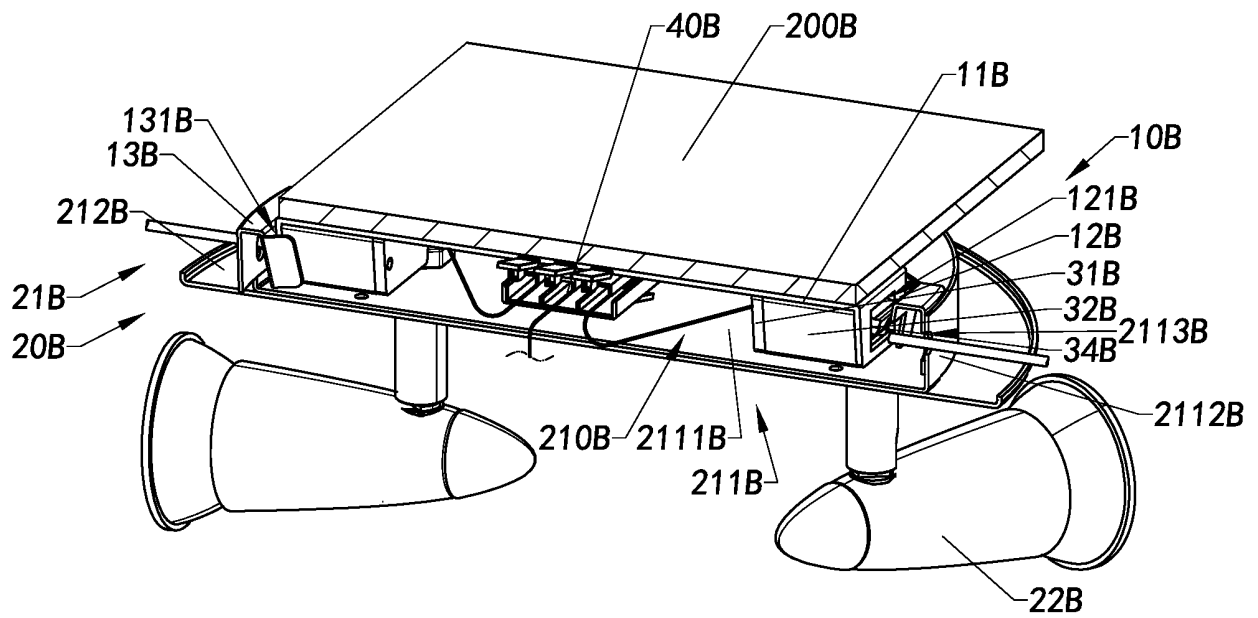


Fig.21F

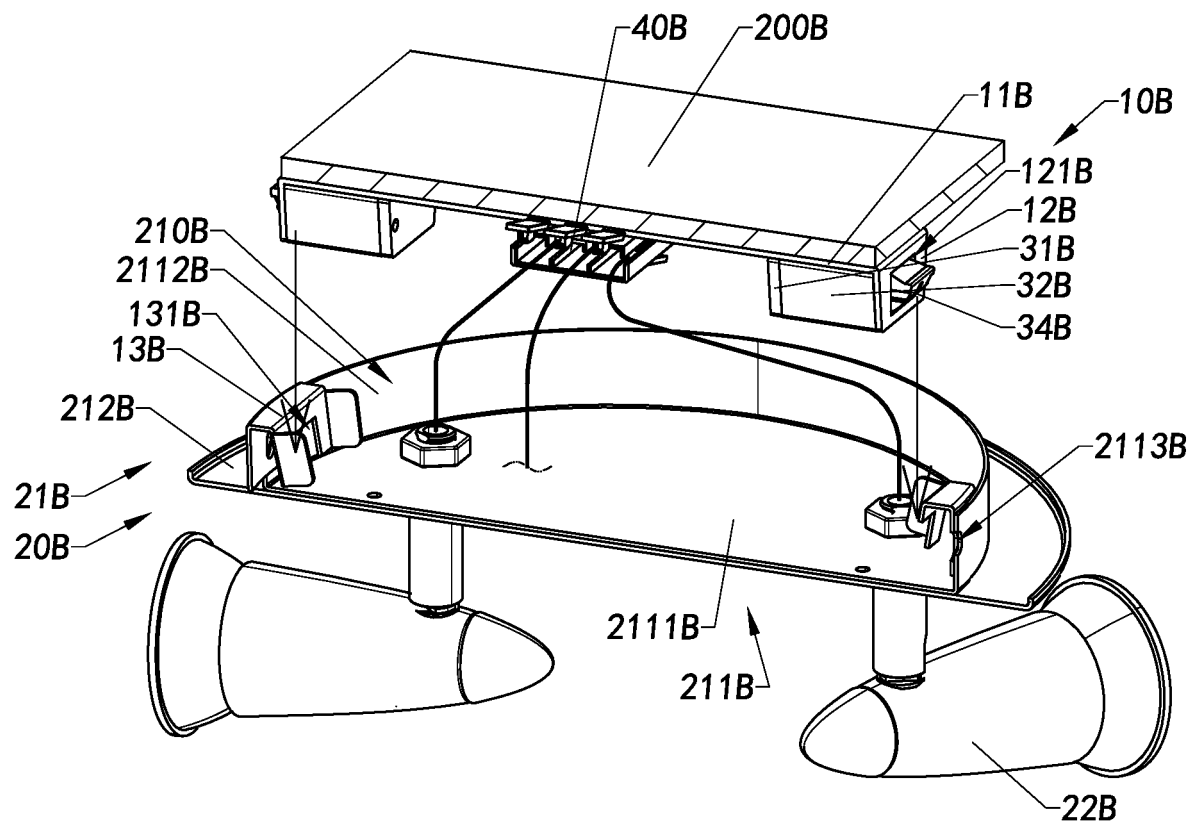


Fig.21G

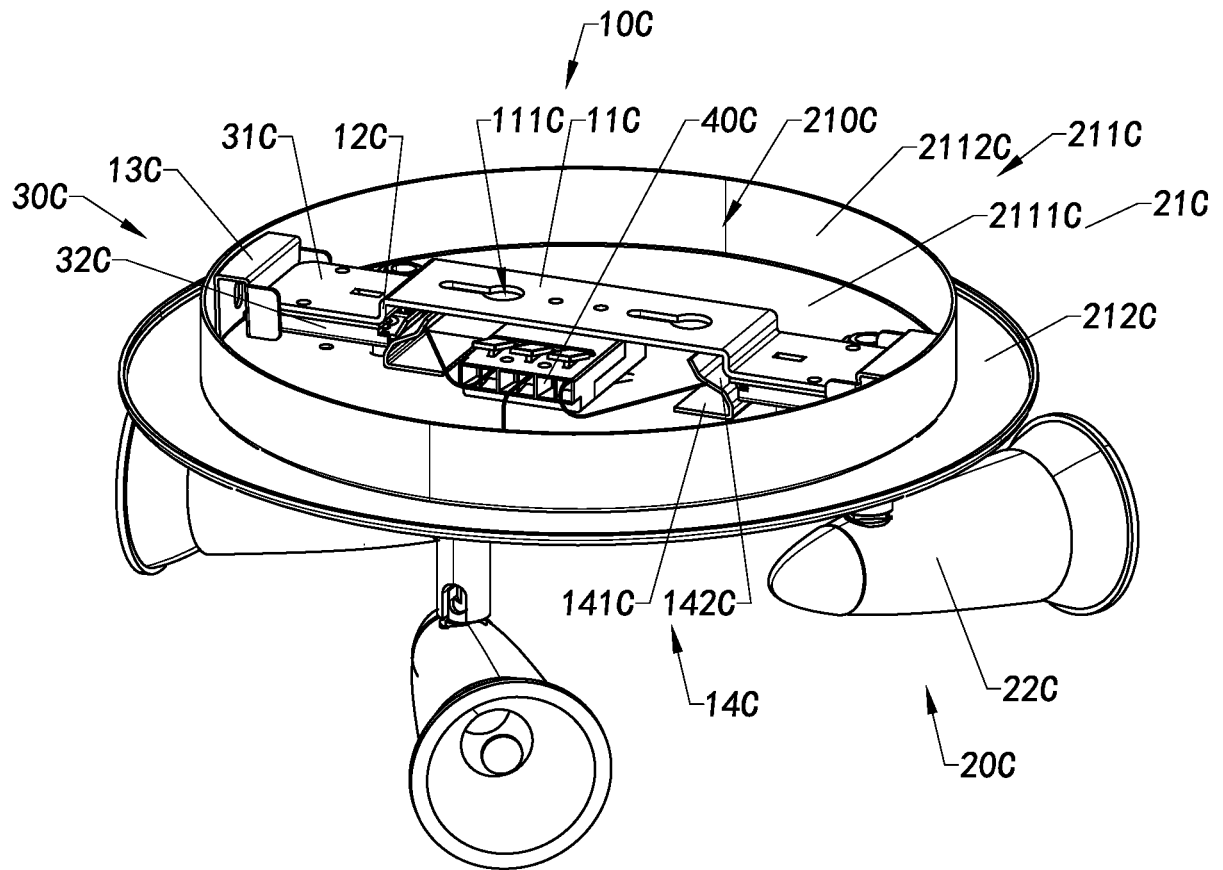


Fig.22

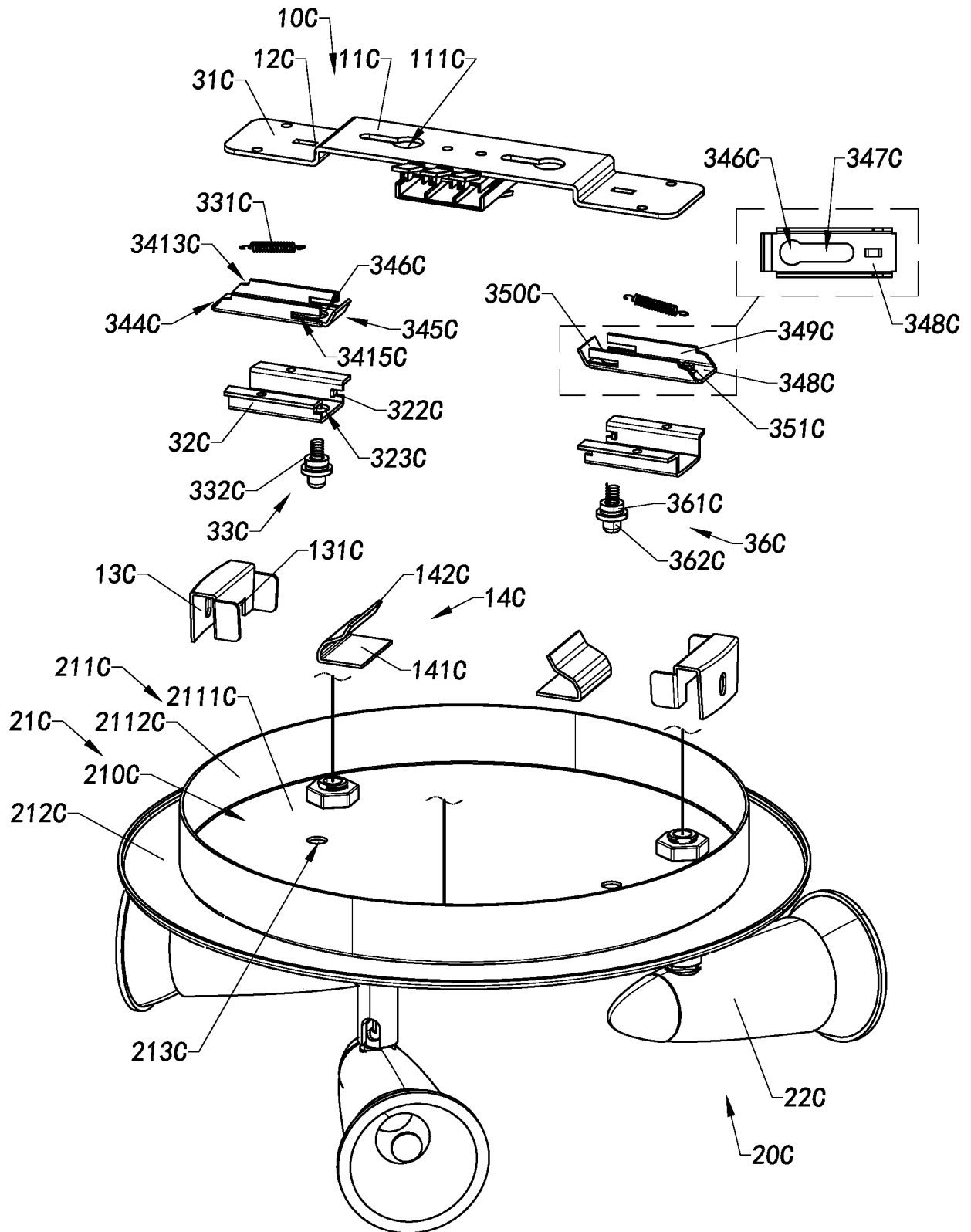


Fig.23

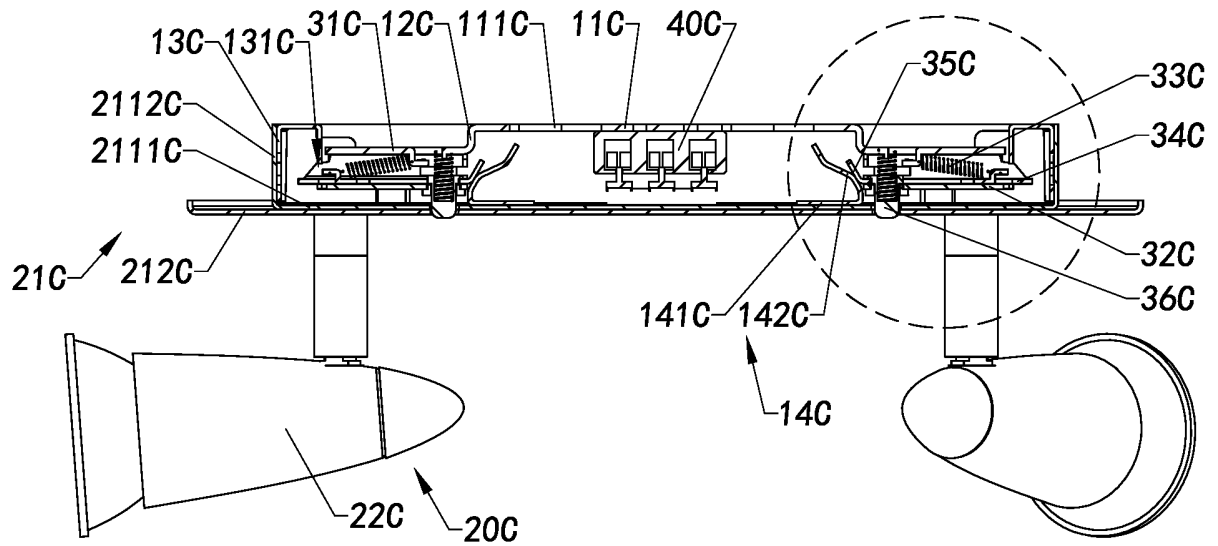


Fig.24

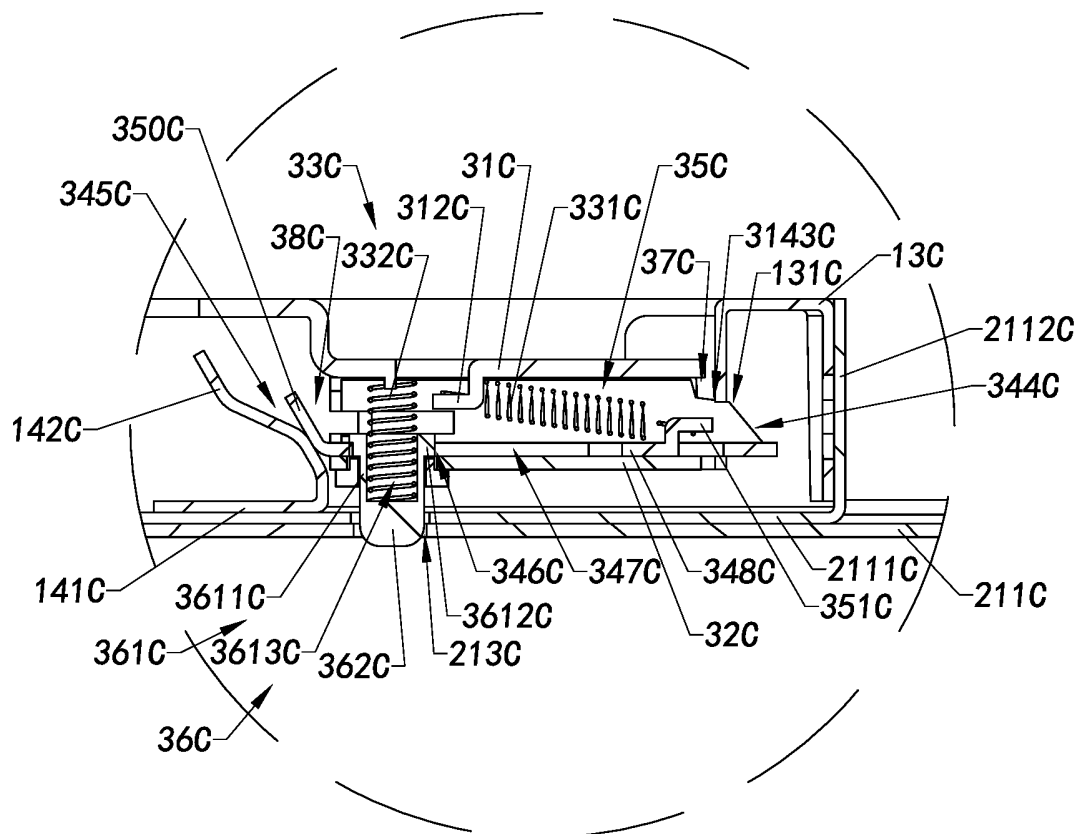


Fig.25



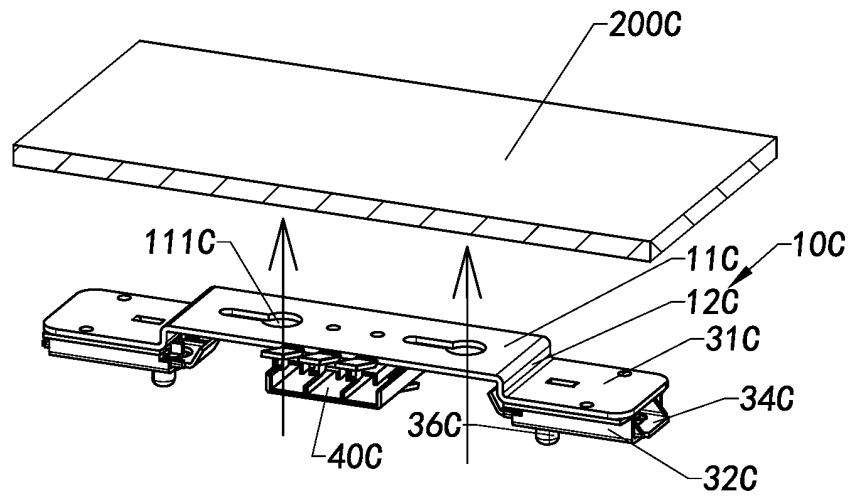


Fig.26A

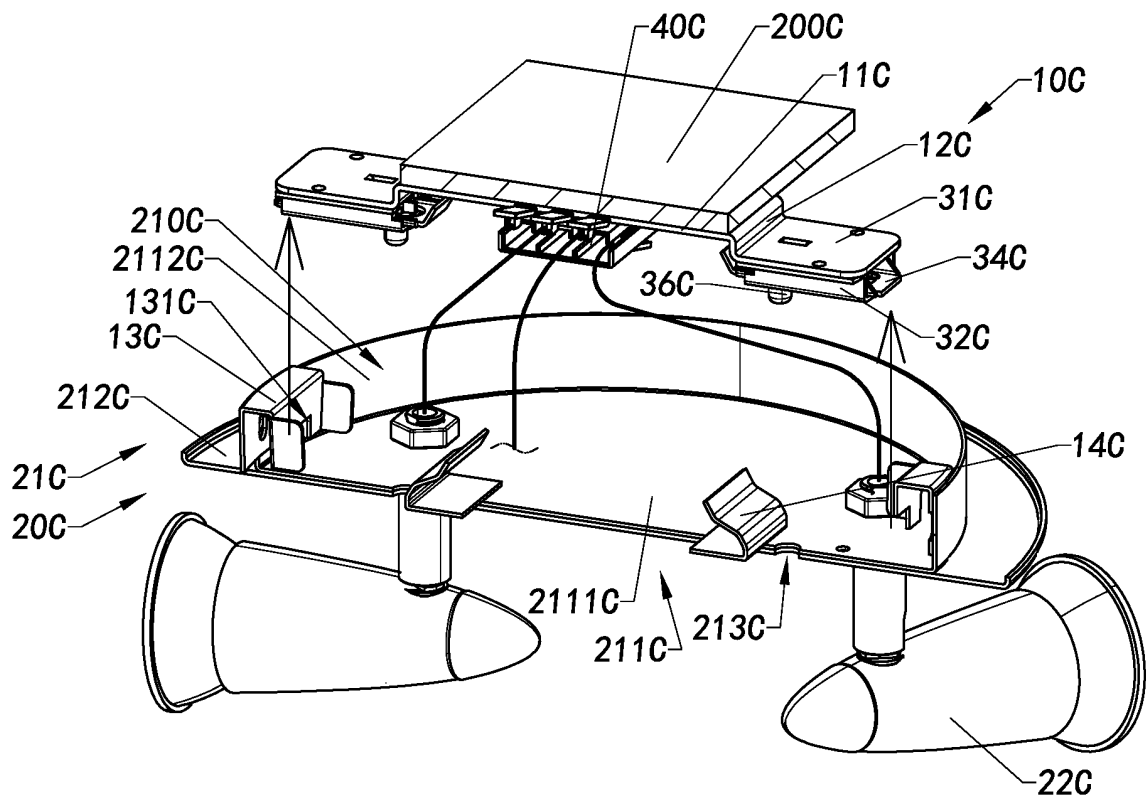


Fig.26B

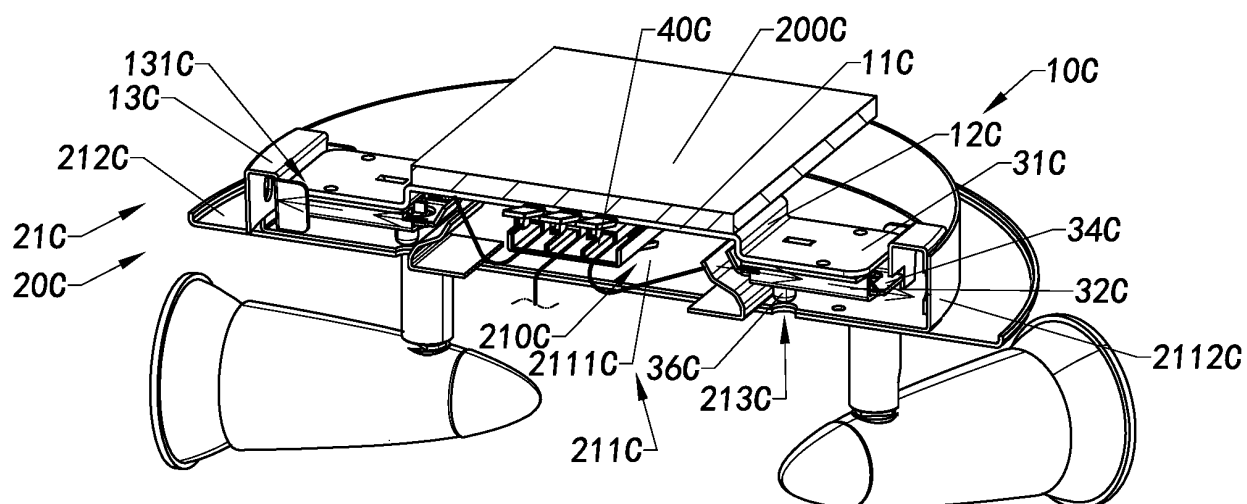


Fig. 26C

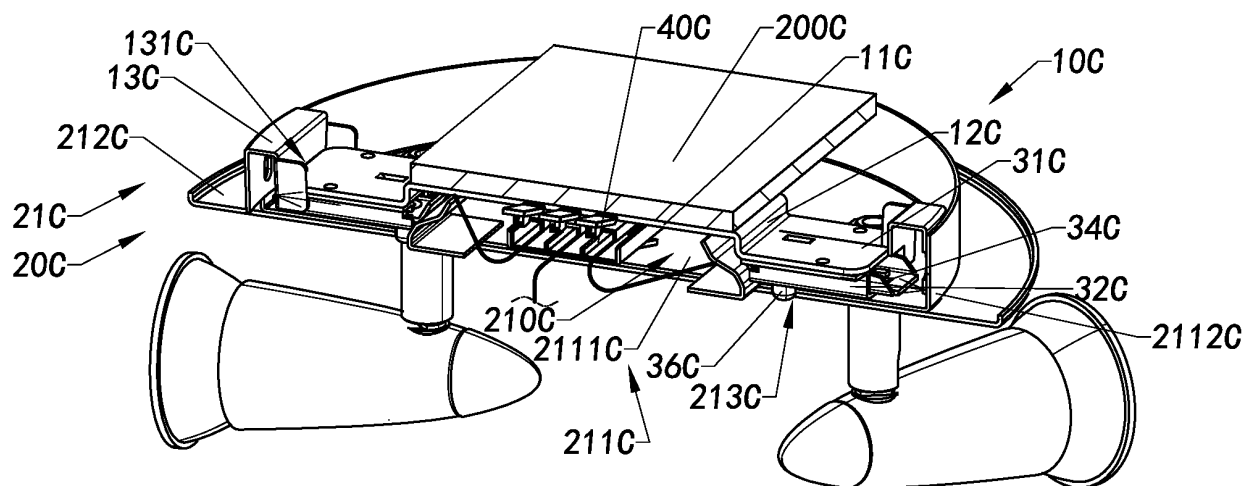
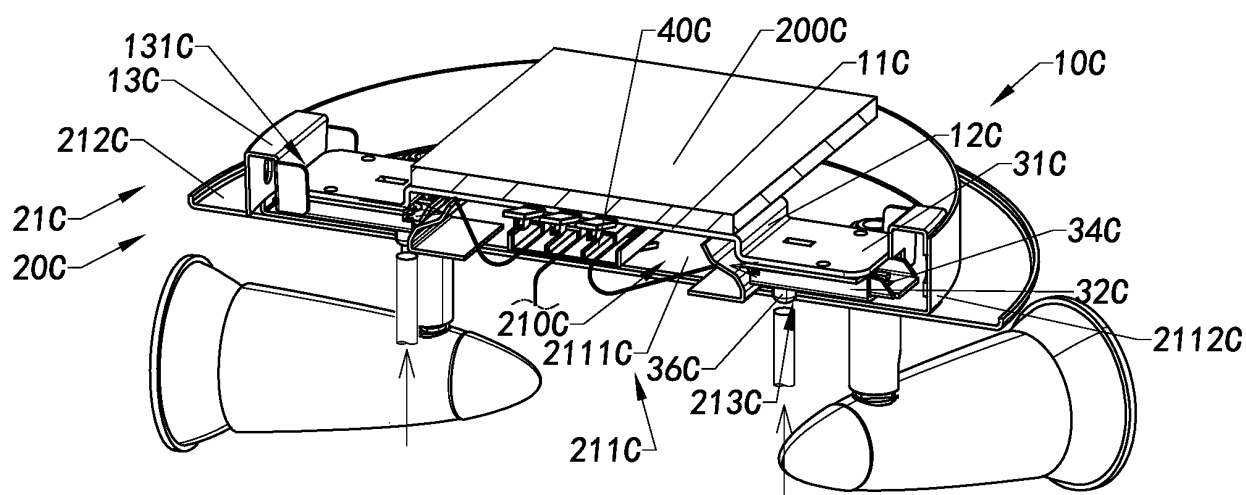
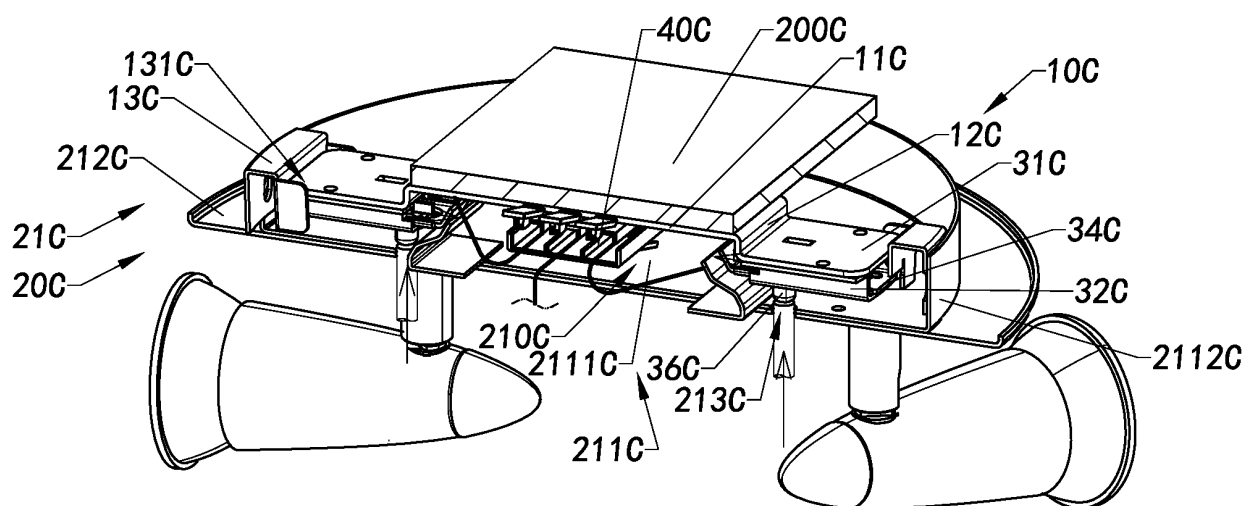


Fig. 26D



**Fig.26E**



**Fig.26F**

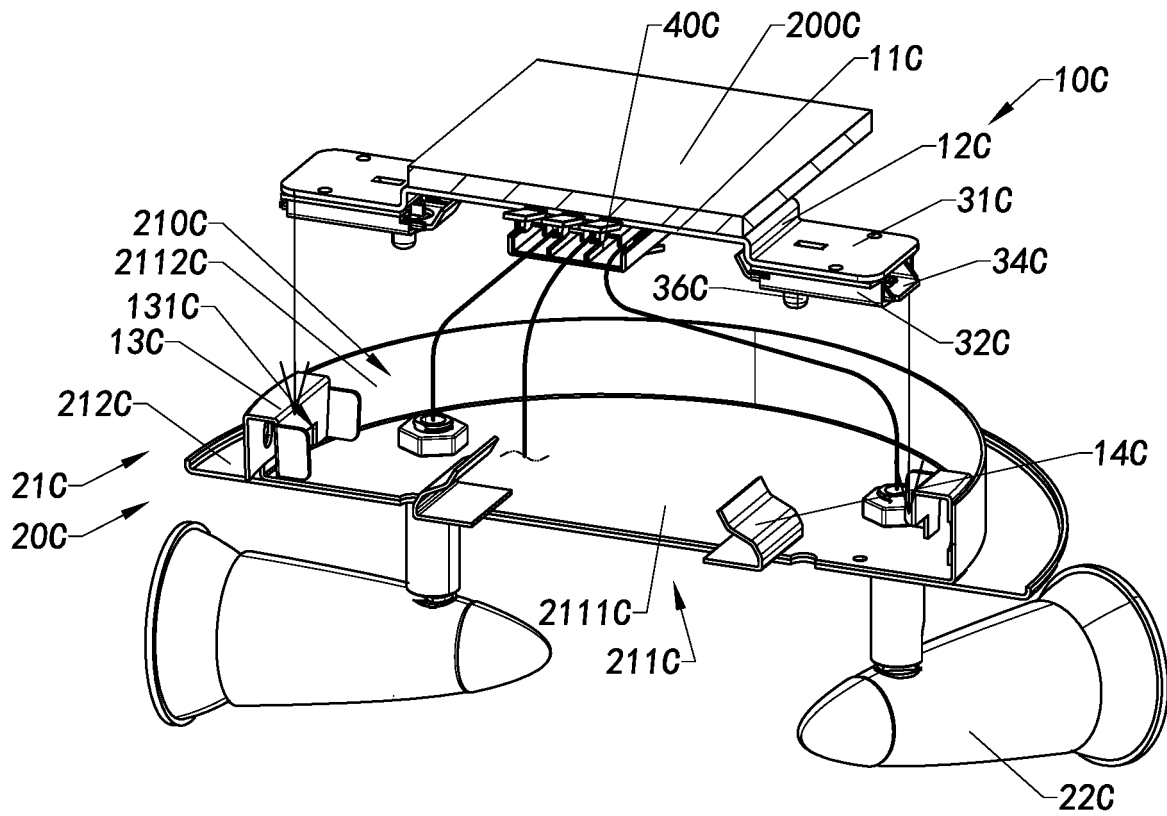


Fig.26G

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2019/072116

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> F21S 8/04(2006.01)i; F21V 17/02(2006.01)i According to International Patent Classification (IPC) or to both national classification and IPC																		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) F21 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) CNABS, CNTXT, VEN, CNKI: 威得士灯饰电器有限公司, 扣, 本体, 顶, 拆, 弹簧, 灯, 弹, 卡, 安装, 支架, 自动, 天花板, 复位, 灯壳, 灯盘, buckle, ceiling, spring+, elastic+, lamp+, light+, bracket, panel, fit+, fix+, install+, set+																		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b> <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>CN 206419810 U (GUANGDONG YINTANSI ENERGY TECHNOLOGY CO., LTD.) 18 August 2017 (2017-08-18) description, pages 1-2, and figures 1-2</td> <td>1-13, 16, 19-23, 27-29, 35, 38, 44</td> </tr> <tr> <td>A</td> <td>CN 201628186 U (SAT ILLUMINATION CO., LTD.) 10 November 2010 (2010-11-10) entire document</td> <td>1-44</td> </tr> <tr> <td>A</td> <td>CN 206386806 U (ZHONGSHAN CITY KUNXIANG LIGHTING CO., LTD.) 08 August 2017 (2017-08-08) entire document</td> <td>1-44</td> </tr> <tr> <td>A</td> <td>CN 104964216 A (HUIZHOU LEISHI OPTOELECTRONIC TECHNOLOGY CO., LTD.; CHONGQING NVC LIGHTING INDUSTRY CO., LTD.) 07 October 2015 (2015-10-07) entire document</td> <td>1-44</td> </tr> <tr> <td>A</td> <td>CN 103672629 A (SANYO TECHNOLOGY CENTER (SHENZHEN) CO., LTD.; PANASONIC MANUFACTURING (BEIJING) CO., LTD.) 26 March 2014 (2014-03-26) entire document</td> <td>1-44</td> </tr> </tbody> </table>	Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	CN 206419810 U (GUANGDONG YINTANSI ENERGY TECHNOLOGY CO., LTD.) 18 August 2017 (2017-08-18) description, pages 1-2, and figures 1-2	1-13, 16, 19-23, 27-29, 35, 38, 44	A	CN 201628186 U (SAT ILLUMINATION CO., LTD.) 10 November 2010 (2010-11-10) entire document	1-44	A	CN 206386806 U (ZHONGSHAN CITY KUNXIANG LIGHTING CO., LTD.) 08 August 2017 (2017-08-08) entire document	1-44	A	CN 104964216 A (HUIZHOU LEISHI OPTOELECTRONIC TECHNOLOGY CO., LTD.; CHONGQING NVC LIGHTING INDUSTRY CO., LTD.) 07 October 2015 (2015-10-07) entire document	1-44	A	CN 103672629 A (SANYO TECHNOLOGY CENTER (SHENZHEN) CO., LTD.; PANASONIC MANUFACTURING (BEIJING) CO., LTD.) 26 March 2014 (2014-03-26) entire document	1-44
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A	CN 104964216 A (HUIZHOU LEISHI OPTOELECTRONIC TECHNOLOGY CO., LTD.; CHONGQING NVC LIGHTING INDUSTRY CO., LTD.) 07 October 2015 (2015-10-07) entire document	1-44																
A	CN 103672629 A (SANYO TECHNOLOGY CENTER (SHENZHEN) CO., LTD.; PANASONIC MANUFACTURING (BEIJING) CO., LTD.) 26 March 2014 (2014-03-26) entire document	1-44																
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex. * Special categories of cited documents: “A” document defining the general state of the art which is not considered to be of particular relevance “E” earlier application or patent but published on or after the international filing date “L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) “O” document referring to an oral disclosure, use, exhibition or other means “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 <b>16 April 2019</b>	Date of mailing of the international search report <b>24 April 2019</b>																	
Name and mailing address of the ISA/CN <b>State Intellectual Property Office of the P. R. China  No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing  100088  China</b> Facsimile No. (86-10)62019451	Authorized officer    Telephone No.																	

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INTERNATIONAL SEARCH REPORT

International application No.
<b>PCT/CN2019/072116</b>

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C. DOCUMENTS CONSIDERED TO BE RELEVANT		
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Information on patent family members

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