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(54) **LIGHT FIXTURE**

(57) The present application relates to a light fixture (1) and a method for maintenance of a light fixture (1). The light fixture (1) comprises a base frame (2) extending longitudinally along a first axis (A), a translucent cover (3) arranged to the base frame (2) and at least one gable (4). The light fixture (1) is characterized in that the at least one gable (4) is rotationally moveable around a second

axis (B) relative to the base frame (2) between an open position and a closed position, such that the translucent cover (3) is fixed relative to the base frame (2) by the at least one gable (4) being in the closed position, and that the translucent cover (3) is removable from the base frame (2) when the at least one gable (4) is in the open position.

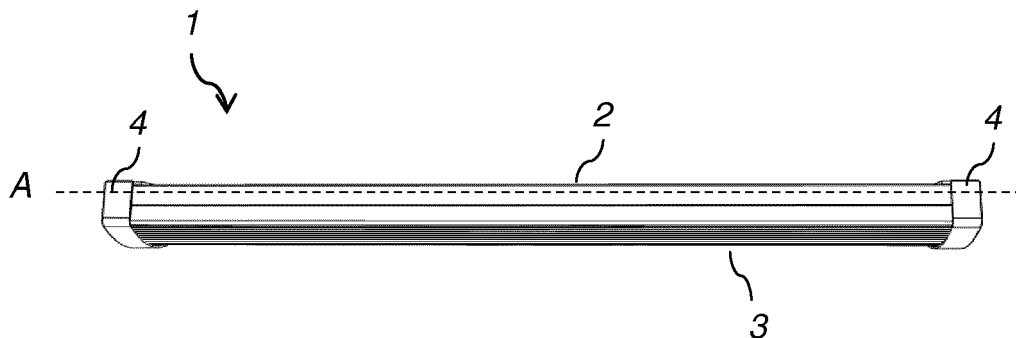


Fig. 1

Description

Technical Field

[0001] The present disclosure relates to a light fixture, and especially an arrangement for facilitating mounting and maintenance of a light fixture.

Background

[0002] In the field of light fixtures, it is common that the translucent panes are removable such as to provide access to the interior of the fixture also after mounting. Arrangement such as these suffer from breakage or damage when removed from the frame. Prior art solutions such as US2606008A or US2524353A comprise fixtures where the reflector or translucent panes can be rotated such as to provide access to the interior of the fixture. A particular problem with these types of constructions is that the panes provide an obstacle by their presence making maintenance more difficult as well as restricting the placement and orientation of the fixture as space around the fixture is needed to allow for proper opening of the panes. Hence, there is a need for a light fixture which can be easily mounted and maintained without causing damage to the translucent panes or restricting the placement and orientation of the fixture.

Summary

[0003] It is an object of the present invention to provide an improved solution that alleviates the mentioned drawbacks with present devices.

[0004] The invention is defined by the appended independent claims, with embodiments being set forth in the dependent claims, in the following description and in the attached drawings.

[0005] According to a first aspect of the invention, there is provided a light fixture comprising a base frame extending longitudinally along a first axis, a translucent cover arranged to the base frame and at least one gable. The light fixture is characterized in that the at least one gable is rotationally moveable around a second axis relative to the base frame between an open position and a closed position, such that the translucent cover is fixed relative to the base frame by the at least one gable being in the closed position, and that the translucent cover is removable from the base frame when the at least one gable is in the open position.

[0006] With this arrangement a light fixture which is easy to mount and maintain without damaging the translucent panes or restricting the placement and orientation of the fixture is achieved.

[0007] The at least one gable can be rotated from an open position to a closed position and when in the open position allows for the translucent cover to be removed without use of force or tools that may cause damage to the translucent cover. Further, after mounting of the light

fixture, maintenance of the light fixture may be performed by simply rotating the gables into the open position and removing the translucent cover.

[0008] The base frame provides support and rigidity to the light fixture as well as that it provides an area for mounting the light fixture to a ceiling, wall, or other suitable surface. The translucent cover may be translucent or transparent to spread light over an area or direct light in a certain direction. There may be one gable on each longitudinal end of the base frame, both gables being identical in form and function. Both gables may be rotatable relative to the base frame. Alternatively, only one of the gables may be rotatable relative to the base frame. The other gable may in such embodiment be fixedly attached to the base frame, or be provided as an integrated portion of the base frame. Only one rotatable gable may provide a simpler and more cost-efficient fixture, with kept functionality of removability of the translucent cover.

[0009] According to another embodiment, the first axis of the base frame may be perpendicular to the second axis of the base frame. The first axis provides the axis of extension of the base frame and the second axis provides the central axis of rotation for the gable. The second axis may further be located on a longitudinal end of the base frame.

[0010] According to a further embodiment, a hinge may be arranged to the base frame, wherein the gable is suspended to the base frame by the hinge, and wherein the hinge provides the rotatability of the gable around the second axis. Providing the base frame with a hinge to which the gable is suspended provides an area of contacting between the gable and the base frame such that the gable may be rotated in relation to the base frame and thus allow for the translucent cover to be released when the gable is rotated around the hinge into the open position.

[0011] In yet another embodiment, the hinge may be arranged at a distance from a side portion of the base frame, where the side portion extends in a direction parallel to the second axis, such as to form a space between the gable and an outer side of the side portion. Arranging the hinge at a distance from the side portion moves the axis of rotation of the gable further along the first axis which provides a space between the side portion and the side of the gable facing the side portion. Such space may be useful for arrangement of fixture components, such as cables received by the fixture. The side portion may further extend in a direction perpendicular to the first axis. By being arranged at a distance from the side portion, it may be meant that the hinge is arranged at a distance from an outer surface of the side portion, which outer surface faces an inner side of the gable.

[0012] In another embodiment, the gable may be rotatable at least 5 degrees, preferably between 5-45 degrees, more preferably between 5-25 degrees, most preferably between 5-15 degrees, around the second axis between the closed position and the open position. The rotation of the gable provides space for the translucent

cover to be released from the base frame.

[0013] According to another embodiment, the at least one gable may extend in the direction of the first axis such that an end portion of the translucent cover is held fixed relative to the base frame when the at least one gable is in the closed position. The gable may extend from one longitudinal end of the base frame towards the other longitudinal end of the base frame such that a portion of the translucent cover is covered by the gable and held into position such that the translucent cover may be prevented from falling off or being removed by other means from the base frame when the gable is in the closed position. The end portion of the translucent cover may rest on a holding portion of the gable, when the gable is in the closed position.

[0014] In a further embodiment, the base frame may comprise a first and a second side portion extending in a direction parallel to the second axis. The first and second side portions may comprise an outer side facing the gable and an inner side facing an interior of the base frame. The translucent cover may be configured to extend between the inner sides of the first and second side portions, and the gable may comprise a holding portion which in the closed position may be configured to extend past the first and second side portions in direction from the outer side to the inner side thereof to hold the end portion of the translucent cover. The first and second side portions may provide a barrier between the space between the gable and the side portion and the space of the interior of the light fixture. The first and second side portions may further provide support and an area of attachment to the base frame for the hinge. The first and second side portions may further extend in a direction perpendicular to the first axis.

[0015] In another embodiment, the base frame may comprise a third and fourth side portion extending along the longitudinal direction of the base frame. Each of the third and fourth side portion may comprise an outer side facing the exterior of the base frame and an inner side facing the interior of the base frame. The translucent cover may be arranged to abut the inner side of the third and fourth side portion respectively. The third and fourth sides together with the first and second sides of the base frame may form a rectangular shape which construct the base frame. The abutment between the translucent cover and the third and fourth sides may serve to suspend the translucent cover to the base frame when the gable is in the open position such as to prevent uncontrolled removal of the translucent cover or that it falls or loosens from the frame in an uncontrolled manner. The light fixture may further comprise a base side arranged between the first through fourth sides and opposite the translucent cover. The base side may be configured to be fastened to a ceiling or wall or other suitable surface to which to arrange the light fixture. The holding portion of the gable may extend past the first and second portions and may extend such that it extends past the first and second side portions and covers part of the third and fourth sides and the end

portion of the translucent cover while leaving the base side uncovered such as to allow for rotation of the gable without limitation or disturbance from the back side of the base frame.

[0016] According to another embodiment, the at least one gable may be held in the closed position by means of attaching means. The attaching means may serve to keep the gable in the closed position such as to prevent unintentional rotation of the gable into the open position and thus preventing the translucent cover from falling off or getting loose unintentionally. The attaching means may provide that a force above a threshold force level is required in order to move the gable to the open position.

[0017] In a further embodiment, the attaching means may comprise at least one first attaching member and at least one second attaching member configured to adhere to each other. The first and second members may adhere to each other when the gable is in the closed position and may be non-adherent when the gable is in the open position. One of the attaching members may be arranged on the gable, and the other one on a side portion of the base frame. Especially, one of the attaching members may be arranged on an inner side of the gable, facing the side portion, and the other attaching member may be arranged on an outer side of the side portion, facing the gable.

[0018] In another embodiment, the at least one first and at least one second attaching member may correspond to a at least one first and a at least one second magnetic member respectively. The first magnetic member may be a magnet and the second magnetic member may be a magnetic material such as a screw or piece of metal.

[0019] In yet another embodiment, the at least one first magnetic member may be arranged on the at least one gable and at least one second magnetic member is arranged on a side portion of the base frame, where the side portion may extend in a direction parallel to the second axis. The first magnetic member being arranged on the gable and the second magnetic member being arranged on the side portion may assure that when the gable is rotated into the closed position, the first magnetic member adheres to the second magnetic member on the side portion, indicating that the gable may be kept in the closed position by the magnetic members. Applying a force larger than the magnetic force between the two magnetic members to the gable, and to the first magnetic member, allows for rotation of the gable into the open position and thus for removal of the translucent cover from the base frame. Alternatively, the first magnetic member may be arranged on the side portion and the second magnetic member on the gable.

[0020] In another embodiment, the base frame may comprise a through hole arranged on a side portion of the base frame, said side portion extending in a direction parallel to the second axis, wherein the through hole is configured to receive cabling, and wherein the through hole constitutes a protruding part of the side portion. The

through hole may provide means for providing the interior of the light fixture with cabling allowing for electrical features such as LED, light bulbs, fluorescent lamps, or other electrical mean for generation of light inside the light fixture.

[0021] In another embodiment, the hinge may be arranged to extend on either side of the protruding part. The hinge extending on either side of the protruding part may allow for rotation of the gable without interference with cabling passing through the trough hole.

[0022] According to a further embodiment, the attaching members may be contained in a space formed by the distance between the outer side of the side portion and an inner side of the gable. The distance between the inner side of the gable and the outer side of the side portion may provide space to contain the attaching members.

[0023] According to another embodiment, the at least one gable may comprise an opening arranged to receive the protruding part when the gable is in the closed position. The protruding part may extend through the gable. The opening in the gable may allow for the cabling to pass through the gable into the light fixture without being obstructed or affected by rotation of the gable between its open and closed positions.

[0024] In a further embodiment, the base frame may be configured to carry LED lamps and wherein the translucent cover is arranged to cover the LED lamps.

[0025] According to another aspect of the invention, there is provided a method for enabling maintenance of a light fixture according to the first aspect of the invention. The method may comprise the steps of rotating the at least one gable around the second axis from the closed position to the open position, and removing the translucent cover. Rotation of the gable around the second axis may allow for removal of the translucent cover from the base frame without causing damage to the translucent cover. Removal of the translucent cover may disclose the interior of the light fixture and thus allow for maintenance of the interior of the light fixture or maintenance of the translucent cover.

Brief Description of the Drawings

[0026] This and other aspects of the present invention will now be described more in detail, with reference to the appended drawings showing a currently preferred embodiment of the invention.

Figure 1 illustrates a perspective view of the light fixture with the gables in the closed position according to an embodiment of the invention.

Figure 2 illustrates a perspective view of the light fixture with the gables in the open position according to an embodiment of the invention.

Figure 3 illustrates a transparent view of the gable in the closed position according to an embodiment of the invention.

Figure 4 illustrates a transparent view of the gable in the open position according to an embodiment of the invention.

Figure 5 illustrates a perspective view of the light fixture with the gable in the open position according to an embodiment of the invention.

Figure 6 illustrates a cross-sectional view of the gable according to an embodiment of the invention.

Figure 7 illustrated a side portion of the base frame according to an embodiment of the invention.

Figure 8 illustrated a cross sectional view of the light fixture according to an embodiment of the invention.

Figures 9 and 10 illustrate an exploded view of the light fixture with the gables in the open position according to an embodiment of the invention.

Figure 11 shows a flow chart of the method according to an embodiment of the invention.

Detailed Description

[0027] The present invention will be described more fully hereinafter with reference to the accompanying drawings. In the drawings, like numbers refer to like elements.

[0028] The light fixture 1 according to an embodiment of the invention is illustrated in figure 1. The light fixture 1 comprises a base frame 2 which extends longitudinally along a first axis A and is arranged to be mounted to a surface such as a wall or ceiling. The light fixture further comprises a translucent cover 3 arranged on the side of the base frame which is facing away from the wall or ceiling. Two gables 4 are rotatably arranged to the base frame 2, one on each longitudinal end of the base frame 2. The gables 4 are rotatable between a closed position, illustrated in fig. 1 and an open position, illustrated in fig. 2. The gables 4 are rotatable around a second axis B, perpendicular to the first axis A, illustrated in fig. 3.

[0029] Fig. 3 provides a view of a part of the light fixture 1 with a transparent view of the gable 4 in the closed position. As illustrated in fig. 3, the base frame 2 comprises a side portion 221, 222 which comprises an inner side 221 b, 222b facing the interior of the base frame 2 and an outer side 221 a, 222a, facing the interior of the gable 4. A first side portion 221 is located on a first side of the base frame 2 and a second side portion 222 located on a second side of the base frame 2. The second side portion 222 being identical in terms of function and features as the first side portion 221.

[0030] The gable 4 is arranged to the base frame 2 by a hinge 24. The hinge 24 may be arranged with a distance to the to the outer side 221 a, of the side portion 221 of the base frame 2. The gable 4 further comprise attaching means that comprise a first attaching member 42 located on a base frame side portion 221, 222 facing side of the gable 4. The first attaching member 42 may be a magnet, an adhesive material, velcro, or other suitable material which allows for attachment without the use of additional attaching means such as screws or nails. The outer side

221 a of the base frame side portion 221 comprises a second attaching member 23 configured to adhere to the first attaching member 42 when the gable 4 is in the closed position and thus serves to keep the gable 4 in the closed position. The second attaching member 23 may be a magnetic material, such as a screw head or piece of metal, or other suitable material adhering to the first attaching member 42.

[0031] In fig. 4 the gable 4 is in the open position and thus there is a space between the first 42 and second 23 attaching members of the attaching means.

[0032] In fig. 4, it is also illustrated a protruding part 25, which extends from the side portion 221, 222 and through the gable 4. The protruding part is configured to allow for passage of cabling into the light fixture via a through hole 21. The protruding part 25 further allows cabling to pass into the light fixture without causing entanglement of the cabling with the gable 4 when this rotates between its open and closed positions.

[0033] In fig. 5, the through hole 21 through the protruding part 25 is illustrated. The through hole 21 allows for passage of cabling through the protruding part 25 into the interior of the light fixture 1. The gable 4 comprises an opening 41 which is arranged to surround the protruding part 25 when the gable 4 is in the closed position.

[0034] Fig. 6 illustrates a cross sectional side view of the gable 4. The gable 4 comprises two first attaching members 42 arranged one on each side of the opening 41. Two corresponding second attaching members 23 are arranged on the outer side 221a of the side portion 221, one on each side of the through hole 21, as illustrated in fig. 7.

[0035] The base frame 2 comprises a third 223 and fourth 224 side portion which extend between the first 221 and second 222 side portions of the base frame 2, in the longitudinal direction of the base frame 2. The third 223 and fourth side portions 224, comprise an outer side facing the exterior of the light fixture 1 and an inner side facing the interior of the light fixture 1. The translucent cover 3, when attached to the base frame 2, is configured to abut inner sides of the third 223 and fourth 224 side portions, as illustrated in fig. 8.

[0036] Fig. 9 and fig. 10 show an exploded view of the base frame 2 and the translucent cover 3. The interior of the base frame is adapted to hold LED lamps but can also be used with fluorescent lamps or other means of light transmission. The translucent cover 3 aims to spread light evenly or directed to a specific area and also serves to protect the eyes of a user of the light fixture form direct or strong light.

[0037] The base frame 2 and gables 4 are produced from sheet metal, wood, hard plastic or other suitable material for mounting to a wall or ceiling. The translucent cover 3 is made of translucent or transparent plastic, which could suitably be a thermo-plastic, preferably PM-MA.

[0038] In figure 11, the method 100 according to an embodiment of the invention is illustrated. The gable 4

is rotated 101 from the closed position to the open position by applying a force larger than the force of the attaching members 42, 23. When the gables 4 are rotated 101 into the open position, the translucent cover 3 can be removed 102. After removal 102 of the translucent cover 3 maintenance 103 is performed.

[0039] In the drawings and specification, there have been disclosed preferred embodiments and examples of the invention and, although specific terms are employed, they are used in a generic and descriptive sense only and not for the purpose of limitation, the scope of the invention being set forth in the following claims.

Claims

1. A light fixture (1) comprising:

a base frame (2) extending longitudinally along a first axis (A),
a translucent cover (3) arranged to the base frame,
at least one gable (4),

characterized in that said at least one gable is rotationally moveable around a second axis (B) relative to the base frame between an open position and a closed position, such that the translucent cover is fixed relative to the base frame by the at least one gable being in the closed position, and wherein the translucent cover is removable from the base frame when the at least one gable is in the open position.

2. A light fixture (1) according to any of the previous claims, wherein the first axis (A) is perpendicular to the second axis (B).

3. A light fixture (1) according to any of the previous claims, wherein a hinge (24) is arranged to the base frame (2), wherein the gable (4) is suspended to the base frame by the hinge, and wherein the hinge provides the rotatability of the gable around the second axis (B).

4. A light fixture (1) according to claim 3, wherein the hinge (24) is arranged at a distance from a side portion (221, 222) of the base frame (2), said side portion extending in a direction parallel to the second axis (B), such as to form a space between the gable (4) and an outer side (221 a, 222a) of the side portion.

5. A light fixture (1) according to any of the previous claims, wherein the at least one gable (4) extends in the direction of the first axis (A) such that an end portion of the translucent cover (3) is held fixed relative to the base frame (2) when the at least one gable is in the closed position.

6. A light fixture (1) according to any of the previous claims, wherein the base frame (2) comprises a first (221) and a second (222) side portion extending in a direction parallel to the second axis (B), wherein the first and second side portions comprise an outer side (221 a, 222a) facing the gable (4) and an inner side (221 b, 222b) facing an interior of the base frame, wherein the translucent cover (3) is configured to extend between the inner sides of the first and second side portions, and wherein the gable comprises a holding portion which in the closed position is configured to extend past the first and second side portions in direction from the outer side to the inner side thereof to hold the end portion of the translucent cover. 5
7. A light fixture (1) according to any of the previous claims, wherein the base frame (2) comprises a third (223) and fourth (224) side portion extending along the longitudinal direction of the base frame (2), wherein each of the third and fourth side portion comprises an outer side facing the exterior of the base frame and an inner side facing the interior of the base frame, wherein the translucent cover (3) is arranged to abut the inner side of the third and fourth side portion respectively. 10 20 25
8. A light fixture (1) according to any of the preceding claims, wherein the at least one gable (4) is held in the closed position by means of attaching means (42, 23). 30
9. A light fixture (1) according to claim 8, wherein the attaching means comprises at least one first attaching member (42) and at least one second attaching member (23) configured to adhere to each other. 35
10. A light fixture (1) according to claim 9, wherein the at least one first (42) and at least one second (23) attaching member correspond to a at least one first and a at least one second magnetic member respectively. 40
11. A light fixture (1) according to claim 10, wherein at least one first magnetic member (42) is arranged on the at least one gable (4) and at least one second magnetic member (23) is arranged on a side portion (221, 222) of the base frame, said side portion extending in a direction parallel to the second axis (B). 45 50
12. A light fixture (1) according to any of the previous claims, wherein the base frame (2) comprises a through hole (21) arranged on a side portion (221, 222) of the base frame, said side portion extending in a direction parallel to the second axis (B), wherein the through hole is configured to receive cabling, and wherein the through hole constitutes a protruding part (25) of the side portion. 55
13. A light fixture (1) according to claim 12, wherein the hinge (24) is arranged to extend on either side of the protruding part (25).
14. A light fixture (1) according to any of claims 12-13, wherein the at least one gable (4) comprises an opening (41) arranged to receive the protruding part (25) when the gable is in the closed position, and wherein the protruding part extends through the gable.
15. Method (100) for enabling maintenance (103) of a light fixture according to any of the previous claims, the method comprising the steps of:
Rotating (101) the at least one gable (4) around the second axis (B) from the closed position to the open position, and
removing (102) the translucent cover (3).

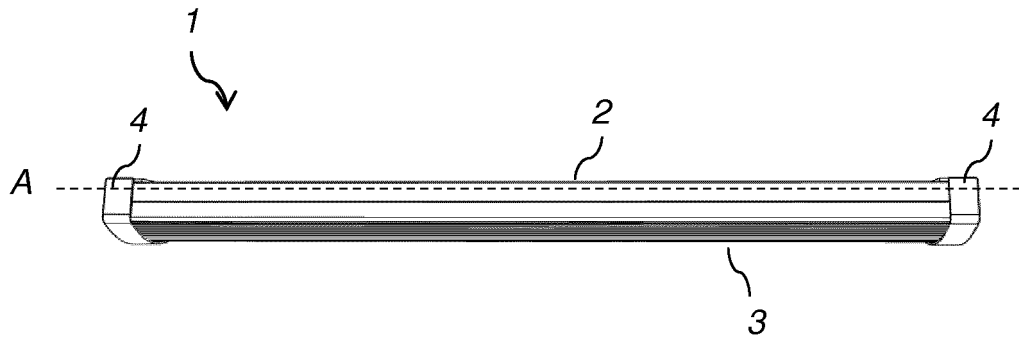


Fig. 1

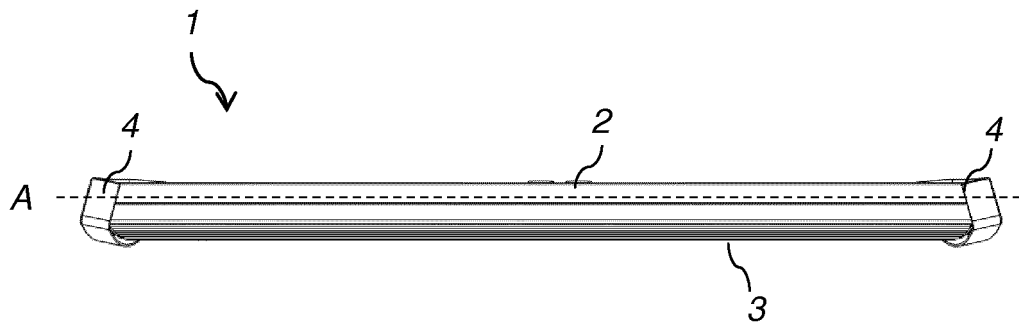


Fig. 2

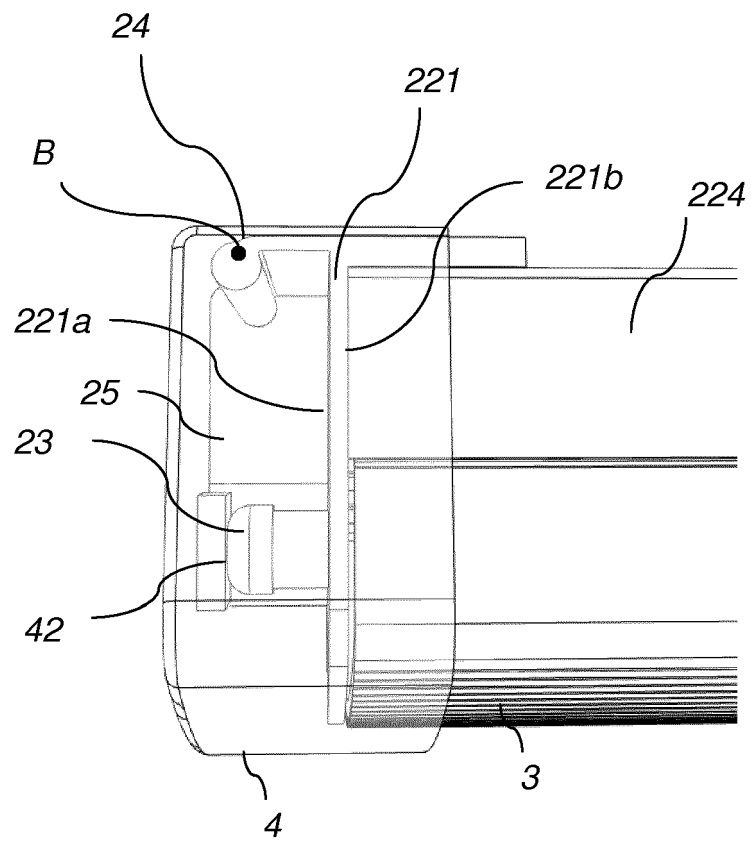


Fig. 3

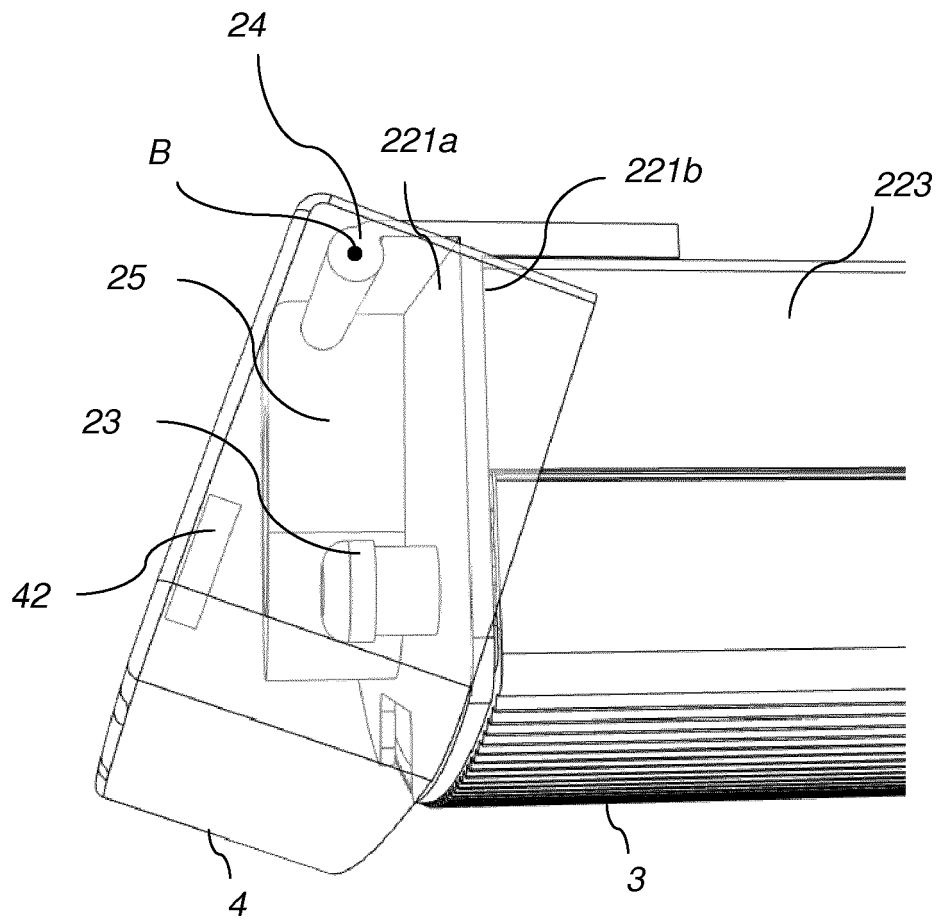


Fig. 4

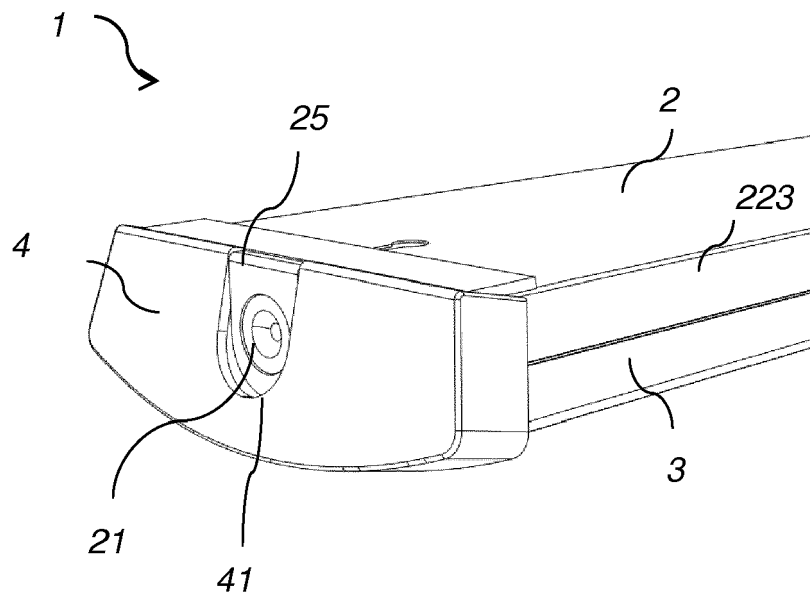


Fig. 5

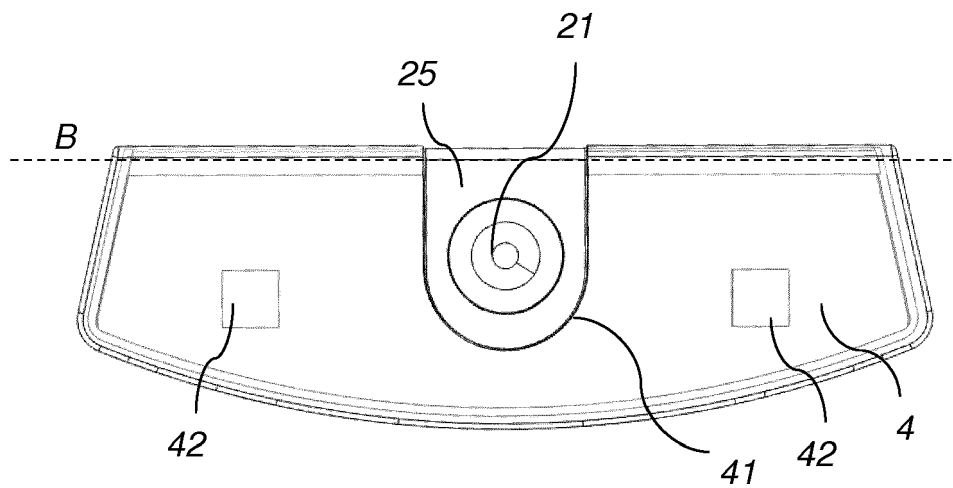


Fig. 6

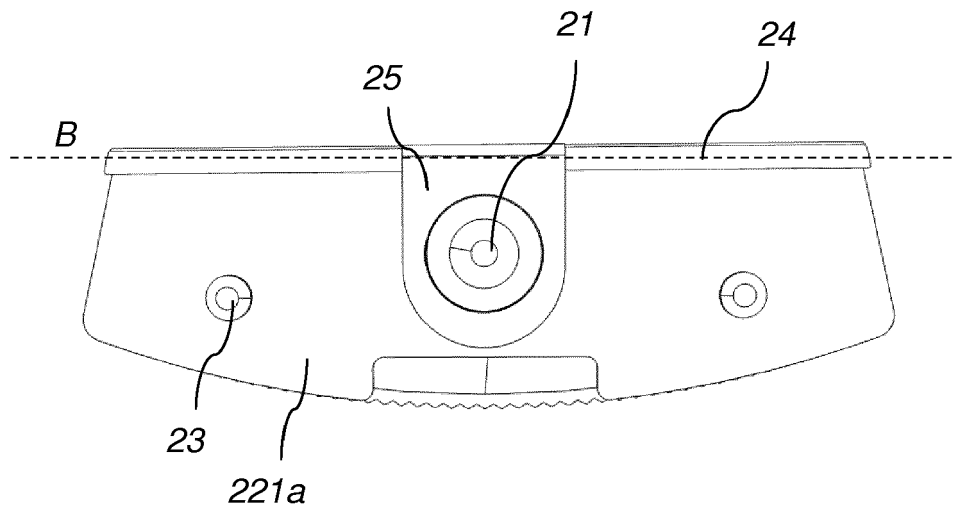


Fig. 7

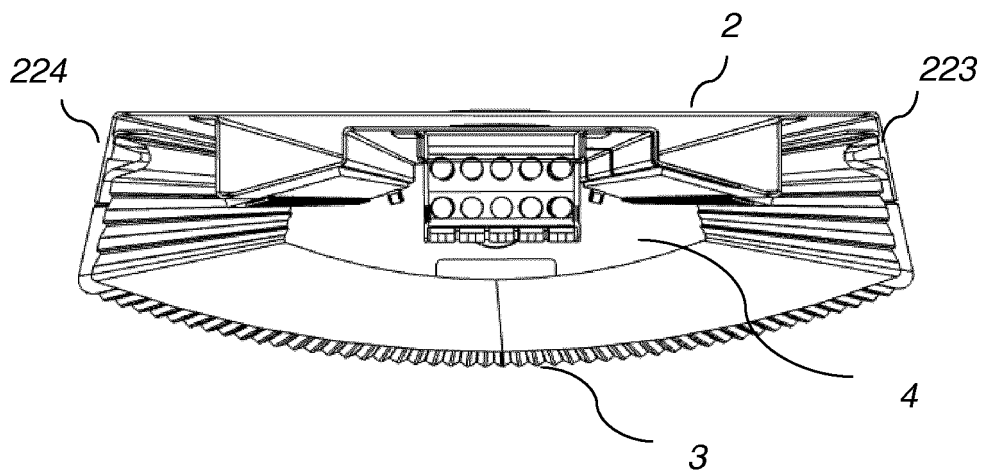


Fig. 8

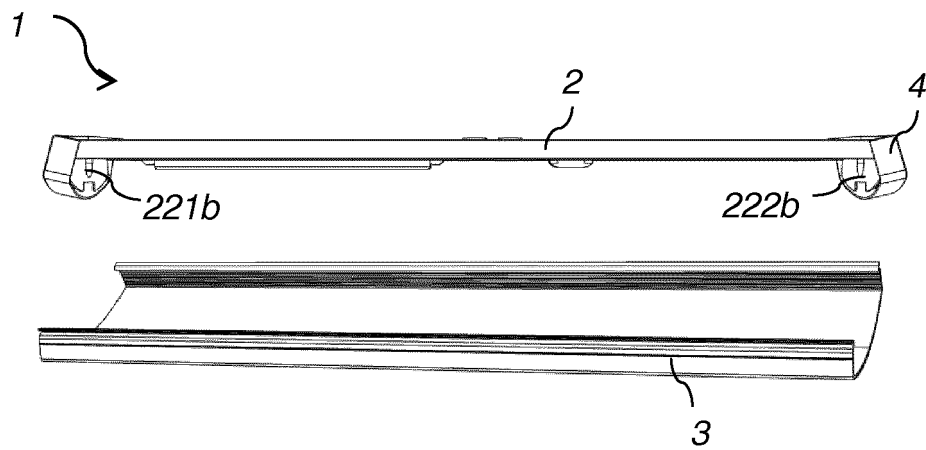


Fig. 9

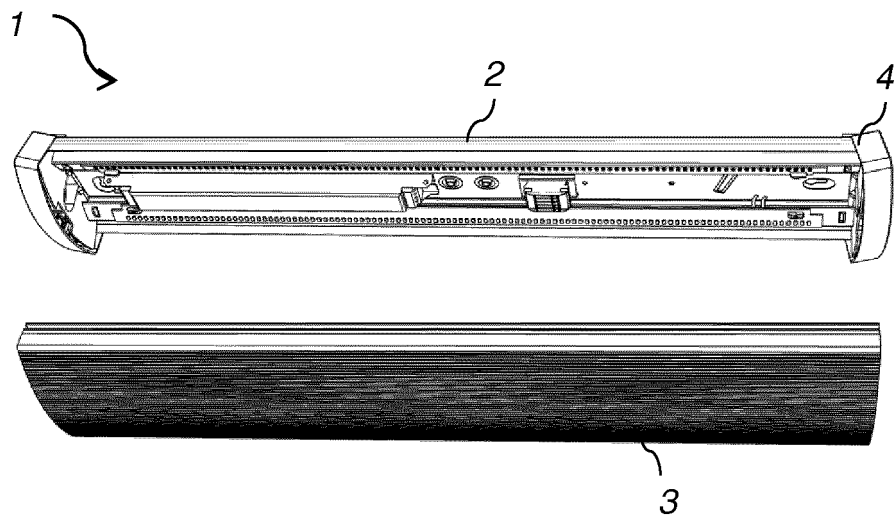


Fig. 10

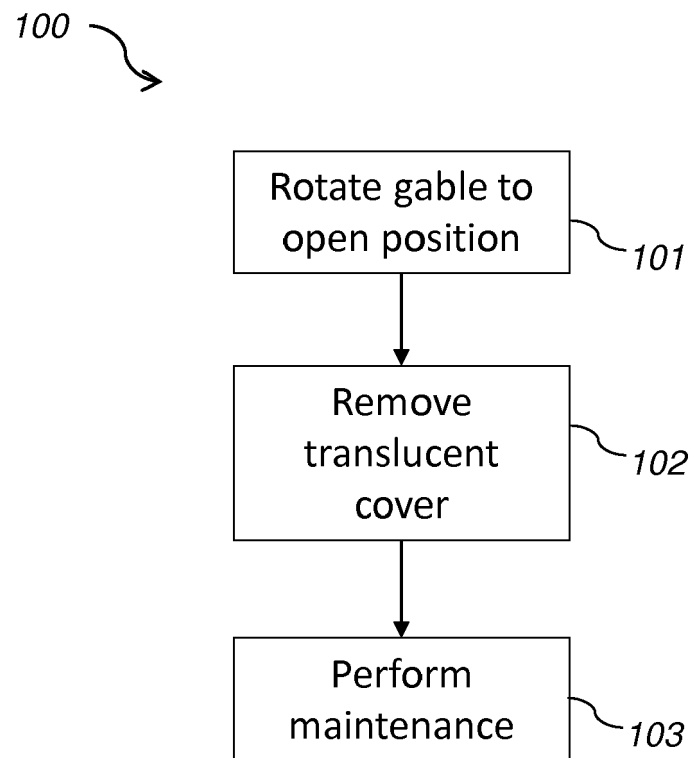


Fig. 11



EUROPEAN SEARCH REPORT

 Application Number
 EP 17 16 8349

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 10 2009 026095 A1 (SEMPERLUX AG LICHTTECHNISCHE WERKE [DE]) 5 January 2011 (2011-01-05) * paragraphs [0042] - [0054]; figures 1-15 *	1,3-5, 7-9,12, 15 2,6,10, 13,14	INV. F21V15/015 F21V17/10 ADD. F21V3/00 F21S8/04
A	----- US 2 490 191 A (BAKER FREDERICK C) 6 December 1949 (1949-12-06) * column 2, line 32 - column 5, line 2; figures 1-6 *	1,3-5, 12,15 2,6-11, 13,14	
A,D	----- US 2 524 353 A (LOCKE ANDREW O) 3 October 1950 (1950-10-03) * column 3, line 34 - column 6, line 30; figures 1-11 *	1-15	
A	----- FR 1 312 544 A (LE PROJECTEUR STANDARD) 21 December 1962 (1962-12-21) * the whole document *	1-15	
A	----- FR 1 299 027 A (LE PROJECTEUR STANDARD) 20 July 1962 (1962-07-20) * the whole document *	1-15	TECHNICAL FIELDS SEARCHED (IPC)
A	----- BE 550 687 A (ANCIENS ATELIERS VAN GINNEKEN & PACKET P.V.B.A.) 18 December 1959 (1959-12-18) * the whole document *	1-15	F21V F21S
A	----- EP 2 163 815 A2 (BEGHELLI SPA [IT]) 17 March 2010 (2010-03-17) * paragraphs [0017] - [0023]; figures 17-21 *	1-15	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 29 September 2017	Examiner Menn, Patrick
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 17 16 8349

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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