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(71) Applicant: **Daxtor APS**
8600 Silkeborg (DK)

(72) Inventor: **Dahl, Torben**
8600 Silkeborg (DK)

(74) Representative: **Tellefsen, Jens J.**
Patrade A/S
Fredens Torv 3A
8000 Aarhus C (DK)

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(54) **Mounting bracket for use in mounting accessories for lighting equipment**

(57) A mounting bracket (1) for use in mounting accessories for lighting equipment, wherein the bracket includes a displaceable (20) part pivotably connected to a mounting part (30), wherein the displaceable part includes a first stationary part (10) and a second displace-

able part (20), wherein the stationary part is fastened on the lighting equipment, and wherein the stationary part and the displaceable part interact whereby the displaceable part can be displaced along the stationary part, the stationary part having a longer dimension in the direction of displacement than the displaceable part.

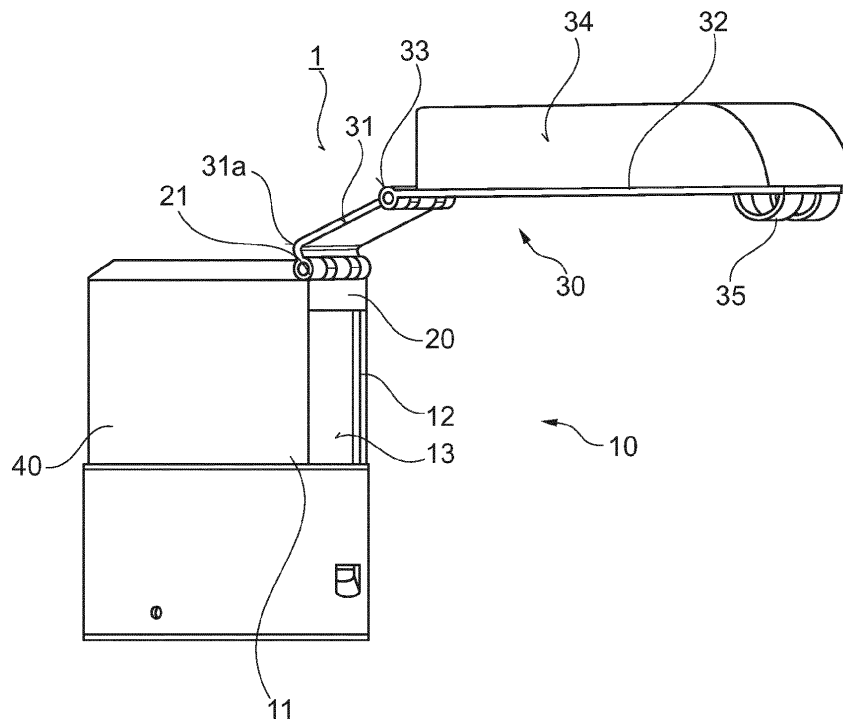


Fig. 1

Description

Field of the Invention

[0001] The present invention concerns a mounting bracket for use in mounting accessories for lighting equipment.

Background of the Invention

[0002] In connection with a large number of lighting fixtures, including particularly recessed spots with as well as without mounting box, the mounting of the former typically occurs from the front side of the building part in which the lighting fixture/spot is to emit light from as small hole as possible provided in the building part. In connection with many modern light sources, besides the light source itself a recessed mounting box/mounting box, transformer, cooling, light control etc. are to be inserted, all of which are to be mounted in the building part through the relatively small hole that often has a size such that the recessed spot largely fills the entire hole after mounting. In order to reduce the installation height behind the building part such that the spacing, e.g. between a ceiling and the moisture barrier and other structure lying behind, can be kept as small as possible as it is often desirable that the extra accessories are mounted beside the lighting equipment.

[0003] In EP 2157370 is disclosed a mounting bracket including a first part which is pivotably connected to a mounting part, in that case a mounting box, suitable for mounting various lighting fixtures.

Object of the Invention

[0004] The object of the present invention is therefore to provide a bracket which enables installation of the type of lighting equipment requiring accessories or equipment in addition to the light source itself in such a way as to allow for the minimal installation height.

Description of the Invention

[0005] Therefore, the invention provides a mounting bracket for use in mounting accessories for lighting equipment, wherein the bracket includes a displaceable part pivotably connected to a mounting part, wherein the displaceable part includes a first stationary part and a second displaceable part, wherein the stationary part is fastened on the lighting equipment, and wherein the stationary part and the displaceable part interact whereby the displaceable part can be displaced along the stationary part, the stationary part having a longer dimension in the direction of displacement than the displaceable part.

[0006] In modern houses, besides requirements to insulation, window areas, air renewal etc. there are also requirements to the tightness of the house. It is therefore desirable that no penetration of the moisture barrier oc-

curs which contributes to sealing the house at points where it can be difficult to provide efficient sealing afterwards.

[0007] It is therefore desirable and possible with the present invention to mount recessed spots from the front side in such a way that the accessories needed for e.g. the light source, such as transformer, wire relief, printed circuit board, cooling fins and the like, can be mounted up through the hole in the building part in which the lighting equipment is to be mounted, and then slide in on the back side of the building part whereby the minimal installation height is attained. In that the slide system allows free height adjustment, it is implied that no loads are transmitted from e.g. a protruding item on which is mounted a transformer, possibly causing misalignments over time in the mounting of the lighting equipment relative to the building part. By relieving the lighting equipment itself, there is furthermore provided the option that the lighting equipment can be provided with a sealing ring such that the perforation in the building part in which the lighting equipment is to be inserted, becomes as airtight as possible so that the tightness of the house is enhanced.

[0008] In a further preferred embodiment, the mounting part includes two mutually hinged parts. Hereby is enabled that by the further hinging the accessories mounted in connection with the lighting equipment can be arranged as flatly as possible at the back side of the building part, thereby further reducing the installation height.

[0009] In further embodiments, the stationary means can be integrated in the lighting equipment, or the bracket as a whole can include means for fastening to the outer side of a lighting equipment. By these embodiments it is possible to prefabricate the bracket as a finished unit which can be mounted in connection with any type of equipment or alternatively, e.g. particularly by mounting boxes, to make the stationary means an integrated part of the mounting box such that the mounting box including the stationary means can be produced e.g. by an injection moulding process in one step.

[0010] In a further preferred embodiment, the displaceable means has an omega-shaped (or C-shaped) cross-section perpendicular to the direction of displacement, and that the stationary means includes a T-shaped cross-section wherein the omega-shaped (or C-shaped) part largely surrounds and grips displacingly around the T-shaped cross-section.

[0011] It may of course be vice versa as well, i.e. the displaceable means has a T-shaped cross-section perpendicular to the direction of displacement, and that the stationary means includes an omega-shaped or C-shaped cross-section wherein the omega-shaped/C-shaped part largely surrounds and grips displacingly around the T-shaped cross-section.

[0012] Both of these geometries enable a relatively easy production procedure as well as the interaction between the means is very uncomplicated and thus very reliable.

[0013] In a further preferred embodiment of the invention, the displaceable means is designed with a largely rectangular cross-section perpendicular to the direction of displacement, and that the stationary means includes an omega-shaped or C-shaped cross-section wherein the omega-shaped/C-shaped part largely surrounds and grips displacingly around the rectangular cross-section, and that the pivotable connection is part of the displaceable means

[0014] In yet a preferred embodiment of the invention, there are provided releasable fastening means by which the displaceable part can be fastened relative to the stationary part. This may be advantageous in designs where it is desired that an element e.g. is to have a certain distance to the light source, which e.g. can be the case by wire reliefs, such that the possibility of one part displacing relative to the other is not desirable as this can result in a load e.g. on the fastening of the terminals to the wire ends. The releasable fastening means may e.g. be separate pins which are inserted into the two mutually displaceable parts, or be the displaceable means which is provided with a flexible part which manually can be pressed into the stationary part in order thereby to lock the displaceable part relative to the stationary part.

[0015] In a particularly preferred embodiment of the invention, the lighting equipment includes a mounting box which the stationary part is either fastened to or integrated in.

Description of the Drawing

[0016] The invention will now be described with reference to the accompanying drawing, wherein

Figs. 1-3 illustrate different views of a first embodiment;

Fig. 4 shows an alternative embodiment.

Detailed Description of the Invention

[0017] In Fig. 1 is illustrated a mounting bracket 1 according to the invention, including a stationary part 10, a displaceable part 20 and a mounting part 30. In this embodiment, the stationary part 10 is integrated in the outer wall of a mounting box 40.

[0018] The stationary part 10 is designed as a recess, wherein along the sides there are provided two flanges 11, 12 such that the displaceable part 20 has an extension that protrudes in under the flanges and thereby are retained in the recess 13. The recess and the flanges 11, 12 hereby form an omega- or C-shape in cross-section. The displaceable part 20 can thus be moved up and down in the recess 13 guided by the flanges 11, 12. Moreover, see Fig. 4 which illustrates a cross-section through this construction. The corresponding parts are shown with corresponding reference numbers.

[0019] The pivotable connection 21 between the displaceable part 20 and the mounting part 30 are provided

in the form of hinge 21. The hinge 21 will of course follow the displaceable part in the movement in the recess 13. For that reason, the first part 31a of the first part 31 of the mounting part is provided with a bend so that the first part of the mounting part 31 can be folded/pivoted down along the outer wall of the mounting box 40. In this example, the mounting part 30 is divided into two parts 31, 32, which parts are connected with the hinge 33 such that even greater freedom is achieved in this way for positioning accessories, which in this case is illustrated as a transformer 34.

[0020] The double-bend connection provided by the hinges 21, 33 enables the transformer part to be supported at the back side of the building part (not shown) such that the mounting box 40 is not influenced by the weight of the transformer 34. This will particularly happen as illustrated in Fig. 2 where the displaceable part 20 is moved down to its lowermost position in the recess 13 such that the mounting part 30 and particularly the support part 35 mounted on the mounting part 30 rest on the back side of the building part in which the lighting equipment is mounted.

[0021] As it appears from Fig. 1 and 2, the displaceable part 20 can be moved up and down in the recess 13 so that the dimension of the stationary part 10 determines how much the displaceable part can be moved up and down.

[0022] In Fig. 3 is shown a further embodiment wherein a light source, e.g. a recessed spot 50, is provided with a stationary part 10, a hinge 21 mounted on a displaceable part 20, and a mounting part 30. In an entirely analogous way as already described above, the displaceable part 20 can be moved up and down by the stationary part 10 such that the recessed spot 50 can be correctly disposed relative to the internal side 100 as illustrated by the broken line of a building part, after which the mounting part can be properly positioned.

[0023] The invention is thus described with reference to the accompanying drawing which illustrates concrete examples of the design of the invention, but it is apparent that the invention is only to be limited by the wording of the claims, providing the option of far more embodiments than those shown in this detailed description.

Claims

1. A mounting bracket (1) for use in mounting accessories for lighting equipment, including a pivotable part connected with a mounting part, **characterised in that** the bracket (1) includes a displaceable part (20) pivotably connected to a mounting part (30), wherein the displaceable part (20) includes a first stationary part (10) and a second displaceable part (20), wherein the stationary part (10) is fastened on the lighting equipment, and wherein the stationary part (10) and the displaceable part (20) interact whereby the displaceable part (20) can be displaced

along the stationary part (10), the stationary part (10) having a longer dimension in the direction of displacement than the displaceable part (20).

2. Mounting bracket according to claim 1, **characterised in that** the mounting part (30) includes two mutually hinged parts (31, 32). 5
3. Mounting bracket according to claim 1, **characterised in that** the stationary means (10) is integrated in the lighting equipment. 10
4. Mounting bracket according to claim 1, **characterised in that** the bracket (1) includes means for fastening to the outer side of a lighting equipment. 15
5. Mounting bracket according to claim 1, **characterised in that** the displaceable means (20) has an omega-shaped cross-section perpendicular to the direction of displacement, and that the stationary means (10) includes a T-shaped cross-section wherein the omega-shaped part largely surrounds and grips displacingly around the T-shaped cross-section. 20
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6. Mounting bracket according to claim 1, **characterised in that** the displaceable means (20) has a T-shaped cross-section perpendicular to the direction of displacement, and that the stationary means (10) includes an omega-shaped cross-section wherein the omega-shaped part largely surrounds and grips displacingly around the T-shaped cross-section. 30
7. Mounting bracket according to claim 1, **characterised in that** the displaceable means (20) has a largely rectangular cross-section perpendicular to the direction of displacement, and that the stationary means (10) includes an omega-shaped cross-section wherein the omega-shaped part largely surrounds and grips displacingly around the rectangular cross-section, and that the pivotable connection (21) is part of the displaceable means (20). 35
40
8. Mounting bracket according to claim 1, **characterised in that** there are provided releasable fastening means by which the displaceable part (20) can be fastened relative to the stationary part (10). 45
9. Mounting bracket according to any preceding claim, **characterised in that** the lighting equipment includes a mounting box (40) which the stationary part (10) is either fastened to or integrated in. 50

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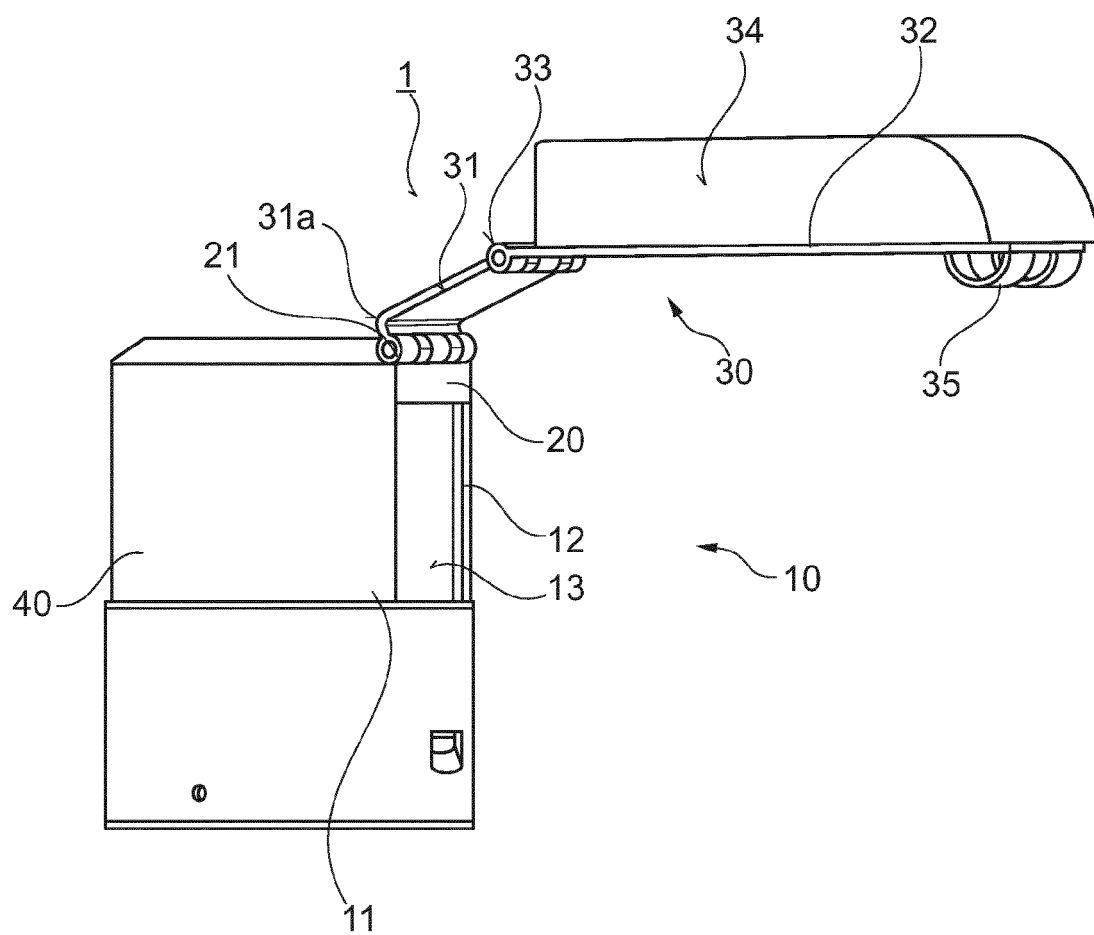


Fig. 1

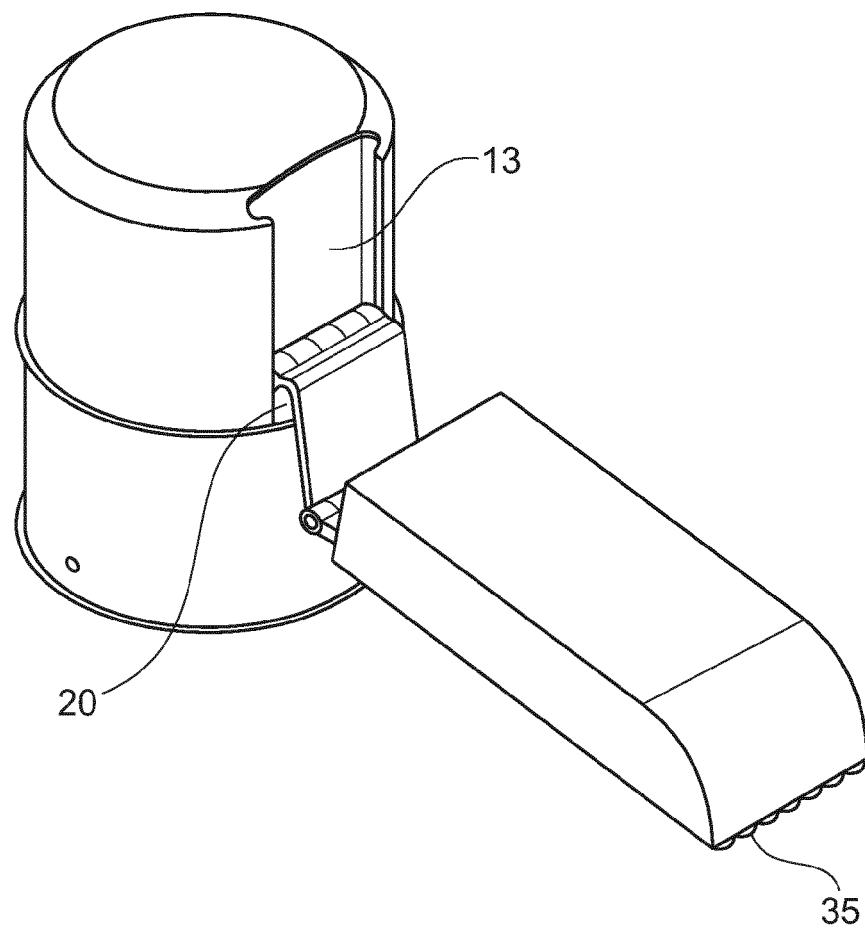
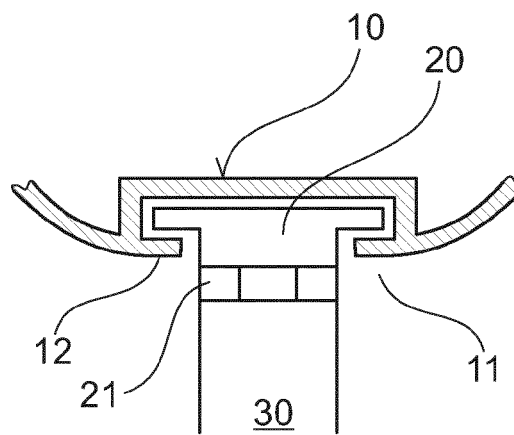
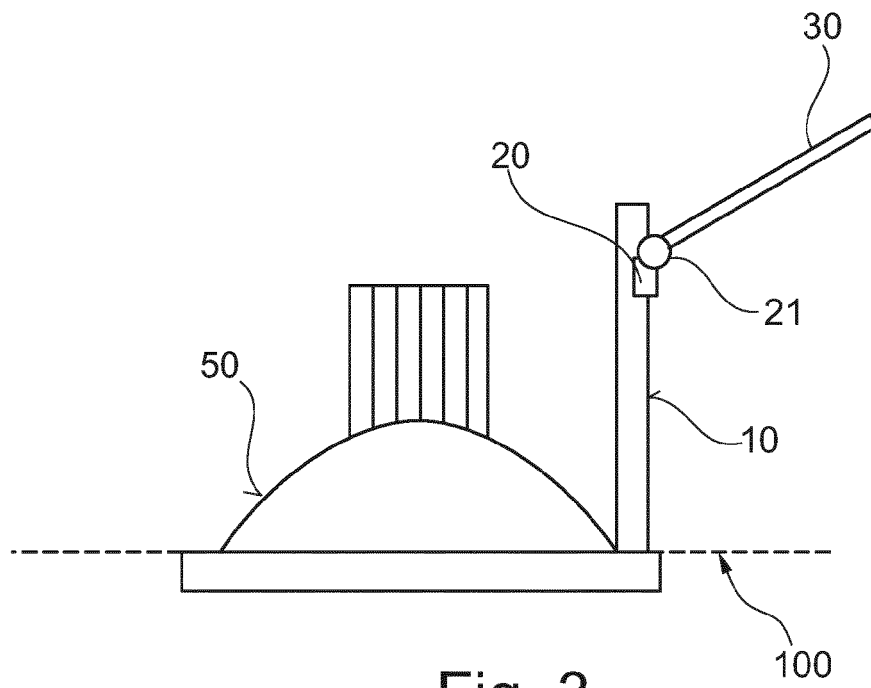


Fig. 2





EUROPEAN SEARCH REPORT

Application Number
EP 12 19 5659

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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Y	* paragraph [0011] - paragraph [0026];	2	
A	figures 1-6 *	5-7,9	
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	* page 5 - page 7; figures 1-4 *		
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 6 March 2013	Examiner Arboreanu, Antoniu
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p>			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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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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