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**Meyer**(10) **Pub. No.: US 2010/0326997 A1**(43) **Pub. Date: Dec. 30, 2010**(54) **MOBILE CASING DEVICE****Publication Classification**(75) Inventor: **Yves Meyer, Rixheim (FR)**(51) **Int. Cl.**  
**B65D 61/00** (2006.01)(52) **U.S. Cl.** ..... **220/751**(57) **ABSTRACT**

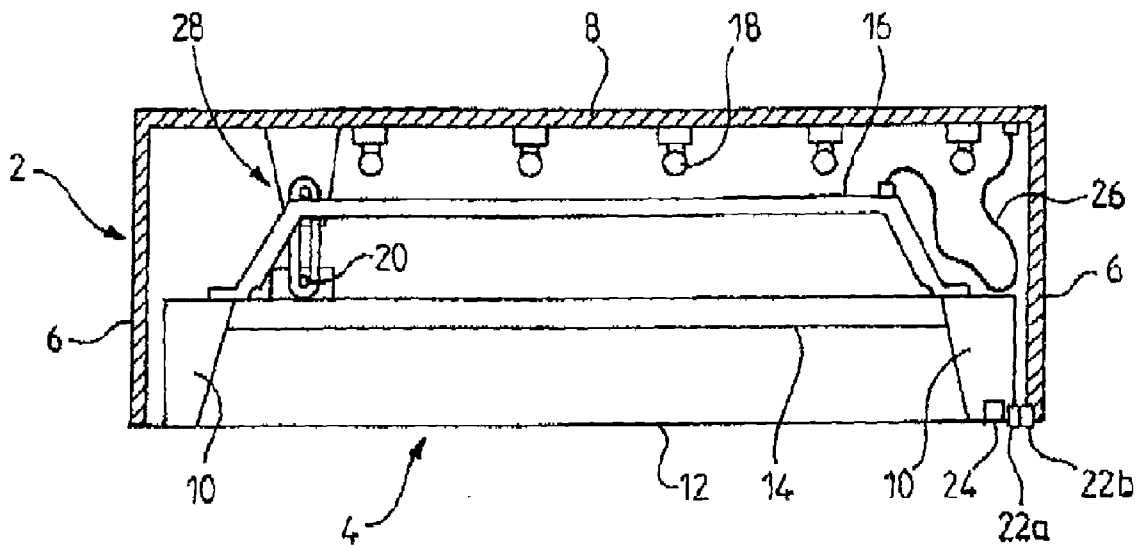
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§ 371 (c)(1),

(2), (4) Date: **Aug. 20, 2010**

The invention relates to a mobile casing device, in particular for a hanging ceiling, that comprises: a casing (4) comprising a so-called inner frame at the base of which a stretched web (12) is attached, a casing housing (2) comprising a so-called outer frame and a bottom (8), to be attached to a wall; and a hinge assembly (28) connecting the casing (4) and the casing housing (2) in order to enable the tilting of the casing relative to the casing housing. The device is characterised in that the hinge assembly includes a first portion mounted on a surface of the inner frame opposite the bottom and a second portion mounted on the bottom, the first and second portions being mounted so as to be capable of rotation relative to each other, and in that one of the two portions of the hinge assembly is mounted so as to be capable of sliding movement.



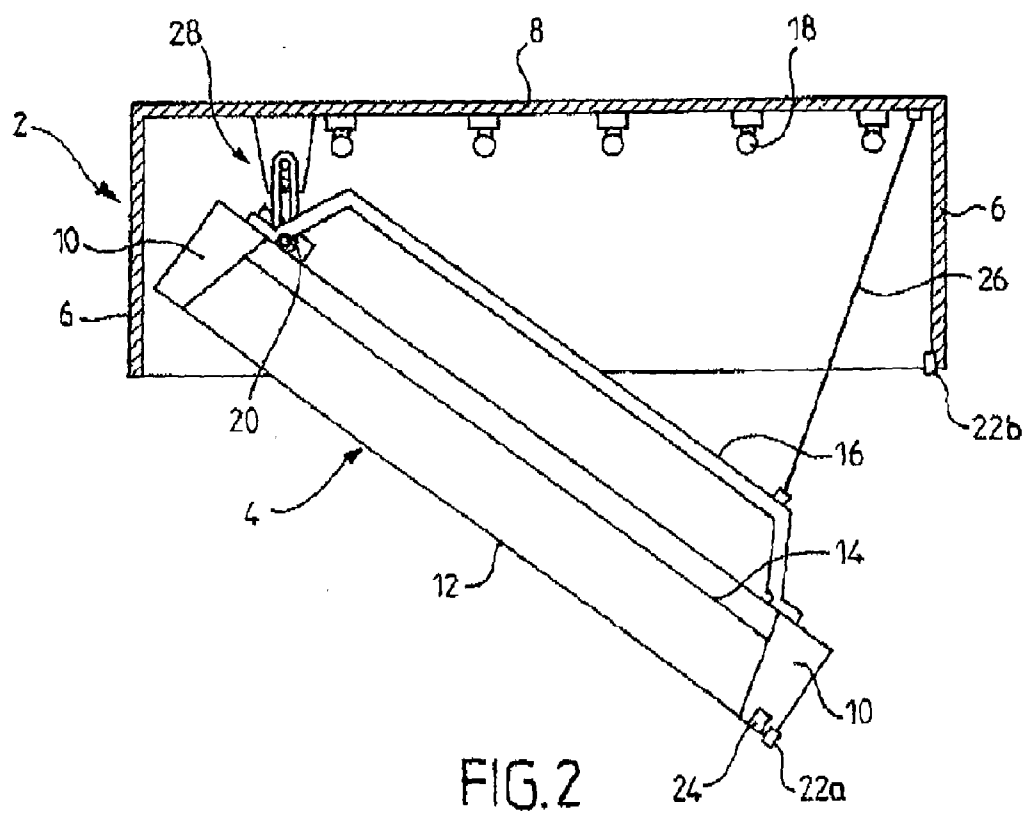
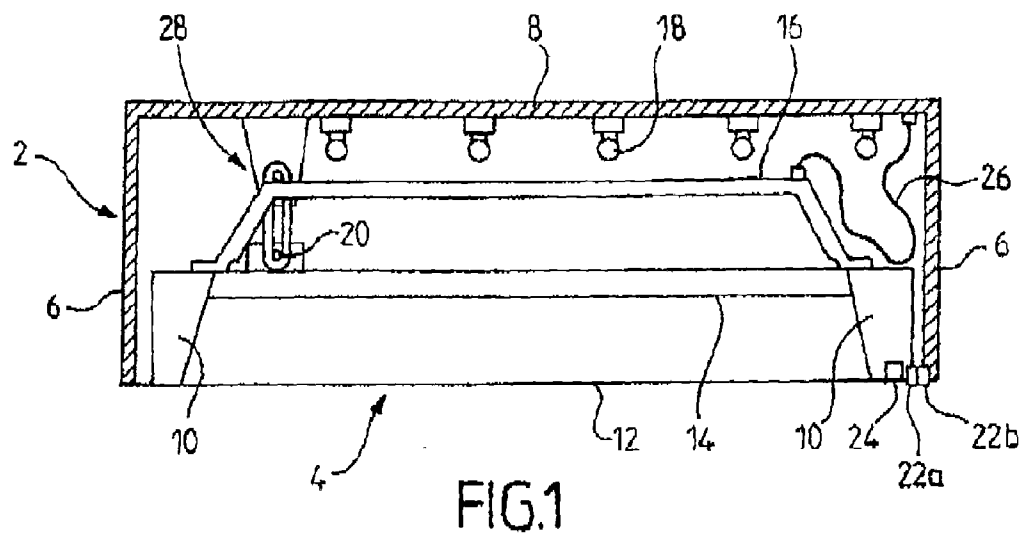


FIG. 3

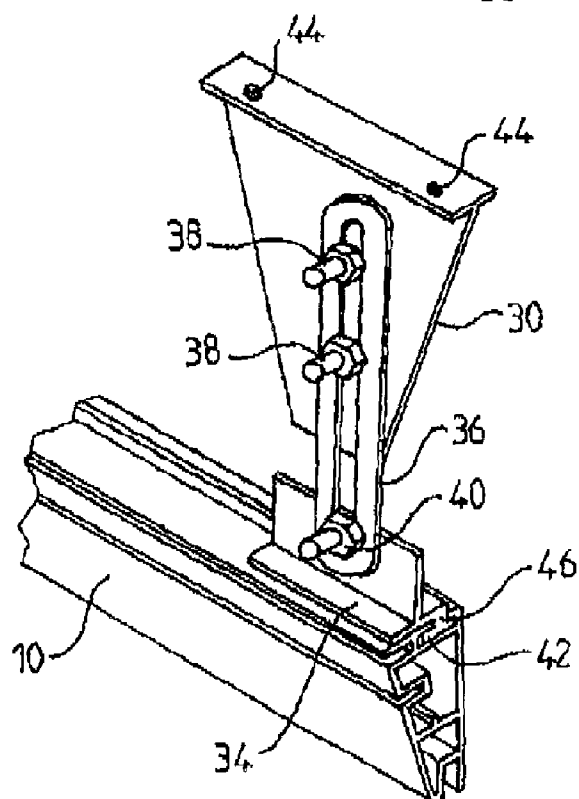
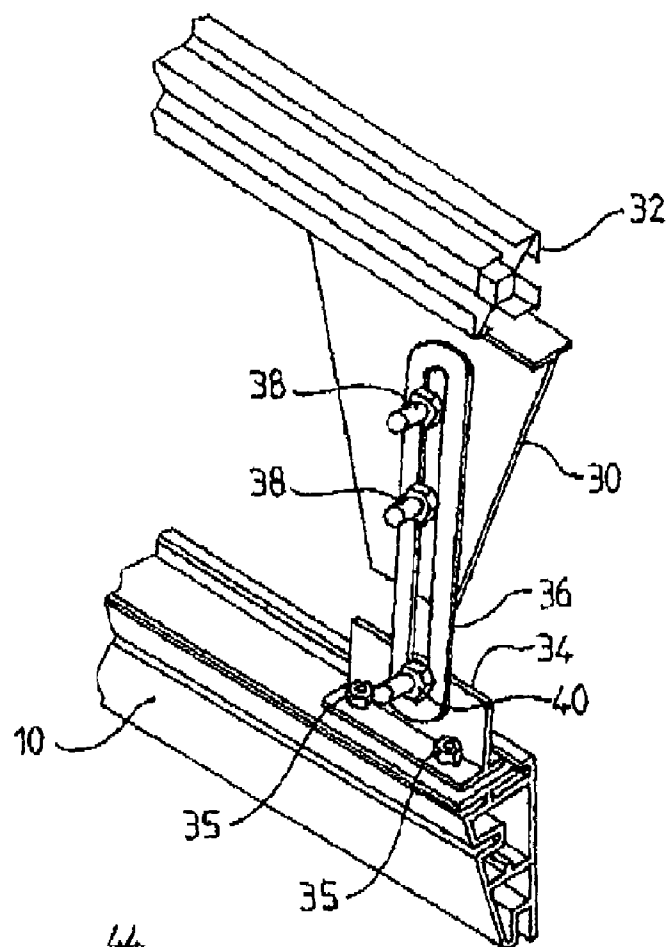
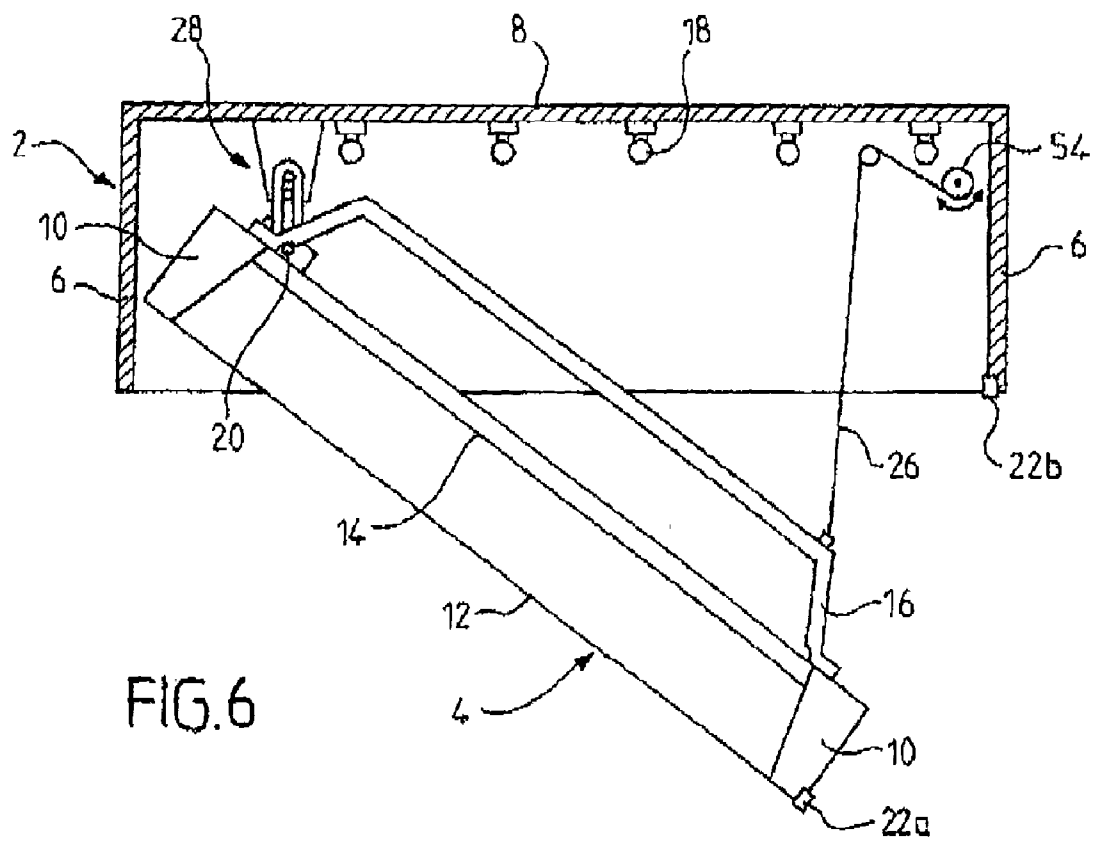
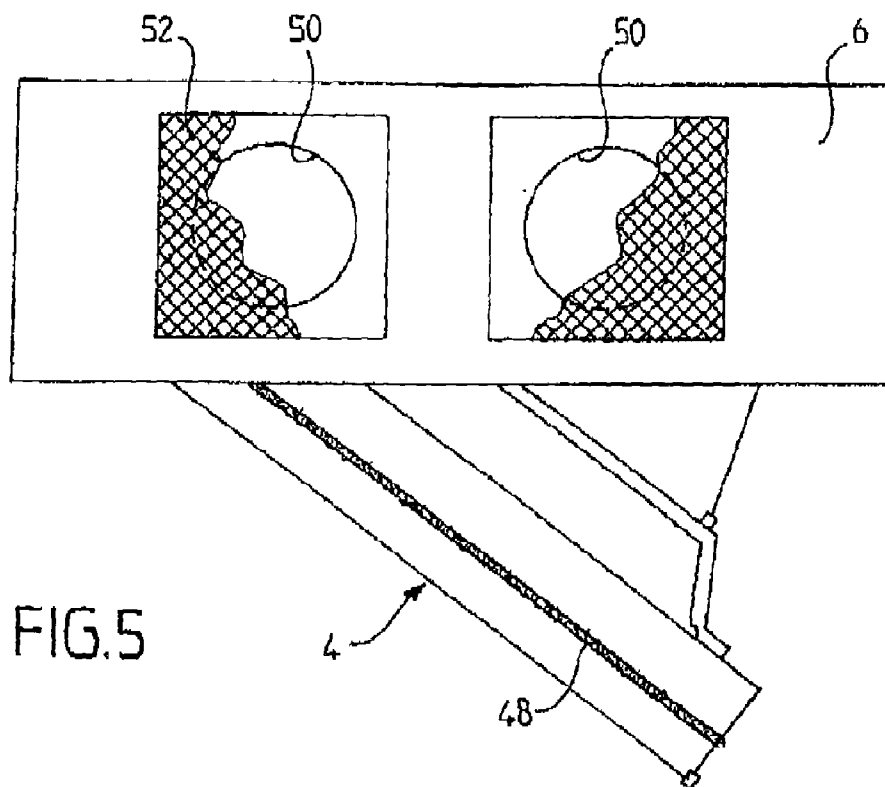


FIG. 4



## MOBILE CASING DEVICE

[0001] The present application is the United States National Stage Entry of International Application Number PCT/FR2008/000238, filed Feb. 27, 2008, the entirety of which is incorporated herein by reference.

## FIELD OF THE INVENTION

[0002] The present invention concerns a mobile casing device.

## SUMMARY OF THE INVENTION

[0003] This device is to be attached to a surface such as a wall or a ceiling.

[0004] It includes a casing comprised of a stretched web attached to the base of a frame, called the inner frame, a casing housing including a frame, called the outer frame, and a bottom to be attached to a surface, and a hinge assembly connecting the casing and the casing housing so as to allow the casing to tilt relative to the casing housing.

[0005] In particular, the casing housing can be equipped with lighting means and the web can be of a translucent type. The casing may also include, in known fashion, stiffening elements to strengthen its stiffness.

[0006] To allow maintenance of both the inside surface of the stretched web (cleaning) and of the lighting means (cleaning and replacement of the fluorescent tubes), the casing is pivotably mounted to the casing housing.

[0007] Articulation of the casing relative to its casing housing is known, particularly from document FR-A-2 882 588.

[0008] The purpose of the present invention is to propose a simpler and more effective solution for tilting the casing.

[0009] The object of the present invention is therefore a mobile casing device, particularly for hanging ceilings, including:

[0010] a casing including a frame, called the inner frame, to the base of which is attached a stretched web,

[0011] a casing housing including a frame, called the outer frame, and a bottom to be attached to a surface, and

[0012] a hinge assembly connecting the said casing and the said housing so as to allow tilting of the said casing relative to the said housing,

in which the said hinge assembly includes a first part mounted on one face of the said inner frame, facing the said bottom, and a second part mounted on the said bottom, the first and second parts being mounted so as to allow rotation of one relative to the other.

[0013] This arrangement allows easy assembly of the casing to the casing housing.

[0014] One of the two parts of the hinge assembly is advantageously mounted slidably. In the case of the first part, it is slidably mounted on an integral slide or in a groove in the inner frame.

[0015] According to a preferred embodiment, the said second part includes a small plate extending perpendicularly from the bottom, and a splice plate, the said splice plate being rotatably mounted to the first part of the hinge assembly.

[0016] According to a preferred embodiment, the second part is a small plate including a first flange perpendicular to the plane of the outer frame and a second flange perpendicular to the plane of the small plate.

[0017] The hinge assembly is advantageously made integral with the bottom of the casing housing.

[0018] One approach to practicing the invention is described hereafter, as a non-limiting example, with reference to the appended drawing in which:

## BRIEF DESCRIPTION OF THE DRAWINGS

[0019] FIG. 1 is a vertical section of a mobile casing device in its movable closed position, or operating position,

[0020] FIG. 2 is a vertical section of a mobile casing device in the open position, or maintenance position,

[0021] FIG. 3 shows an embodiment of the hinge assembly,

[0022] FIG. 4 shows another embodiment of the hinge assembly,

[0023] FIG. 5 is a side view of an embodiment of the mobile casing device, and

[0024] FIG. 6 is a vertical section of the casing device of FIGS. 1 and 2 in which the casing movement is motor-driven.

## MORE DETAILED DESCRIPTION

[0025] A mobile casing device according to the invention is shown in FIGS. 1 and 2, including a casing housing 2 for receiving a mobile casing 4.

[0026] In this description, it is assumed that the casing device is attached to a ceiling. The expressions “upper” and “lower” used here therefore refer to relative positions with respect to the vertical direction. More generally, for example in the case of a casing device attached to a wall, “upper” and “lower” should be interpreted as meaning “facing the bottom (or near the bottom)” and “remote from the bottom.”

[0027] In operation, mobile casing 4 is housed within casing housing 2, as shown in FIG. 1, and is tilted out of the casing housing for maintenance as shown in FIG. 2.

[0028] The casing housing includes a frame, called the outer frame, made up of four sides 6 defining a quadrilateral on which is mounted a bottom 8. This housing is to be attached to a surface, such as a wall or a ceiling. Casing 4 includes a frame, called the inner frame, made up of four section members 10, to the base of which is attached a stretched web 12.

[0029] As shown in the figures, the casing can be equipped with a second stretched web 14 located above the first stretched web 12. For example, the first stretched web 12 is translucent and the second stretched web 14 is transparent. In particular, the second stretched web has the role of protecting the first stretched web 12 against dust and insects which could be deposited on it and which would be visible to users.

[0030] In the embodiment shown, the mobile casing device additionally includes stiffening means 16 to stiffen the inner frame, made up of at least one stringer extending between two opposite section members 10 of the casing's inner frame. It also includes lighting means, such as neon tubes 18, mounted on bottom 8.

[0031] The casing is able to tilt by rotation around an axis 20 parallel to one of the sides of the casing. To allow this movement, a hinge assembly, which will be described in detail with reference to FIGS. 3 and 4, connects the mobile casing to the casing housing.

[0032] The mobile casing is held in the closed position by latches made up of two elements 22a and 22b, one attached to the inner frame and the other to the outer frame.

[0033] To assist in opening the casing, a counterweight 24 is located on the mobile casing and, for example, as shown,

within section member **10** parallel to and remote from axis **20**. The counterweight could, however, also be located on the stiffening means.

[0034] The mobile casing also includes means for maintaining it, if the user wishes, in a tilted position. These means may consist simply, for example, of a flexible cord **26**, or a strap or a chain.

[0035] According to the invention, the mobile casing device includes a hinge assembly **28** connecting bottom **8** of casing housing **2** to the casing's inner frame **4**.

[0036] A first embodiment of the hinge assembly is shown in FIG. **3**. In practice, the mobile casing device includes two hinge assemblies located on opposite section members of the inner frame and thus defining an axis of rotation for the mobile casing.

[0037] The hinge assembly includes a small plate **30** whose upper part has for example a "T" or "L" shape, allowing it to slide within a slide **32**, this slide being fixed to bottom **8** of the casing housing. The hinge assembly also includes a bracket **34** attached by two bolts **35** to the upper face of a section member **10** of inner frame **4**.

[0038] Small plate **30** and bracket **34** are connected by a splice plate **36**. This mounting method allows easy assembly and disassembly of the mobile casing device and fine height adjustment of the position of the mobile casing relative to the casing housing.

[0039] Bolts **38** provide a rigid connection between small plate **30** and splice plate **36**, and bracket **34** is rotatably attached to splice plate **36** by a bolt **40**.

[0040] In the event that, as shown in FIGS. **1** and **2**, the casing housing is provided with lighting means attached to its bottom, it could be difficult to also place slide **32** on the bottom.

[0041] In this case, it is advantageous to allow the bracket to slide as shown in FIG. **4**. In this figure, elements identical to those in FIG. **3** have the same reference numbers.

[0042] In FIG. **4**, the upper face of a casing section member **10** includes a groove **42**, formed directly in section member **10** or made up of a slide attached to section member **10**. Small plate **30** is attached to bottom **8** (not shown) of the casing housing by means of two bolts (not shown) extending through bore holes **44** made in the upper part of small plate **30**.

[0043] Bracket **34** includes on its lower face a runner **46** having a T-shaped cross-section and which is able to slide in groove **42**.

[0044] The hinge assembly according to FIG. **4** takes up less space at the bottom of the casing housing than that of FIG. **3** because, in the latter case, the small plate is slidably mounted.

[0045] FIG. **5** shows a side view of the device. The perimeter of inner frame **4** is provided with a seal **48**, in the form of a wiper for example, for fitting the inner to the outer frame. In

this case, to assist in opening and closing the device, at least one pressure-release port **50** is made in at least one side **6** of the outer frame. For aesthetic reasons, every pressure-release port is preferably covered with a grating **52**.

[0046] FIG. **6** shows a variant of the embodiment of the mobile casing device of FIGS. **1** and **2**, in which the movement of the casing is motor-driven. In this case, it is no longer necessary to provide a counterweight as in the mobile casing device of FIGS. **1** and **2**.

[0047] In FIG. **6**, elements identical to those in FIGS. **1** and **2** have the same reference numbers.

[0048] The device of FIG. **6** includes a shaft **54** capable of being driven in rotation in either direction by a motor (not shown) to reel in or pay out flexible cord or strap **26**. For this function, the device advantageously includes at least one idler, such as idler **56** located directly above the point of attachment of the strap to the mobile casing when it is in the closed position.

1. A mobile casing device, in particular for a hanging ceiling, comprising:

- a casing having an inner frame, the inner frame having a base to which a stretched web is attached,
- a casing housing having an outer frame, and a bottom to be attached to a surface, and

- a hinge assembly connecting the casing and the casing housing so as to allow tilting of the casing relative to the casing housing,

- the hinge assembly including a first part mounted on one face of the inner frame facing the bottom and a second part mounted on the bottom, the first and second parts being mounted so that one can rotate relative to the other, and

- one of the first and second parts of the hinge assembly is slidably mounted to one of one the face of the inner frame facing the bottom and the bottom.

2. A device according to claim **1**, wherein the first part is slidably mounted on an integral slide or in a groove in the inner frame.

3. A device according to claim **1**, wherein the second part includes a small plate extending perpendicularly from the bottom and a splice plate, the splice plate being rotatably attached to the first part of the hinge assembly.

4. A device according to claim **1**, wherein the hinge assembly is integral with the bottom of the casing housing.

5. A device according to claim **2**, wherein the second part includes a small plate extending perpendicularly from the bottom and a splice plate, the splice plate being rotatably attached to the first part of the hinge assembly.

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