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(71) Applicants:
• **Renson Sunprotection-Screens NV**
8790 Waregem (BE)
• **Renson, Paul**
9771 Nokere (Kruishoutem) (BE)

(72) Inventors:
• **Abeel, Bart Pieter Jules**
8880, Sint-Eloois-Winkel (BE)
• **Veys, Thierry Luc**
9800, Deinze (BE)
• **Tokmaji, Michael**
8790, Waregem (BE)
• **Brabant, Pieter Leopold André**
8840, Oostnieuwkerke (BE)
• **Colpaert, Stijn**
9700, Oudenaarde (BE)

(74) Representative: **Ostyn, Frans**
K.O.B. NV
Kennedypark 31 c
8500 Kortrijk (BE)

(54) **Canopy structure**

(57) The present invention relates to a screen construction (1) comprising a roof structure (2) which can at least be rolled up and unrolled on a screen roller (3) and by means of which the roof structure (2) is at least partially closable, and a screen casing (4), which extends virtually horizontally and is provided with an internal space for

said screen roller (3), wherein the internal space, on a side extending in the longitudinal direction of the screen casing (4), is delimited by at least one removably secured wall element (7a, 7b) of the screen casing (4), so that the screen roller (3), after said wall element (7a, 7b) has been removed, can be placed into and removed from the internal space via the opening formed in this way.

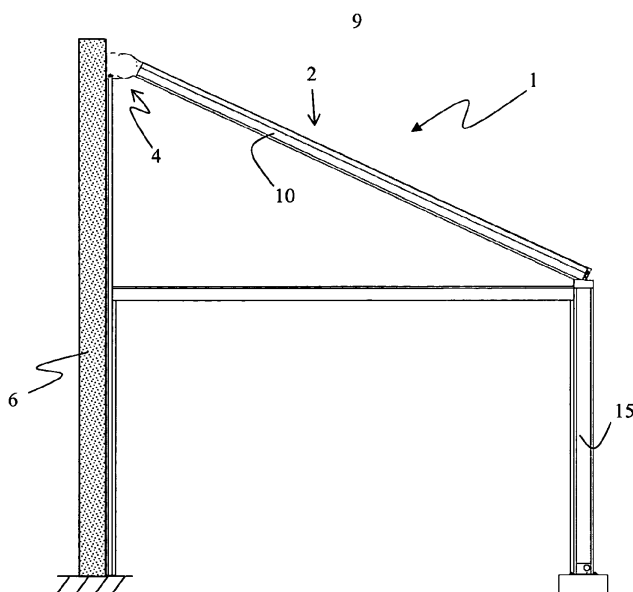


Fig. 1

Description

[0001] The present invention relates to a screen construction comprising a roof structure which can at least be rolled up and unrolled on a screen roller and by means of which the roof structure is at least partially closable, and a screen casing, which extends virtually horizontally and is provided with an internal space for said screen roller, wherein the roof structure furthermore comprises at least one support element that is intended to receive a respective end of the screen roller.

[0002] Screen constructions of this type are generally set up to protect an outdoor location from adverse weather conditions. For example, screen constructions of this type are often set up at domestic dwellings, restaurants, shops and the like in order to protect an outdoor terrace or a location where goods for sale have been set up from sun, precipitation and wind. For this purpose the known screen constructions comprise a screen that can be rolled up and unrolled and depending on the weather conditions may be unrolled completely, partially or not at all.

[0003] The present invention in particular relates to a terrace covering, an awning or a pergola having a roof structure and at least one screen which can be rolled up and unrolled on a screen roller and by means of which the roof structure can be at least partially closed.

[0004] The screen roller is provided in a screen casing that extends virtually horizontally. In the known screen constructions, this virtually horizontally extending screen casing is positioned above the roof structure that is present. However, this has the drawback that the internal space, and therefore also the screen roller, of the screen casing is difficult to reach on account of only being accessible via the top.

[0005] EP 1 298 264 describes a screen construction that is typical of awnings or veranda systems, wherein the horizontal screen casing is provided on its top side with a removable wall element through which the screen roller can be introduced into and removed from the screen space. The removable wall element is located at the top side since in constructions of this type one or more elements are often located beneath the screen space, for example beams, glass or another roof covering material, and consequently it is only possible for the screen roller to be introduced into and removed from the screen space via the top side.

[0006] It is an object of the present invention to provide a screen construction which makes it possible to provide easy access to the internal space of the screen casing.

[0007] The object of the invention is achieved by providing a screen construction comprising a roof structure which can at least be rolled up and unrolled on a screen roller and by means of which the roof structure is at least partially closable, and a screen casing, which extends virtually horizontally and is provided with an internal space for said screen roller, wherein the roof structure furthermore comprises at least one support element that

is intended to receive a respective end of the screen roller, wherein the internal space, on an underside extending in the longitudinal direction of the screen casing, is delimited by at least one removably secured wall element of the screen casing, so that the screen roller, after said wall element has been removed, can be placed into and removed from the internal space via the opening which is formed in this way along the underside, and wherein the at least one support element comprises at least one removably secured locking element, on and/or against which an end of the screen roller at least partially rests. It is preferably the axle of the screen roller which is locked in the supporting element.

[0008] By designing the screen casing in this way, it is made possible to introduce the screen roller into the screen casing and remove it from the screen casing via the underside.

[0009] In a preferred embodiment, the screen roller, after said locking element has been removed, can be placed into and removed from the internal space via an opening formed in this way.

[0010] In a particular embodiment of the screen construction according to the invention, the at least one support element also comprises a second locking element, on which the screen roller is at least partially supported after removal of at least one removable locking element. Said second locking element may be either removable or fixed. The second locking element is responsible for supporting the screen roller, in particular the axle of the screen roller. If the screen roller is to be placed into and removed from the internal space via the underside, the second locking element ensures that the screen roller will not fall straight out of the internal space after the removable locking element has been removed.

[0011] In an advantageous embodiment of the screen construction according to the invention, said screen construction comprises securing means which are intended to secure the screen casing against a rear existing wall or on a rear vertically disposed carrying structure which forms part of the screen construction. The vertically disposed carrying structure is preferably one or more vertically disposed columns or structural bars.

[0012] According to a more particular embodiment of the screen construction according to the invention, a removable intermediate profiled section is provided between the securing means and the screen casing.

[0013] The present invention will now be explained in more detail on the basis of the following more detailed description of a preferred embodiment of a screen construction according to the present invention. The purpose of this description is only to provide illustrative examples and to indicate further advantages and details of this screen construction and therefore cannot be interpreted as restricting the area of application of the invention or the scope of the patent as set down in the claims.

[0014] In this more detailed description, reference is made to the accompanying drawings by means of reference symbols. In the drawings:

- **Figure 1:** shows a side view of a screen construction according to the present invention, which is attached to an existing wall via a securing profiled section;
- **Figure 2:** shows a side view of a support element, beam and securing means;
- **Figures 3 to 6:** show a vertical cross section through the various steps of removing the screen roller from the internal space of the screen casing via the underside of the screen construction;
- **Figure 7:** shows a side view of a support element, beam and securing means.

[0015] Figure 1 shows an illustration of a screen construction (1) (terrace covering) according to the present invention. A screen construction (1) of this type can be used to at least partially cover a terrace with the aid of a screen. The screen construction (1) shown is secured to an existing wall (6) with the aid of securing means (5). However, it is also possible for the screen construction (1) to be secured with the aid of securing means (5) to another rear carrying structure, for example one or more vertically disposed columns.

[0016] The screen construction (1) shown comprises a roof structure (2) which is supported by means of a vertically disposed carrying structure, in particular columns (15). The roof structure (2) can be at least partially closed by a screen that, preferably such that it can be rolled up and unrolled from a screen roller (3), is arranged between slat guides and/or screen guides disposed at an angle, which are attached to or form part of inclined beams (10) of the roof structure (2). To allow the screen to be rolled up and unrolled automatically, the screen construction (1) also comprises a motor adapted for driving the screen roller (3). Reference numeral 14 denotes this motor together with motor support, with the motor viewed in the longitudinal direction thereof.

[0017] The screen roller (3) is located in a screen casing (4) which for this purpose is provided with an internal space for this screen roller (3). To lock the screen roller (3) in the screen casing (4) the screen casing (4) comprises a support element (8) on at least one of its ends (and preferably at both ends). As can be seen from Figure 2, inter alia, this support element (8) comprises firstly a number (two or more) of platelike elements (9a, 9b, 9c, 9d) at least one of which has to be removed in order for the screen roller (3) to be taken out of the screen casing (4), and secondly a side plate (13) to which said elements (9a, 9b, 9c, 9d) are secured. These elements (9a, 9b, 9c, 9d) are releasably connected to the side plate (13) preferably via one or more screw or bolt connections. The elements (9a, 9b, 9c, 9d) of the support element (8) are hidden from view by the side plate (13), as shown in Figure 7.

[0018] The screen casing (4) illustrated is secured, via a horizontal wall profiled section (5), to a rear existing wall (6) or to another carrying structure that forms part of the screen construction (1). In the screen construction (1) shown, the screen casing (4) is secured to the hori-

zontal wall profiled section (5) via a two-part adjustable bracket (12), however it is also possible for a wall profiled section (5) of this type not to be used, but rather for the screen casing (4) to be secured to a rear carrying structure only by means of the brackets (12) (supports).

[0019] To make it possible for the screen roller (3) to be removed from or introduced into the screen casing (4) from the underside, the internal space, on a side extending in the longitudinal direction of the screen casing (4), in particular on the underside, is delimited by at least one removably secured wall element (7) of the screen casing (4), so that the screen roller (3), after removal of said wall element (7) can be placed into and removed from the internal space via the opening formed in this way.

[0020] To provide further explanation, in the text which follows the method of removing a screen roller (3) from a screen casing (4) via the underside will be described with reference to Figures 3 to 6.

[0021] First of all, as shown in Figure 3, the bottom intermediate profiled section (11a), which is provided between the horizontal wall profiled section (5) and the screen casing (4), needs to be removed (see Figure 4). The top intermediate profiled section (11b) which is likewise provided between the horizontal wall profiled section (5) and the screen casing (4), does not need to be removed. The top intermediate profiled section (11b) has to be removed when the screen roller (3) is to be taken out of the screen casing (4) via the top side.

[0022] Next, the bottom removably secured wall element (7) of the screen casing (4) is removed (see Figure 4), so as to create an elongate passage opening, extending along the longitudinal axis of the screen roller (3), for the screen roller (3). By removing the bottom wall element (7) of the screen casing (4), it is possible to gain access to the support element (8) with its elements (9a, 9b, 9c, 9d).

[0023] At this time, both ends of the screen roller (3) are still locked in the support element (8). The screen roller (3), together with the motor for the screen roller (3) and the motor support (14) at one end and/or with a bearing and bearing support at the other end, is locked in this support element (8). To take the screen roller (3) out of the screen casing (4), it is necessary to loosen the screw or bolt connections by which the (removable) locking element (9a) is secured and then to remove this locking element (9a) (the hatched area of Figure 5).

[0024] After the locking element (9a) has been removed, a guide channel, as it were, and as shown in Figure 6, will be formed for a screen roller (3) end. Since the screen roller (3) is still partly supported by a second locking element (9b) (support element), the screen roller (3) will be prevented from falling out of the screen casing (4) under the force of gravity. To remove the screen roller (3) from the screen casing (4) as shown in Figure 6, first of all it, together with the motor and the motor support (14) and/or together with a bearing and bearing support, will be slid sideways and then moved downwards in order for the screen roller (3) together with the motor and motor

support and/or bearing and bearing support to be removed from the screen casing (4). However, in an alternative embodiment it is also possible for the bearing and/or bearing support to remain in place during removal of the screen roller (3).

5

Claims

1. Screen construction (1) comprising a roof structure (2) which can at least be rolled up and unrolled on a screen roller (3) and by means of which the roof structure (2) is at least partially closable, and a screen casing (4), which extends virtually horizontally and is provided with an internal space for said screen roller (3), wherein the roof structure (2) furthermore comprises at least one support element (8) that is intended to receive a respective end of the screen roller, **characterized in that** the internal space, on an underside extending in the longitudinal direction of the screen casing (4), is delimited by at least one removably secured wall element (7) of the screen casing (4), so that the screen roller (3), after said wall element (7) has been removed, can be placed into and removed from the internal space via the opening which is formed in this way along the underside, and **in that** the at least one support element comprises at least one removably secured locking element (9a), on and/or against which an end of the screen roller at least partially rests.
2. Screen construction (1) according to Claim 1, **characterized in that** the screen roller (3), after said locking element (9a) has been removed, can be placed into and removed from the internal space via an opening formed in this way.
3. Screen construction (1) according to Claim 1 or 2, **characterized in that** the at least one support element (8) also comprises a second locking element (9b), on which the screen roller (3) is at least partially supported after removal of at least one removable locking element (9a).
4. Screen construction (1) according to one of the preceding claims, **characterized in that** said screen construction (1) comprises securing means (5) which are intended to secure the screen casing (4) against a rear existing wall (6) or on a rear vertically disposed carrying structure which forms part of the screen construction (1).
5. Screen construction (1) according to Claim 4, **characterized in that** a removable intermediate profiled section (11a; 11b) is provided between the securing means (5) and the screen casing (4).

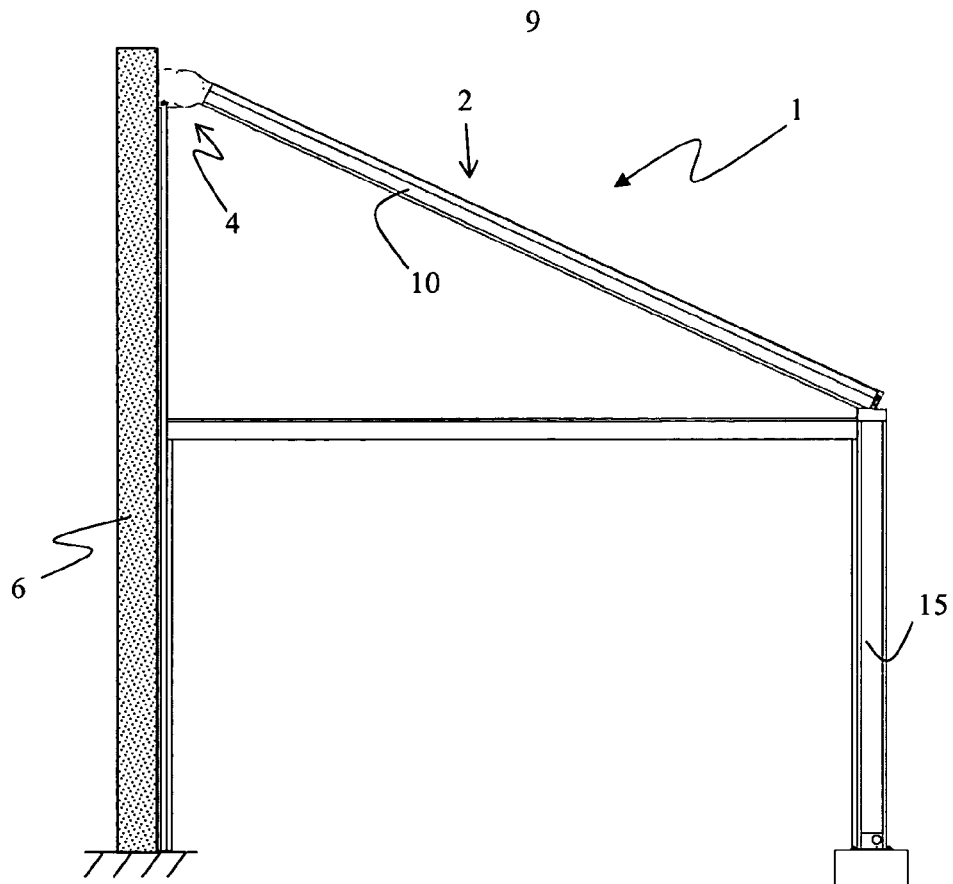


Fig. 1

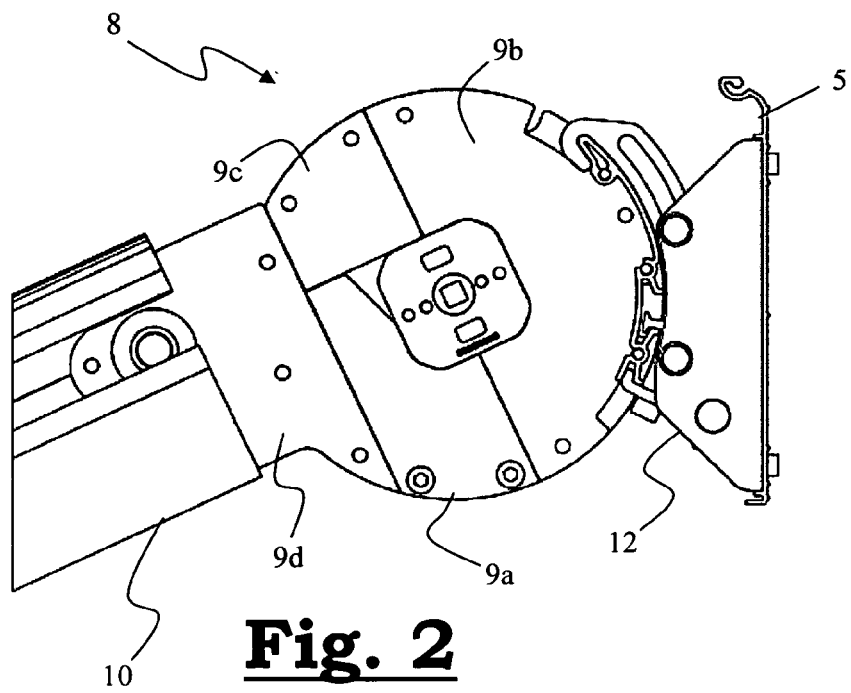


Fig. 2

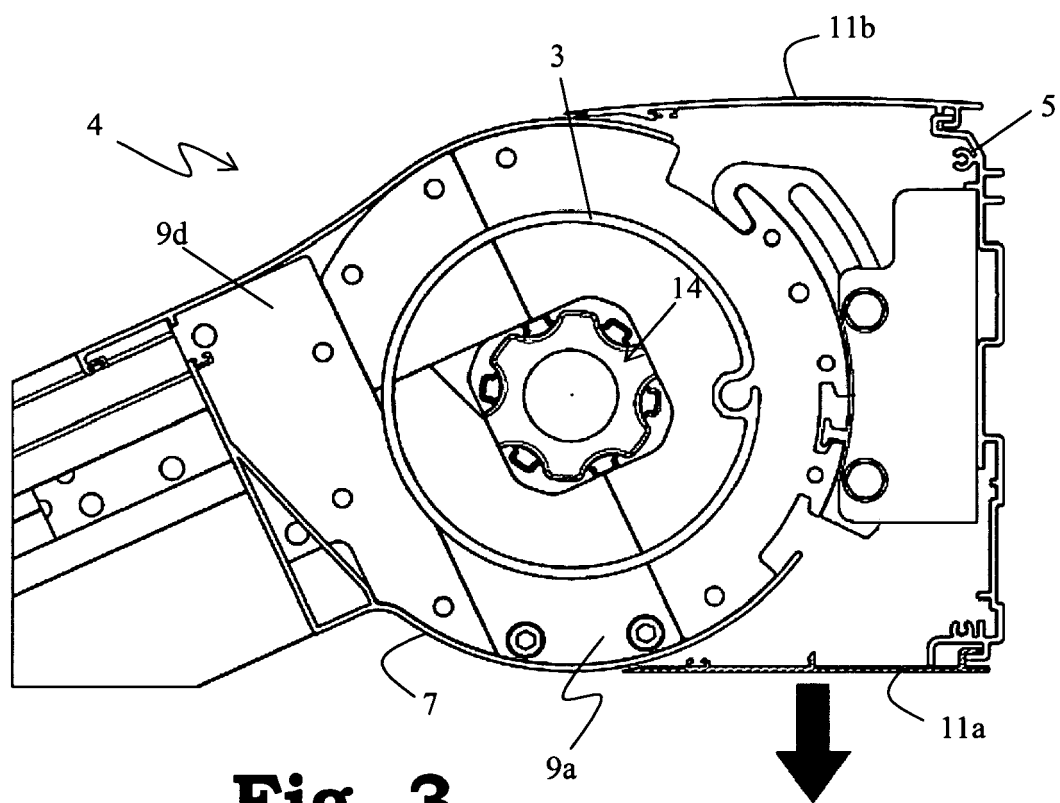


Fig. 3

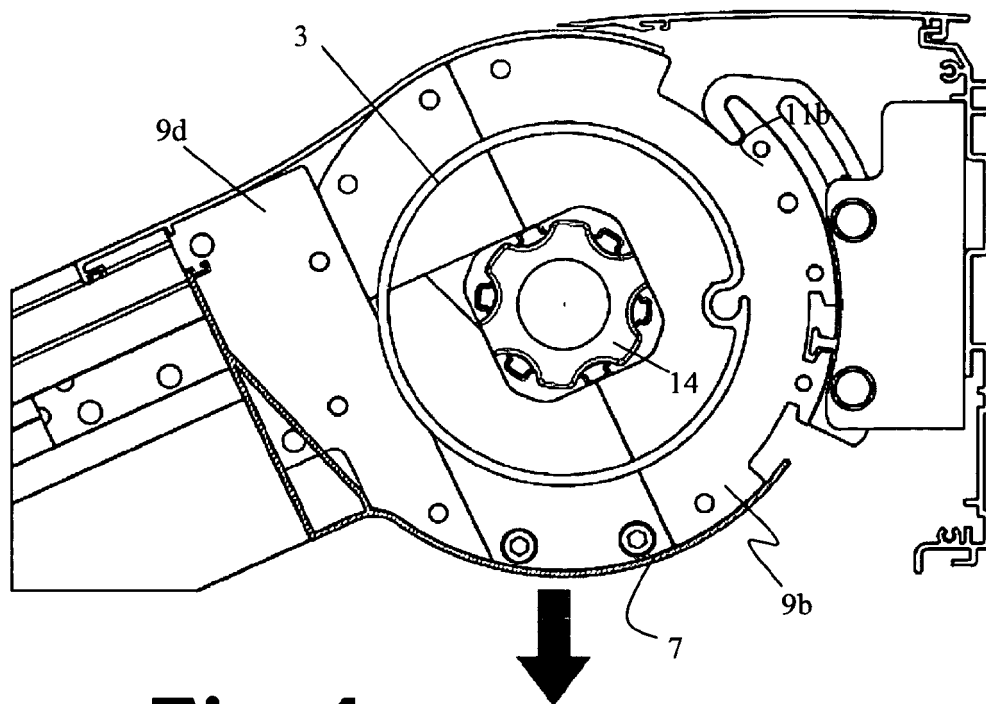


Fig. 4

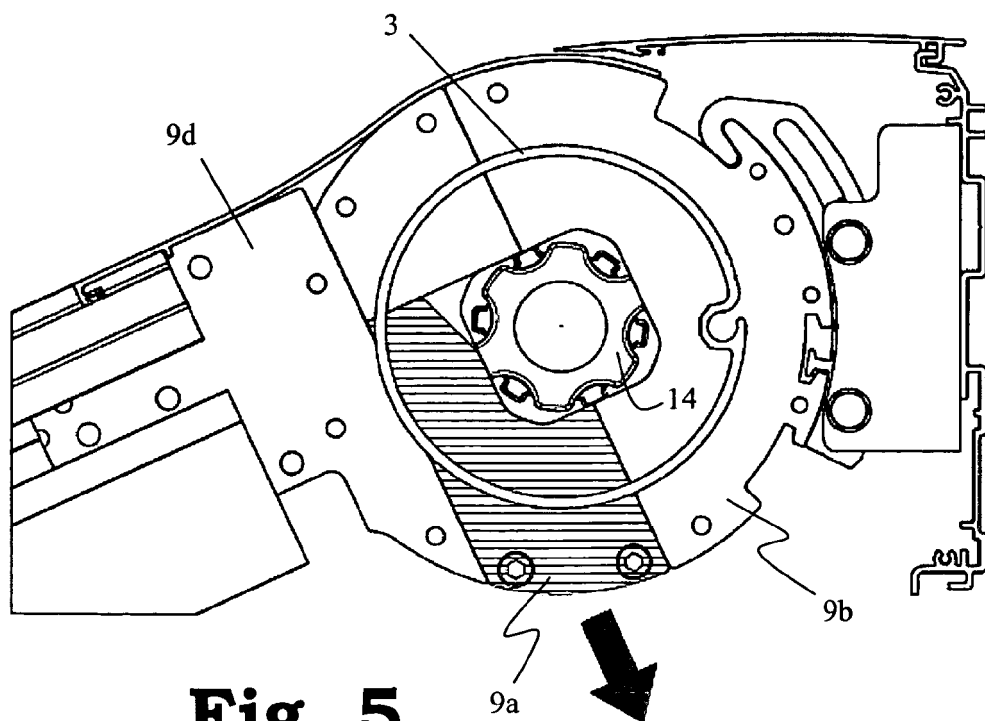


Fig. 5

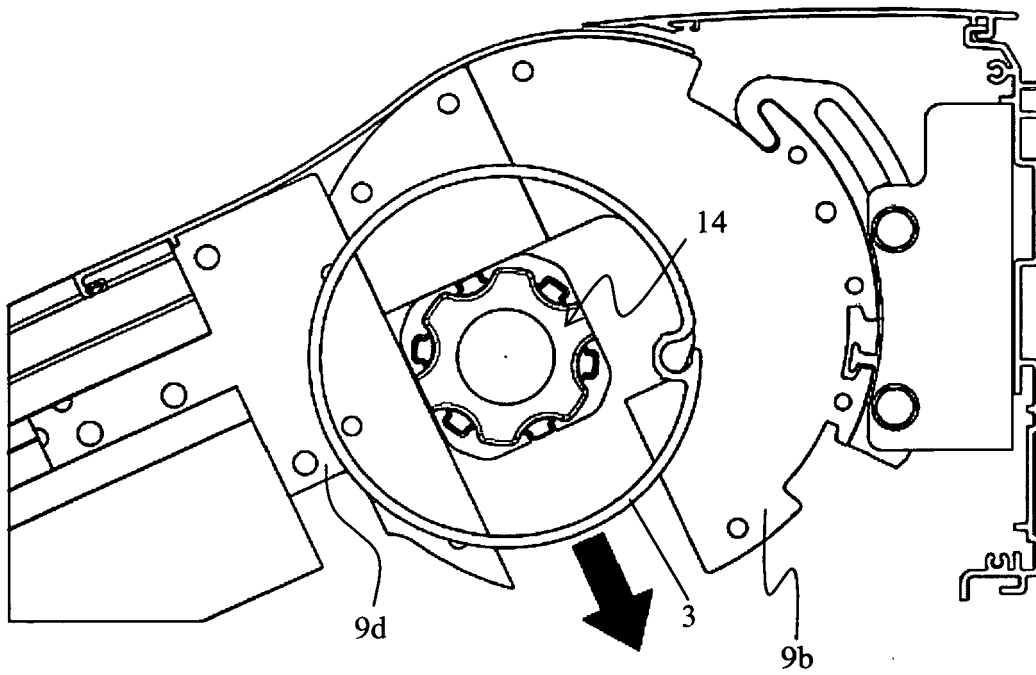


Fig. 6

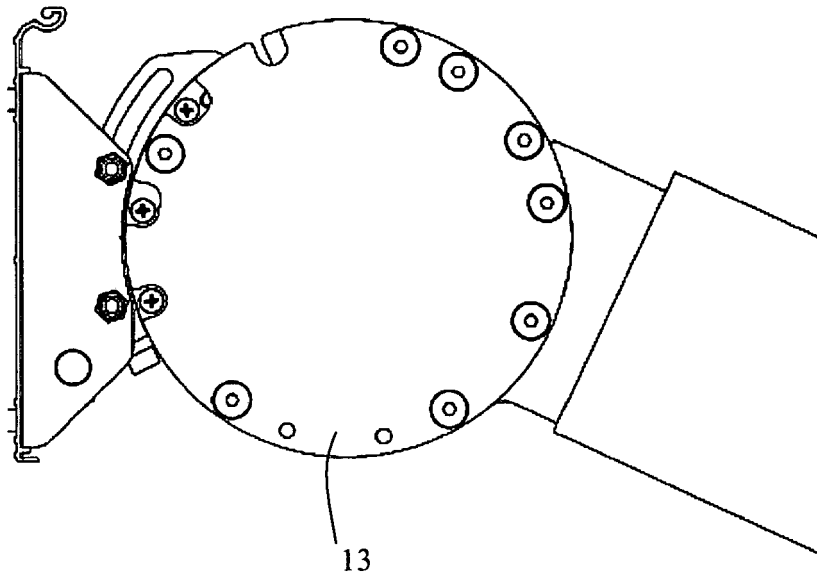


Fig. 7

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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