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(54) **Outdoors curtain with drip-preventing movable profile**

(57) An outdoors curtain (1) comprises a support frame (2) provided with at least one transverse bar (5) that is slidably movable between two longitudinal elements (4), a sheet (6), applied to the transverse bar (5) and slidable relative to the longitudinal elements (4) from a retracted position to an extended position and vice versa, and a profile (7), hinged on each longitudinal element (4) of the frame (2) and movable between two operative positions: a lowered position for protection, assumed with the sheet (6) extended, in which the movable profile (7) is in pressing contact with the sheet (6), along a substantially longitudinal contact line, and a raised position assumed with the sheet (6) at least partially retracted, the passage between one operative position and the other being produced automatically by the sliding of the transverse bar (5), which is so shaped as to interact with the correspondent movable profile (7), allowing it to be lowered or causing it to be raised.

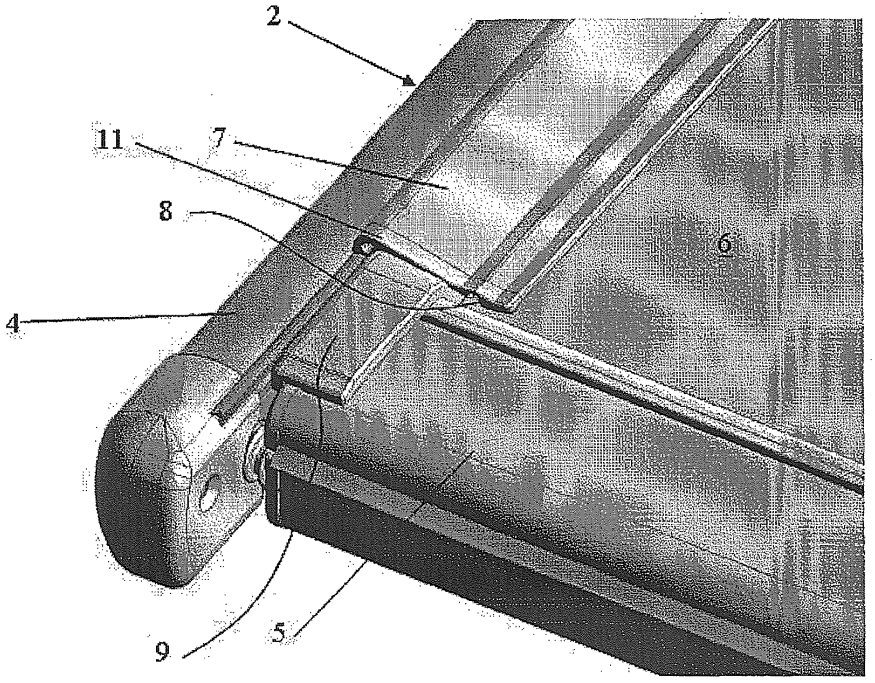


FIG. 2

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## Description

**[0001]** The present invention relates to an outdoors curtain with drip-preventing movable profile, of the kind comprising:

- a support frame provided with at least one transverse bar, slidably movable between two longitudinal elements;
- a sheet, applied to the transverse bar and slidable relative to the longitudinal elements of the frame, together with the transverse bar, from a retracted position to an extended position and vice versa.

**[0002]** The field of the present invention is that of outdoor curtains, i.e. curtains able to serve as roofs, to protect persons or objects from the sun and the weather. These curtains comprise a sheet and a frame to support the sheet.

**[0003]** Within this field, use is frequent of curtains able to be operated in two different operative conditions, depending on whether the shelter provided by the curtain is to be utilised or not; in a first operative condition, the sheet is in extended position, whilst in a second operative condition the sheet is in retracted / closed position. Therefore, said curtains also comprise means for actuating the sheet from one position to the other, the sheet being movable (generally in slidable fashion) relative to two longitudinal elements of the frame.

**[0004]** In this light, different technical solutions are known. Some curtains provide for the use of a sheet wound on a roller associated to the frame. In these cases, the sheet, during its movement, always remains tensioned and it slides relative to the two longitudinal elements of the frame.

**[0005]** In other curtains, the sheet is retracted / reclosed in a manner called "in packets" (or "packing"), i.e. in such a way that the sheet, in the retracted position, is substantially folded back onto itself. In a curtain of this kind, to the sheet are frequently transversely applied rigid elements, called windbreakers, which, during the movement of the sheet, generally slide relative to the two longitudinal elements of the frame.

**[0006]** The use is also known of a transverse bar that is slidably movable between the two longitudinal elements of the frame; said transverse bar constitutes an anchoring element for the sheet, which is applied to the transverse bar itself at one of its ends.

**[0007]** Since such curtains also have to provide shelter from rain, there is a problem with respect to the drainage of the rainwater that falls on the sheet. It should be noted that said curtains are generally mounted in such a way as to have a low or even null inclination relative to the underlying ground. In practice, the curtains and in particular the sheets of the curtains are substantially horizontal. Therefore, rain water does not easily drain towards the longitudinal end of the root and thus a part of the water that falls onto the sheet tends to flow towards the sides of the sheet itself, causing an undesired dripping and potentially damaging movement members of the curtain housed in the longitudinal elements of the frame.

**[0008]** To overcome said drawbacks, known technical solutions provide for applying anti-dripping barriers to the sheet, as described for example in the utility model IT 252130. However, said solutions have some drawbacks. In the first place, the anti-drip barriers are inconvenient to apply; moreover, when replacing the sheet, said barriers have to be applied again; lastly, said anti-drip barriers do not allow to repair the transverse elements completely and effectively, because they do not provide any tightness at all.

**[0009]** An object of the present invention is to eliminate the aforesaid drawbacks and to make available a curtain that guarantees an effective protection from rain, without dripping at the sides of the curtain and without risk that rain may damage the curtain, seeping through to its mechanical members.

**[0010]** Said objects are fully achieved by the curtain of the present invention, which is characterised by the content of the appended claims and in particular in that it is provided with movable profiles, each profile being applied to a longitudinal element of the frame and provided with two operative positions:

- a lowered position for protection, assumed with the sheet extended, in which the movable profile is in pressing contact with the sheet, along a substantially longitudinal contact line;
- a raised position assumed with the sheet at least partially retracted, the passage between one operative position and the other being produced automatically by the sliding of the transverse bar, which is so shaped as to interact with the related movable profile, allowing it to be lowered or causing it to be raised.

**[0011]** This and other characteristics shall become more readily apparent from the following description of a preferred embodiment, illustrated purely by way of non limiting example in the accompanying drawing tables, in which:

- Figure 1 shows a perspective view of a curtain according to the present invention, with the sheet in the extended position;
- Figure 2 shows an enlargement of a portion of the curtain of Figure 1;
- Figure 3 shows an enlargement like Figure 2, but with the sheet in slightly retracted position;
- Figure 4 shows an enlargement as in Figure 3, but according to a different perspective;
- Figure 5 shows a sectioned lateral view of an enlargement as in Figure 3;
- Figure 6 shows a bottom perspective view of a detail of the curtain of Figure 1.

**[0012]** In the figures, the reference number 1 designates a curtain according to the present invention. The curtain 1 comprises a support frame 2, able to be associated to a wall or to various (substantially known) support elements. The frame 2, in turn, comprises a fixed transverse element, preferably but not necessarily constituted by a box body 3, and two longitudinal elements 4, fastened to the ends of the box body 3 (or of said fixed transverse element) and substantially perpendicular relative to it.

**[0013]** The longitudinal elements 4 define guides (or grooves) in which a transverse bar 5 is slidably engaged. Said guides (or grooves) are defined by the longitudinal elements 4 in preferably (but not necessarily) lateral position, i.e. on mutually opposite surfaces, facing each other, of the longitudinal elements 4.

**[0014]** The curtain 1 also comprises a sheet 6, applied to the transverse bar 5 and connected, at an opposite end, to a fixed portion of the frame 2. The sheet 6 is movable relative to the frame 2 and in particular relative to the box body 3 and to the longitudinal elements 4, from an extended position, in which the frame 6 is tensioned, to a retracted position, in which the sheet 6 is folded back, and vice versa.

**[0015]** The motion of the sheet 6 is correlated to the sliding of the transverse bar 5. The sheet 6 has an end applied to the transverse bar 5; an opposite end (in the longitudinal sense) of the sheet 6 is connected to a fixed portion of the frame 2 or to a load-bearing structure, in different manners, depending on the type of curtain. For example, the sheet 6 can be wound on a roller associated to the frame 2 (and possibly housed in the box body 3). Or, in a different embodiment (the one illustrated herein), said opposite end of the sheet 6 is fastened to a fixed portion of the frame 2, e.g. to the box body 3, without being wound, because the curtain 1 provides for the sheet 6, in the retracted position, is folded back in packet form (in a known manner).

**[0016]** Therefore, the sheet 6 defines a retractable roof and it is preferably, but not necessarily, made of fabric. Thus, the sheet 6 is movable between two operative position: an extended position (shown in Figure 1), in which the sheet is tensioned and covers the underlying area, and a recessed position, in which the sheet 6 is folded back or wound on a roller and it leaves the underlying area uncovered.

**[0017]** The curtain also comprises, originally, movable profiles 7, applied to each longitudinal element 4 of the frame 2. Said movable profiles 7 are hinged on the frame 2; preferably, the profiles 7 are hinged in particular on the longitudinal elements 4 of the frame 2. Therefore, the movable profiles 7 are swivelling relative to the longitudinal elements 4 of the frame 2 whereto they are anchored. Moreover, to maintain the profiles 7 in the proper longitudinal position, intervenes a pair of detents (not shown in the accompanying figures) positioned in the hinging area between the profile 7 and the longitudinal elements 4, and more specifically fastened at the two ends of the profiles 7, in the longitudinal elements 4. The profiles 7 extend longitudinally for a length that is substantially equal to the length of the sheet 6 in the extended position.

**[0018]** Each movable profile 7 is provided with two operative positions: a lowered position, for protection against rain, and a raised position, of non interference with the sheet 6.

**[0019]** Each profile 7 assumes the lowered position when the sheet 6 is in the extended position; in the lowered position, said profile 7 is in pressing contact with the sheet 6, along a substantially longitudinal contact line. The length of said contact line is substantially equal to the length of the sheet 6, i.e. of the part of the sheet 6 that is uncovered in the extended position). Moreover, the profile 7, in the lowered position, preferably defines a slide for rain water that is inclined towards the sheet 6 whereon it bears.

**[0020]** Each profile 7 originally comprises a gasket 8, able to provide a seal on the sheet 6, when the profile 7 is in the lowered position.

**[0021]** Each movable profile 7 assumes the raised position when the sheet 6 is at least partially retracted. Thereby, advantageously, the profile 7 and in particular the gasket 8 is prevented from being in contact with the sheet 6 when the sheet is in motion; such a rubbing contact would entail an accelerated wear of the gasket 8, with consequent reduction in the effectiveness of the profile 7 against rain infiltrations, and it would also cause annoying noises due to the rubbing between sheet and gasket.

**[0022]** The passage of each movable profile 7 from the lowered position to the raised position and vice versa is produced automatically by the sliding of the transverse bar 5, which is so shaped as to interact with each movable profile 7, allowing it to be lowered or causing it to be raised. In particular, the transverse bar 5 superiorly has two projections 9, positioned at a mutual distance that is substantially equal to the distance between the profiles 7. Said projections 9 are so shaped as to facilitate their insertion under the movable profiles 7, during the winding / packing of the curtain.

**[0023]** Each projection 9 extends in the transverse direction for less than the width (i.e. the transverse dimension) of each profile 7. Moreover, each projection 9 extends vertically by a quantity that exceeds at least the thickness of the gasket 8.

**[0024]** In this way, when the sheet 6 is at least partially retracted, each projection 9 is in contact with a portion of a corresponding profile 7 (in particular with a portion of the lower surface of a corresponding profile 7), thus maintaining the profile 7 raised, but without interfering with the corresponding gasket 8.

**[0025]** When the sheet 6 is in the extended position, the transverse bar 5, together with the projections 9, does not interfere with the movable profiles 7, because it is in a more advanced position, relative to the profiles 7.

**[0026]** In a preferred embodiment (the one illustrated

herein), said projections 9 are constituted by sliding blocks fastened to the transverse bar 5 and interacting with the lower surface of each movable profile 7 without contacts with the gasket 8, when the sheet 6 (and hence the transverse bar 5) is in at least partially retracted position.

**[0027]** The mechanism for lifting the profile 7 by the transverse bar 5 and by the blocks 9 is facilitated by a terminal slide 11 fastened on the end of the profile 7 interacting with the blocks 9. In a different embodiment, said slide 11 can be defined by the edge of the profile 7 interacting with the block 9, said edge having chamfered / rounded shape.

**[0028]** The curtain 1 also comprises elastic element 10, operatively active between each movable profile 7 and a fixed portion of the frame 2, in such a way that each profile 7 applies a pressing action on the sheet 6, when the sheet 6 is in the extended position, to hold each movable profile 7 normally in the lowered position. In particular, said pressing action is applied to the surface (line) of contact between each gasket 8 and the sheet 6. On the contrary, when the sheet 6 is in an at least partially retracted position, said pressing action produced by the elastic elements 10 is developed between a portion of the lower surface of each profile 7 and the corresponding projection 9. In the illustrated embodiment (Figure 6), said elastic elements 10 are constituted by springs, each of which has one end connected to a profile 7 and another end fastened to a longitudinal element 4 of the frame 2.

**[0029]** Therefore, the curtain 1 of the present invention advantageously enables to shelter a surface from the sun or weather, favouring the outflow of the water that falls on the sheet 6 of the curtain in longitudinal sense and equally preventing the lateral dripping or the infiltration of water from the sheet 6 into the elements of the frame 2 of the curtain, thanks to the use of movable profiles 7.

**[0030]** Another advantage originally offered by the curtain 1 of the invention is that the movable profiles 7, able to protect the frame 2 of the curtain against water and to prevent lateral dripping, are automatically activated when the sheet 6 is in extended position and are placed, also automatically, in a raised position during the movement of the sheet 6, avoiding risks of damaging the profiles 7.

**[0031]** Another advantage originally offered by the curtain 1 of the invention is that the movable profiles 7 provide a seal on the sheet 6, thanks to the presence of gaskets 8 pressing on the sheet, thereby assuring a particularly effective protection against undesired water infiltrations.

## Claims

**1.** Outdoors curtain (1), comprising:

- a support frame (2) provided with at least one transverse bar (5), slidably movable between two longitudinal elements (4);
- a sheet (6), applied to the transverse bar (5) and slidable relative to the longitudinal elements (4) of the frame (2), together with the transverse bar (5), from a retracted position to an extended position and vice versa,

**characterised in that** it is provided with movable profiles (7), each profile (7) being applied to a longitudinal element (4) of the frame (2) and provided with two operative positions:

- a lowered position for protection, assumed with the sheet (6) extended, in which the movable profile (7) is in pressing contact with the sheet (6), along a substantially longitudinal contact line;
- a raised position assumed with the sheet (6) at least partially retracted,

the passage between one operative position and the other being produced automatically by the sliding of the transverse bar (5), which is so shaped as to interact with the correspondent movable profile (7), allowing it to be lowered or causing it to be raised.

**2.** Curtain as claimed in claim 1, wherein each movable profile (7) is hinged to the frame (2).

**3.** Curtain as claimed in claim 2, wherein each movable profile (7) is hinged to a longitudinal element (4) of the frame (2).

**4.** A curtain as claimed in any of the previous claims, wherein each movable profile (7) is provided with at least one elastic element (10) to hold it normally in the lowered position.

**5.** Curtain as claimed in any of the previous claims, wherein each movable profile (7) is provided with a gasket (8), able to provide a seal against the sheet (6), when the profile (7) is in the lowered position.

**6.** Curtain as claimed in claim 5, wherein the transverse bar (5) is provided with a sliding block (9) interacting with the lower surface of the movable profile (7) without contacts with the gasket, which remains lifted from the sheet (6) when the movable profile is in the raised position.

**7.** Curtain as claimed in claim 3, wherein the movable profile (7) is swivelling relative to the longitudinal element (4) whereto it is anchored.

**8.** Curtain as claimed in any of the previous claims, wherein the sheet (6), in the retracted position, is folded back in packet fashion.

**9.** Curtain as claimed in any of the claims 1 through 7, wherein the sheet (6), in the retracted position, is wound on a roller associated to the frame (2).

**10.** Curtain as claimed in any of the previous claims, wherein each movable profile (7), in the lowered position, defines a slide for rain water that is inclined towards the sheet (6) whereon it bears.

**11.** Curtain as claimed in any of the previous claims, wherein each movable profile (7), in the lowered position, is in pressing contact with the sheet (6), along a longitudinal contact line that extends throughout the length of the sheet (6).

**12.** A curtain as claimed in any of the previous claims, wherein each movable profile (7), in the raised position, is separated from the sheet (6) in each of its parts.

**13.** Curtain as claimed in any of the previous claims, **characterised in that** each movable profile (7) is provided with at least one terminal slide (11) that facilitates interaction with the transverse bar (5).

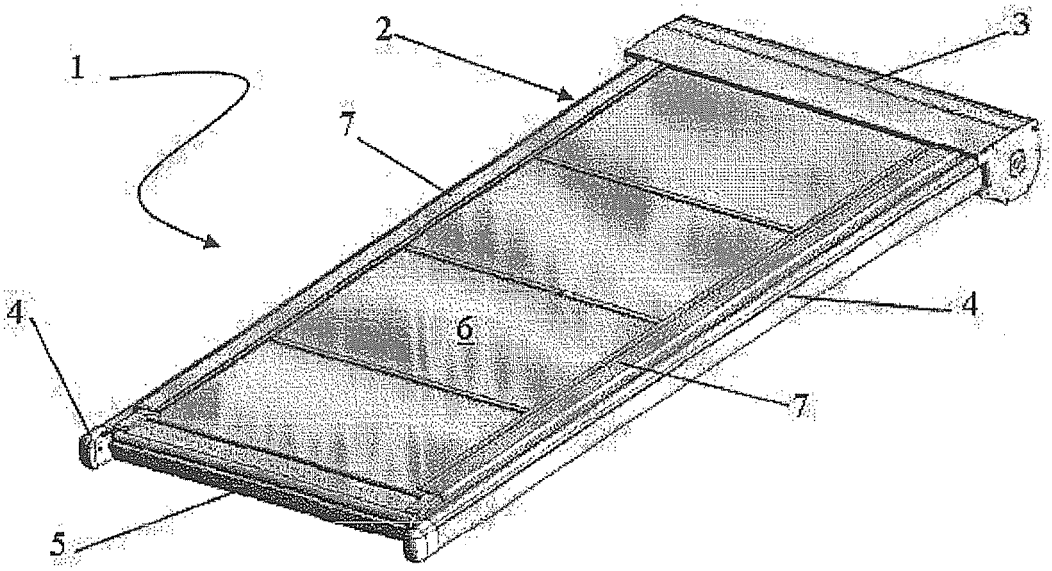


FIG. 1

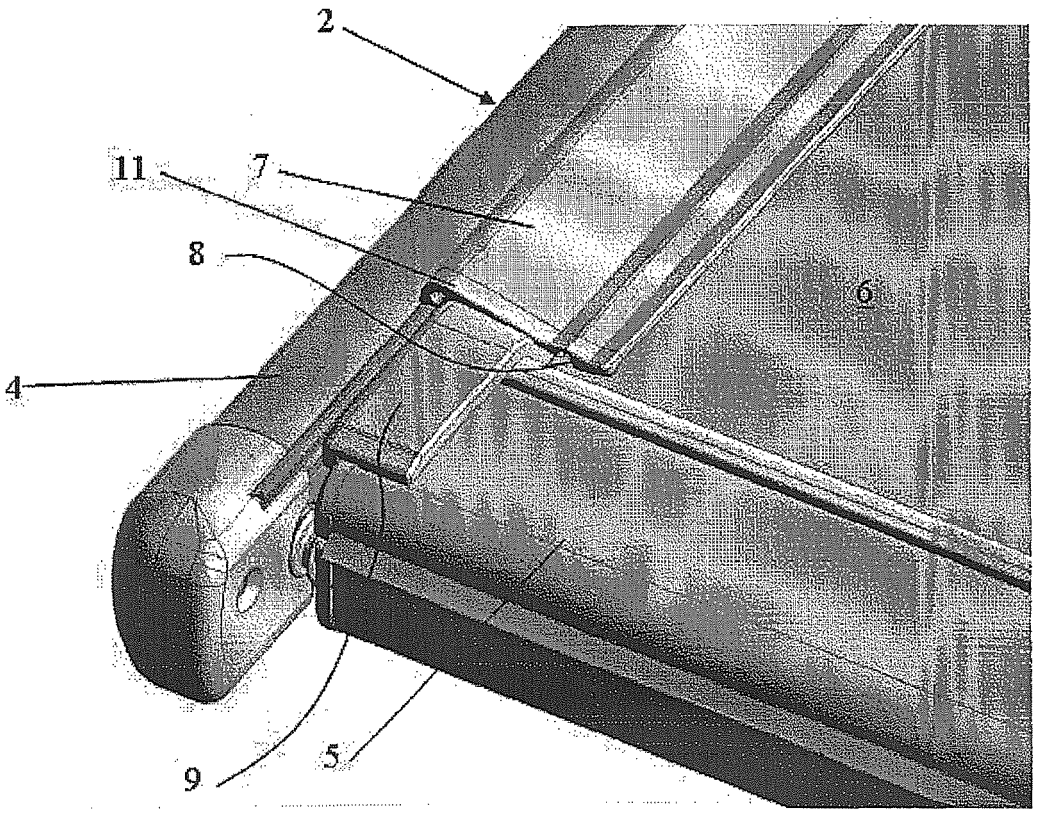


FIG. 2

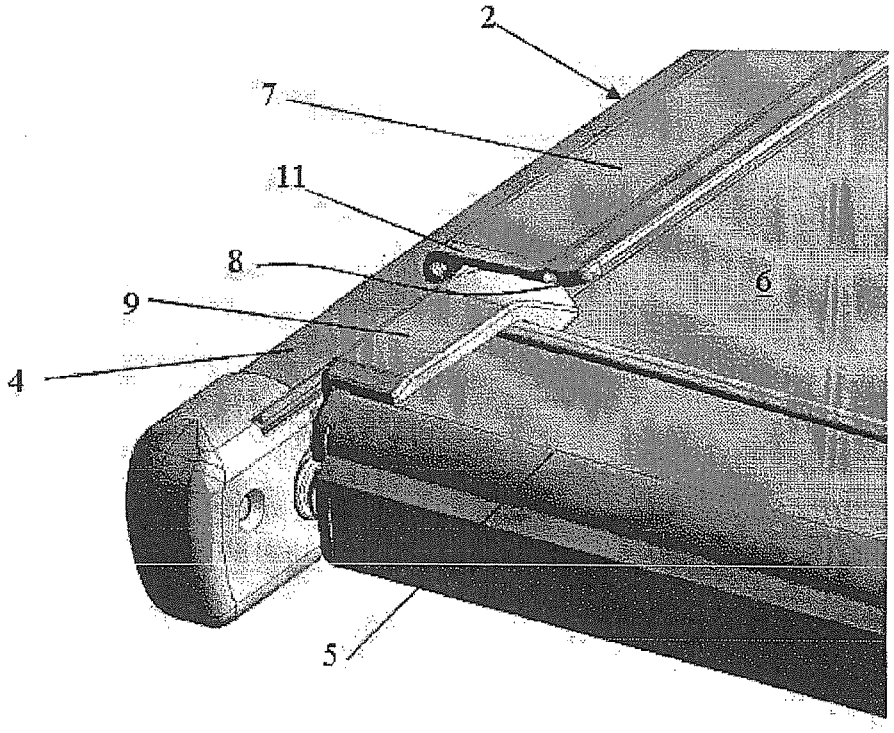


FIG. 3

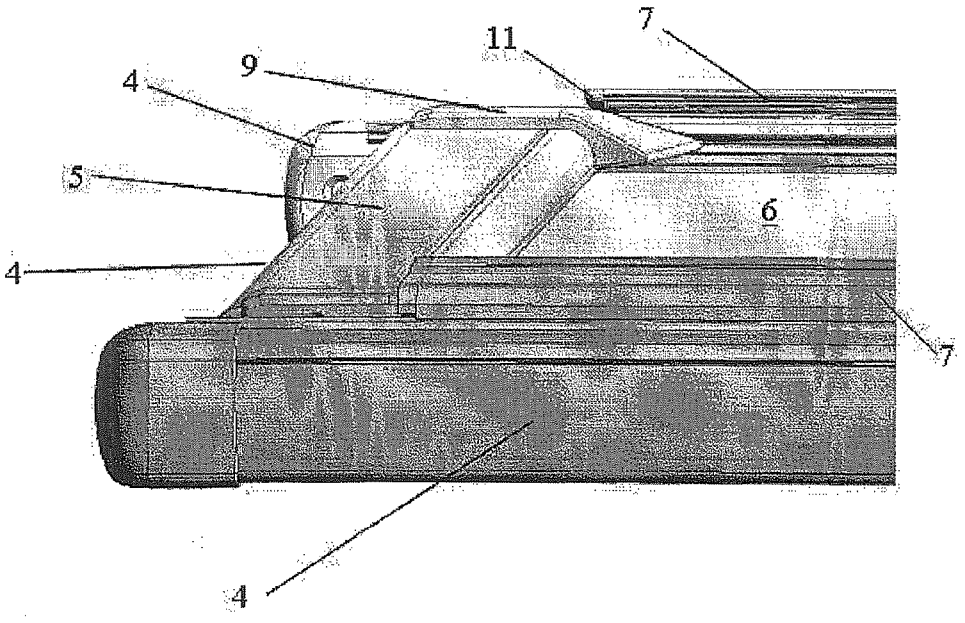


FIG. 4

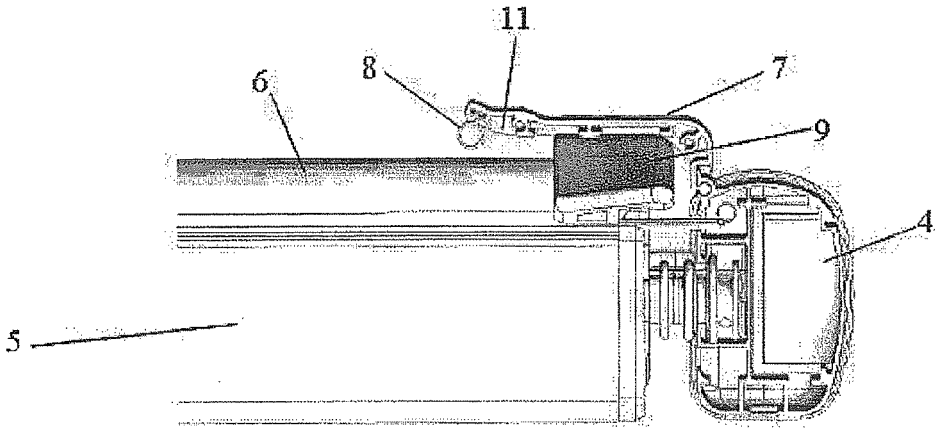


FIG. 5

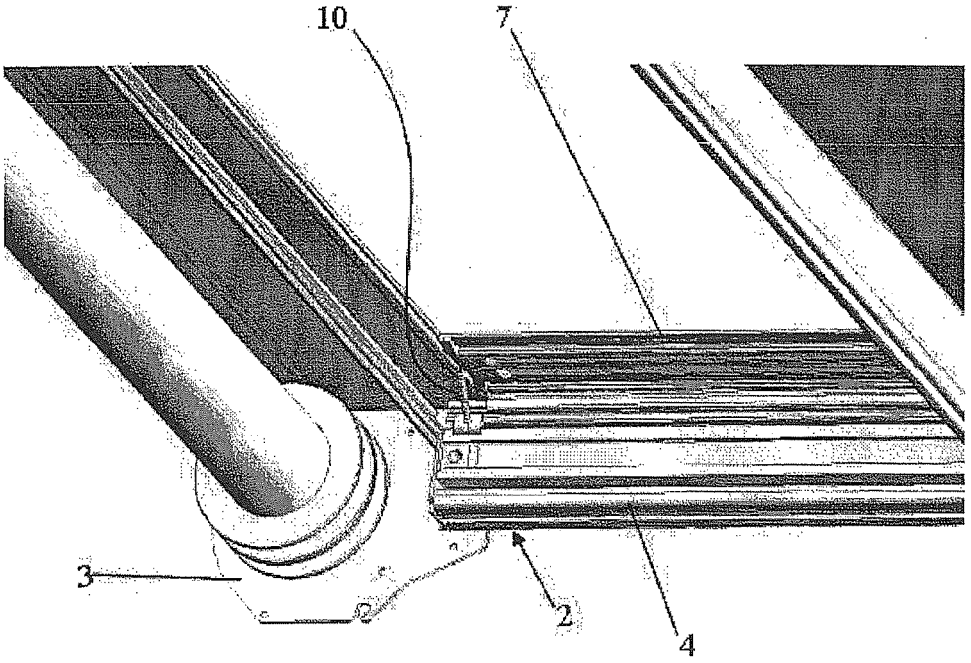


FIG. 6

## REFERENCES CITED IN THE DESCRIPTION

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### Patent documents cited in the description


- IT 252130 **[0008]**