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(54) **Canopy made of prefabricated modular elements**

(57) The present invention relates to a canopy (P) comprising at least a pair of bearing brackets (A) and a cover sheet (B) that rests on at least two strips (2) coinciding with the head wing of the shelves (1 a), having a T-shaped cross-section; said canopy (P) comprising, for each shelf (1a), a tie-rod (3) that tightens the cover sheet (B) above the strip (2), said tie-rod (3) being coupled with fixing means (6) to the plate (1), on one side, and fixing means (7) to the eaves (4), on the other side.

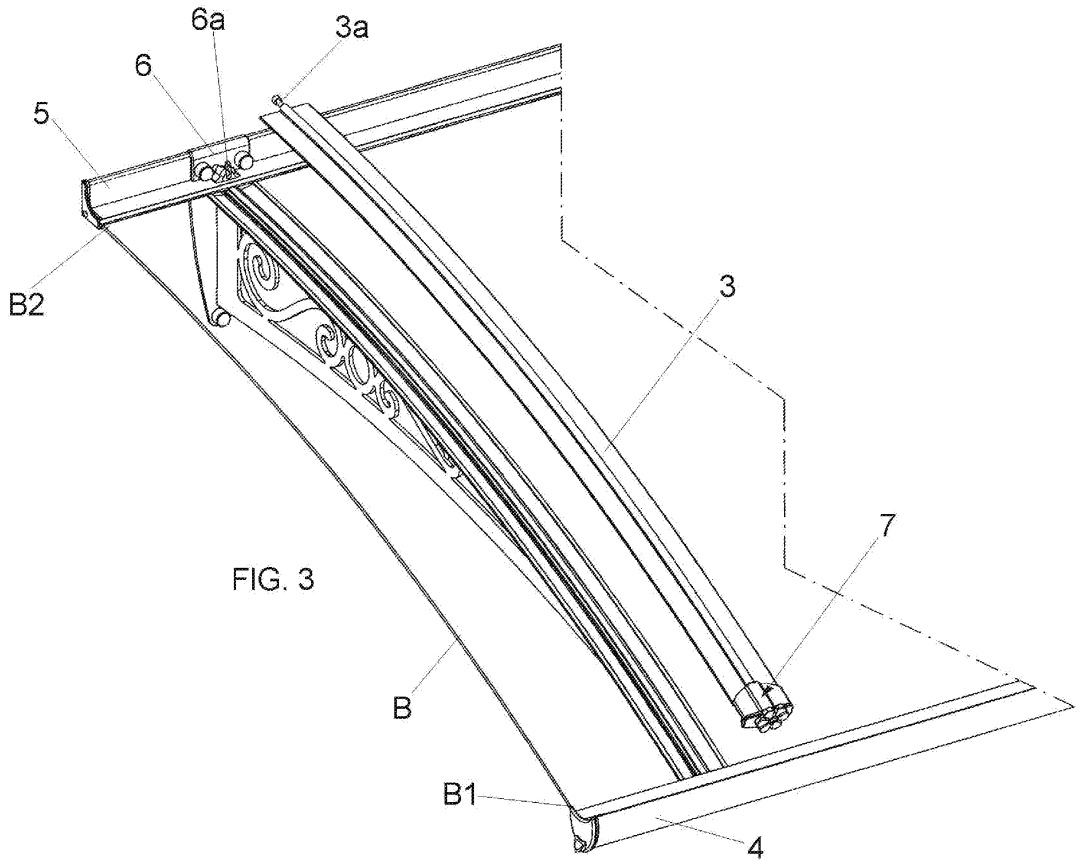

FIG. 3

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Description

[0001] The present patent application for invention relates to a canopy made of prefabricated modular elements.

[0002] The canopy of the invention, which is mainly used to protect doors and windows from the rain, comprises a cover sheet supported and fixed above at least a pair of bearing brackets, practically consisting in flag-shaped shelves fixed to the wall.

[0003] Said shelves are normally provided with T-shaped cross-section, with horizontal wing acting as support surface for the cover sheet, which is firmly fixed by means of a series of self-threaded screws that cross the cover sheet and engage in holes suitably obtained on the horizontal wing.

[0004] DE 20 2007 0047 discloses a canopy according to the preamble of the independent claim 1.

[0005] The main purpose of the invention is to devise and realise a canopy of the aforesaid type, which is provided with new means to fix the cover sheet to the bearing brackets, able to simplify the assembly and installation of the canopy on one side, and fix the cover sheet without drilling holes, on the other side.

[0006] Obviously, the latter ensures the perfect screening of the canopy against water, while one of the most frequent drawbacks of the known models of canopy consists in water leakage and dripping through the holes obtained on the cover sheet to receive the screws used to fix it above the bearing brackets.

[0007] Another purpose of the present invention is to realise a canopy with modular structure that can be joined and connected to another identical specimen to originate a canopy with double or triple length, while guaranteeing maximum water tightness in the connection line of two consecutive elements.

[0008] These and other advantages of the canopy of the invention will become evident during the description below, with reference to the enclosed drawings, which are intended for purposes of illustration only and not in a limiting sense, wherein:

- fig. 1 is a view of the canopy of the invention assembled and installed on the wall;
- fig. 2 is a view of one of the bearing brackets of the canopy of the invention;
- figs. 2A and 2B are a view of some constructive details of the bracket of fig. 2;
- fig. 3 is a view of the canopy of the invention, partially disassembled;
- fig. 4 is an exploded view of some constructive details of the eaves of the canopy of the invention and relevant fixing means;
- fig. 4A is an enlarged view of a detail of fig. 4 seen from a different angle;
- fig. 5 is an enlargement of the fixing means of the eaves;
- fig. 6 is a view of a section of a double canopy, which is obtained by joining and connecting two specimens of the same element;
- fig. 7 is an exploded view of some constructive details of the double canopy of fig. 6;
- fig. 8 is an exploded view of some constructive details of the double canopy of fig. 6;
- fig. 9 is an exploded view of some constructive details of the double canopy of fig. 6.

[0009] With reference to figs. 1 and 2, the canopy (P) of the invention comprises at least a pair of bearing brackets (A) and a cover sheet (B). Each bracket (A) is composed of a wall-anchoring plate (1), from which a flag shaped shelf (1 a) protrudes, with the upper side (1 b) having a slightly curved profile.

[0010] The cover sheet (B) is rolled in such a manner to have the same profile as the upper side (1 b) or is made of flexible material so that it can be curved and adhered to said side (1 b).

[0011] The shelf (1a) has a T-shaped cross-section so that the cover sheet (B) can use a continuous support strip (2) that practically coincides with the head wing of the T-shaped cross-section, as shown in fig. 2A.

[0012] The cover sheet (B) is fixed above the strip (2) by means of a tie-rod (3) that consists in an elastically flexible strip that is stretched and pressed above the sheet (B) in each shelf (1a), in such a manner that the cover sheet (B) is tightened and fixed firmly between the strip (2) and tie-rod (3).

[0013] Moreover, the canopy of the invention is provided with eaves (4) fixed to the front ends of the shelves (1a) provided with front points (1c).

[0014] The eaves (4) is provided with a longitudinal groove (4a) in which the front longitudinal border (B1) of the cover sheet (B) is inserted, while the back longitudinal border (B2) is inserted into a groove (5a) provided on an L-shaped section adapted to be fixed to the wall immediately above the upper side (1b) of the shelves (1a).

[0015] More precisely, the groove (5a) runs along the border of the horizontal wing (5b) of said section (5).

[0016] The tie-rod (3) ends on the back, that is to say on the side facing the plate (1), with a mushroom-shaped hook (3a) designed to be engaged and held inside an engagement housing (6a) obtained on a metal U-bolt (6), which is provided with a parallel pair of holes (6b), in which the two wall fixing screws are inserted (6c) to tighten the U-bolt (6) against the wall-anchoring plate (1) provided with two holes (1d) for the screws (6c).

[0017] The U-bolt (6) is also used to fix the L-shaped section to the wall, positioning the vertical wing (5c) between the plate (1) and the U-bolt (6) before tightening the screws (6c) that are inserted through corresponding holes (5d) provided on the vertical wing (5c).

[0018] The tie-rod (3) is coupled at the front end, that is to say on the side facing the eaves (4), with an overturned L-shaped plate (7), whose vertical wing (7a) is provided with a central hole (7b) for a bolt (8) used to constrain and tighten the plate (7) to the tie-rod (3), which

is provided in turn with a threaded endhole (3b) in which the bolt (8) is screwed, with a coupling ring (9) on the head to simplify manual tightening, as shown in figs. 4, 4A and 8.

[0019] Moreover, the internal side of the vertical wing (7a) of the plate (7) is provided with a parallel pair of teeth (7c) designed to be fitted into a corresponding pair of slots (4b) obtained in the eaves (4).

[0020] It must be noted that the horizontal wing (7e) of the plate (7) is suitably shaped to overlap and perfectly match with the upper side of the tie-rod (3), as shown in figs. 4, 4A and 8.

[0021] The assembly and wall-installation of the canopy of the invention are obtained by initially fixing the plate (1) to the wall both with screws (V) inserted into holes (F) of the plate (1) and with said screws (6c), after interposing the section (5) and the U-bolt (6), in such a manner that the tightening of the screws (6c) simultaneously determines the tightening of the vertical wing (5c) between the plate (1) and the U-bolt (6).

[0022] Then, the back border (B2) of the cover sheet (B) is inserted into the groove (5a) of the section (5), and the front border (B1) of the cover sheet (B) is inserted into the groove (4a) of the eaves (4).

[0023] Now the eaves (4) is mounted on the shelves (1 a) and the front points (1 c) are inserted into corresponding slots (4d) obtained on the eaves (4), resting the cover sheet (B) on the strip (2).

[0024] Then the hook (3a) of the tie-rod (3) is fitted inside the engagement housing (6a) so that the tie-rod (3) can be curved until it adheres against the cover sheet (B) in order to fit the vertical wing (7a) of the plate (7) - previously coupled with the tie-rod (3) without tightening the bolt (8) - to the eaves (4), engaging the teeth (7c) in the slots (4b).

[0025] The vertical wing (7a) of the plate (7) is also provided with a central slot (7d), in which the front point (1 c) of each shelf (1 a) is inserted.

[0026] Now the bolt (8) is tightened by means of the coupling ring (9) that is practically situated inside the eaves (4).

[0027] By tightening the bolt (8), the eaves (4) is fitted firmly to the shelves (1 a), and the cover sheet (B) is tightened between the strip (2) and the tie-rod (3), which is specular and identical to the strip (2).

[0028] The eaves (4) is made of an extruded aluminium section with end caps (10) provided with drain holes (10a), as shown in fig. 4.

[0029] Also the tie-rod (3) is preferably made of an extruded aluminium section, just like the support strip (2), and the vertical wing of the shelf (1 a) is preferably made of steel or cast iron, thus causing a problem when fixing the aluminium strip (2) at the top of the shelf (1 a).

[0030] The coupling between the vertical wing of the shelf (1 a) and the strip (2) is obtained by means of rectangular plugs (11) inserted through corresponding slots (1f) obtained near the upper side (1b) of said vertical wing and engaged, sliding freely, inside a groove (2a) with T-shaped section that runs along the longitudinal axis of the strip (2), as shown in figs. 2A and 2B.

[0031] In order to join and couple two or more identical specimens of canopies (P), the transversal matching borders of the two canopies (P) are rested on the same strip (2) of the same shelf (1 a), as shown in figs. 6, 7, 8 and 9.

[0032] In particular, the U-bolt (6) is fitted both on the left end of the section (5) of the right-hand canopy (P) and on the right end of the section (5) of the left-hand canopy (P), as shown in fig. 7.

[0033] The eaves (4) of the two adjacent canopies (P) are connected by means of a U-shaped coupling (12) with gasket (13).

[0034] The coupling (12) is fixed by means of a pin (14) on the point (1 c), which is provided with a hole (15) for insertion of said pin (14).

[0035] Moreover, the coupling is fitted to the two eaves (4) by means of two dowels (16).

[0036] The plate (7) is situated astride the two eaves (4) so that the two teeth (7c) are fitted to corresponding slots (4b), the first one being obtained on the left end of the eaves (4) of the right-hand canopy (P), and the second one being obtained on the right end of the eaves (4) of the left-hand canopy (P), as shown in fig. 9.

[0037] With reference to fig. 2A, attention is drawn finally on the configuration of the cross-section of the strip (2), which is provided on the upper side with a central rib (2b) with groove (2a) and two lateral channels (2c) to convey towards the coupling (12) the water that may seep under the tie-rod (3) that tightens a parallel pair of sheets (B) respectively belonging to a parallel pair of canopies (P), as shown in figs. 6, 7 and 8.

Claims

1. Canopy of the type comprising:

- at least a pair of bearing brackets (A) and a cover sheet (B), in which each bracket (A) is formed of a wall-anchoring plate (1), from which a flag shaped shelf (1a) protrudes, said shelf (1a) comprising a strip (2) on which said cover sheet rests,
- a tie-rod (3) for each shelf (1a) that tightens the cover sheet (B) above the strip (2), the said tie-rod (3) being coupled with fixing means (6) suitable to be fixed to the plate (1) on one side, while on the other side the tie-rod (3) is coupled with fixing means (7) suitable to be fixed to eaves (4) supported by the said shelves (1a),

characterized in that

- said shelf (1a) has a T-shaped cross-section, in such a way that the cover sheet (B) rests on the strip (2) that basically coincides with the head wing of the said T-shaped cross-section,

- the tie-rod (3) is coupled at the front end, that is to say on the side facing the eaves (4), with an overturned L-shaped plate (7), whose vertical wing (7a) is provided with a central hole (7b) for a bolt (8) used to constrain and tighten the plate (7) to the tie-rod (3), which is provided with an threaded endhole (3b) in which the said bolt (8) is screwed

2. Canopy as claimed in the above claim, **characterised in that** the tie-rod (3) ends on the back, that is to say on the side facing the plate (1), with a mushroom-shaped hook (3a), designed to be engaged and held inside an engagement housing (6a) obtained on a metal U-bolt (6) screwed onto the plate (1).

3. Canopy as claimed in claim 1 or 2, **characterised in that** the plate (7) is provided on the internal side of the vertical wing (7a) with a parallel pair of teeth (7c) designed to be fitted into a corresponding pair of slots (4b) obtained in the eaves (4) provided with a slot (4d) where the front point (1 c) of each shelf (1 a) is inserted.

4. Canopy as claimed in the above claim, **characterised in that** the vertical wing (7a) of the plate (7) is also provided with a central slot (7d), in which the front point (1 c) of each shelf (1 a) is inserted.

5. Canopy as claimed in one or more of the above claims, **characterised in that** the eaves (4) is provided with a longitudinal groove (4a) in which the front longitudinal border (B1) of the cover sheet (B) is inserted, while the back longitudinal border (B2) is inserted into a groove (5a) provided on the border of the horizontal wing (5b) of an L-shaped section (5).

6. Canopy as claimed in claims 2 and 5, **characterised in that** the U-bolt (6) presses against the wall the L-shaped section (5), whose vertical wing (5c) is positioned between the plate (1) and the U-bolt (6) before tightening the wall fixing screws (6c) of the plate (1), the said screws (6c) being inserted first through corresponding holes (6b) provided on the U-bolt (6), then through corresponding holes (5d) provided on the vertical wing (5c) and finally through corresponding holes (1d) provided on the anchoring plate (1).

7. Canopy as claimed in claim 1, **characterised in that** the vertical wing of the shelf (1a) is fixed to the strip (2) through rectangular plugs (11) inserted through corresponding slots (1f) obtained near the upper side (1 b) of the said vertical wing, which are engaged and free to slide inside a groove (2a) with T-shaped section that runs along the longitudinal axis of the strip (2).

8. Canopy as claimed in claim 1, **characterised in that** the upper side (1 b) of the shelves (1 a) has a slightly curved section and the tie-rod (3) is made of an elastically flexible metal strip.

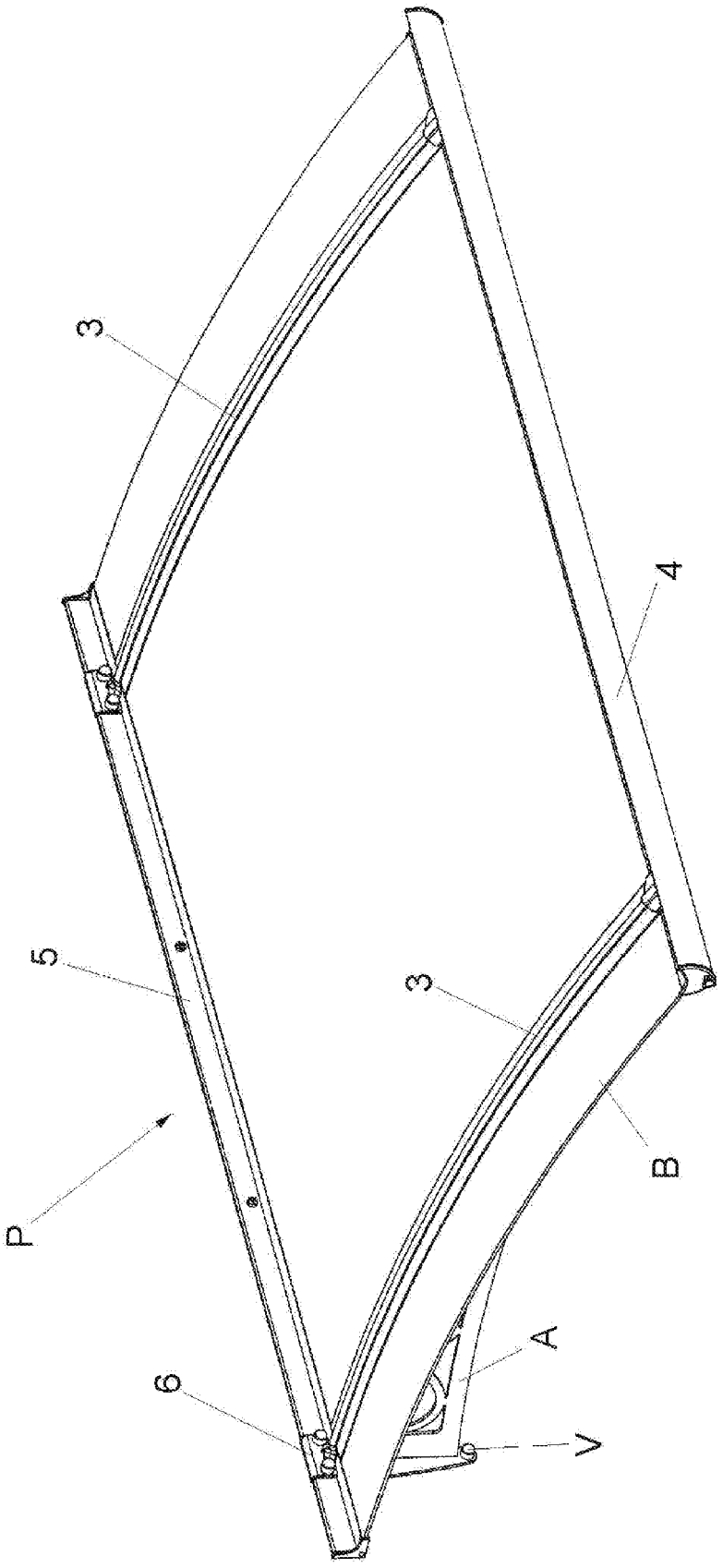

FIG. 1

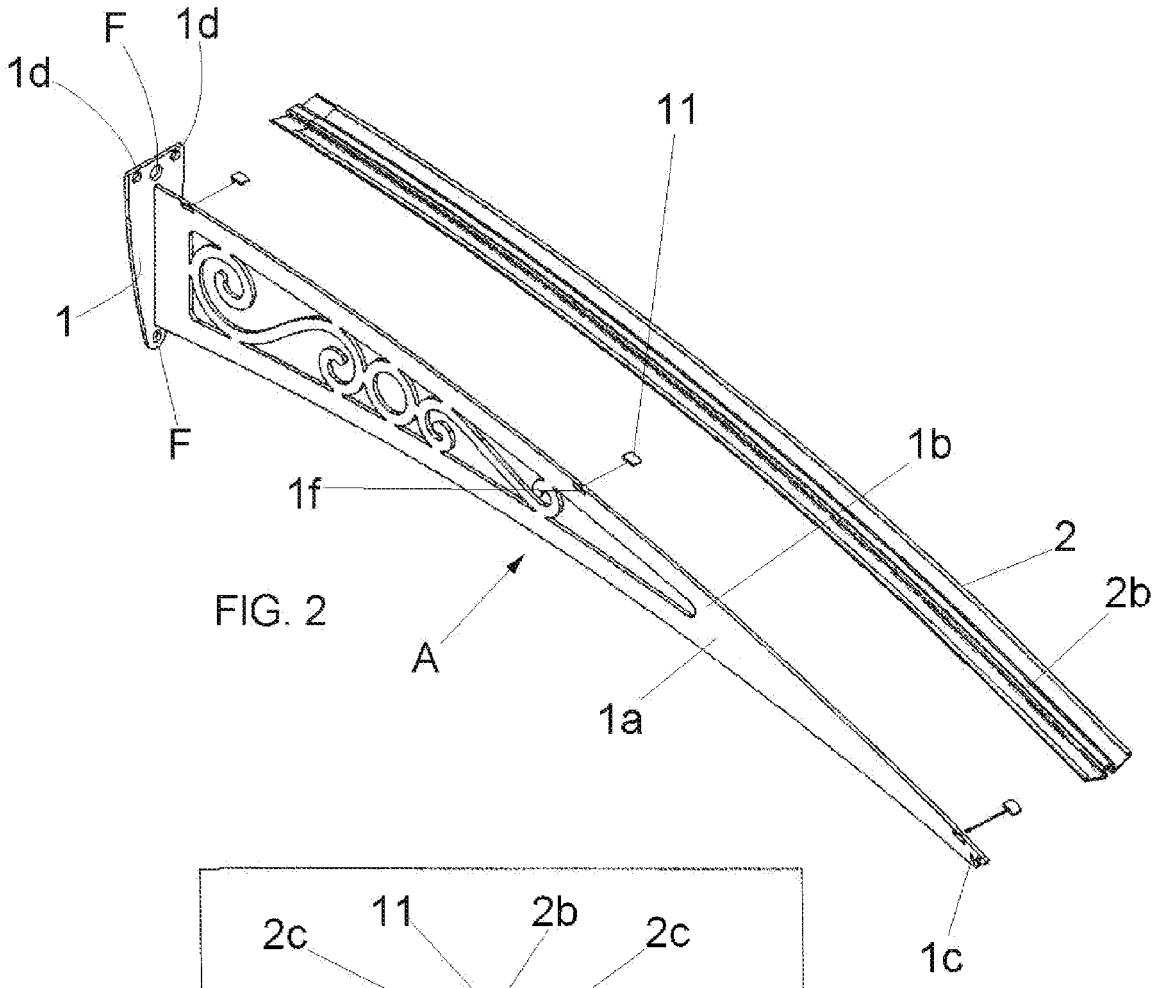

FIG. 2

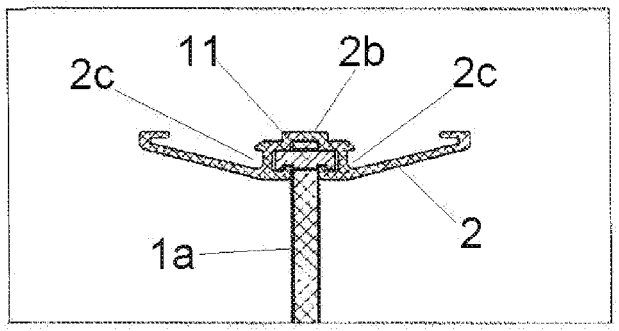

FIG. 2A

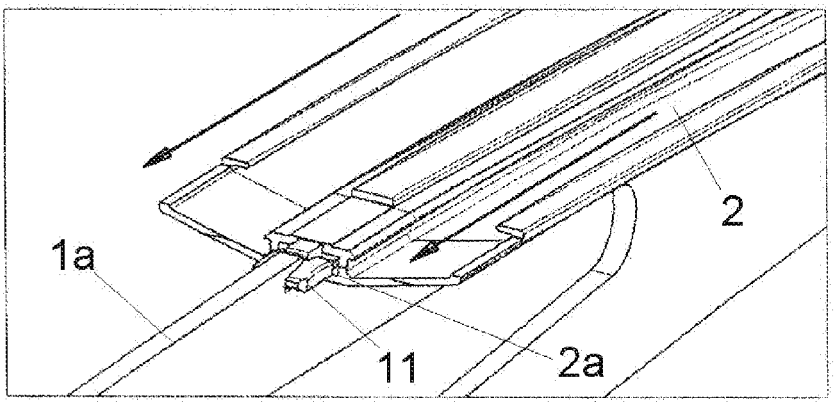

FIG. 2B

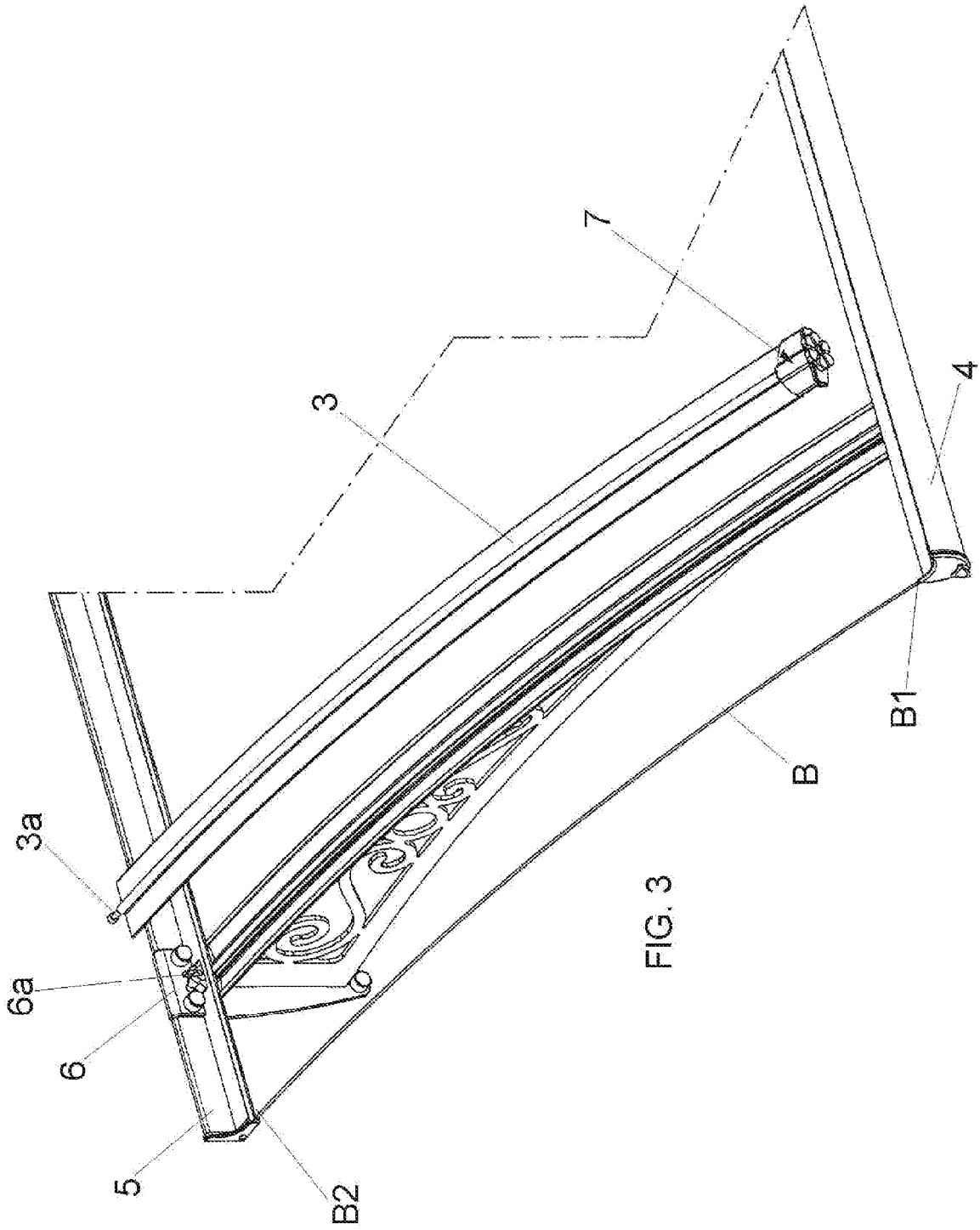

FIG. 3

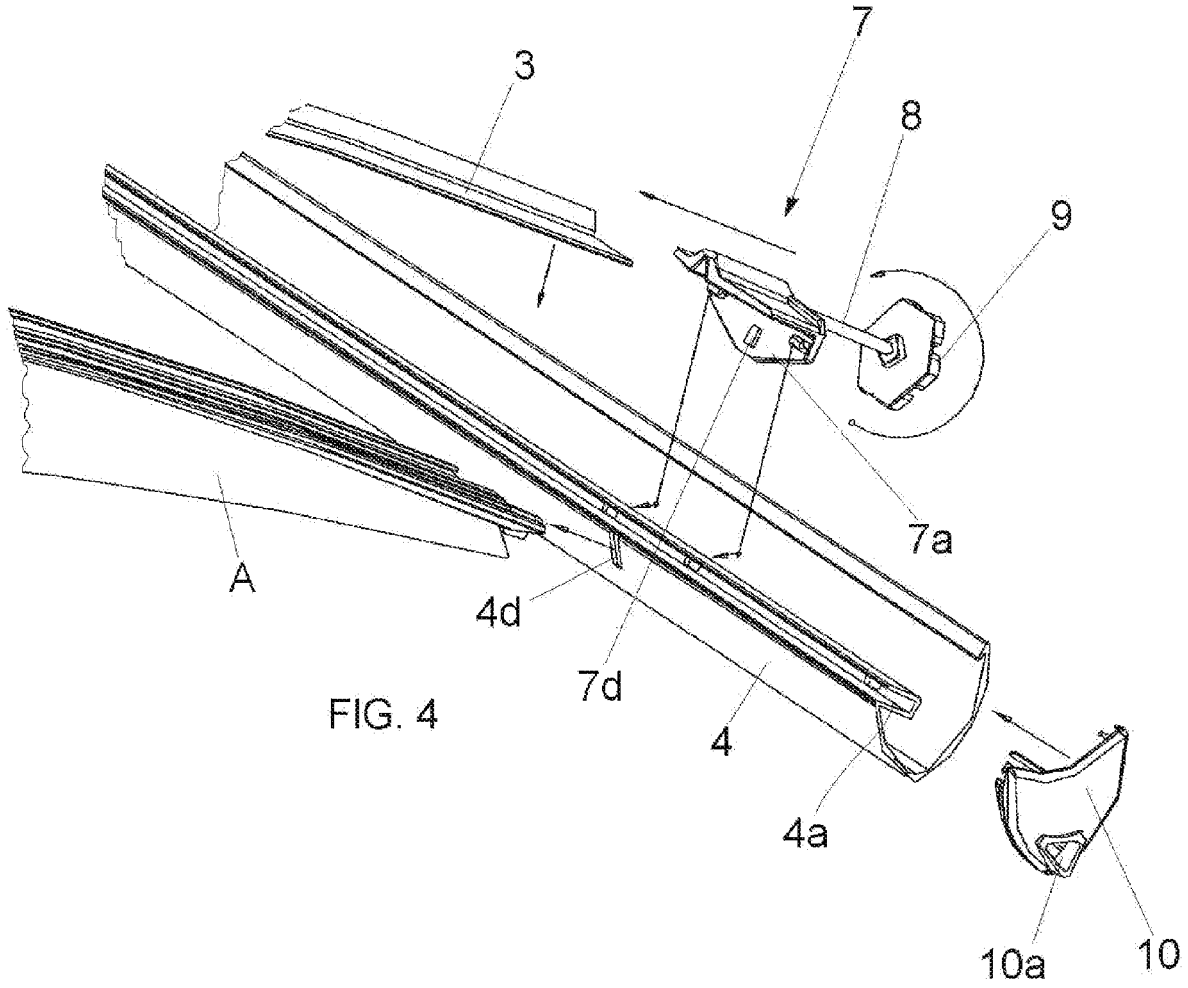

FIG. 4

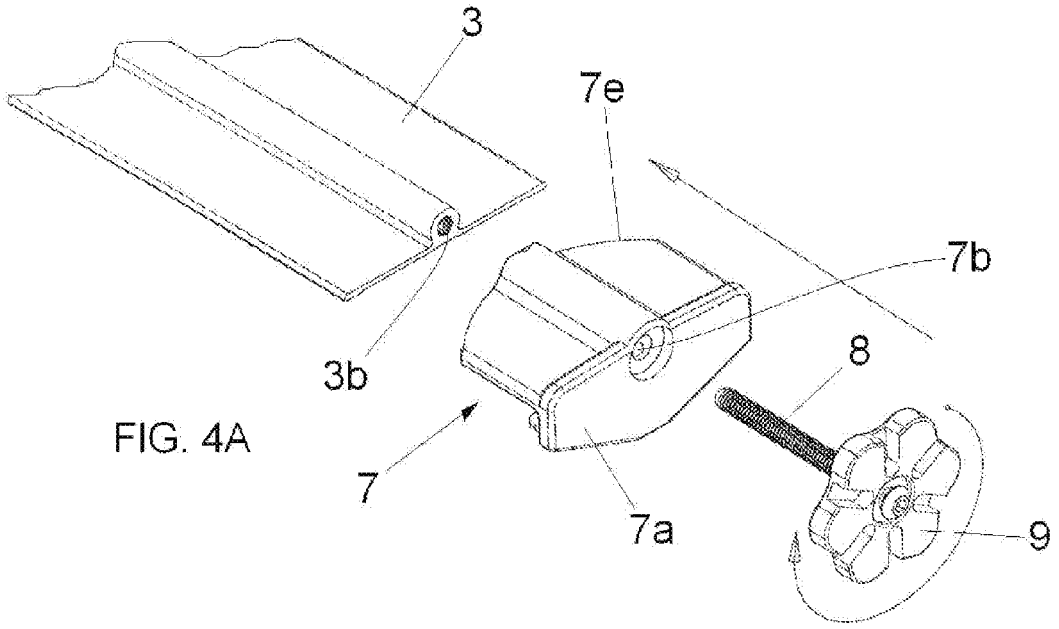

FIG. 4A

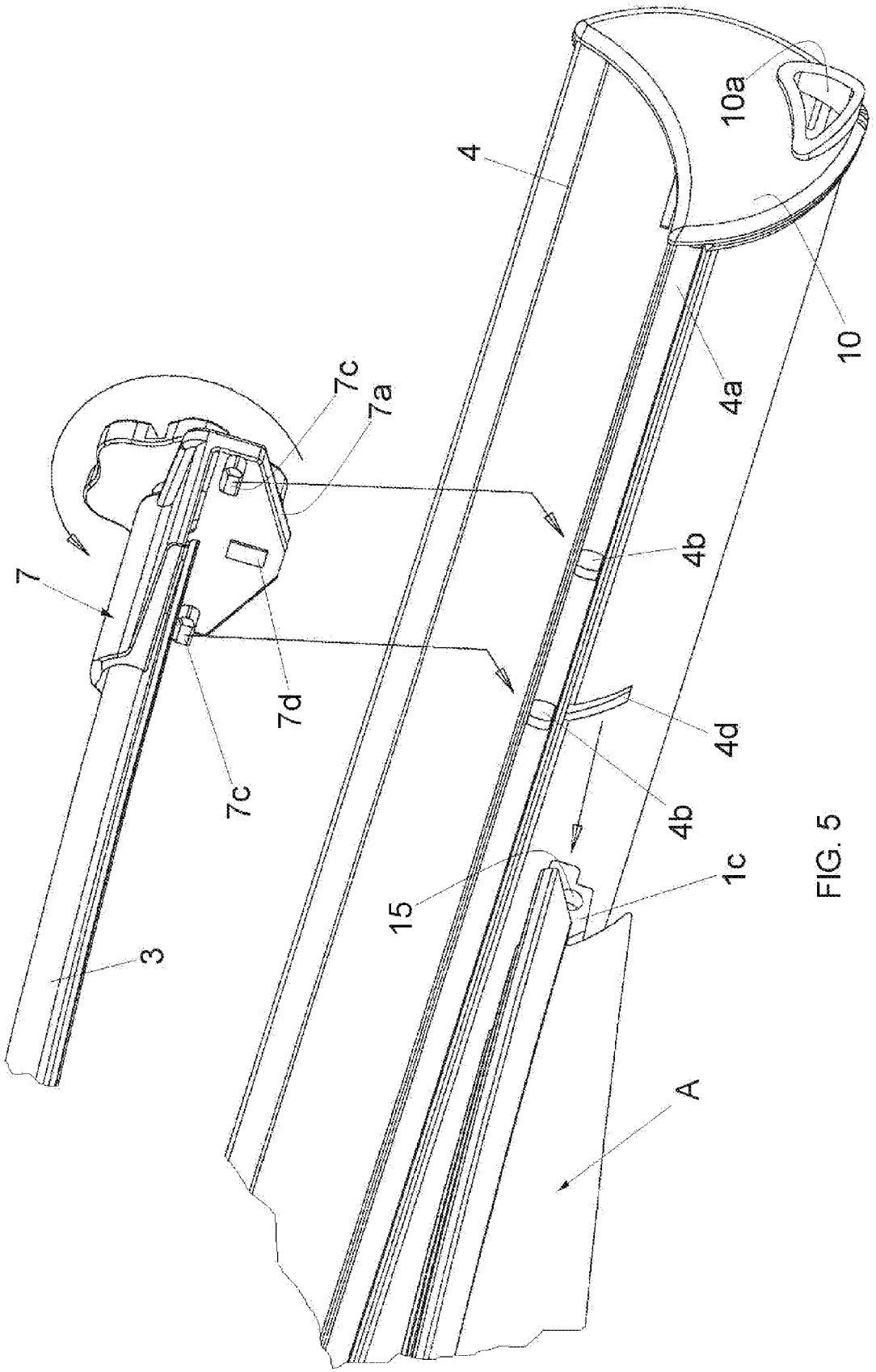

FIG. 5

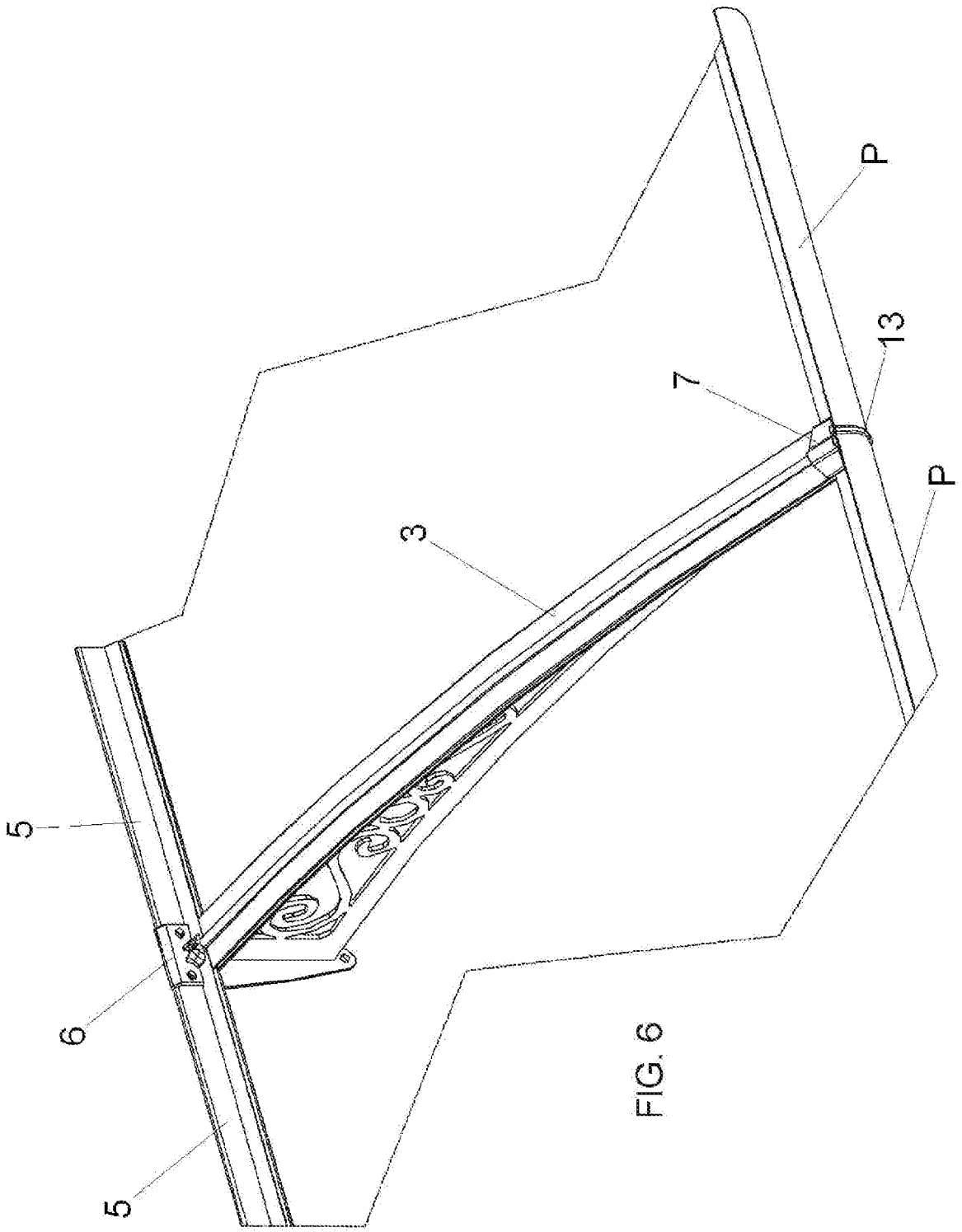

FIG. 6

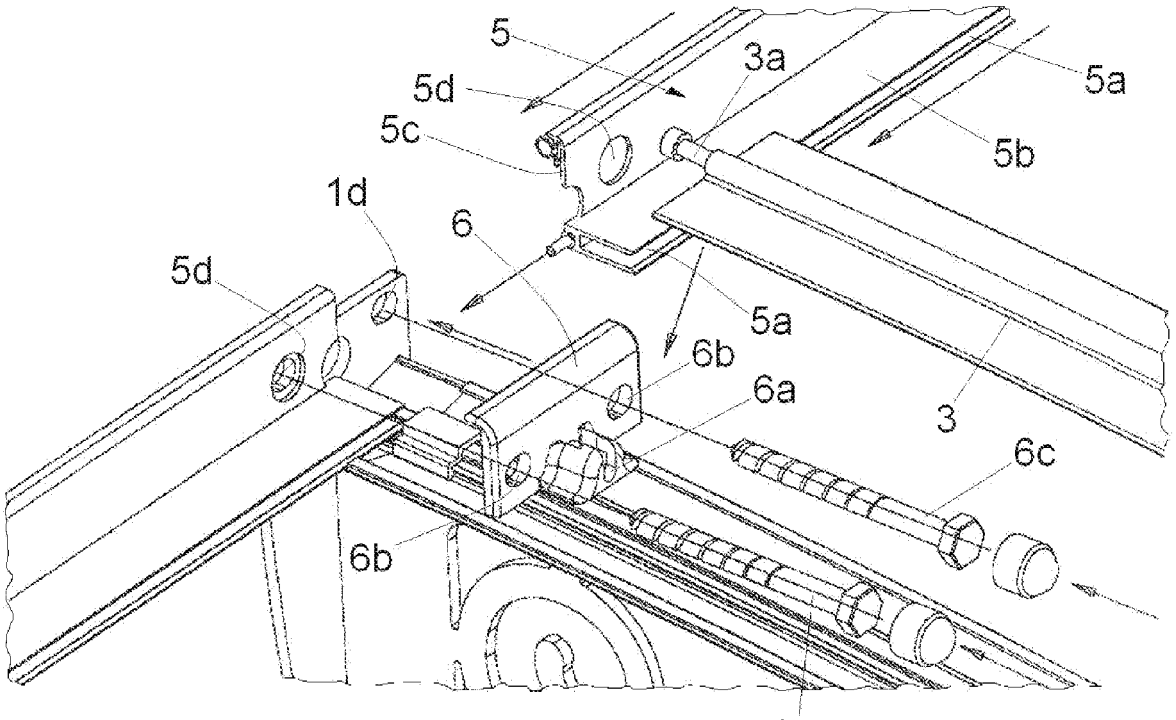

FIG. 7

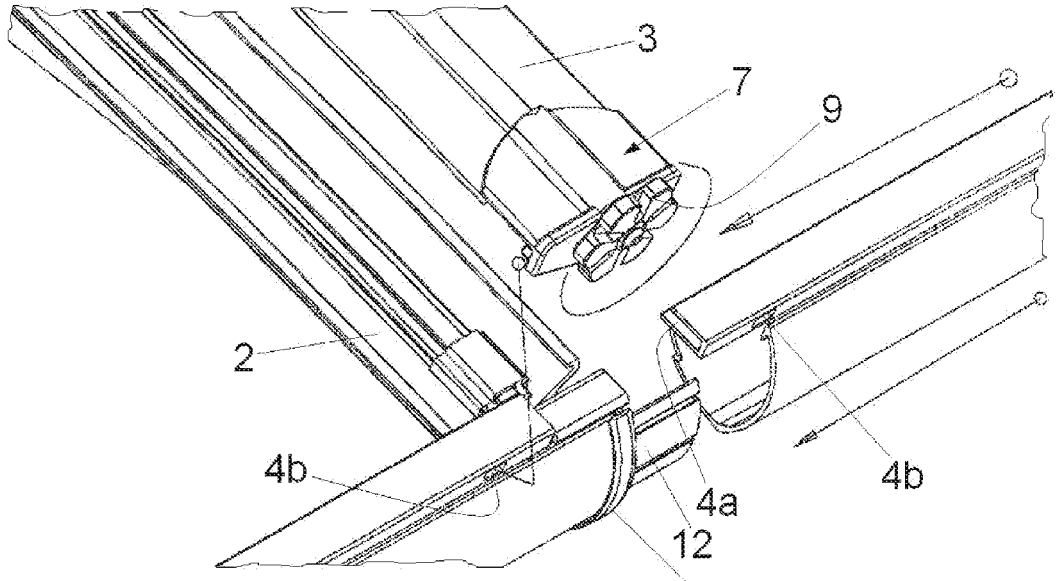

FIG. 9

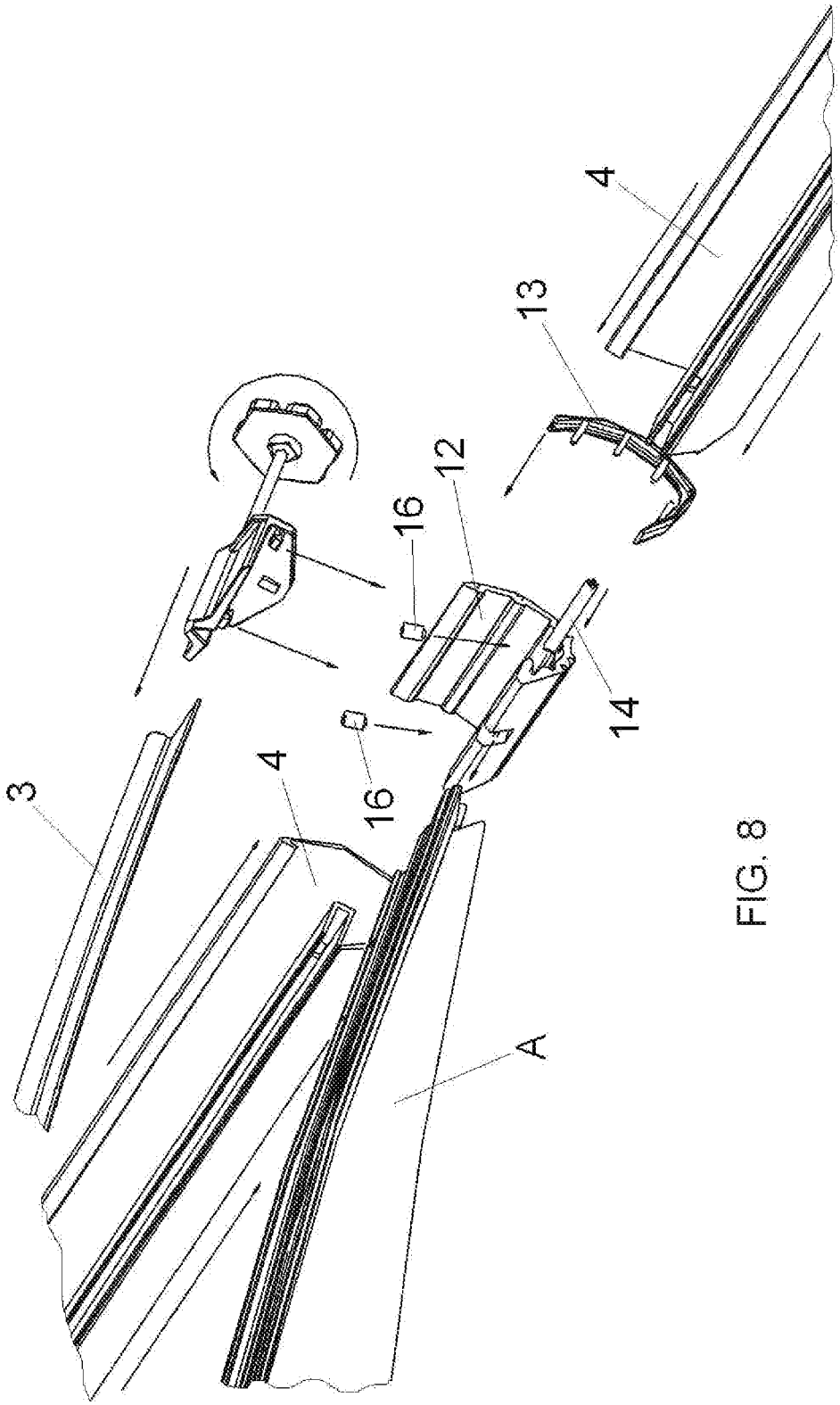

FIG. 8

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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