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(54) Canopy structure

(57) The invention relates to an awning structure with a roof-forming part (1) whose supporting structure (2-5) comprises a horizontal front beam (5) in which an internal space (12) is provided for an awning roll (9) and said front beam (5) extends between two columns (7), (8) and on at least one of the sides running in the longitudinal direction (A) it comprises a detachable wall element (26) so that the internal space (12) can easily be opened on said side in order to install or remove the awning roll (9). This simplifies the installation and the front beam performs the function of structural element and the function of awning housing, so that the structure can be made more compact and simpler.

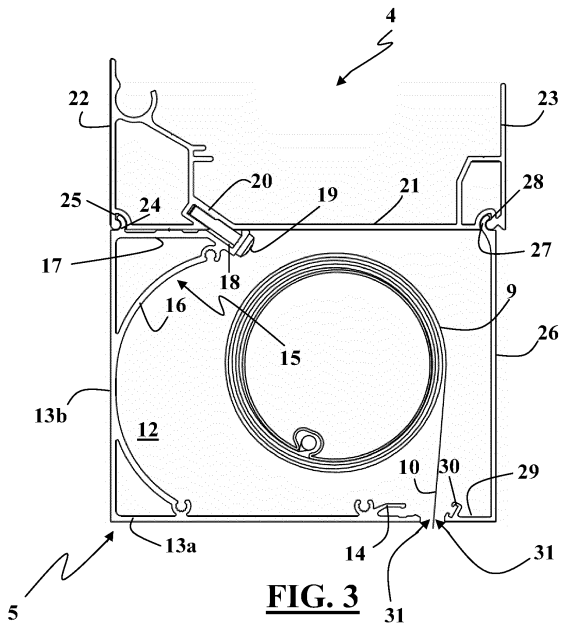

FIG. 3

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Description

[0001] The present invention relates to an awning structure comprising a roof-forming part for which a roof structure is provided that comprises a front beam extending practically horizontally and at least two columns which support the front beam.

[0002] The present invention relates in particular to an awning structure of this kind that is also provided with at least one awning that can be rolled on and off an awning roll, which in the rolled-up state forms a wall-forming part of the structure.

[0003] Awning structures of this kind are usually erected in order to shield a place located outside from unpleasant weather conditions. Thus, such awning structures are often erected on dwellings, restaurants, shops and the like in order to shield an outdoor terrace or a place where goods for sale are set out, against the sun, precipitation and wind.

[0004] The present invention relates in particular to a terrace roofing, a canopy or a pergola with the characteristics defined above.

[0005] An awning structure with the properties stated in the first paragraph of this description is known from, among others, DE 20 2008 014 066 U1. In this awning structure, an awning roll is provided in an awning housing which is integral with a supporting beam. This component of the structure is very bulky and conspicuous. The awning housing has a removable end part via which the awning roll can be inserted or can be removed. The sideways insertion of an awning roll with the awning, along the direction of the axis of the awning roll, is not easy and is time-consuming. In addition, there must be sufficient free space on the side of the awning housing that can be opened. If there are other structures on this side that prevent the awning roll being brought into the extension of the awning housing, the awning roll cannot be inserted into the awning housing from this side.

[0006] In another known awning structure, the awning housing is a separate component of the structure that is fastened to the underside of the front beam. The awning structure must therefore be provided with two rather bulky components extending above each other over the entire width of the structure. In addition, in a number of known structures the awning roll must also be inserted into the awning housing via an opened end part.

[0007] The aim of the present invention is to rectify the aforementioned problems by developing an awning structure that is more compact and can be installed more easily.

[0008] These aims are achieved by providing an awning structure with the characteristics stated in the first paragraph of this description, in which the front beam comprises an internal space for an awning roll, with the front beam extending between two columns and comprising, on at least one of the sides extending longitudinally, a wall element that is fastened detachably, and where said wall element delimits said internal space so that by removing it, a passage is cleared, along which the awning roll can be inserted into the internal space and can be removed therefrom.

[0009] Accordingly, the front beam has a dual function. On the one hand the front beam is constructed with the required strength to withstand the load and provide long-term stability of the structure, but on the other hand the front beam is also provided to function as an awning housing in which the awning roll and the awning rolled-up thereon are concealed and protected.

[0010] At the same time, in the present invention it is ensured that the awning roll can be inserted into the internal space along a passage in a side of the front beam extending longitudinally, so that all the problems and difficulties associated with sideways insertion of the awning roll are also rectified immediately. It is thus also no longer necessary for there to be a free space in the extension of the front beam for this sideways insertion of the awning roll.

[0011] The longitudinally extending side of the front beam, which comprises a wall element that is fastened detachably, is preferably the front of the front beam, but embodiments are also possible in which it is the underside or the top or the rear of the front beam. Embodiments are also possible in which the front beam comprises said detachable wall element on several of these sides. The wall element can be of one-part or multi-part construction.

[0012] The fact that two rather bulky components extending over the whole width can be reduced to one component in addition also ensures a more compact awning structure. From the aesthetic viewpoint this is undoubtedly an advantage. Furthermore, this awning structure consists of fewer components, so that the material costs and the production costs decrease and installation of the awning structure is simpler and quicker. These benefits are obtained without any concession with respect to the quality and stability of the structure.

[0013] For the front beam to extend between the columns, the awning roll can be connected to these columns directly or indirectly (via the side walls of the front beam or via an end part secured for this purpose to the front beam), so that the awning roll and the awning are carried by the columns and the front beam is not loaded by them. In addition, the awning guides can be fastened to the sides of the columns directed towards each other so that the unrolled awning extends in a plane that extends between the columns or is located in the plane of the front of the columns. Because the front beam is not supported on the underside, an opening extending over practically the whole length of the front beam can be provided on the underside of the front beam, which can be closed by a detachable wall element. Removal of the awning roll via the opened underside is especially user-friendly. An additional advantage is that the height at which the front beam is placed is no longer dependent on the height of the columns, since the front beam does not rest on these columns but is secured at the desired height between them.

[0014] In a preferred embodiment the front beam comprises, on at least one of its ends, an end part, which is fastened to a vertical wall of a column.

[0015] In a preferred embodiment this awning structure also comprises at least one awning that can be rolled on and off a roll bar, which in the rolled-up state forms a wall-forming part of the awning structure, and the awning roll is provided in said internal space in the front beam.

[0016] In an even more preferred embodiment of this awning structure the detachable wall element comprises one or more first connecting means that are provided for interacting with respective complementary second connecting means of the awning structure for holding the wall element in place with respect to the front beam, said first and second connecting means being connecting means of the type that can be connected and released by hand without using tools.

[0017] As a result, installation of the awning structure is further simplified as opening and closing of the internal space in the front beam can also be simpler and quicker.

[0018] In a particular embodiment of this awning structure the connecting means of at least one pair of interacting connecting means are of the type where connection is brought about by hooking-in a hook part or lip of one of the connecting means into a cavity, recess or slot of the other connecting means and/or the connecting means of at least one pair of interacting connecting means are of the type where connection is brought about by deforming, and allowing to spring back, at least one elastically deformable part of one or both connecting means.

[0019] These "hooking-in" means or connecting means involving elastic deformation (snap connections) are very user-friendly and easy to produce.

[0020] In a very preferred embodiment this awning structure comprises a gutter secured on the top of the front beam, and said internal space of the top beam is delimited at the top by the underside of the gutter.

[0021] In this way the bottom wall of the gutter is used as the top wall of the front beam. With this measure, the production costs and the material costs of the awning structure are reduced.

[0022] In an especially advantageous embodiment the gutter comprises, on at least one end, an end part projecting past the front beam that extends to above an upper end of a column.

[0023] This embodiment offers the advantage that one or both columns are covered at their upper end by the gutter. As a result the openings in the column(s) are closed. The dimensions of the gutter are determined in relation to the dimensions of the cross-section of the column(s).

[0024] An additional advantage is that the inclined joists, which rest on the gutter at the outermost sides of the awning structure, have a point of support that is located above the columns, so that these joists do not exert any load on the front beam. Only the joists that are located between these outermost joists constitute, via the gutter, a load for the front beam.

[0025] In addition, drainage of water from the gutter via a drain pipe can easily be concealed in the columns and precipitation water can be led away without bends from the gutter to the columns.

[0026] The gutter is connected to the columns by connecting means that extend in the longitudinal direction of the columns. Connection of the front beam between the columns is by connecting means that extend in the transverse direction of the columns. This manner of connection at right angles ensures that hardly any gaps form between the gutter and the columns, or between the front beam and the columns. Furthermore, this manner of connection at right angles ensures a strong joint and it contributes to the stability of the assembly of columns, gutter and front beam.

[0027] Preferably an oblong through-opening for the awning, extending along the longitudinal axis of the awning roll, is provided in the wall of the front beam that delimits the internal space from the underside. Preferably the structure also comprises a closing plate for closing said through-opening for the awning.

[0028] If the front beam is used without an awning roll, the opening for the awning is superfluous and annoying from the aesthetic viewpoint. By closing off this opening with a closing plate, the front beam is made continuous with closed external walls and the aesthetic qualities of the awning structure are preserved. Moreover, closing off the opening for the awning prevents insects getting into the internal space and prevents accumulation of dirt in this space.

[0029] In a very advantageous embodiment a strengthening element is fastened to at least one of the longitudinally extending walls of the front beam. By this means, the front beam according to the present invention can also be constructed with the required resistance to larger loads, in particular for spanning quite considerable lengths.

[0030] Preferably the strengthening element in the internal space is fastened to a wall of the front beam. In this way the strengthening element does not affect the view from the awning structure.

[0031] In a particular embodiment the position of the detachable wall element is fastened by adjustable fastening means, such that its position is adjustable in a horizontal direction that is transverse to the longitudinal direction of the front beam. This makes it possible to alter the position of the wall element so that this wall element is not, as a result of small dimensional deviations, incorrectly positioned and so would not connect perfectly with adjacent components, such as the columns, among others.

[0032] In an especially interesting embodiment the detachable wall element is fastened to a component of the awning structure secured above the front beam. In a most preferred embodiment of this awning structure, said wall element is fastened to a component of the gutter secured above the front beam that is adjustable in the stated di-

rection.

[0033] The invention will now be explained in more detail based on the following detailed description of some preferred embodiments of an awning structure according to the present invention. Our only purpose in presenting this accurate description of these explanatory examples is on the one hand to illustrate the basic characteristics of the invention and on the other hand also to point out further benefits and particular features of this awning structure. This description can therefore not be regarded in any way as a limitation of the scope of protection, or of the field of application of the invention.

[0034] In this detailed description, reference numbers are used for referring to the appended drawings, in which:

- **Fig. 1** is a perspective view of a preferred embodiment of an awning structure according to the present invention,
- **Fig. 2** shows a vertical cross-section of the front beam and the gutter fastened to it, of this awning structure, in an arrangement without awning roll and with the opening for the awning fabric closed,
- **Fig. 3** shows the cross-section from Fig. 2 in an arrangement with awning roll, partly rolled-up awning fabric and with the opening for the awning fabric open,
- **Fig. 4** shows a vertical cross-section of a beam of a longer design and the gutter fastened to it, in an arrangement without awning roll and with the opening for the awning fabric closed, with an internal strengthening element provided in the front beam,
- **Fig. 5** shows the cross-section from Fig. 4 in an arrangement with awning roll, partly rolled-up awning fabric and with the opening for the awning fabric open,
- **Fig. 6a** shows a vertical cross-section of an embodiment of the gutter fastened on the front beam, where the gutter comprises an adjustable fastening profile,
- **Figs. 6b and 6c** show a vertical cross-section of the adjustable fastening profile of the gutter depicted in Fig. 6a, where these diagrams show the two outermost positions of this profile,
- **Fig. 7** shows, in perspective, a part of the awning structure, in which a part of a column can be seen with the front beam fastened to it and the gutter profile fastened to the front beam, and with the front beam and gutter profile shown in cross-section,
- **Fig. 8** shows, in perspective, a part of the front beam provided with an end part and the gutter profile fastened to the front beam of this awning structure.

[0035] The awning structure according to the invention comprises a roof structure (1) consisting of a covering material, among other things. In the embodiment shown in Fig. 1 the covering material consists of two strips of awning fabric which are unwound next to each other from a respective awning roll (not shown in the diagrams). This covering material can also be composed of elements in sheet form (e.g. of glass), whether or not in combination with awnings.

[0036] The roof structure (1) comprises a supporting framework (2-5) consisting of a number of joists (2), which are fastened at one end to a wall profile (not reproduced in the diagrams) and at their other end are connected to a gutter profile (4) that is fastened to a front beam (5). This assembly of the gutter (4) and the front beam (5) will be described in more detail.

[0037] The wall profile is fastened in a horizontal position to a wall (6), whereas the front beam (5) is provided, also in a horizontal position, between two pillars or columns (7), (8) and is supported or carried at both ends by a respective pillar or column (7), (8) which is connected to the ground in a stable vertical position. The wall profile (3) is usually higher than the gutter (4) so that the roof part (1) slopes downward from the wall (6).

[0038] The front beam (5) has the required strength to withstand the load imposed on it and in particular offers sufficient resistance to bending.

[0039] The front beam (5) is a beam-shaped element enclosed by elements in sheet form. An awning roll (9) is received in the internal space (12), enclosed by these elements in sheet form, of the front beam (5). The awning roll (9) carries an awning fabric (10) which, by turning the awning roll (9), can be wound onto the awning roll (9) and can be rolled down. For this, the vertical lateral sides of the awning fabric are guided in lateral guides (56) (shown in Fig. 7).

[0040] A bottom lath (not shown in the diagrams) can also be provided on the underside of the awning fabric, and is guided by means of bottom lath end parts in these lateral guides. In the rolled-up state the awning fabric (10) extends from the front beam (5) vertically downward from between the columns (7), (8), so that it forms a closed wall part (11).

[0041] The sheet-form wall elements of the front beam comprise a first wall element in the form of a profile (13a, 13b) with two parts in sheet form (13a), (13b) that abut with one another at right angles and form the bottom wall and the rear wall of the front beam (5), respectively.

[0042] Part (13 a) forming the bottom wall has, in the vicinity of the front edge, a clamping wall extending horizontally forwards (14). This clamping wall (14) can be deformed elastically. Between this clamping wall (14) and the underlying part in sheet form (13a), a receiving slot is formed for a corresponding projection (33) of a closing plate (32), which will be described in detail.

[0043] Part (13b), which forms the rear wall of the front

beam, is provided at the top with a hollow projecting wing (15), which in the internal space (12) displays a concave curved surface (16) and has a horizontal, almost flat top (17). A number of slanting holes directed upwards (18) for fixing screws or fixing bolts (19) are provided, passing through the walls of the wing (15), distributed over the length of the front beam.

[0044] A U-shaped gutter profile (4) is fastened to the top of the front beam (5). The gutter profile (4) has a flat bottom (21) and two vertical flanks abutting to it at right angles (22), (23). In the bottom (21) of the gutter profile (4), slanting holes directed upwards (20) are provided, which are located in the extension of the holes (18) through the wing (15) of the first wall element (13a, 13b).

[0045] The gutter profile (4) has practically the same length as the wall elements of the front beam (5) and is placed on the flat top (17) of the wing (15) so that the rearmost flank (22) of the gutter profile (4) is located in the same vertical plane as the rear wall (13b) of the front beam (4). The gutter profile (4) is connected by said fixing screws (19) in the holes (18), (20) to the front beam (5). The flat bottom (21) of the gutter profile (4) extends over the entire width of the front beam (5) and closes the internal space (12) at the top. In other words the bottom (21) of the gutter profile (4) functions as the top wall of the front beam (5).

[0046] A curved lip (24) is also provided on the upper surface (17) of the wing (15) and extends in the longitudinal direction of the first wall element (13a, 13b) and fits into a corresponding slot (25) in the bottom (21) of the gutter profile (4). Owing to the curved shape of the lip (24) and the complementary slot (25), the lip (24) must be inserted in the slot (25) by rotating the gutter profile (4) and wall element (13a, 13b) towards each other from a mutually rotated position about an axis of rotation that coincides with the lip (24) and the slot (25). Disconnection requires this rotary motion to be reversed.

[0047] This form of connection can be performed quickly and does not require any loose fastenings such as screws or bolts etc. As a result, installation of the awning structure is easier and quicker.

[0048] The sheet-form wall elements (13a, 13b), (26) of the front beam (5) comprise a second wall element (26) that forms the front wall of the front beam (5) and is fastened detachably to the gutter profile (4) in the vicinity of the front edge of the bottom (21).

[0049] This wall element (26) is made as a mainly flat plate that extends over the whole length of the front beam (4). The top edge of this wall element (26) is provided with a curved lip (27) that extends over the whole length of the plate.

[0050] On the front edge of the bottom (21) of the gutter profile (4), a slot (28) is provided with a shape that is complementary to the shape of said lip (27). Owing to the curved shape of the lip (27) and the slot (28), the lip (27) must be inserted in the slot (28) by rotating the wall element (26) from a slanting position (clockwise on the cross-sections in Figs. 2 to 5) about an axis of rotation that coincides with the lip (27) and the slot (28). Disconnection requires this rotary motion to be reversed.

[0051] On the bottom edge, wall element (26) has a part extending horizontally backwards (29), on which an upward pointing projection (30) is provided. This projection (30) serves for fixing a closing plate (32) for the opening for the awning fabric, which is described hereafter. A brush seal or rubber profile (not shown in the diagrams) can also be fitted in the projection (30).

[0052] Between the part extending horizontally backwards (29) on the bottom edge of the wall element (26) on the one hand, and the bottom wall that is formed by the part in sheet form (13a) of the first wall element (13a, 13b) on the other hand, an opening (31) is provided, which extends over the whole length of the front beam (5). This slot-shaped opening (31) is necessary to allow the awning fabric (10) to pass through when it is unwound from the awning roll (9), and is designated in this patent application with the term opening for the awning fabric or awning opening.

[0053] For arrangements where no awning roll (9) is provided in the front beam (5), the opening for the awning fabric (31) is superfluous. This opening for the awning fabric (31) can be closed by means of a closing plate (32). The closing plate (32) is a rectangular plate with the necessary dimensions for closing the opening for the awning fabric (31).

[0054] In the vicinity of the rearmost edge, the closing plate (32) is provided on the top with a projection extending horizontally backwards (33), which can fit into the receiving slot under the aforementioned clamping wall (14). During this, the clamping wall (14) undergoes an elastic deformation so that the projection (33) is clamped in the receiving slot. This connection can of course be detached easily by hand without tools.

[0055] The closing plate (32) is provided in the vicinity of the front edge on the top with a forward-extending edge (34), which is located at the height of the top of the projection (30) of the second wall element (26). The projection (30) of the wall element (26) is pushed under the edge (34), whereby the projection (30) and/or the edge (34) are deformed elastically so that a clamped joint is produced, which does not come apart easily but can nevertheless be detached again by hand and without tools.

[0056] If an awning roll (9) is not placed in the front beam (5), the closing plate (32) is used for closing the opening for the awning fabric (31), as shown in Figs. 2 and 4. If an awning roll (9) with awning fabric is in fact provided, the closing plate can easily be removed to clear the opening for the awning fabric. This is the case in Figs. 3 and 5.

[0057] If the front beam (5) must support a larger load or is to be constructed with a greater length, it may be necessary to fasten a strengthening element (38) to a wall of the front beam. This will in particular provide the front beam (5) with the necessary rigidity or resistance to bending.

[0058] For this purpose, on the rear wall (13b) in the

internal space (12), connecting means (35-37) are provided for fastening a beam-shaped profile (38) onto it. The strengthening element (38) extends over the whole length of the front beam (5) and preferably consists of metal. Preferably the strengthening element has a height that practically takes in the whole available height along the wall (13b) and a small thickness so that it does not take up too much space in the internal space (12). Other shapes, lengths and materials for the strengthening element (38) are of course also possible.

[0059] The connecting means (35-37) mainly comprise a bottom supporting edge (35) with a front edge directed upwards and a top retaining edge (36). The supporting edge (35), which is secured to the rear wall (13b), and the retaining edge (36), which is secured to the bottom of the upper surface (17), can extend over the whole length of the front beam (5) or can be made shorter and/or can have an interrupted course.

[0060] A beam-shaped metal strengthening element (38) is for example placed with the bottom edge on the supporting edge (35), whereas its top edge is placed behind the retaining edge (36). The top edge of the strengthening element (38) can be clamped against the rear wall (13b) of the front beam (5) by means of set screws (37) that engage with the retaining edge (36). The strengthening element (38) provides in particular greater rigidity of the front beam (5) and is for example fitted if the front beam has a length of 4 m or more.

[0061] To explain and supplement the foregoing, reference is made to Fig. 7, which shows a perspective view of a part of the awning structure, and to Fig. 8, which shows a perspective view of a part of the front beam (5) provided with an end part (50) and with the gutter profile (4) fastened to it.

[0062] Fig. 7 shows in more detail the top part of the left column (7), to which a front beam (5) is connected via an end part (50) fastened to said front beam (5). A gutter profile (4) is secured on top of the front beam (5). The gutter profile (4) is only shown partially, and the front beam (5) is shown in cross-section.

[0063] The front beam (5), which extends almost horizontally between the columns (7), (8), can be one-part or multi-part. The front beam (5) shown in the diagrams is two-part and comprises, as stated above, a rear wall element (13a, 13b) and a front wall element (26).

[0064] The front beam (5) is fastened at both ends to a respective column (7), (8) and so extends between both columns (7), (8) and is carried (or supported) at both ends by these columns (7), (8).

[0065] The front beam (5) further comprises a gutter profile (4) that is suitable for collecting and conveying precipitation water towards one of the columns (7), (8). This gutter profile (4) can be formed integral with the front beam (5), or can also be produced as a separate profile which, in the assembled state, is connected to the front beam (5). As can be seen in Fig. 1, the sloping elements of the roof structure (2) are supported on this gutter profile (4).

[0066] The front beam (5) comprises an end part (50) on one or both ends. This end part (50) is for example fastened by means of bolts and/or screws (53) (see Fig. 8) to the rear wall element (13a, 13b) of the front beam (5). As can be seen in Fig. 7, the rear wall element (13a, 13b) is also connected to the gutter profile (4). The front wall element (26) of the front beam (5) is in contrast only connected to the gutter profile (4).

[0067] When an awning that can be wound onto and unwound from an awning roll bar is provided in the internal space (12) within the front beam (5), the awning roll (not shown in the diagrams) can be connected at one or both ends via a motor support (not shown in the diagrams) to a respective end part (50). As can be seen in Fig. 7, guide strips (51) can be provided for this, so that a motor support for supporting a drive motor (for driving the winding and unwinding motion of the awning) can be pushed over these guide strips (51). These guide strips (51) are connected by means of screws and/or bolts (52) (see Fig. 7) to the end part (50). On the other hand it is also possible for the awning roll to be connected by means of a bearing piece (not shown in the diagrams), which is pushed over the guide strips (51), to the respective end part (50). It is also possible for these guide strips (51) to be made integral with the end parts (50).

[0068] Thus, an end part (50) is fastened by means of bolts or screws (53) to one or both ends of the front beam (5). Each end part (50) is in its turn fastened to a column (7), (8) by bolts or screws (54), which extend practically transversely in the longitudinal direction of the columns (7), (8).

[0069] These end parts (50) are preferably inserted in recesses, not shown in the diagrams, in the columns (7), (8). For this purpose the end parts (50) have a thickness that is less than or equal to the depth of these recesses. In this way the front beam (5), or when it is of multi-part construction, the front (26) and the rear wall element (13a, 13b) thereof, is connected properly to the columns (7), (8) to which the front beam (5) is connected.

[0070] The awning structure thus comprises a gutter profile (4) fastened to the top of the front beam (5). As can be seen in Fig. 7, this gutter profile (4) extends to above column (7) and completely covers this top end of the column, and the front beam (5) extends between the columns (7), (8).

[0071] The gutter profile (4) thus has an end part (55) that extends a certain distance past the front beam (5). This can be seen in Fig. 8. The distance preferably coincides with the width of the columns (7), (8), whereas the transverse dimensions of the gutter profile (4) are defined so that said gutter profile (4) almost completely covers the upper end of one or both columns.

[0072] The awning is provided on an awning roll in the internal space (12) of the front beam (5) and can be unwound via the awning opening (31). The bottom lath and the lateral edges of the awning are guided during winding and unwinding in the lateral guides (56), which are fastened to the columns (7), (8) and form opposite guide

slots.

[0073] It was described above that the second sheet-form wall element (26) is fastened detachably to the bottom (21) of the gutter profile (4). To avoid this wall element (26) being poorly positioned, as a result of small dimensional deviations, and therefore not connecting perfectly to adjacent components, such as the columns (7), (8), the fastening means provided on the gutter profile (4), namely the slot (28), is designed to be adjustable in a horizontal direction (P) normal to the longitudinal direction (A) of the front beam (5). This is shown in Figs. 6a to 6c.

[0074] Fig. 6a shows a gutter profile (4), the right flank (23) of which is stepped, and at the front of this flank (23) a U-shaped channel (39), extending horizontally, is formed between a top wall (40) and a bottom wall (41).

[0075] Opposite the front of flank (23), a fastening profile (42) is provided with two parallel walls (43), (44), which extend horizontally into said channel (39) and connect to the top (40) and the bottom (41) of the channel (39). The fastening profile (42) also has a horizontal bottom wall (45) that extends to the gutter profile (4) and connects to the bottom (21) thereof.

[0076] In the underside of the fastening profile (42), a slot (46) is formed, which is identical to the slot (28) in the bottom of the gutter profile (4) according to the embodiments in Figs. 2 to 5. This slot (46) is thus complementary to the curved lip (27) of the second wall element (26) of the front beam (5).

[0077] The fastening profile (42) is fastened to the gutter profile (4) by means of screws (47), which extend through a slot-shaped opening in the bottom wall (45) of the fastening profile (42) and engage in a hole in the underside of the gutter profile (4). As a result, the fastening profile (42) can, after screw (47) has been loosened, be moved a small distance (coinciding with the length of the slot-shaped opening) relative to the flank (23) of the gutter profile (4) and can be fixed in the desired position by tightening the screw (47).

[0078] Figs. 6b and 6c show, respectively, the extreme inward position and the extreme outward position of this adjustable fastening profile (42). The position of the slot (46) can thus be altered in a horizontal direction (P) normal to the longitudinal direction (A) of the front beam (5), to provide perfect positioning of the wall element (26) fastened in this slot.

[0079] The internal space (12) of the front beam (5) is also closed sideways and fastening means are provided on the side walls to support an awning roll (9) with possibility of rotation.

[0080] In order to insert an awning roll (9) in this internal space it is sufficient to detach the second wall part (26). Both the bottom edge and the top edge of the wall part (26) are easily detachable by hand. Once the wall element has been removed, the internal space is open over the entire width, so that fitting of the awning roll (9) can be carried out quickly, and without any problems.

Claims

1. Awning structure comprising a roof-forming part for which a roof structure (1) is provided, which comprises a front beam extending practically horizontally (5), and at least two columns (7), (8) that support the front beam (5), **characterized in that** the front beam (5) extends between two columns (7), (8) and comprises an internal space (12) for an awning roll (9), **in that** the front beam (5) comprises, on at least one of the sides extending longitudinally (A), a wall element (26) that is fastened detachably, and **in that** said wall element (26) delimits said internal space (12), so that by removing it, a clear passage is created, via which the awning roll (9) can be placed in the internal space (12) and can be removed from it.

2. Awning structure according to Claim 1, **characterized in that** the front beam (5) comprises, on at least one of its ends, an end part (50) that is fastened to a vertical wall of a column (7), (8).

3. Awning structure according to Claim 1 or 2, **characterized in that** said awning structure also comprises at least one awning (10) that can be wound onto an awning roll (9), said awning forming, in the rolled-up state, a wall-forming part (11) of the awning structure, and **in that** the awning roll (9) is provided in said internal space (12) in the front beam (5).

4. Awning structure according to one of the preceding claims, **characterized in that** the detachable wall element (26) comprises one or more first connecting means (27), (30) which are provided for interacting with respective complementary second connecting means (28), (34) of the awning-structure in order to hold the wall element (26) in place relative to the front beam (5), and **in that** said first and second connecting means are of the type that can be connected and released by hand without using tools.

5. Awning structure according to Claim 4, **characterized in that** the connecting means of at least one pair of interacting connecting means are of the type where connection is brought about by hooking-in a hook part or lip (27) of one of the connecting means in a cavity, recess or slot (28) of the other connecting means and/or **in that** the connecting means of at least one pair of interacting connecting means are of the type where connection is brought about by deforming, and allowing to spring back, at least one elastically deformable part (30), (34) of one or both connecting means.

6. Awning structure according to one of the preceding claims, **characterized in that** it comprises a gutter (4) fastened to the top of the front beam (5), and **in that** said internal space (12) of the front beam (5) is

delimited at the top by the underside (21) of the gutter (4).

7. Awning structure according to claim 6, **characterized in that** it comprises a gutter (4) fastened to the top of the front beam (5), **in that** the gutter (4) comprises, on at least one end, an end part (52) that extends past the front beam (5), and **in that** each end part (52) extends above a respective upper end of a column (7), (8).

8. Awning structure according to one of the preceding claims, **characterized in that** in the wall (13a) of the front beam (5), which delimits the internal space (12) at the bottom, an oblong opening is provided for the awning (31) extending along the longitudinal axis (A) of the awning roll (9).

9. Awning structure according to Claim 8, **characterized in that** it comprises a closing plate (32) for closing said opening for the awning (31).

10. Awning structure according to one of the preceding claims, **characterized in that** a strengthening element (38) is fastened to at least one of the walls (13b) of the front beam (5) extending in the longitudinal direction (A).

11. Awning structure according to Claim 10, **characterized in that** the strengthening element (38) is fastened in the internal space (12) to a wall (13b) of the front beam (5).

12. Awning structure according to one of the preceding claims, **characterized in that** the position of the detachable wall element (26) is fastened by adjustable fastening means, such that its position is adjustable in a horizontal direction (P) that is transverse to the longitudinal direction (A) of the front beam (5).

13. Awning structure according to one of the preceding claims, **characterized in that** the detachable wall element (26) is fastened to a component (4) of the awning structure that is fastened above the front beam (5).

14. Awning structure according to Claim 12 or 13, **characterized in that** the wall element (26) is fastened to a component (42), of the gutter (4) that is fastened above the front beam (5), such that its position with respect to the gutter (4) is adjustable in a horizontal direction (P) that is transverse to the longitudinal direction (A) of the front beam (5).

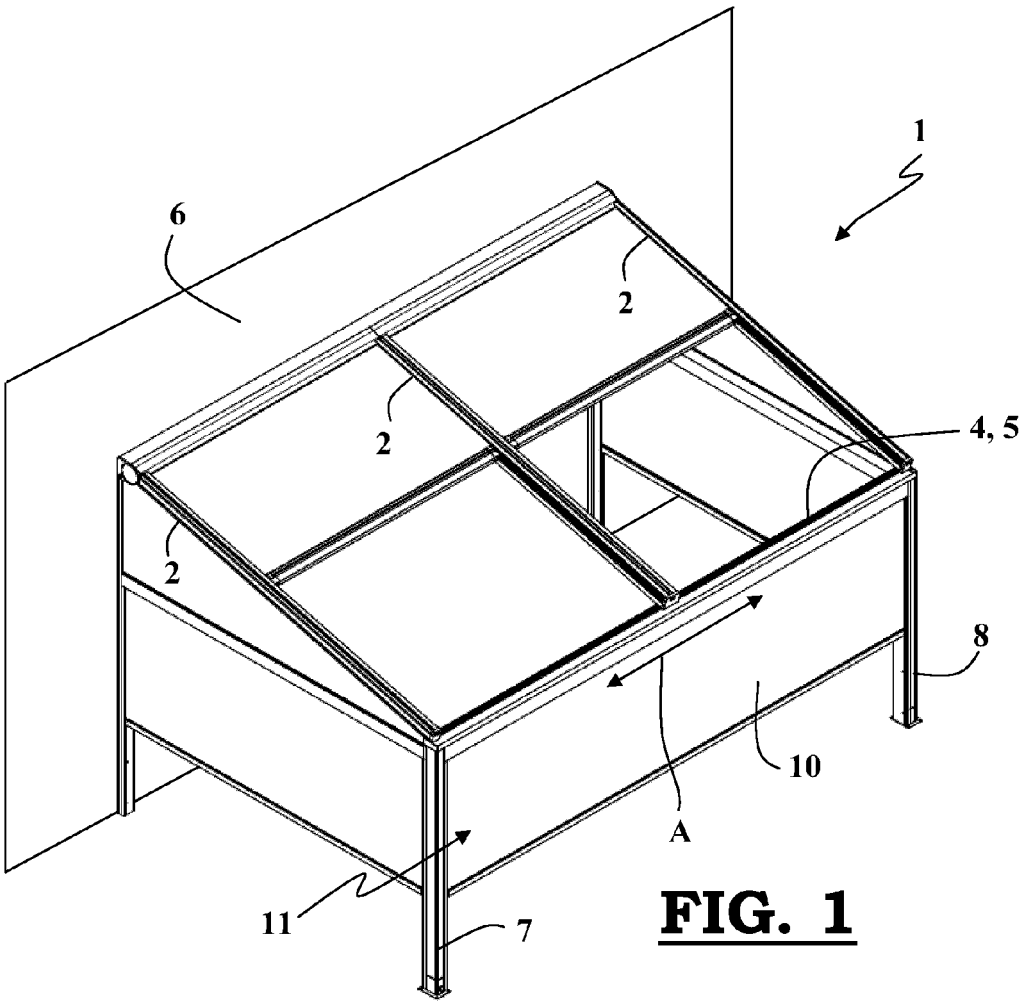

FIG. 1

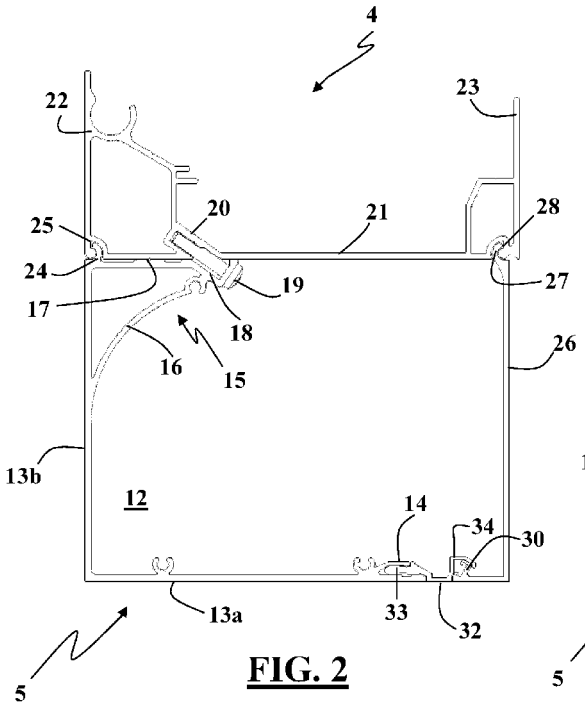
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FIG. 2

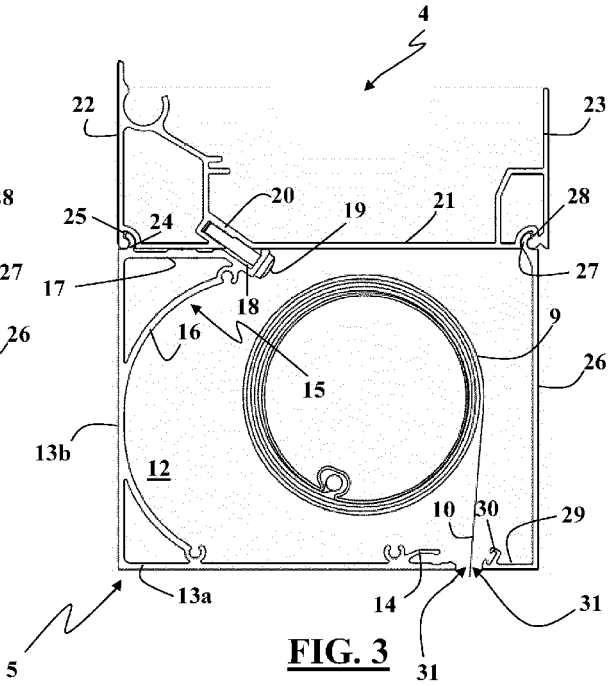
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FIG. 3

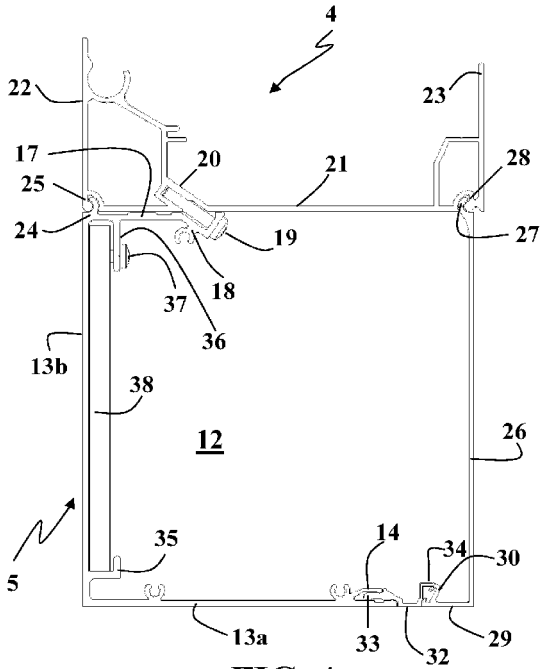
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FIG. 4

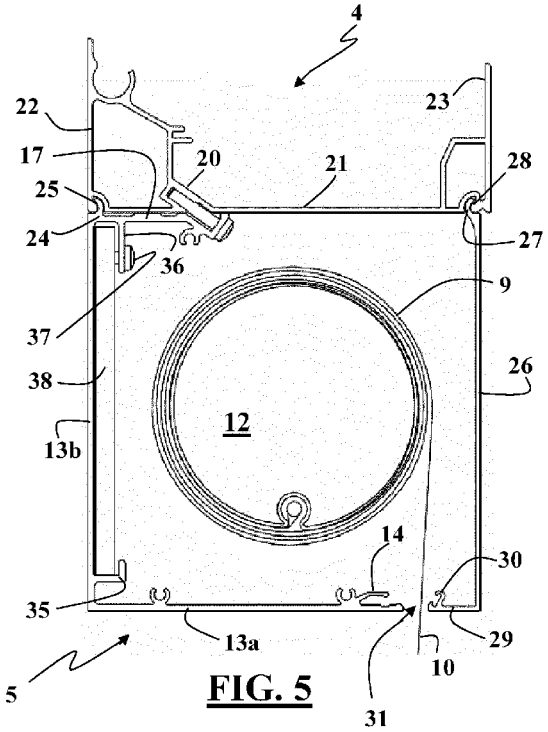
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FIG. 5

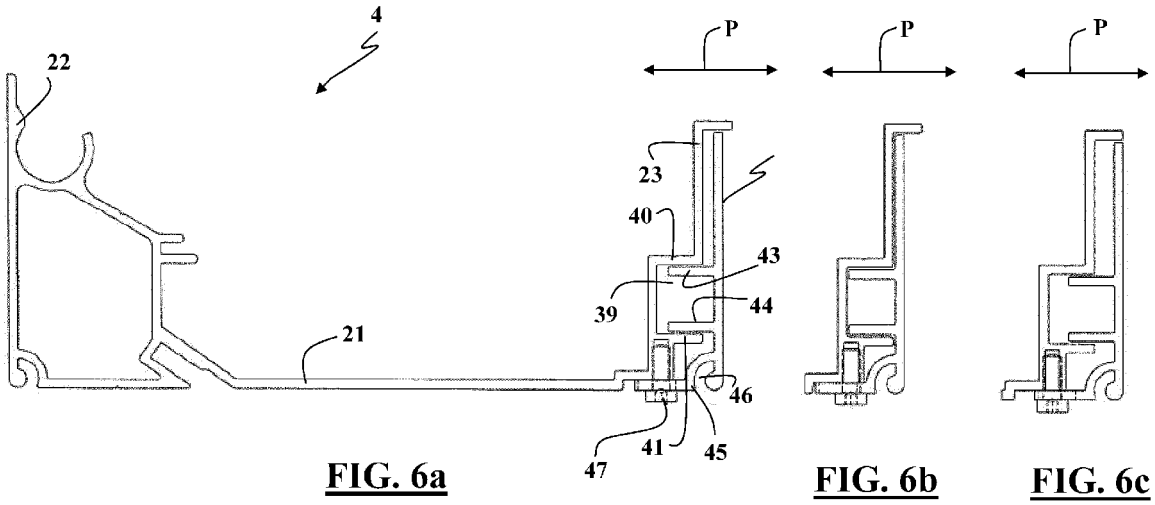

FIG. 6a

FIG. 6b

FIG. 6c

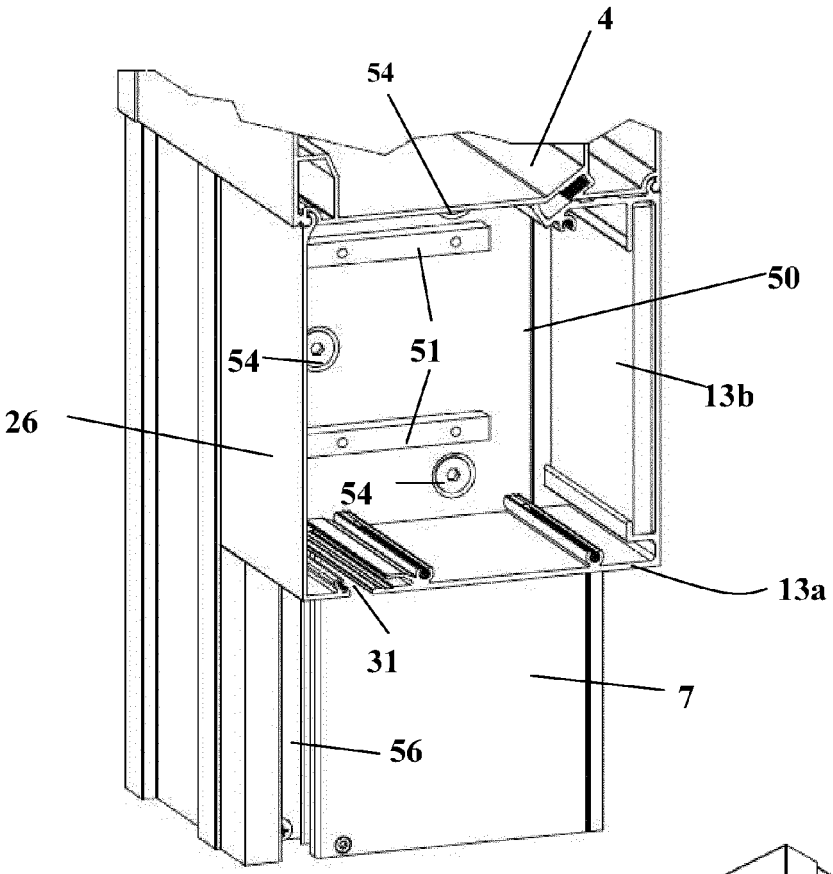
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FIG. 7

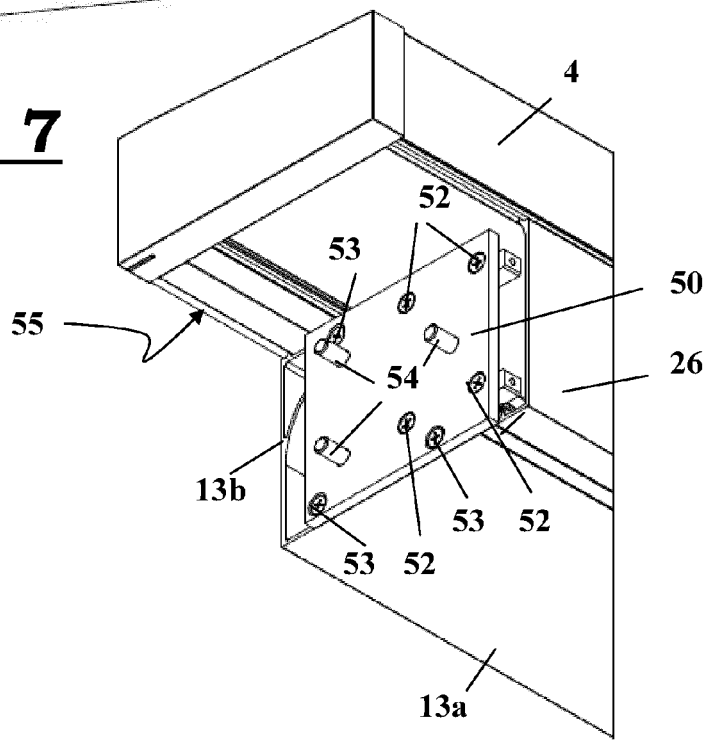
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FIG. 8

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EUROPEAN SEARCH REPORT

Application Number
EP 14 19 1206

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	12 February 2015	Cornu, Olivier

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12-02-2015

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