(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 857 631 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
**08.04.2015 Bulletin 2015/15**

(51) Int Cl.:
***E06B 9/58*** *(2006.01)* ***E04F 10/06*** *(2006.01)*

(21) Application number: **14187101.2**

(22) Date of filing: **30.09.2014**

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR**
Designated Extension States:
**BA ME**

(30) Priority: **02.10.2013 IT PD20130274**

(71) Applicant: **BAT S.P.A.**
**30020 NOVENTA DI PIAVE (VE) (IT)**

(72) Inventor: **Barbieri, Edy**
**30027 San Dona' Di Piave VE (IT)**

(74) Representative: **Modiano, Micaela Nadia et al**
**Modiano & Partners (IT)**
**Via Meravigli, 16**
**20123 Milano (IT)**

(54) **Pergola awning**

(57) A pergola awning (10), of the type comprising a frame (11) with two parallel longitudinal members (12, 13), on each of which there slides an end (14, 15) of a terminal transverse element (16) to which the edge (17) of a covering sheet (18) is fixed, the sheet (18) being adapted to be stretched and gathered, with corresponding movement means, by way of the guided translation of the terminal transverse element (16), the longitudinal members (12, 13) being fixed to a wall or being fixed to a wall on one side and supported by corresponding columns on the opposite side, each one of the longitudinal members (12, 13) comprising

- a load-bearing structural profile (19), which is provided, on a longitudinal side thereof, with a contoured longitudinal slot (20) for the insertion of
- a guiding and sliding profile (21) for an edge (22) of the covering sheet (18),
- and a closure profile (23), which cooperates to the locking of the guiding and sliding profile (21) in the longitudinal slot (20).

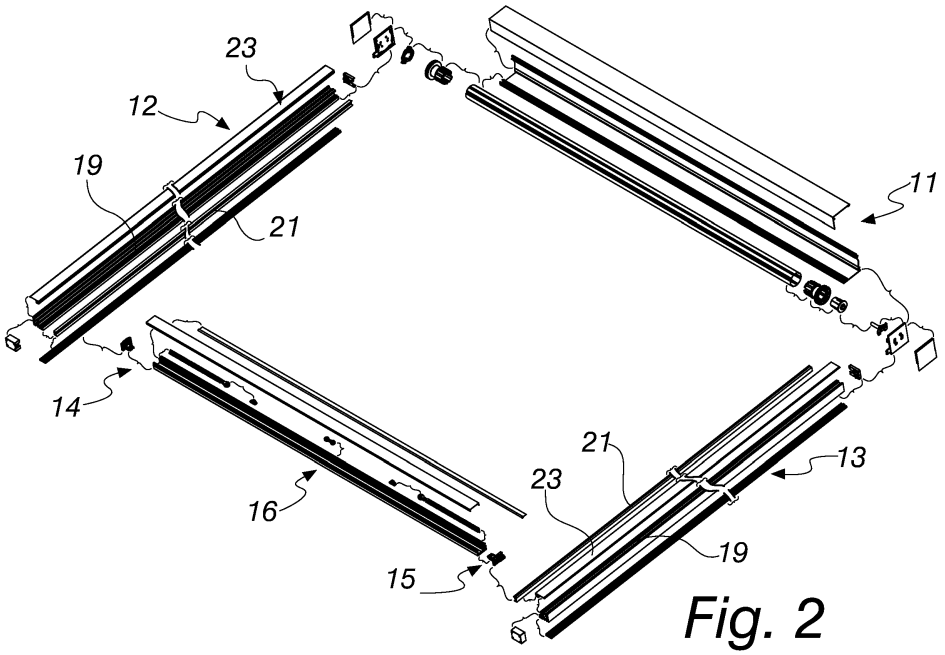


Fig. 2

EP 2 857 631 A1

## Description

**[0001]** The present invention relates to a pergola awning.

**[0002]** The expression "pergola awning" is understood to reference an outdoor awning constituted usually by a frame that comprises two parallel longitudinal members, on each of which there slides an end of a terminal transverse element to which the edge of a covering sheet is fixed; the sheet is adapted to be stretched and gathered, by way of the guided translation of the terminal transverse element, with respect to two opposite first ends of the two longitudinal members, said first ends being usually fixed to a wall.

**[0003]** The frame is completed by two columns that support the second ends, which are not wall-mounted, of the longitudinal members.

**[0004]** The longitudinal members of such pergola awnings usually are provided and installed by using specific metallic longitudinal profiles, depending on whether they must be supported by columns or fixed to a wall.

**[0005]** This entails the production and in-store provision of specific profiles depending on the installation mode of the awning, or the execution, as an alternative, of adapted work on such profiles and of adapted systems for adapting the longitudinal profile with the preset support.

**[0006]** Moreover, for some types of such pergola awnings, inside the longitudinal profile of the longitudinal member there is an auxiliary profile, which is fixed to such longitudinal member and defines a guide for the containment and sliding, inside it, of a lateral edge of the covering sheet.

**[0007]** Such auxiliary profile is currently inconveniently welded, glued or fixed by means of threaded elements to the main profile of the longitudinal member.

**[0008]** The aim of the present invention is to provide a pergola awning that is capable of obviating the cited limitations of pergola awnings of the known type.

**[0009]** Within this aim, an object of the invention is to provide a pergola awning that is simple to install in case of fixing to a wall, in case of fixing on columns or posts, and in case of mixed fixing, to a wall on one side and on columns or posts at the other side.

**[0010]** Another object of the invention is to provide a pergola awning that is simpler and faster to assemble in its components.

**[0011]** This aim and these and other objects that will become better apparent hereinafter are achieved by a pergola awning, of the type comprising a frame with two parallel longitudinal members, on each of which there slides an end of a terminal transverse element to which the edge of a covering sheet is fixed, said sheet being adapted to be stretched and gathered, with corresponding movement means, by way of the guided translation of the terminal transverse element, said longitudinal members being fixed to a wall or being fixed to a wall on one side and supported by corresponding columns on the opposite side, said pergola awning being characterized in that each one of said longitudinal members comprises

- a load-bearing structural profile, which is provided, on a longitudinal side thereof, with a contoured longitudinal slot for the insertion of
- a guiding and sliding profile for an edge of said covering sheet,
- and a closure profile, which cooperates to the locking of said guiding and sliding profile in said longitudinal slot.

**[0012]** Further characteristics and advantages of the invention will become better apparent from the description of a preferred but not exclusive embodiment of the pergola awning according to the invention, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a perspective view of a pergola awning according to the invention;
Figure 2 is an exploded perspective view of the awning according to the invention;
Figure 3 is an enlarged-scale view of a detail of Figure 2;
Figure 4 is a partially exploded transverse sectional view of a longitudinal member of a pergola awning according to the invention;
Figure 5 is the same view as Figure 4 in the assembled condition;
Figures 6, 7, and 8 are each a transverse sectional view of a different assembly mode of a longitudinal member according to Figures 4 and 5;
Figures 9 to 12 are each a side view of a different installation of a pergola awning according to the invention.

**[0013]** With reference to the figures, a pergola awning according to the invention is generally designated by the reference numeral 10.

**[0014]** The pergola awning 10 is of the type comprising a frame 11 with two parallel longitudinal members 12 and 13, on each of which there slides an end, respectively 14 and 15, of a terminal transverse element 16 to which the edge 17 of a covering sheet 18 is fixed.

**[0015]** The sheet 18 is adapted to be stretched and gathered, with corresponding movement means, to be understood as being of a known type, by the guided translation of the terminal transverse element 16.

**[0016]** The longitudinal members 12 and 13 are fixed to a wall or are fixed to a wall on one side and supported by corresponding columns on the opposite side, as in Figure 1.

**[0017]** The particularity of the invention resides in that each one of the longitudinal members 12 and 13 comprises, as shown in Figures 2 to 5,

- a load-bearing structural profile 19, which is provided, on a longitudinal side thereof, with a contoured longitudinal slot 20 for the insertion of
- a guiding and sliding profile 21 for an edge 22 of the covering sheet 18,
- and a closure profile 23, which cooperates to the locking of the guiding and sliding profile 21 in the longitudinal slot 20.

**[0018]** The structural profile 19 is constituted by an extruded profile made of metallic material.

**[0019]** The structural profile 19 has, at an assembly side 24 thereof, an engagement groove 25, which is designed to accommodate either a closure lid 26, as shown in Figures 2, 3 and 6, or a fixing device 28 for a supporting post 27, as in Figures 7 and 8.

**[0020]** The guiding and sliding profile 21, clearly visible in Figures 3, 4 and 5, comprises a base 28 from which two opposite outer longitudinal walls 30 and 31 and two inner longitudinal walls 32 and 33 extend.

**[0021]** The outer longitudinal walls 30 and 31 are contoured for insertion in corresponding locking channels 34 and 35 defined in the longitudinal member 12 and 13.

**[0022]** The inner longitudinal walls 32 and 33 are contoured to define between them a central channel 36 for the sliding of a slider shank 37 arranged on the end of the lateral edge 22 of the covering sheet 18, and a slot 38 for the passage of the corresponding flap of the covering sheet 18.

**[0023]** For example, the slider shank 37 is provided with one of the two parts of the longitudinal set of teeth of a zip fastener.

**[0024]** The guiding and sliding profile 21 is preferably made of plastic material, for example PVC.

**[0025]** The locking channels 34 and 35 defined in the longitudinal member 12 and 13 are constituted in the present embodiment, which is to be understood as a non-limiting example of the invention, by a first locking channel 34, which is defined by an L-shaped ridge 40 defined at a lateral wall 41 of the longitudinal slot 20, as indicated in Figure 5, while a second locking channel 35 is defined by an opposite U-shaped ridge 42 that is part of the closure profile 23.

**[0026]** The closure profile 23 also is constituted by an extruded profile made of metallic material or plastic material.

**[0027]** The closure profile 23 has a flat main body 43 and a lateral tab 44 with ridges 47 and 48.

**[0028]** The free edges 53, 57 and 58 of the flat body 43 and of the ridges 47 and 48 are adapted for engagement and centering with corresponding complementarily shaped longitudinal ridges 50, 51 and 52 defined on corresponding portions of the structural profile 19.

**[0029]** For the assembly of a longitudinal member 12 and 13, one proceeds therefore as follows.

**[0030]** As exemplified in Figure 4, first of all the guiding profile 21 is inserted in the slot 20 of the structural profile 19, and then, as shown schematically in Figure 5, the closure profile 23 is coupled to the structural profile 19.

**[0031]** In this manner, in order to fix the guiding and sliding profile 21 it is not necessary to resort to adhesives or welds or threaded connections, and its assembly is simple, quick and intuitive.

**[0032]** In Figure 1, the pergola awning 10 is shown fixed at one side to a wall 54 and supported at the opposite side by two columns 55 and 56.

**[0033]** By way of the installation flexibility allowed by the engagement slot 25 defined on the structural profile 19, the pergola awning 10 proper can be fixed

- directly to a wall 59, as shown in Figure 9, with the housing 60 for protecting the rolled-up sheet directed outwardly, for any inclination of the wall,
- supported by posts 27 fixed to the wall 59, with the housing 60 directed toward the wall 59, as in Figures 8 and 10, for any inclination of the wall,
- supported by posts 27 fixed to the wall 59, with the housing 60 directed outwardly, as in Figures 7 and 11, for any inclination of the wall,
- fixed to the wall 59 on the side of the housing 60 and on columns 61 at the opposite end, by way of articulated joining means, to be understood as being of a known type, capable of adapting to the preset slope for the sheet of the pergola awning 10.

**[0034]** In practice it has been found that the invention achieves the intended aim and objects.

**[0035]** In particular, the invention provides a pergola awning that is simple to install in case of wall fixing, in case of fixing on columns or posts, and in case of mixed fixing, to a wall on one side and on columns or posts on the other side.

**[0036]** Moreover, the invention provides a pergola awning that is simpler and quicker to assemble in its components.

**[0037]** The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims; all the details may further be replaced with other technically equivalent elements.

**[0038]** In practice, the materials used, so long as they are compatible with the specific use, as well as the contingent shapes and dimensions, may be any according to requirements and to the state of the art.

**[0039]** The disclosures in Italian Patent Application No. PD2013A000274 from which this application claims priority are incorporated herein by reference.

**[0040]** Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

## Claims

1. A pergola awning (10), of the type comprising a frame (11) with two parallel longitudinal members (12, 13), on each of which there slides an end (14, 15) of a terminal transverse element (16) to which the edge (17) of a covering sheet (18) is fixed, said sheet (18) being adapted to be stretched and gathered, with corresponding movement means, by way of the guided translation of the terminal transverse element (16), said longitudinal members (12, 13) being fixed to a wall or being fixed to a wall on one side and supported by corresponding columns on the opposite side, said pergola awning being **characterized in that** each one of said longitudinal members (12, 13) comprises

   - a load-bearing structural profile (19), which is provided, on a longitudinal side thereof, with a contoured longitudinal slot (20) for the insertion of
   - a guiding and sliding profile (21) for an edge (22) of said covering sheet (18),
   - and a closure profile (23), which cooperates to the locking of said guiding and sliding profile (21) in said longitudinal slot (20).

2. The pergola awning according to claim 1, **characterized in that** said structural profile (19) is constituted by an extruded profile made of metallic material.

3. The pergola awning according to claim 1, **characterized in that** said structural profile (19) has, at an assembly side (24) thereof, an engagement groove (25), which is designed to accommodate either a closure lid (26) or a fixing device (28) for a supporting post (27).

4. The pergola awning according to claim 1, **characterized in that** said guiding and sliding profile (21) comprises a base (28) from which two opposite outer longitudinal walls (30, 31) and two inner longitudinal walls (32, 33) extend.

5. The pergola awning according to claim 4, **characterized in that** the outer longitudinal walls (30, 31) are contoured for insertion in corresponding locking channels (34, 35) defined in the longitudinal member (12, 13).

6. The pergola awning according to one or more of the preceding claims, **characterized in that** said inner longitudinal walls (32, 33) are contoured to define between them a central channel (36), for the sliding of a slider shank (37) arranged on the end of the lateral edge (22) of the covering sheet (18), and a slot (38) for the passage of the corresponding flap of the covering sheet (18).

7. The pergola awning according to claim 1, **characterized in that** said guiding and sliding profile (21) is made of plastic material, for example PVC.

8. The pergola awning according to claim 5, **characterized in that** said locking channels (34, 35) defined in each one of the longitudinal members (12, 13) are constituted by a first locking channel (34), which is defined by an L-shaped ridge (40) defined at a lateral wall (41) of the longitudinal slot (20), a second locking channel (35) being defined by an opposite U-shaped ridge (42) that is part of the closure profile (23).

9. The pergola awning according to claim 1, **characterized in that** said closure profile (23) also is constituted by an extruded profile made of metallic material or plastic material.

10. The pergola awning according to claim 1, **characterized in that** said closure profile (23) has a flat main body (43) and a lateral tab (44) with ridges (47, 48).

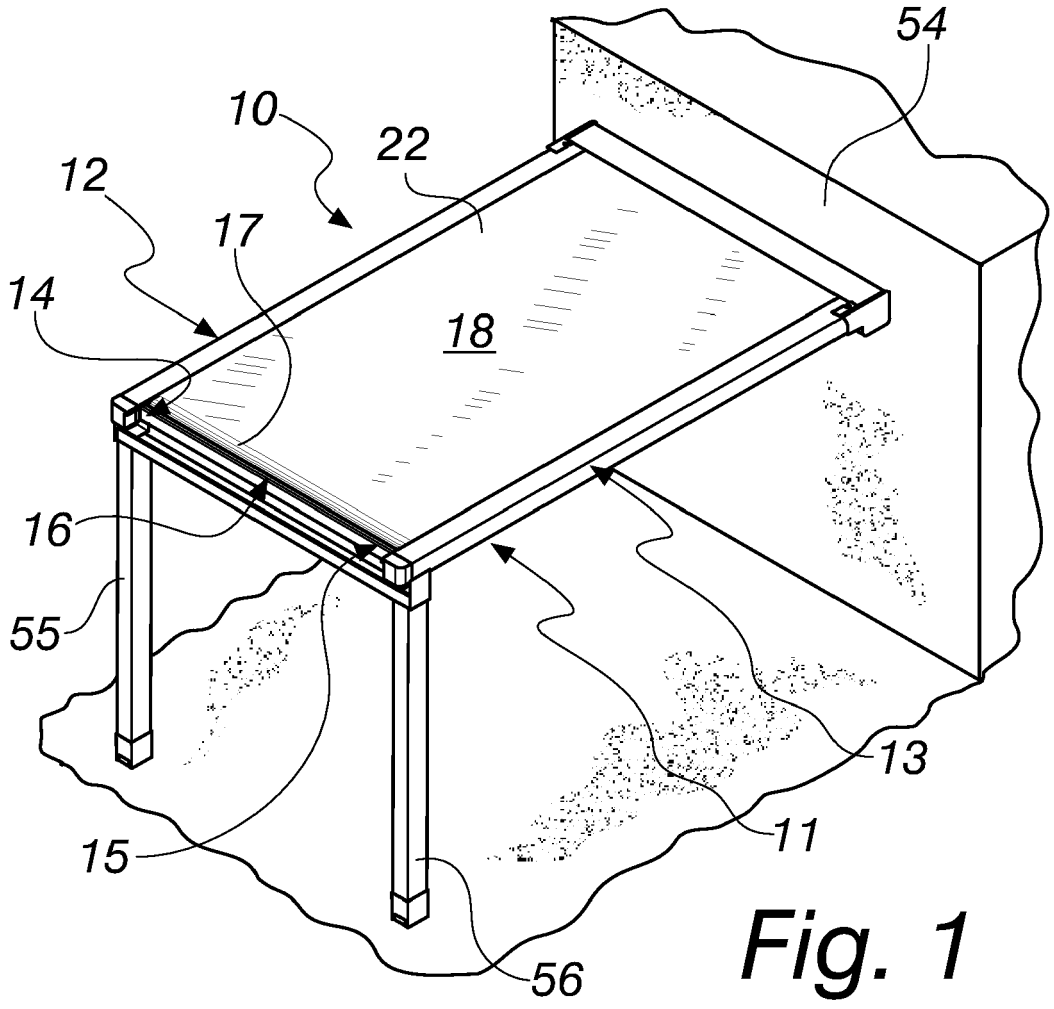


Fig. 1

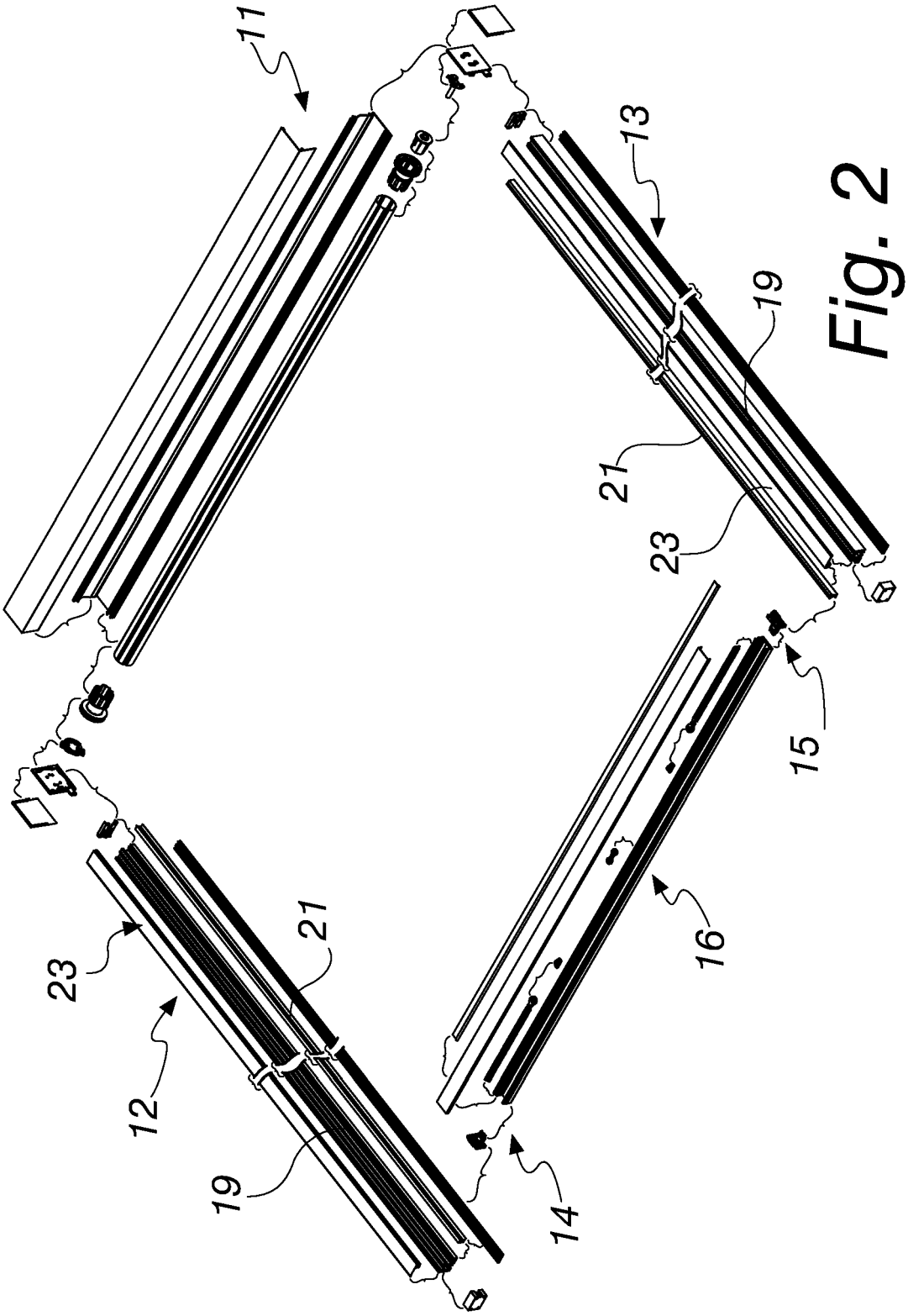


Fig. 2

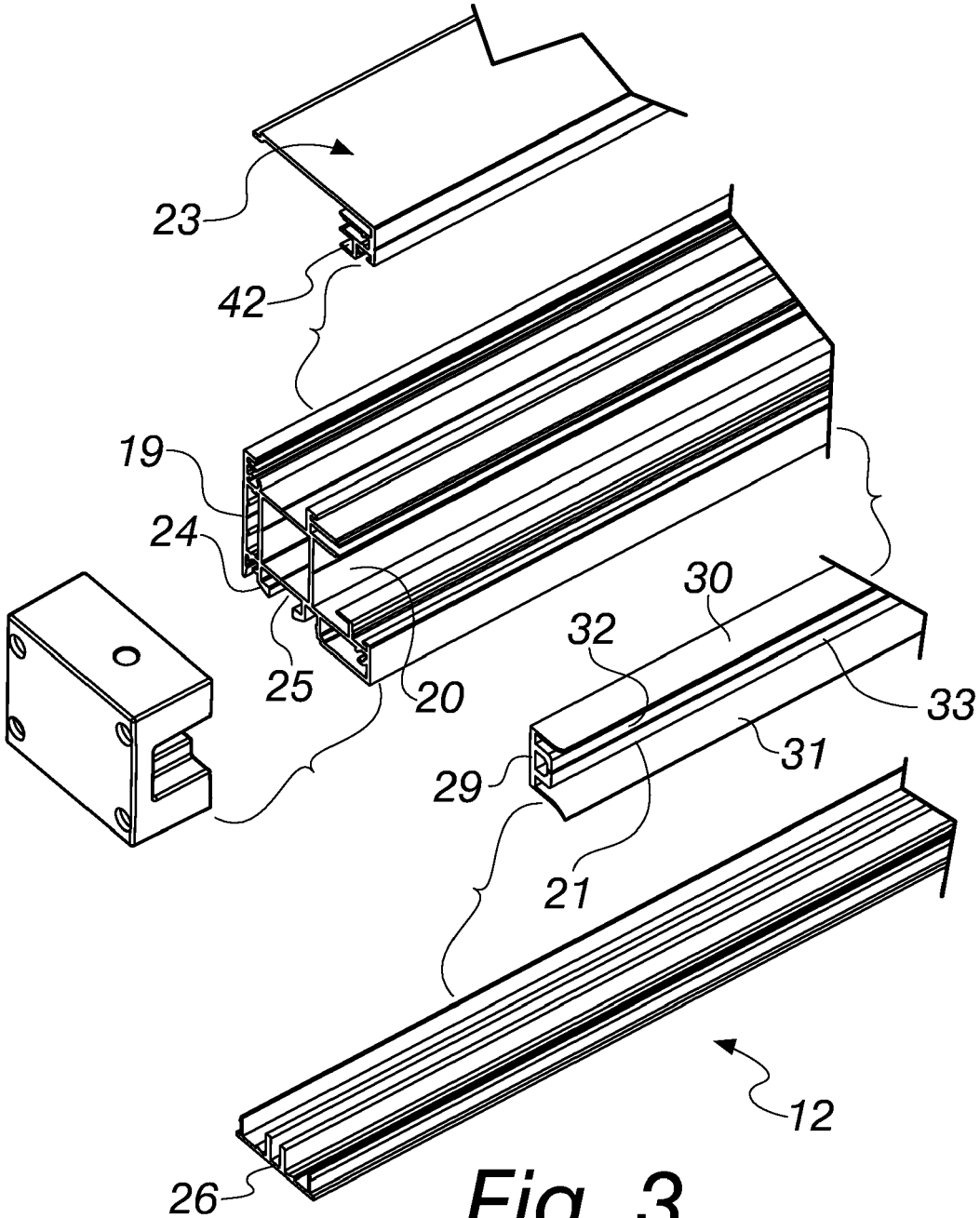


Fig. 3

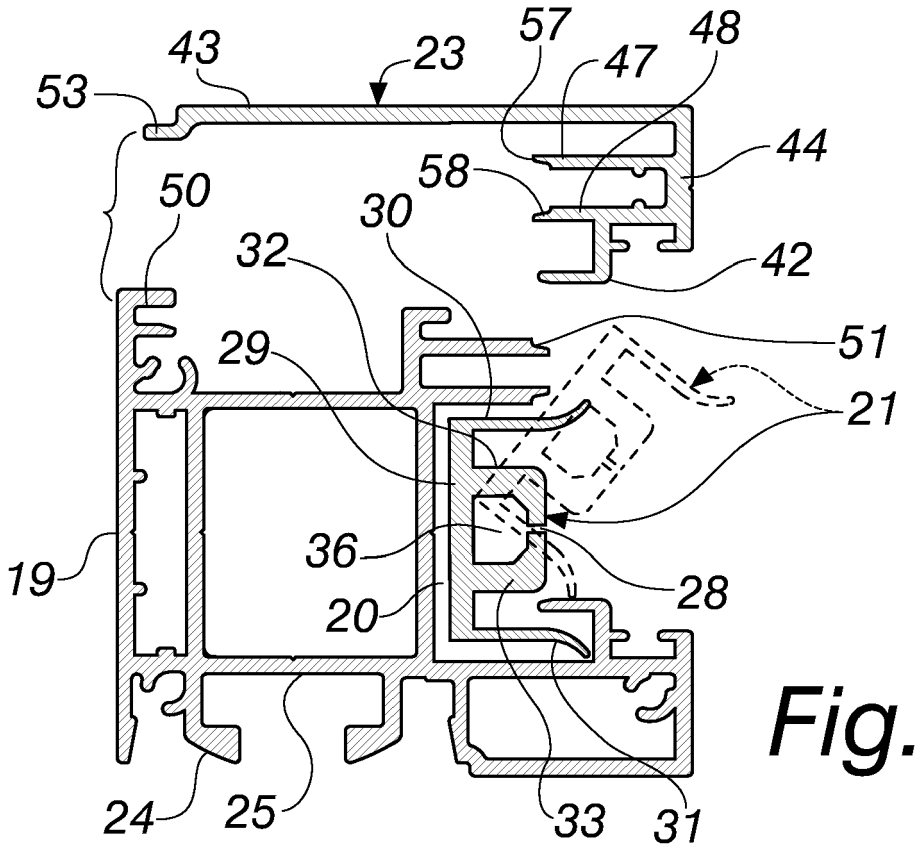
43
23
57
47
48
53
44
58
50
30
42
32
51
29
21
19
36
28
20
24
25
33
31

Fig. 4

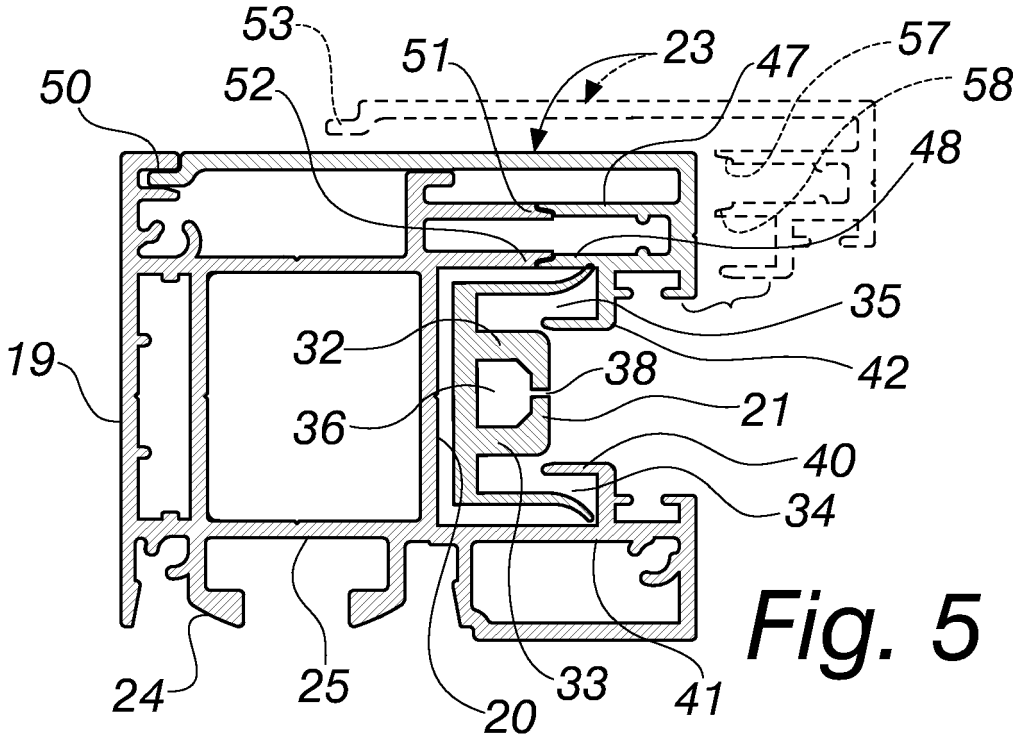
53
51
23
47
57
58
50
52
48
35
32
42
38
19
21
36
40
34
24
25
20
33
41

Fig. 5

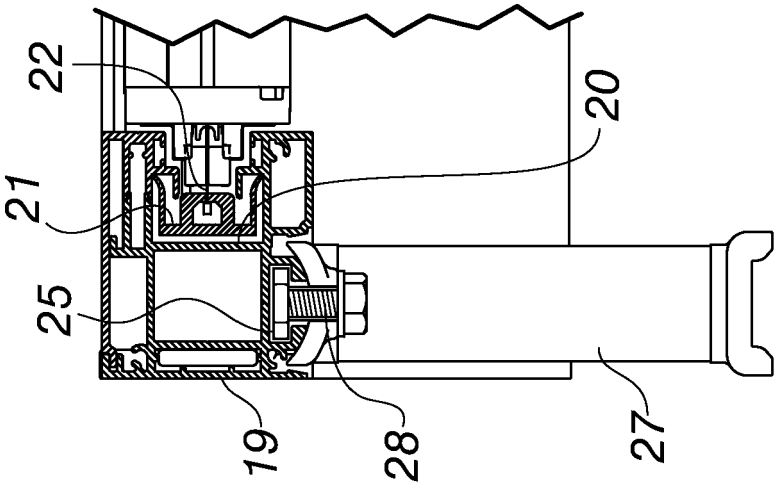


Fig. 8

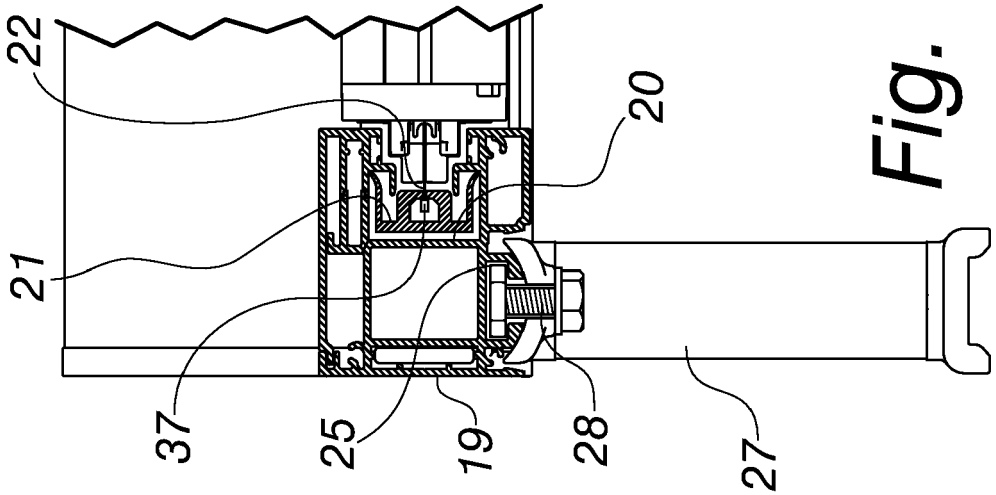


Fig. 7

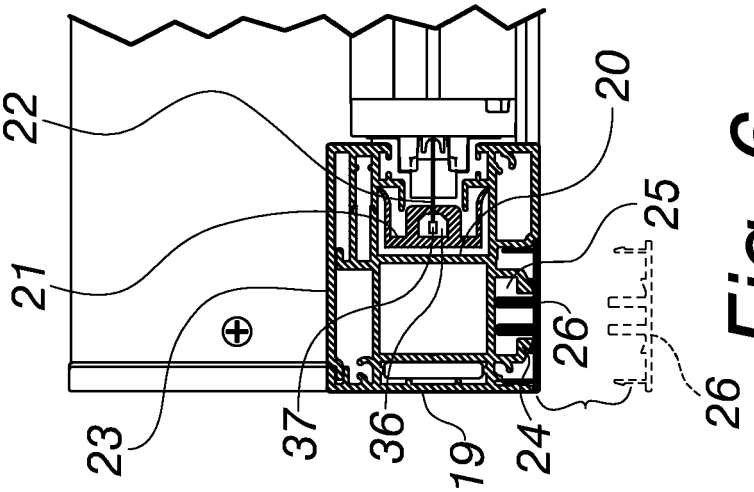


Fig. 6

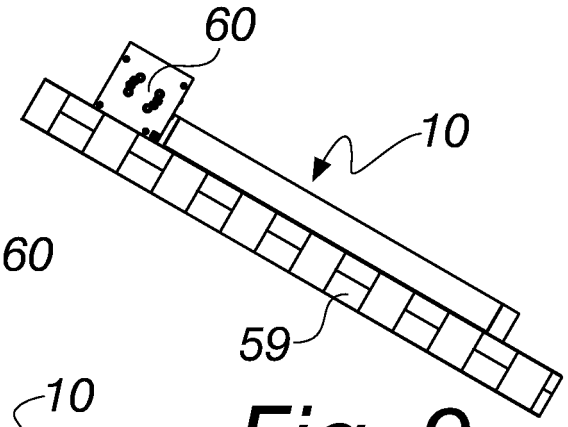


Fig. 9

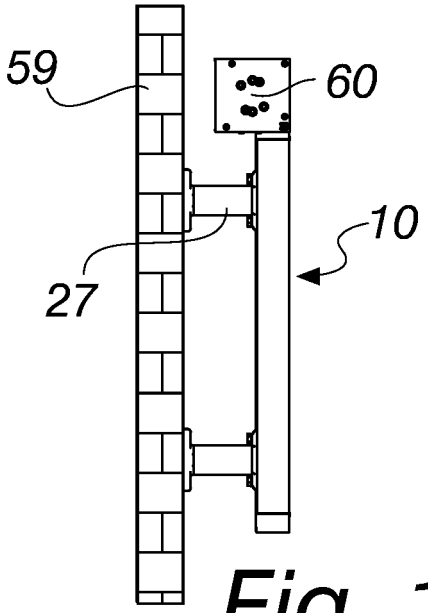


Fig. 10

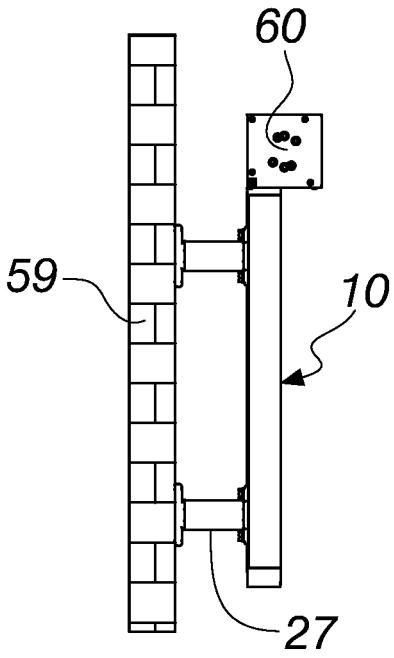


Fig. 11

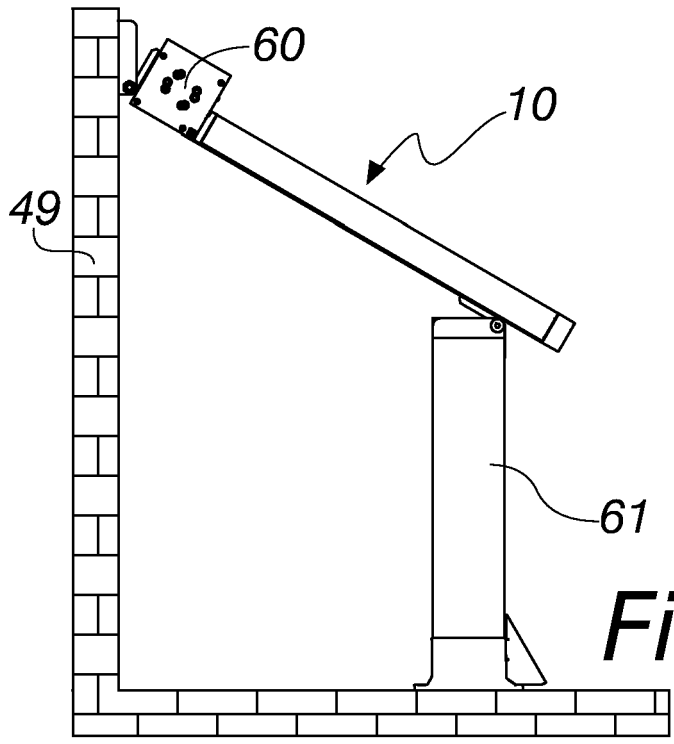


Fig. 12

Europäisches Patentamt
European Patent Office
Office européen des brevets

# EUROPEAN SEARCH REPORT

Application Number
EP 14 18 7101

## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (IPC) |
|---|---|---|---|
| Y | DE 10 2006 020573 A1 (MALLMANN HANS-JUERGEN [DE])<br>15 November 2007 (2007-11-15)<br>* abstract; figures 1-3 *<br>* paragraphs [0001], [0002], [0005] * | 1-10 | INV.<br>E06B9/58<br>E04F10/06 |
| Y | AU 2011 101 241 A4 (STEFANO CARMELO DI)<br>27 October 2011 (2011-10-27)<br>* figures 1-3 *<br>* page 1, line 2 - line 16 *<br>* page 4, line 3 - line 8 * | 1-10 | |
| A | WO 2012/050518 A1 (ERCO SYSTEMS AB [SE]; KOGSTA RONNY [SE])<br>19 April 2012 (2012-04-19)<br>* figures 3,4 * | 1-10 | |

TECHNICAL FIELDS SEARCHED (IPC)
E04F
E06B

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| Munich | 17 December 2014 | Cornu, Olivier |

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 14 18 7101

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

17-12-2014

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| DE 102006020573 A1 | 15-11-2007 | NONE | |
| AU 2011101241 A4 | 27-10-2011 | NONE | |
| WO 2012050518 A1 | 19-04-2012 | EP 2633146 A1 | 04-09-2013 |
| | | SE 1051081 A1 | 08-11-2011 |
| | | WO 2012050518 A1 | 19-04-2012 |

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

## REFERENCES CITED IN THE DESCRIPTION

*This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.*

### Patent documents cited in the description


- IT PD20130274 A **[0039]**