

(19)



(11)

**EP 3 599 321 A1**

(12)

**EUROPEAN PATENT APPLICATION**

(43) Date of publication:  
**29.01.2020 Bulletin 2020/05**

(51) Int Cl.:  
**E04D 13/03<sup>(2006.01)</sup> E04D 13/147<sup>(2006.01)</sup>**

(21) Application number: **18185562.8**

(22) Date of filing: **25.07.2018**

(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**

Designated Validation States:

**KH MA MD TN**

(72) Inventors:

- Baumgardt, Uffe Grønheden  
**2970 HØRSOLM (DK)**
- LUND, Jakob Swane  
**2970 HØRSOLM (DK)**

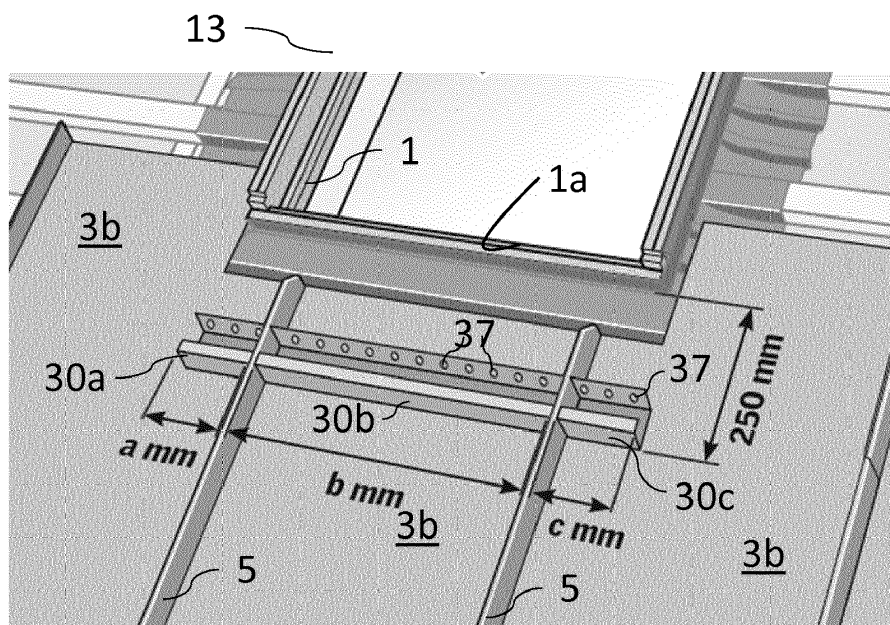
(74) Representative: **AWA Denmark A/S**  
**Strandgade 56**  
**1401 Copenhagen K (DK)**

(71) Applicant: **VKR Holding A/S**  
**2970 Hørsholm (DK)**

**(54) KIT OF PARTS AND METHOD OF FLASHING A ROOF ELEMENT**

(57) With the invention, a kit of parts for flashing a roof element (1), such as a roof window, in a sloping roof with a roof covering comprising flat roofing panels (3), possibly of sheet metal, with standing seams (5), comprising at least a bottom flashing member (20) having at least a section with a generally L-shaped cross-section with a first leg configured to be arranged against a side (1a) of the roof element and a second leg configured to

be at least in part positioned above the roof covering to seal between the roof element and the roof covering. An elongated filling member (30) having a length in a longitudinal direction is provided with a mounting surface extending in the longitudinal direction for mounting the filling member on a receiving surface and an opposing surface (32) opposite the mounting surface and positioned at a distance from a plane defined by the mounting surface.



**Fig. 4**

**Description****Technical Field**

- 5 **[0001]** The present invention relates to a kit of parts for flashing a roof element, such as a roof window, in a sloping roof with a roof covering comprising flat roofing panels, possibly of sheet metal, with standing seams, comprising at least a bottom flashing member having at least a section with a generally L-shaped cross-section with a first leg configured to be arranged against a side of the roof element and a second leg configured to be at least in part positioned above the roof covering to seal between the roof element and the roof covering.
- 10 **[0002]** The invention further relates to a method of flashing a roof element, such as a roof window, in a sloping roof with a roof covering comprising flat roofing panels, possibly of sheet metal, with standing seams, using such a kit of parts.

**Background Art**

- 15 **[0003]** For flashing a roof element, such as a roof window, in a sloping roof it is well known to use a kit of flashing members comprising a bottom flashing member and further side flashing members and an upper flashing member for flashing the entire roof element in order to seal between the roof element and the surrounding roof surface. The flashing members will be adapted to the roof covering of the roof in question.
- 20 **[0004]** Especially a lower section of the bottom flashing member that, when the flashing is installed, overlies the roof covering must be adapted to the roof covering when this is not plane but is corrugated, e.g. like tiles or comprises standing seams that are too rigid to be flattened, e.g. from a metal panel roofing. In case of non-plane roof coverings usually a bottom flashing member comprising a flexible skirt is used. Such flexible skirts were years ago made from lead that is deformably stretchable and flexible, but other and more environmental friendly flashing materials has been developed like e.g. the material disclosed in WO 2001/65029 A1.
- 25 **[0005]** For different reasons, e.g. aesthetic reasons, or economic reasons it may be preferred to avoid such skirt of the bottom flashing member and use a plain rigid bottom flashing member.
- 30 **[0006]** In case of a roof covering e.g. comprising roofing panels extending in the sloping direction of the roof and mutually joined by means of standing seams it for some kind of panels known and possible to flatten the seams where need, e.g. at positions where the roofing panels are overlaid by a bottom flashing member. For some kinds of panels, the joining seams are however, no possible to flatten or it may for other reasons be unwanted to flatten the seams.

**Summary of Invention**

- 35 **[0007]** It is an object of the present invention to provide a kit of parts and a method for flashing that will allow using a plain bottom flashing member without a flexible skirt for flashing a roof element in a roof having a roof covering comprising rigid standing seams.
- 40 **[0008]** In a first aspect, this is obtained by a kit of parts as mentioned by way of introduction and which is characterized by comprising an elongated filling member having a length in a longitudinal direction; a mounting surface extending in the longitudinal direction for mounting the filling member on a receiving surface; and an opposing surface opposite the mounting surface and positioned at a distance from a plane defined by the mounting surface. By means of the filling member it is possible to fill a gap that would be present between the bottom flashing member and the major part of the surface of the roof covering due to the presence of standing seams therebetween, and thus provide for sufficient sealing between the bottom flashing member and the roof covering.
- 45 **[0009]** In an embodiment the elongated filling element is a profile element with a mounting section comprising the mounting surface; a wall section extending from the mounting section at an angle relative to the mounting section, the opposing surface being situated at a side of the wall section opposite the mounting section. The profile element may conveniently be made by folding an elongate piece of sheet material such as sheet steel.
- 50 **[0010]** In a further embodiment the profile element comprises an opposing section extending from the wall section opposite the mounting section and comprising the opposing surface. Hereby the opposing surface gains more width than being merely an edge of sheet material. Thereby the opposing surface may e.g. offer the possibility of applying a sealing material between the opposing surface and a lower surface of the bottom flashing member.
- 55 **[0011]** In yet a further embodiment the profile element comprises a second wall section extending from the mounting section at a second angle relative to the mounting section. Hereby a better sealing effect may be obtained. Especially when in a further embodiment the second wall section extends to substantially the same distance from the plane defined by the mounting surface as the first wall section.
- [0012]** In an embodiment at least one vent opening is provided in the filling member. Hereby is obtained that a space below the bottom flashing element may be vented.
- [0013]** When the elongated filling element is a profile element with a mounting section comprising the mounting surface;

a wall section extending from the mounting section at an angle relative to the mounting section, the opposing surface being situated at a side of the wall section opposite the mounting section, in a further embodiment at least one vent opening is provided in at least one wall section. Hereby is obtained that a space below the bottom flashing element may be vented.

**[0014]** In a further embodiment a vent opening is provided at the mounting section in only one wall section. Hereby is obtained that e.g. condensation water lying on an inner surface of the mounting section may be drained through a vent opening at the mounting section.

**[0015]** In a second aspect, the object is further obtained by a method of flashing a roof element, such as a roof window, in a sloping roof with a roof covering comprising flat roofing panels, possibly of sheet metal, with standing seams, using a kit of parts according to the invention, wherein the method comprises the steps of:

- a) mounting a full roofing panel at a first side of the roof element;
- b) mounting at least two lower roofing panels below the roof element, a seam between the at least two lower roofing panels extending down the roof from a position adjacent a lower side of the roof element; and
- c) mounting the bottom flashing member,

the method being characterized by the following step between steps b) and c): providing at least one of: a piece of elongate filling member having a length corresponding to a distance between a first side of the bottom flashing member and an adjacent seam; a piece of elongate filling member having a length corresponding to a space between two adjacent seams; and a piece of elongate filling member having a length corresponding to a distance between a second side of the bottom flashing member and a seam adjacent thereto, and mounting said at least one piece between the roofing panels and an overlying part of the bottom flashing member. By means of the filling member a gap is filled that is present between the bottom flashing member and the major part of the surface of the roof covering due to the presence of standing seams therebetween, thus providing sufficient sealing between the bottom flashing member and the roof covering.

**[0016]** In an embodiment the at least one piece is mounted on a respective roofing panel by means of at least one of a mechanical fastening means, such as screws, and an adhesive sealing material. Hereby a good sealing may be obtained against penetration of water present on the surface of the roof covering that under heavy weather conditions may be pressed upwards by wind.

**[0017]** In a further embodiment the overlying part of the bottom flashing member is attached to the at least one piece by means of a mechanical fastening means, such as screws. Hereby a good fastening of the lower edge of the bottom flashing member is obtained preventing it from vibrating under heavy weather conditions.

### Brief Description of Drawings

**[0018]** In the following the invention will be described in further detail by means of an example of an embodiment having reference to the accompanying schematic drawings, in which

- Fig. 1 illustrates a roof window installed in a sloping roof;
- Figs. 2-5 show different steps in the process of flashing the roof window in Fig. 1;
- Fig. 6 is a section as indicated by line VI-VI in Fig. 5;
- Fig. 7 shows the profile of an embodiment of an elongate filling member; and
- Fig. 8 is a perspective view of a part of an embodiment of an elongated filling member.

### Description of Embodiments

**[0019]** The present invention relates to the flashing of a roof element, which e.g. could be a roof window; a solar panel; etc. In the following as an example the flashing of a roof window is illustrated.

**[0020]** Thus Fig. 1 shows a window frame 1 of a roof window installed and flashed in a sloping roof with a roof covering comprising flat roofing panels 3 interconnected by rigid, standing seams 5.

**[0021]** Referring to Figs. 2-6 the window frame 1 is installed in a roof having a construction known per se comprising an under roof 7; counter battens 9; and battens 11. The window frame 1 is per se fixed to the roof construction in a manner known per se and is provided with an under roof collar 13.

**[0022]** After fixation of the window frame 1 and before flashing, a full roofing panel 3a is mounted at a first side of the window frame 1, here at the right side as see from the outside and in the figures.

**[0023]** By the term "full roofing panes" should herein be understood a roofing panel that is not cut due to regard to the roof element in question.

**[0024]** Next lower roofing panels 3b are cut and mounted below the window frame 1 the respective roofing panels 3a,

3b being interconnected by the rigid standing seams 5 as it is well known per se. Together, the cut roofing panels 3b form a cut-out 3c extending below the window frame 1, as shown substantially throughout the length of the bottom of the window frame

**[0025]** Flashing of the window frame 1 is initiated by providing a kit flashing parts comprising, usually amongst other flashing members, a bottom flashing member 20 and an elongate filling member 30.

**[0026]** The bottom flashing member 20 has a main section 21 with a generally L-shaped cross-section with a first leg 22 configured to be arranged against a side 1a of the roof element, i.e. the window frame 1, and a second leg 23 configured to be at least in part positioned above the roof covering to seal between the roof element and the roof covering. The bottom flashing member 20 has sides 24 flanking the main section 21 and being placed with a mutual distance corresponding to the width of the window frame 1. The sides 24 are mutually parallel and extend a distance below the lower surface of the main section corresponding to the height of the rigid standing seams 5 of the roofing panels 3. At lower edges, the sides 24 meet flanges 25 configured to be sandwiched between layers of roofing panels in the installed condition. The respective sides 24 and flanges 25 are in an embodiment two parts of a folded material sheet.

**[0027]** Further in the flashing procedure, the distances between the respective sides 24 and adjacent standing seams 5 and mutual distances between adjacent standing seams 5 between the sides 24 are measured, cf. Fig. 3 and pieces 30a, 30b, 30c of elongate filling member 30 are cut to lengths accordingly.

**[0028]** The elongate filling member 30 is in the present embodiment a profile element comprising a piece of sheet material such as metal sheet, e.g. aluminium, zinc or steel sheet, that is folded into the configuration seen in the figures, especially in Fig. 7. The filling member 30 comprises a mounting surface 31 adapted for mounting the filling member on a receiving surface, i.e. the flat surface of the roofing panels 3. The filling member further has an opposing surface 32 opposite the mounting surface 31 and positioned at a distance from a plane defined by the mounting surface 31. Thus, in the mounted position the opposing surface 32 approximately reaches the height of the standing seams 5.

**[0029]** The profile element constituting the filling member comprises a mounting section 33 comprising the mounting surface 31; a first wall section 34 extending from the mounting section 33 at a first angle which in the embodiment shown is a right angle; from the end of the wall section 34 an opposing section 35 is extending, approximately parallel to the mounting section 33. The opposing section 35 comprises the opposing surface 32 which in this embodiment has a substantial width. From a side of the mounting section 33 opposite the first wall section 34 a second wall section 36 is extending at a second angle, which in the present embodiment is a right angle. Thus the first wall section and the second wall section are mutually parallel. At an end opposite the mounting section 33 the second wall section 36 has an edge constituting a slender opposing surface 36a.

**[0030]** Further in the flashing procedure, the pieces of filling member, that have been cut to length, are mounted on the surface of the roofing panels 3b, as shown in Fig 4, at a distance from the side 1a of the window frame corresponding to the size of the bottom flashing member 20. The pieces of filling member are in the present embodiment mounted by means of mechanical fasteners, such as screws or blind rivets, not shown. An adhesive sealing material may be provided between the mounting surface and the surface of the roofing panels. Subsequently the bottom flashing member 20 is mounted as indicated in Figs. 5 and 6. Mechanical fasteners, such as screws or blind rivets, in the present embodiment screws 15 (Fig. 1), are used to fasten the part of the bottom flashing member 20 overlying the opposing section 35 of the pieces of elongate filling member 30. Having thus flashed the bottom part of the window frame in accordance with the present invention the rest of the window frame 1 and the surrounding roof covering are finished as it is known in the art thus providing a flashed window frame as shown in Fig. 1.

**[0031]** By virtue of the use of the filling member 30 it is possible, as seen, to use a plain bottom flashing member with a straight main section 21 that does not get into contact with the proper surface of the roofing panels 3b but only (possibly) with the crests of the standing seams. The filling member provides for sealing between the bottom flashing member 20 and the roofing panels 3b.

**[0032]** Possibly, vent openings in the form of vents 37 are provided in one (Fig. 4) or both (Fig. 8) of the first wall section 34 and the second wall section 36 in order to vent the space provided below the bottom flashing member 30.

**[0033]** As shown in Fig. 8 such vents 37a may in one of the wall sections be provided at the mounting section 33 e.g. to provide for condensed water to flow from the upper surface of the mounting section 3 to the roofing panels outside.

#### List of reference numerals

|    |                        |                                 |
|----|------------------------|---------------------------------|
| 1  | window frame           | karm                            |
| 1a | side                   | side                            |
| 3  | (flat) roofing panels  | (flade) tagbeklædningspaneler   |
| 3a | full roofing panel     | helt tagbeklædningspanel        |
| 3b | lower roofing panels   | nedre tagbeklædningspanel       |
| 3c | cut-out                | udsparing                       |
| 5  | (rigid) standing seams | (stive) staende sammenføjninger |

(continued)

|    |           |                            |                              |
|----|-----------|----------------------------|------------------------------|
|    | 7         | under roof                 | undertag                     |
|    | 9         | counter battens            | kontralægter                 |
| 5  | 11        | battens                    | lægter                       |
|    | 13        | under roof collar          | undertagskrave               |
|    | 15        | screws                     | skruer                       |
|    | 20        | bottom flashing member     | bundinddækningsselement      |
| 10 | 21        | main section               | hovedsektion                 |
|    | 22        | first leg                  | første ben                   |
|    | 23        | second leg                 | andet ben                    |
|    | 24        | sides                      | sider                        |
|    | 25        | flanges                    | flanger                      |
| 15 | 30        | elongate filling member    | langstrakt fyldningsselement |
|    | 30a, 30b, | pieces of elongate filling | stykker af langstrakt        |
|    | 30c       | member                     | fyldningsselement            |
|    | 31        | mounting surface           | montageflade                 |
| 20 | 32        | opposing surface           | modstående flade             |
|    | 33        | mounting section           | montagesektion               |
|    | 34        | first wall section         | første vægsektion            |
|    | 35        | opposing section           | modstående sektion           |
|    | 36        | second wall section        | anden vægsektion             |
| 25 | 36a       | slender opposing surface   | slank modstående flade       |
|    | 37, 37a   | vents                      | ventilationsåbninger         |

## Claims

- 30
1. A kit of parts for flashing a roof element (1), such as a roof window, in a sloping roof with a roof covering comprising flat roofing panels (3), possibly of sheet metal, with standing seams (5), comprising at least a bottom flashing member (20) having at least a section with a generally L-shaped cross-section with a first leg (22) configured to be arranged against a side (1a) of the roof element and a second leg (23) configured to be at least in part positioned above the
- 35
- roof covering to seal between the roof element and the roof covering, **characterized by** comprising an elongated filling member (30) having a length in a longitudinal direction; a mounting surface (31) extending in the longitudinal direction for mounting the filling member on a receiving surface; and an opposing surface (32) opposite the mounting surface and positioned at a distance from a plane defined by the mounting surface.
- 40
2. A kit of parts according to claim 1, wherein the elongated filling element (30) is a profile element with a mounting section (33) comprising the mounting surface (31); a wall section (34) extending from the mounting section at an angle relative to the mounting section (33), the opposing surface (32) being situated at a side of the wall section (34) opposite the mounting section (33).
- 45
3. A kit of parts according to claim 2, wherein the profile element comprises an opposing section (35) extending from the wall section (34) opposite the mounting section (33) and comprising the opposing surface (32).
- 50
4. A kit of parts according to claim 2 or 3, wherein the profile element comprises a second wall section (36) extending from the mounting section (33) at a second angle relative to the mounting section (33).
- 55
5. A kit of parts according to claim 4, wherein the second wall section (36) extends to substantially the same distance from the plane defined by the mounting surface as the first wall section (34).
6. A kit of parts according to any one of claims 1 to 5, wherein at least one vent opening (37, 37a) is provided in the filling member (30).
7. A kit of parts according to any one of claims 2 to 5, wherein at least one vent opening (37) is provided in at least one wall section (34, 36).

8. A kit of parts according to claim 7, wherein a vent opening (37) is provided at the mounting section (33) in only one wall section (34).

9. A method of flashing a roof element, such as a roof window, in a sloping roof with a roof covering comprising flat roofing panels, possibly of sheet metal, with standing seams, using a kit of parts according to any one of claims 1 to 8, wherein the method comprises the steps of:

a) mounting a full roofing panel (3a) at a first side of the roof element (1);

b) mounting at least two lower roofing panels (3b) below the roof element, a seam (5) between the at least two lower roofing panels extending down the roof from a position adjacent a lower side (1a) of the roof element (1); and

c) mounting the bottom flashing member (20),

**characterized by** the following step between steps b) and c): providing at least one of: a piece (30a) of elongate filling member (30) having a length corresponding to a distance between a first side of the bottom flashing member (20) and an adjacent seam (5); a piece (30b) of elongate filling member having a length corresponding to a space between two adjacent seams; and a piece (30c) of elongate filling member having a length corresponding to a distance between a second side of the bottom flashing member and a seam adjacent thereto, and mounting said at least one piece between the roofing panels and an overlying part of the bottom flashing member.

10. A method according to claim 9, wherein the at least one piece (30a, 30b, 30c) is mounted on a respective roofing panel by means of at least one of a mechanical fastening means, such as screws (15), and an adhesive sealing material.

11. A method according to claim 9 or 10, wherein the overlying part of the bottom flashing member is attached to the at least one piece by means of a mechanical fastening means, such as screws.

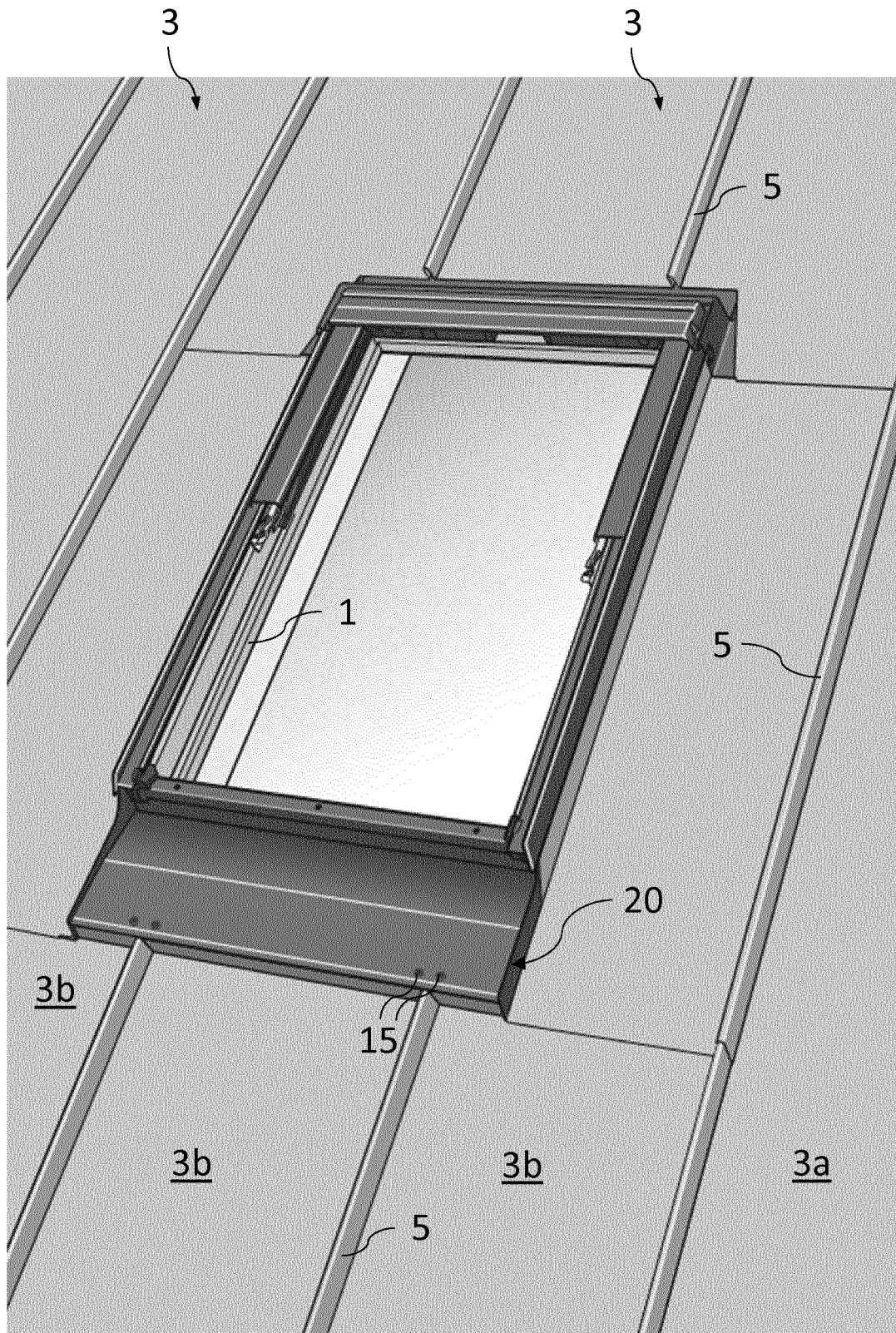


Fig. 1

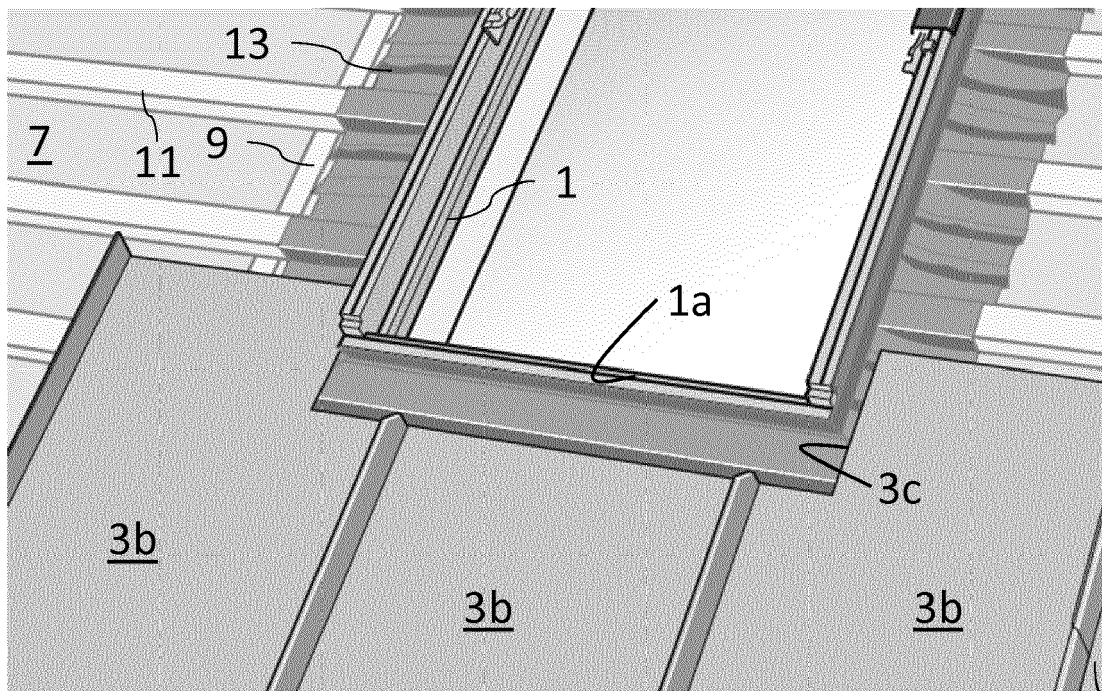


Fig. 2

3a

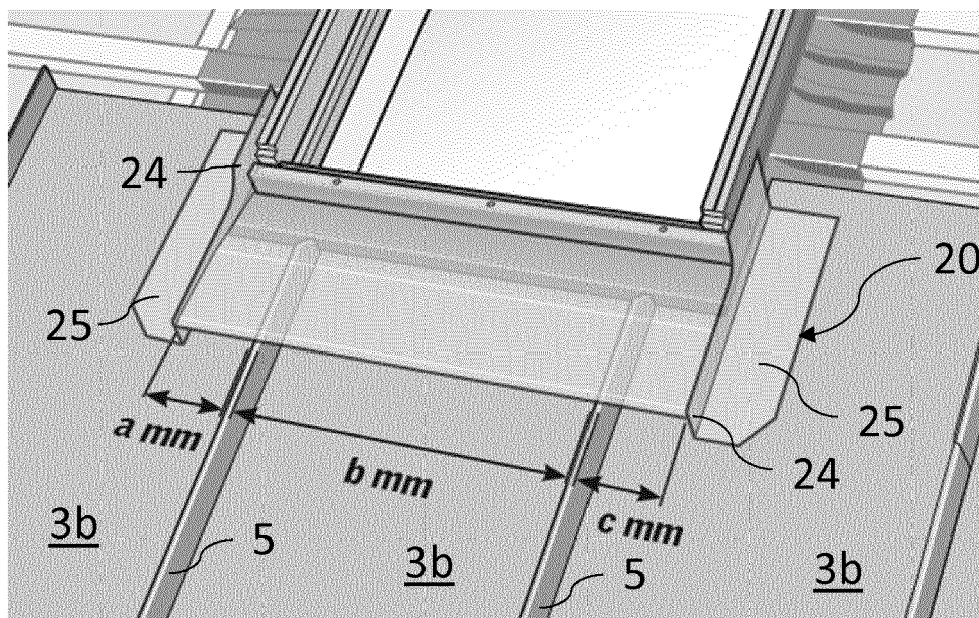


Fig. 3

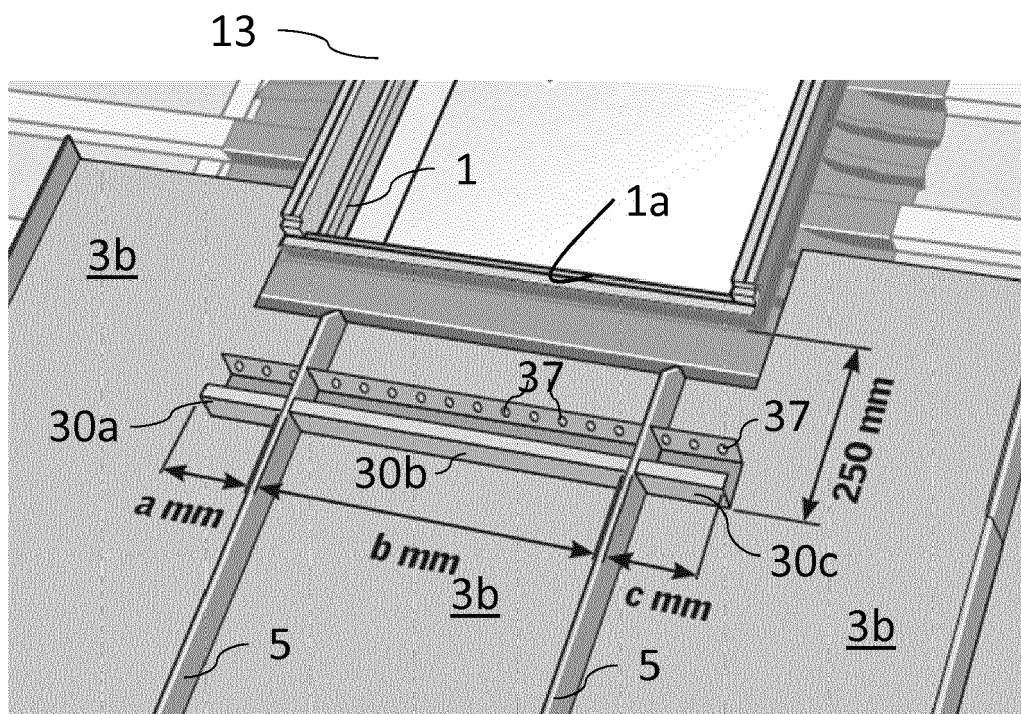


Fig. 4

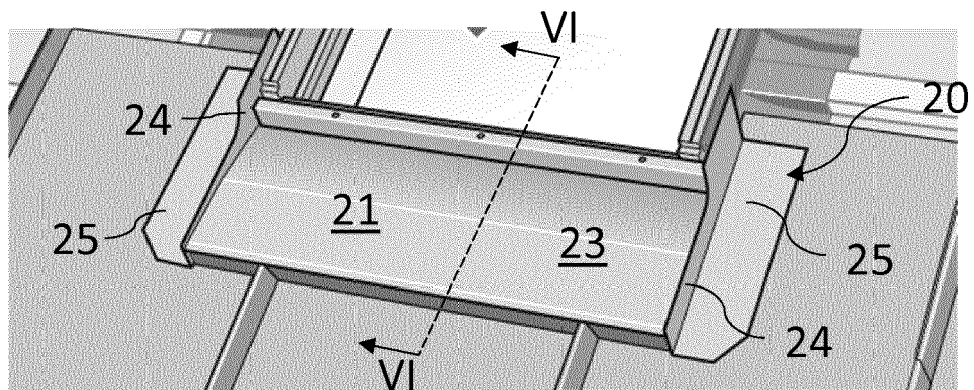


Fig. 5

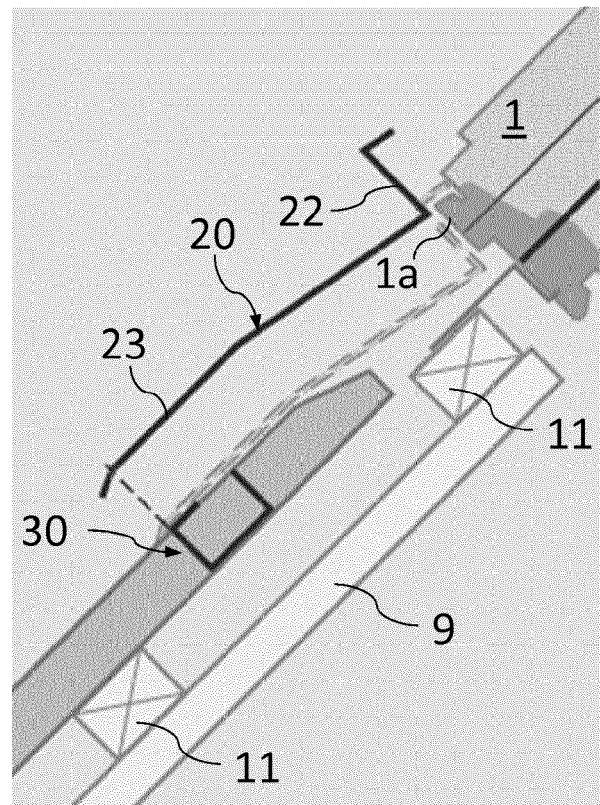


Fig. 6

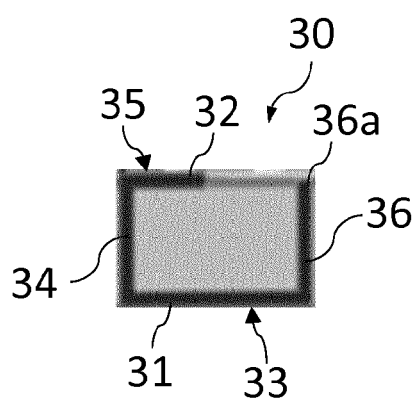


Fig. 7

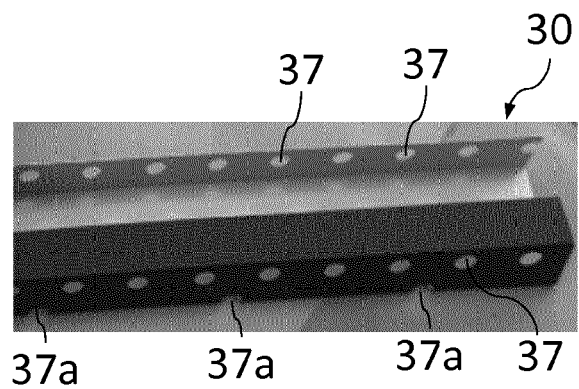


Fig. 8



## EUROPEAN SEARCH REPORT

Application Number  
EP 18 18 5562

5

10

15

20

25

30

35

40

45

50

55

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                    |                                                                                                                            |                                                                                                                                                                                                                                                                                       |                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Category                                                                                                                                                                                                                                               | Citation of document with indication, where appropriate, of relevant passages                                              | Relevant to claim                                                                                                                                                                                                                                                                     | CLASSIFICATION OF THE APPLICATION (IPC) |
| X                                                                                                                                                                                                                                                      | US 8 713 864 B1 (SMITH JR CHARLES L [US])<br>6 May 2014 (2014-05-06)<br>* column 14, line 23 - line 67; figures 13-14 *    | 1-8                                                                                                                                                                                                                                                                                   | INV.<br>E04D13/03<br>E04D13/147         |
| X                                                                                                                                                                                                                                                      | -----<br>CN 202 787 739 U (BEIJING NORTH SPACE<br>STEEL STRUCTRE CO LTD)<br>13 March 2013 (2013-03-13)<br>* figures 1, 6 * | 1-11                                                                                                                                                                                                                                                                                  |                                         |
| X                                                                                                                                                                                                                                                      | -----<br>EP 2 947 220 A1 (ROTO FRANK AG [DE])<br>25 November 2015 (2015-11-25)<br>* figures 4, 5 *                         | 1-8                                                                                                                                                                                                                                                                                   |                                         |
| X                                                                                                                                                                                                                                                      | -----<br>EP 2 947 222 A1 (ROTO FRANK AG [DE])<br>25 November 2015 (2015-11-25)<br>* figure 5 *                             | 1-8                                                                                                                                                                                                                                                                                   |                                         |
| A                                                                                                                                                                                                                                                      | -----<br>US 5 522 189 A (MORTENSEN BENT R [DK] ET<br>AL) 4 June 1996 (1996-06-04)<br>* figure 1 *                          | 1                                                                                                                                                                                                                                                                                     |                                         |
|                                                                                                                                                                                                                                                        |                                                                                                                            |                                                                                                                                                                                                                                                                                       | TECHNICAL FIELDS<br>SEARCHED (IPC)      |
|                                                                                                                                                                                                                                                        |                                                                                                                            |                                                                                                                                                                                                                                                                                       | E04D                                    |
| The present search report has been drawn up for all claims                                                                                                                                                                                             |                                                                                                                            |                                                                                                                                                                                                                                                                                       |                                         |
| Place of search<br><b>The Hague</b>                                                                                                                                                                                                                    |                                                                                                                            | Date of completion of the search<br><b>9 January 2019</b>                                                                                                                                                                                                                             | Examiner<br><b>Demeester, Jan</b>       |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document |                                                                                                                            | T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>.....<br>& : 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 18 18 5562

5 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.

09-01-2019

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|-------------------------------------------|---------------------|----------------------------|---------------------|
| US 8713864 B1                             | 06-05-2014          | US 8713864 B1              | 06-05-2014          |
|                                           |                     | US 8887464 B1              | 18-11-2014          |
| -----                                     | -----               | -----                      | -----               |
| CN 202787739 U                            | 13-03-2013          | NONE                       |                     |
| -----                                     | -----               | -----                      | -----               |
| EP 2947220 A1                             | 25-11-2015          | DE 102014007702 A1         | 26-11-2015          |
|                                           |                     | EP 2947220 A1              | 25-11-2015          |
|                                           |                     | PL 2947220 T3              | 30-05-2018          |
| -----                                     | -----               | -----                      | -----               |
| EP 2947222 A1                             | 25-11-2015          | DE 102014007683 A1         | 26-11-2015          |
|                                           |                     | EP 2947222 A1              | 25-11-2015          |
|                                           |                     | PL 2947222 T3              | 28-02-2018          |
| -----                                     | -----               | -----                      | -----               |
| US 5522189 A                              | 04-06-1996          | DK 44494 A                 | 19-10-1995          |
|                                           |                     | US 5522189 A               | 04-06-1996          |
| -----                                     | -----               | -----                      | -----               |

**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**

- WO 200165029 A1 **[0004]**