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(54) **MOUNTING CLIP FOR HOLDING ROOF PANEL SEAM**

BEFESTIGUNGSSCHELLE FÜR DACHPLATTENNAHT

BRIDE DE MONTAGE POUR MAINTENIR UN JOINT DE PANNEAU DE TOIT

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Description

Field of the invention

[0001] The present invention relates to a mounting clip for slidably attaching a metal roof panel seam to a support structure through a compressible layer.

Background of the invention

[0002] Metal roof panels are commonly used as a lining for protecting roof structures against rain and wind. The panels are joined in a tight manner by means of seams, which are typically formed by folding together upright edges of adjacent roof panels. The panels are held onto an underlying support structure, which may be made up of typical construction materials such as wood or concrete, by means of mounting clips. The mounting clips typically comprise an anchoring member, for fixedly attaching to the support structure, and a seam holder. The seam holder typically comprises a sheet metal tab that is joined with the seam by interleaving the tab between the upright roof panel edges prior to folding. Due to different thermal expansion of the support structure and the metal roof panels during their lifespan, the mounting clips need to allow the roof panels to move along the direction of the seams. Such freedom is typically obtained by designing the clips so as to feature a sliding engagement between the anchoring member and the seam holder. After folding the seam, an upwardly tapering seam space is typically formed between the upright edges of the roof panels. Due to the tapering shape of this space, the sliding engagement needs to be located as close to the support structure as possible, in order to avoid getting jammed in the tight space adjacent to the seam fold.

[0003] US 4 575 983 A discloses a mounting clip according to the preamble of claim 1.

[0004] EP0113753 discloses a mounting clip for slidably holding a metal roof panel seam to a support structure. The clip comprises an anchoring member, which is attached using two screws so as to keep the clip firmly attached as the roof panels thermally expand and contract during their lifespan. A beam or bridge forms a sliding engagement with a seam holder.

[0005] For some applications, there is a need for an additional layer between the support structure and the roof panel. This layer may, by way of example, be a layer of water-tight fabric for increasing the tightness of the roof, or a soft carpet for protecting the roof panels from being damaged by the underlying support structure. Such an additional layer is often made of a compressible material, such as rubber or fabric. When attaching a clip through a compressible layer, the anchoring member of the clip, when tightened to the support structure, will sink into the compressible layer, while the roof panel rests on top of the compressible layer. For this reason, the sliding engagement may risk getting squeezed below the roof plates during mounting. Therefore, specially designed

clips are generally used where the clip needs to be attached through a compressible support layer.

[0006] Fig. 1 illustrates a known variant of the clip of EP0113753 particularly adapted for the purpose of attaching to a support structure through a compressible layer. The mounting clip 1 consists of an anchoring member 2 provided with three screw holes 3, via which the clip 1 is to be attached to the support structure by means of screws. The sliding engagement is formed by a beam 4 and a tab 5 double-folded in a slidable manner about the beam 4. The sliding engagement has a thickness of only three times the metal sheet thicknesses; furthermore, the anchoring member 2 and seam holder 5 are made of relatively thin sheet metal. Thanks to the very limited thickness of the sliding engagement, the sliding engagement can be located relatively high up in the seam space without getting jammed in the tight space adjacent to the seam fold, thereby reducing the risk of the sliding engagement getting squeezed below the roof panels during mounting.

[0007] Construction standards and regulations define which minimum vertical force the clip should be designed to withstand. There is also a need for a stronger clip that is easier to attach.

Summary of the invention

[0008] It is an object of the present invention to solve, or at least mitigate, parts or all of the above mentioned problems. To this end, there is provided a mounting clip according to claim 1 for slidably attaching a metal roof panel seam to a support structure through a compressible layer, the mounting clip comprising a sheet metal anchoring member comprising a base plate for attaching to said support structure, and an upright portion integral with the base plate; and a seam holder having a seam holding end for engaging with said seam, the seam holder being slidably connected to the upright portion of the anchoring member so as to allow sliding of the seam holder relative to the anchoring member along a sliding axis, the upright portion of the anchoring member comprising at least one seam holder engagement tab having a fold forming, together with a mating fold of the seam holder, a sliding folds engagement; and the anchoring member comprising at least two axially separated support tabs for supporting the anchoring member in a stop direction, which is parallel to the plane of the support structure and transversal to the sliding axis, so as to maintain the mounting clip aligned with the roof panel seam, said support tabs extending beyond the upright extent of the seam holder engagement tab along a plane transversal to the stop direction. Said support tabs extend above the seam holder engagement tab for abutting against an upright portion of a roof panel seam edge.

[0009] The mounting clip may be used for holding a seam joining two metal roof panels. The support tabs keep the mounting clip aligned with the seam, thereby preventing the clip from being misaligned or twisted dur-

ing mounting. Such maintained alignment enables the use of a mating folds engagement between the seam holder and the upright portion of the anchoring member, even in a clip for use in a seam holding application involving a compressible layer, without risking that the mating folds engagement gets squeezed below any of the roof panels due to said twisting. Mating folds are thicker, but provide a very strong engagement compared to e.g. a bridge engagement, since there is no need for an axial slit weakening the anchoring member, as is the case in the sliding engagement type of the clip of Fig. 1. Furthermore, a single screw, or other fastening means, may suffice for attaching the mounting clip, since the support tabs will prevent the mounting clip from turning about the screw axis while the roof panels thermally expand and contract during their lifespan. This facilitates attaching the mounting clip to the support structure.

[0010] According to an embodiment, said sliding folds engagement is formed by mating double-folds, and said seam holder engagement tab is folded towards said base plate in such a manner that the base plate blocks the sliding folds engagement from disengaging in a direction transversal to the sliding axis. Such a sliding folds engagement is relatively compact, while still preventing the mounting clip from falling apart into its constituents when handled.

[0011] According to the invention, said support tabs extend above the seam holder engagement tab for abutting against an upright portion of a roof panel seam edge. This particularly facilitates alignment of the clip during mounting, since the support tabs may be abutted onto an upright portion of a roof panel seam edge already attached to the support structure, thereby automatically aligning the clip to the seam to be formed. Furthermore, the support tabs have a thickness of only one single metal sheet layer, permitting the use of a thicker sheet metal for the anchoring member, and/or providing a support in the stop direction higher up in the tapering seam space. In an embodiment, the support tabs may be configured as unfolded tabs of the upright portion of the anchoring member.

[0012] According to an embodiment, said seam holder engagement tab is flanked by said at least two support tabs.

[0013] According to an embodiment, said support tabs are configured as spikes extending below the base plate for penetrating into the compressible layer.

[0014] According to an embodiment, said base plate is provided with one single through hole for receiving a fastener for attaching to the support structure. By using only a single through hole, the structural integrity and strength of the base plate will be maximized.

Brief description of the drawings

[0015] The above, as well as additional objects, features and advantages of the present invention, will be better understood through the following illustrative and

non-limiting detailed description of preferred embodiments of the present invention, with reference to the appended drawings, where the same reference numerals will be used for similar elements, wherein:

Fig. 1 is a diagrammatic view in perspective of a known mounting clip for slidingly attaching a metal roof panel seam to a support structure through a compressible layer;

Fig. 2a is an exploded view in perspective of a first embodiment of a mounting clip for slidingly attaching a metal roof panel seam to a support structure through a compressible layer;

Fig. 2b is a schematic view in perspective of the mounting clip of Fig. 2a when assembled;

Fig. 2c is a schematic view in perspective of the mounting clip of Fig. 2b as seen from another aspect angle;

Fig. 3a is a schematic view in section of the mounting clip of Figs 2a-c when attached to a support structure through a compressible layer, illustrating a seam in a first intermediate seam folding stage;

Fig. 3b is a schematic sectional view in perspective of the mounting clip as attached in Fig. 3a, illustrating the seam in a second intermediate seam folding stage;

Fig. 4a is an exploded view in perspective of a variant of the mounting clip of Figs 2-3;

Fig. 4b is a schematic view in section of the mounting clip of Fig. 4a;

Fig. 5a is a schematic view in perspective of a second embodiment of a mounting clip for slidingly attaching a metal roof panel seam to a support structure through a compressible layer; and

Fig. 5b is a schematic view in perspective of a mounting clip for slidingly attaching a metal roof panel seam to a support structure through a compressible layer.

Detailed description of the exemplary embodiments

[0016] Figs 2a-c illustrate a mounting clip 10 for attaching a metal roof panel seam to a support structure via a compressible layer. Starting with the exploded view of Fig. 2a, the clip 10 comprises an anchoring member 12 and a seam holder 14. The anchoring member 12 comprises a base plate 16, for attaching to the support structure, and an upright portion 18 for slidingly holding the seam holder 14. The base plate 16 is provided with a single through hole 20 for receiving a screw for anchoring the anchoring member 12 to the support structure.

[0017] The upright portion 18 extends upwardly from, and forms an angle of about 90° with the base plate 16. It is formed integrally with the base plate 16 from a single piece of sheet metal. At an upper portion thereof, the upright portion 18 is split by two incisions into three tabs. A first, central tab 22 is adapted for engaging with the

seam holder 14; it is therefore referred to in the following as a seam holder engagement tab. The seam holder engagement tab 22 is double-folded towards the base plate 18 to form a first engagement fold 19; the seam holder engagement tab 22 is flanked by the other two tabs 24, 26, which are unfolded, flat.

[0018] Also the seam holder 14 is integrally formed by a single piece of sheet metal. The seam holder 14 comprises an upright portion 28, an upper end of which is folded to form a hook 30 for engaging with the roof seam. A lower portion 32 of the seam holder 14 is double-folded towards the hook 30 to form a second engagement fold 34. The first and second engagement folds 19, 34 mate, such that they may be slid into each other along a sliding axis A. Once slid together, the mating folds 19, 34 are slidable relative to each other along the sliding axis A, thereby forming a sliding folds engagement 35 (Fig. 2c). Thanks to the seam holder engagement tab 22 being folded towards the base plate 16, the sliding folds engagement 35 is prevented from disengaging in any direction other than the direction of the sliding axis A. In fact, after having slid the anchoring member 12 and the seam holder 14 together, axial disassociation may be prevented by providing the sliding folds engagement 35 with axial stops, e.g. by nipping the axial ends of the engagement fold 34 of the seam holder 14.

[0019] Figs 2b-c illustrate the mounting clip 10 as seen in perspective from two different aspect angles. The upright portion 28 of the seam holder 14 has a flat back 36 facing away from the hook 30. The back 36 forms a shield, shielding the sliding folds engagement 35 in a first shielding direction from getting squeezed from above during mounting of the clip 10.

[0020] The tabs 24, 26 flanking the seam holder engagement tab 22 are support tabs, forming support surfaces facing the hook 30, for abutting against the upright edge of a metal roof panel as will be described in more detail with reference to Figs 3a-b. Also the support tabs 22 thereby form a shield, shielding the sliding folds engagement 35 in a second shielding direction from getting squeezed from above during mounting of the clip 10, said second shielding direction being opposite to said first shielding direction.

[0021] Figs 3a-b illustrate the mounting clip 10 in use, attached to a support structure 38 through a compressible layer 40 by means of a single screw 41. The seam holder 14 of the clip 10 holds a seam 42 joining a first sheet metal roof panel 44 with a second sheet metal roof panel 46. Each of the roof panels 44, 46 has a respective upwardly folded seam edge portion 47, 49, the extreme ends of which are to be folded to form said seam 42. The seam 42 is illustrated in two intermediate seam folding stages in Figs 3a-b. Fig. 3a illustrates a first intermediate seam folding stage in which the extreme ends of the seam edge portions 47, 49 are yet to be folded in a folding direction illustrated by a curved arrow. Fig. 3b illustrates a second intermediate seam folding stage in which the extreme ends of the seam edge portions 47, 49 have

been folded in the direction illustrated by the curved arrow in Fig. 3a, prior to making a final seam fold illustrated by a curved arrow in Fig. 3b.

[0022] Referring again to Fig. 3a, the roof may be installed in the following general order: First, the first roof panel 44 is placed onto the compressible layer 40. The mounting clip 10 is placed onto the compressible layer 40 such that the two support tabs 24 (Fig. 2a), 26 abut an upright portion 48 of the first seam edge portion 47 of the first roof panel. The mounting clip 10 is screwed into the support structure 38 via the compressible layer 40, such that the compressible layer 40 is compressed by the base plate 16. The support tabs 24, 26 abut the upright seam edge portion 48 so as to support the anchoring member 12 (Fig. 2a) from moving in a stop direction S, illustrated by a straight arrow in Fig. 3a, during mounting of the clip 10. Furthermore, the support tabs 24, 26 being axially separated along the sliding axis A (Fig. 2a), and thereby abutting the upright seam edge portion 48 at axially separated locations, prevent the clip 10 from rotating with the screw 41 during mounting. Moreover, the support tabs 24, 26 extend sufficiently above the sliding folds engagement 35 to abut against the upright seam edge portion 48 also when the compressible layer 40 has been fully compressed, as is illustrated in Fig. 3a; thereby, the mounting clip 10 will be maintained aligned with the upright seam edge portion 48 until the clip 10 has been firmly attached to the support structure 38.

[0023] The second roof panel 46 is placed onto the compressible layer 40 so as to reach the position illustrated in Fig. 3a; while positioning the second roof panel 46, the upright portion 28 of the seam holder 14 protects the sliding folds engagement 35 from getting trapped below the second roof panel 46. The seam 42 is finalized by folding the seam 42 according to what is described above, thereby interleaving the hook 30 (Fig. 2a) of the seam holder 14 between the folded extreme ends of the seam edges 47, 49. In this manner, the clip 10 firmly holds the seam 42 to the support structure 38, thereby also holding the roof panels 44, 46 to the support structure 38. After finalizing the fold of the seam 42, the upright seam edge portions 47, 49 define an upwardly tapering seam space 53.

[0024] During the lifespan of the metal roof, the roof panels 44, 46 may slide along the sliding axis A, illustrated in Fig. 3b, due to thermal expansion and contraction of the roof panels 44, 46. Such sliding is permitted by the sliding folds engagement 35. During the entire lifespan, the support tabs 24, 26 of the clip 10 prevent the clip 10 from being twisted about the screw axis, such that the clip 10 will remain aligned with the upright seam edge portion 48 of the first roof panel 44:

[0025] Compared to the design of Fig. 1, the support tabs 24, 26 of the clip 10 of Figs 2-3 allows locating the entire sliding engagement arrangement very close to the base plate 16 without risking that the sliding engagement somehow interferes with the roof panels 44, 46. Thereby, the more space demanding sliding folds type of engage-

ment may be used. Moreover, the design allows using thicker sheet metal for the clip.

[0026] Fig. 4a shows a variant of the mounting clip 10, illustrated in an exploded view similar to the view of Fig. 2a. Fig. 4b illustrates, in a view similar to the view of Fig. 3a, the mounting clip 10 when attached to a support structure through a compressible layer.

[0027] The mounting clip 10 of Figs 4a-b differs from the mounting clip 10 of Figs 2-3 in that the support tabs 24, 26 are folded somewhat towards the upright portion 28 of the seam holder 14 along an axial fold or bend 45, such that an upper portion of the support tabs 24, 26 abuts the seam holder 28. The engagement between the support tabs 24, 26 and the upright portion 28 of the seam holder 14 has the function of a sliding brake, for braking or increasing the friction in the axial movement of the sliding folds engagement 35. The sliding brake assists in maintaining the seam holder 14 axially centered on the anchoring member 12 during handling of the clip 10 prior to anchoring it, e.g. while keeping the mounting clip 10 in a pocket. Thereby, a sufficient travel length of the seam holder 14 in both axial directions, after anchoring the clip 10, will be warranted. In an alternative variant, the support tabs 24, 26 may be unfolded as illustrated in Figs 2-3, and instead the upright portion 28 of the seam holder 14 may be provided with a pair of axial folds or bends bringing it into abutment with the upright, unfolded support tabs 24, 26.

[0028] Fig. 5a illustrates a second embodiment of the invention. The clip 110 differs from the clip 10 described hereinbefore in that it is provided with two additional support tabs 124, 126 punched out of the upright portion 18 of the anchoring member 12. The additional support tabs 124, 126 protrude downwards from the anchoring member 12, and are shaped so as to form spikes for penetrating into and engaging with the compressible layer 40, and for even further increased support, optionally also with the support layer 38 (Figs 3a-b; Fig. 4b). The additional support tabs 124, 126 are axially separated, and extend in a plane essentially perpendicular to the stop direction S (Fig. 3a) so as to provide a maximum engagement and support in the stop direction S. The term essentially perpendicular is to be construed broadly, as deviating by less than 15° from perpendicular.

[0029] Fig. 5b illustrates a mounting clip. The clip 210 differs from the clip 110 described with reference to Fig. 5a in that it is not provided with upwardly extending support tabs 24, 26, and in that the downwardly protruding support tabs 224, 226 are punched out of the base plate 16 instead of the upright portion 18 of the anchoring member 12. Again, the support tabs 224, 226 protrude downwards from the anchoring member 12, and are shaped so as to form spikes for penetrating the compressible layer 40 and engage with the support layer 38 (Figs 3a-b; Fig. 4b). The support tabs 224, 226 extend in a plane essentially perpendicular to the stop direction S (Fig. 3a) so as to provide a maximum support in the stop direction

S during mounting of the clip 210, and are axially separated so as to prevent twisting of the clip 210 during mounting and during the entire lifespan of a roof held by the clip 210.

[0030] Returning again to the clip 1 of Fig. 1, the beam 4 forms the weakest part; therefore, screws need to be located near each of the axial ends of the base plate so as to prevent any vertical force applied to the centre of the beam 4 by the seam holder 5 from lifting the axial ends of the clip, thereby collapsing the entire clip 1. Furthermore, a long sliding engagement, permitting a significant axial travel length of the seam holder 5 of the clip 1, requires a long beam 4, which even further weakens the construction.

[0031] The clips 10, 110, 210 described with reference to Figs 2-5, on the other hand, do not suffer from the weakness of a bar; any vertical load applied to the seam holder 14 will be transferred directly via the sliding folds engagement 35 to the anchoring member 12, which may be free from any slits, beams or other weakening elements. Therefore, one single screw 41 may suffice for attaching any of the clips 10, 110, 210 to a support structure 38.

[0032] Furthermore, thanks to the possibility of locating the sliding folds engagement adjacent to the bottom plate 16 without risking interfering with or causing damage to the metal roof panels, the same design of the anchoring member 12 may be used for clips 10, 110, 210 regardless of whether they are to be used for attaching through a compressible layer 40, or directly onto the support structure 38. Thereby, significant cost savings may be obtained due to production synergies and simplified inventory management.

[0033] The invention has been described above with reference to a few embodiments. However, as is readily appreciated by a person skilled in the art, other embodiments than the ones disclosed above are equally possible within the scope of the invention, as defined by the appended patent claims.

[0034] For example, the invention is by no means limited to a particular number of support tabs 24, 26, 124, 126, 224, 226. Any other number of axially separated support tabs will provide the support in the stop direction S. Similarly, any other number of seam holder engagement tabs 22 may be used for forming a sliding folds engagement without departing from the scope of the appended claims.

[0035] The upright portion 18 of the anchoring member 12 may form an angle differing from 90° with the base plate 12. Typically, the angle is between 70° and 110°, but an angle outside this range is also possible. Seam holders may have various shapes for holding various types of seam edges of various types of sheet metal roof panels. Such various seam holder shapes are within the scope of the appended claims.

[0036] Clearly, a fastener other than a screw 41, such as a nail, staple or the like, may be used for attaching the clip 10, 110, 210 to the support structure.

Claims

1. A mounting clip (10; 110; 210) for slidingly attaching a metal roof panel seam (42) to a support structure (38) through a compressible layer (40), the mounting clip (10; 110; 210) comprising a sheet metal anchoring member (12) comprising a base plate (16) for attaching to said support structure (38), and an upright portion (18) integral with the base plate (16); and a seam holder (14) having a seam holding end (30) for engaging with said seam (42), the seam holder (14) being slidingly connected to the upright portion (18) of the anchoring member (12) so as to allow sliding of the seam holder (14) relative to the anchoring member (12) along a sliding axis (A), the upright portion (18) of the anchoring member (12) comprising at least one seam holder engagement tab (22) having a fold (19) forming, together with a mating fold (34) of the seam holder (14), a sliding folds engagement (35); and the anchoring member (12) comprising at least two axially separated support tabs (24, 26) extending beyond the upright extent of the seam holder engagement tab (22),
characterized in that the support tabs (24, 26) are configured to support the anchoring member (12) in a stop direction (S), which is parallel to the plane of the support structure (38) and transversal to the sliding axis (A), so as to maintain the mounting clip (10; 110; 210) aligned with the roof panel seam (42), said support tabs (24, 26) extending beyond the upright extent of the seam holder engagement tab (22) along a plane transversal to the stop direction (S), and said support tabs (24, 26) extend above the seam holder engagement tab (22) for abutting against an upright portion (48) of a roof panel seam edge (47).
2. The mounting clip according to claim 1, said sliding folds engagement (35) being formed by mating double-folds (19, 34), and said seam holder engagement tab (22) being folded towards said base plate (16) in such a manner that the base plate (16) blocks the sliding folds engagement (35) from disengaging in a direction transversal to the sliding axis (A).
3. The mounting clip according to any of the previous claims, said seam holder engagement tab (22) being flanked by said at least two support tabs (24, 26).
4. The mounting clip according to any of the previous claims, further comprising spikes (124, 126; 224, 226) extending below the base plate (16) for penetrating into the compressible layer (40).
5. The mounting clip according to any of the previous claims, said base plate (16) being provided with one single through hole (20) for receiving a fastener (41)

for attaching to the support structure (38).

Patentansprüche

1. Befestigungsschelle (10; 110; 210) zur gleitenden Befestigung einer Metaldachplattennaht (42) an einer Trägerstruktur (38) durch eine zusammendrückbare Schicht (40), welche Befestigungsschelle (10; 110; 210) umfasst ein Metallblechverankerungselement (12) umfassend eine Basisplatte (16) zur Befestigung an der Trägerstruktur (38) und einen mit der Basisplatte (16) integrierten aufrechtstehenden Teil (18); und einen Nahthalter (14), welcher ein Nahthalter-Ende (30) zum Eingriff mit der Naht (42) aufweist, welcher Nahthalter (14) mit dem aufrechtstehenden Teil (18) des Verankerungselements (12) gleitend verbunden ist, damit ein Gleiten des Nahthalters (14) im Verhältnis zum Verankerungselement (12) entlang einer Gleitachse (A) ermöglicht wird, wobei der aufrechtstehende Teil (18) des Verankerungselements (12) zumindest eine Nahthaltereingriffsflasche (22) mit einer Falte (19) aufweist, die zusammen mit einer dazugehörigen Falte (34) des Nahthalters (14) einen Eingriff (35) von Gleitfalten bildet; und wobei das Verankerungselement (12) zumindest zwei axial getrennte Trägerlaschen (24, 26) umfasst, die über den aufrechtstehenden Umfang der Nahthaltereingriffsflasche (22) hinausgehen, **dadurch gekennzeichnet, dass** die Trägerlaschen (24, 26) zum Tragen des Verankerungselements (12) in einer Anschlagrichtung (S), die parallel zur Ebene der Trägerstruktur (38) und quer zur Gleitachse (A) verläuft, ausgebildet sind, um die Befestigungsschelle (10; 110; 210) mit der Dachplattennaht (42) ausgerichtet zu halten, welche Trägerlaschen (24, 26) über den aufrechtstehenden Umfang der Nahthaltereingriffsflasche (22) entlang einer Ebene quer zur Anschlagrichtung (S) hinausgehen, und welche Trägerlaschen (24, 26) sich über die Nahthaltereingriffsflasche (22) zum Anliegen an einem aufrechtstehenden Teil (48) einer Dachplattennahtkante (47) erstrecken.
2. Befestigungsschelle nach Anspruch 1, welcher Eingriff (35) von Gleitfalten durch dazugehörige Doppelfalten (19, 34) gebildet ist, und welche Nahthaltereingriffsflasche (22) zur Basisplatte (16) hin derart gefaltet ist, dass die Basisplatte (16) gegen ein Auslösen des Eingriffs (35) von Gleitfalten in einer Richtung quer zur Gleitachse (A) blockiert.
3. Befestigungsschelle nach einem der vorhergehenden Ansprüche, welche Nahthaltereingriffsflasche (22) von den zumindest beiden Trägerlaschen (24, 26) flankiert ist.

4. Befestigungsschelle nach einem der vorhergehenden Ansprüche, zusätzlich umfassend Nägel (124, 126; 224, 226), die sich unter der Basisplatte (16) zum Eindringen in die zusammendrückbare Schicht (40) erstrecken.
5. Befestigungsschelle nach einem der vorhergehenden Ansprüche, welche Basisplatte (16) mit einer einzelnen Durchgangsbohrung (20) zur Aufnahme eines Befestigungsmittels (41) zur Befestigung an der Trägerstruktur (38) versehen ist.

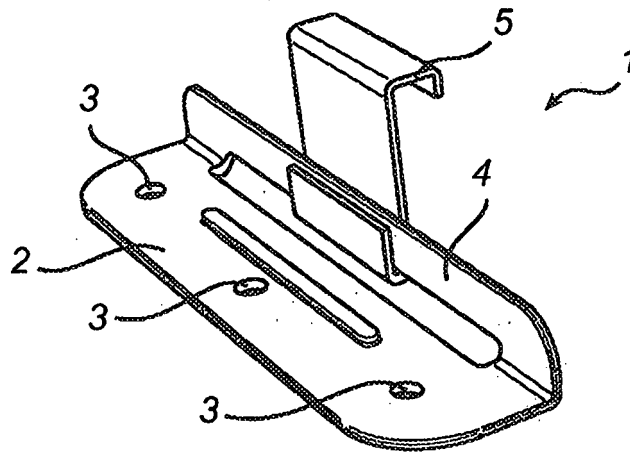
Revendications

1. Bride de montage (10; 110; 210) pour fixer de manière coulissante une couture de panneaux de toiture métallique (42) à une structure de support (38) à travers une couche compressible (40), la bride de montage (10; 110; 210) comprenant un élément d'ancrage en tôle (12) comprenant une plaque de base (16) pour la fixation à ladite structure de support (38), et une partie verticale (18) solidaire de la plaque de base (16); et un support de couture (14) ayant une extrémité de maintien de couture (30) pour venir en prise avec ladite couture (42), le support de couture (14) étant relié de manière coulissante à la partie verticale (18) de l'élément d'ancrage (12) de manière à permettre le coulisement du support de couture (14) par rapport à l'élément d'ancrage (12) le long d'un axe de coulisement (A), la partie verticale (18) de l'élément d'ancrage (12) comprenant au moins une patte de mise en prise du support de couture (22) présentant un pli (19) formant, avec un pli de raccordement (34) du support de couture (14), une prise de plis coulissants (35); et l'élément d'ancrage (12) comprenant au moins deux pattes de support axialement séparées (24, 26) s'étendant au-delà de l'étendue verticale de la patte de mise en prise du support de couture (22), **caractérisée en ce que** les pattes de support (24, 26) sont configurées pour supporter l'élément d'ancrage (12) dans une direction d'arrêt (S), qui est parallèle au plan de la structure de support (38) et transversale à l'axe de coulisement (A), de manière à maintenir la bride de montage (10; 110; 210) alignée avec la couture de panneau de toiture (42), lesdites pattes de support (24, 26) s'étendant au-delà de l'étendue verticale de la patte de mise en prise du support de couture (22) le long d'un plan transversal à la direction d'arrêt (S), et lesdites pattes de support (24, 26) s'étendent au-dessus de la patte de mise en prise du support de couture (22) pour venir en butée contre une partie verticale (48) d'un bord de couture de panneau de toiture (47).

2. Bride de montage selon la revendication 1, ladite

prise de plis coulissants (35) étant formée par l'accouplement de doubles plis (19, 34), et la patte de mise en prise du support de couture (22) étant repliée en direction de ladite plaque de base (16) d'une telle manière que la plaque de base (16) bloque la prise de plis coulissants (35) de se dégager dans une direction transversale à l'axe de coulisement (A).

3. Bride de montage selon l'une quelconque des revendications précédentes, ladite patte de mise en prise du support de couture (22) étant flanquée par lesdites au moins deux pattes de support (24, 26).
4. Bride de montage selon l'une quelconque des revendications précédentes, comprenant en outre des pointes (124, 126; 224, 226) s'étendant au-dessous de la plaque de base (16) pour pénétrer dans la couche compressible (40).
5. Bride de montage selon l'une quelconque des revendications précédentes, ladite plaque de base (16) étant munie d'un trou traversant unique (20) destiné à recevoir un élément de fixation (41) pour la fixation à la structure de support (38).



(Prior art) **Fig. 1**

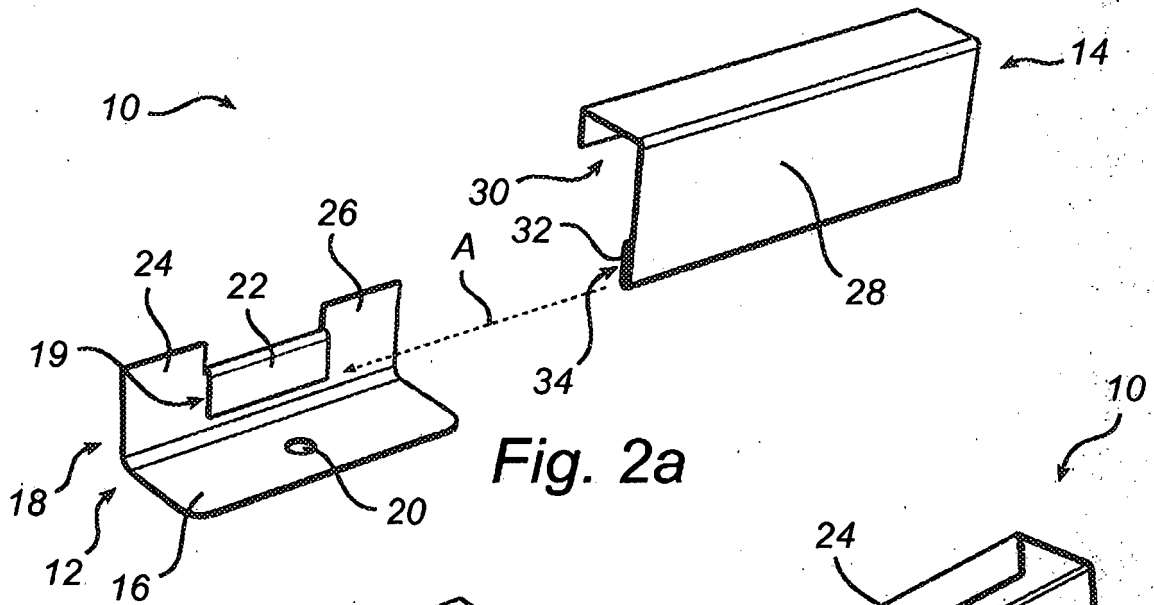


Fig. 2a

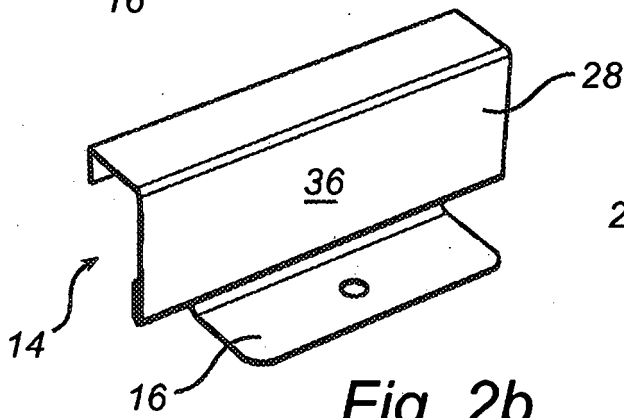


Fig. 2b

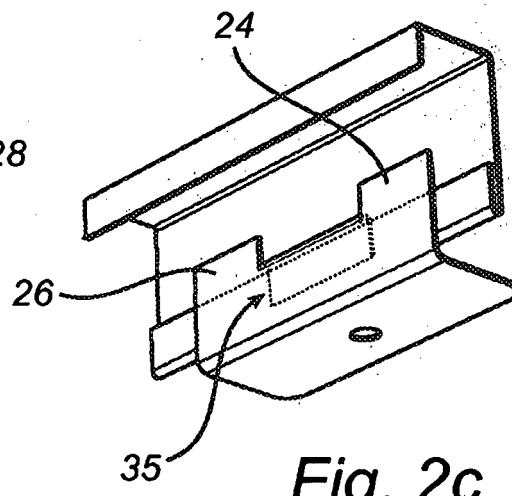


Fig. 2c

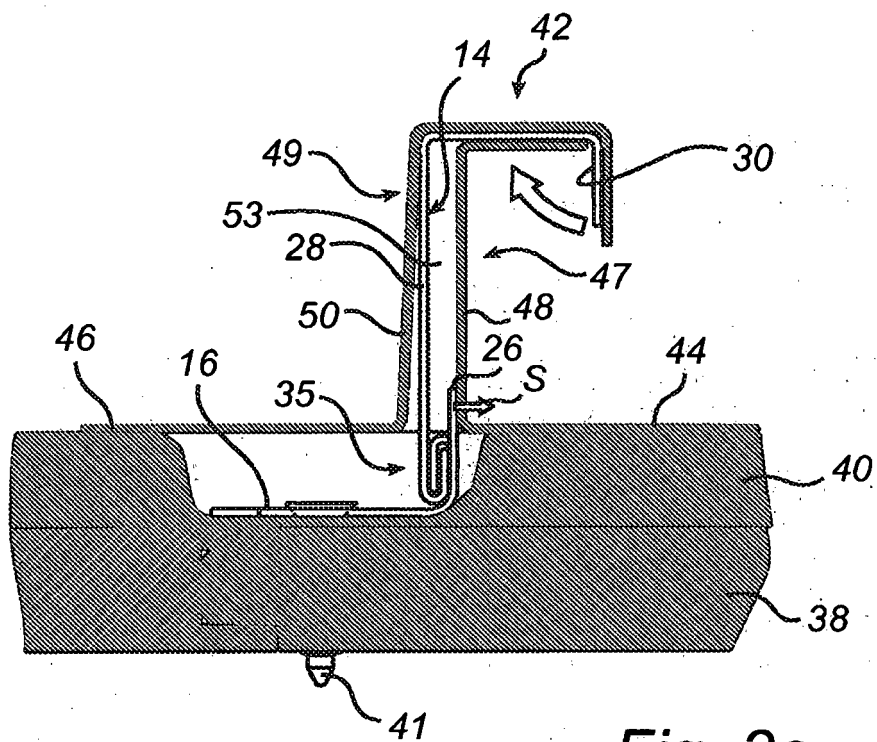


Fig. 3a

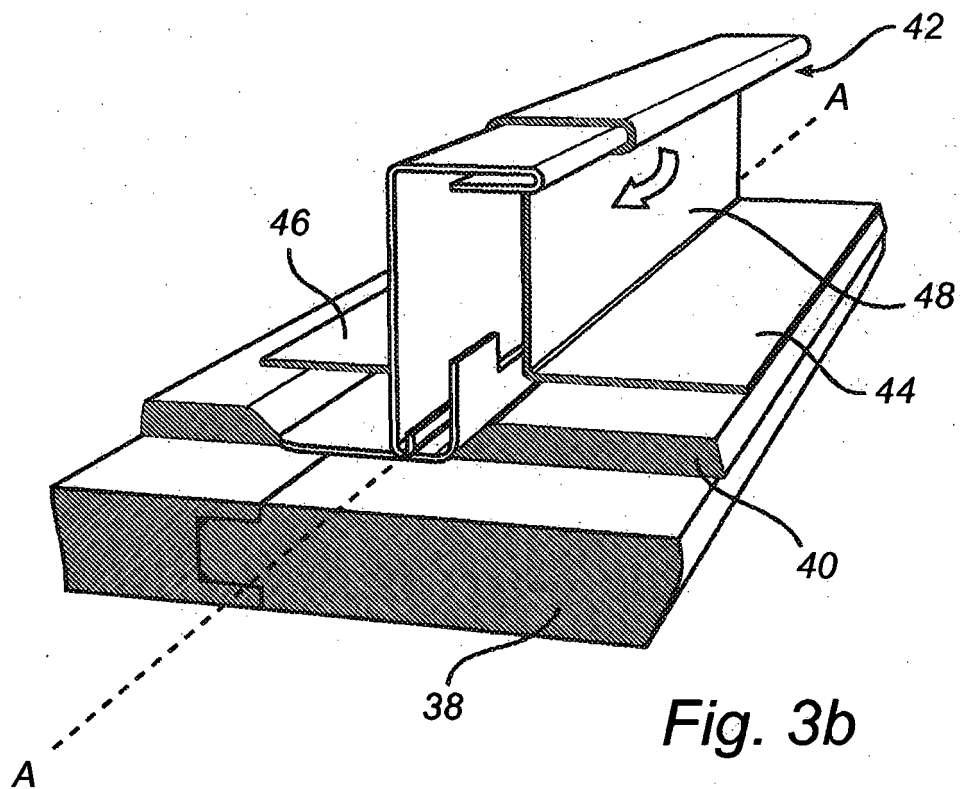
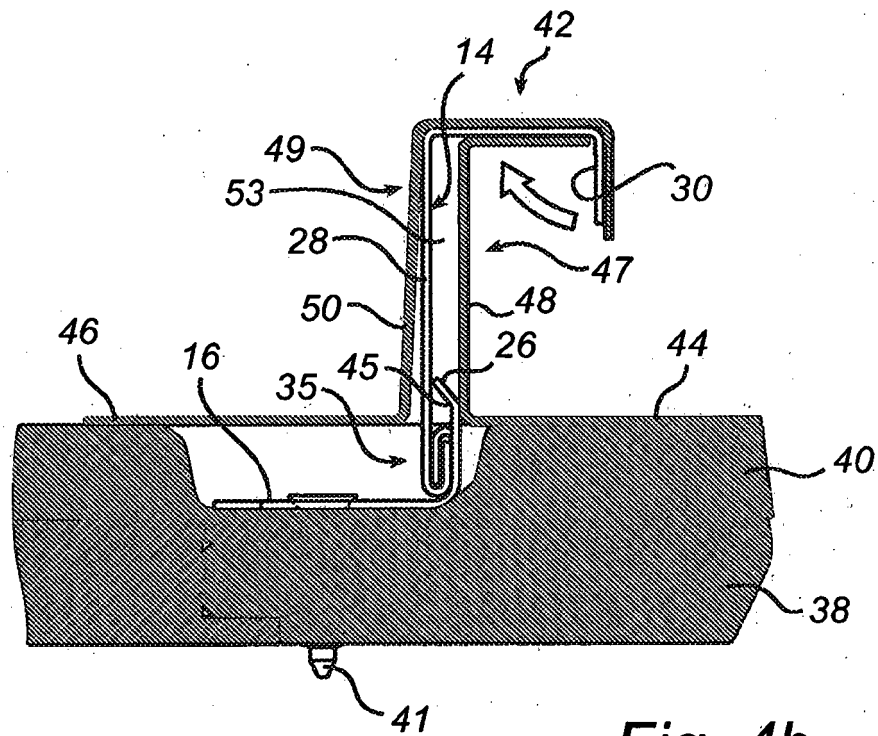
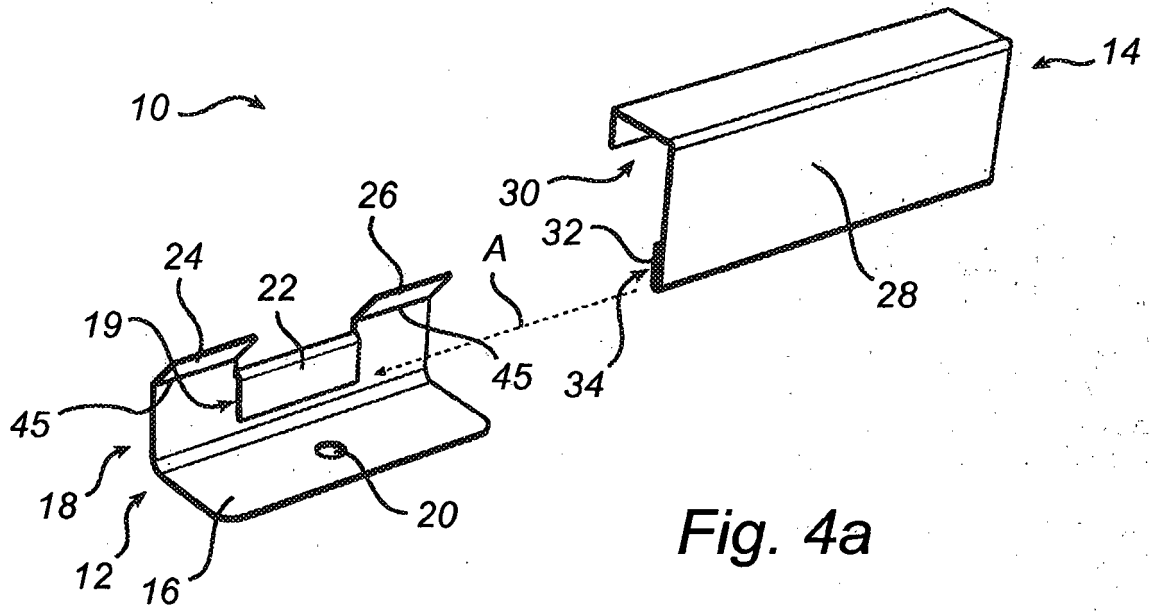
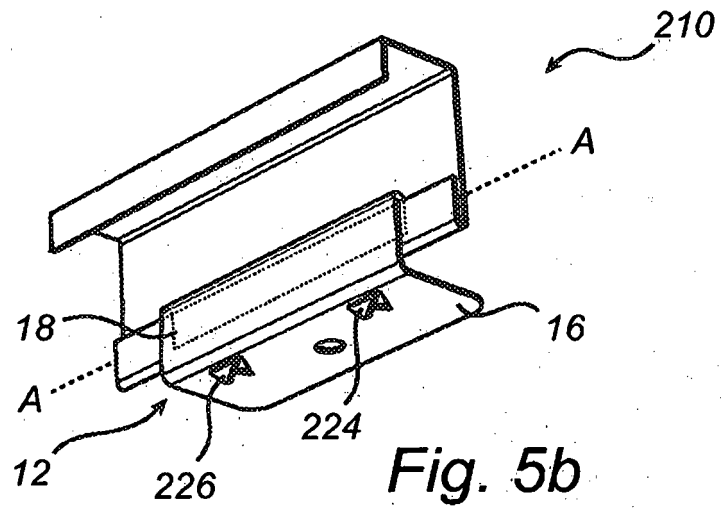
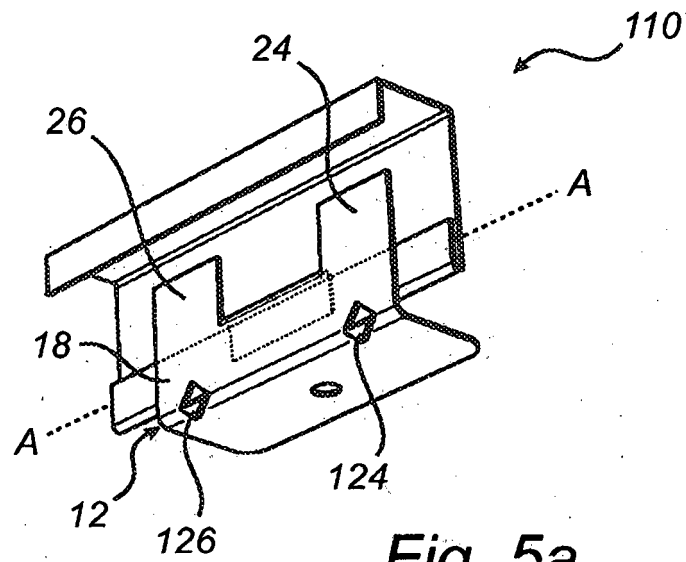


Fig. 3b





REFERENCES CITED IN THE DESCRIPTION

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