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(54) **SHEET FLASHING MEMBER AND A FLASHING KIT**

DICHTUNGSSTREIFEN UND DICHTUNGSSET

ELEMENT DE NOQUET EN TOLE ET KIT DE NOQUETS

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EP 1 521 888 B1

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Description

[0001] The present invention relates to a sheet flashing member for a roof penetrating structure, comprising a first flange intended to be arranged at least partially in proximity with and substantially in parallel with the roof surface in a mounted position of the sheet flashing member, a second flange intended to be arranged against the roof penetrating structure in said mounted position, said first flange having a first edge portion and a second edge portion, said second edge portion forming the connecting line with said second flange. The invention furthermore relates to a kit of sheet flashing members.

[0002] When flashing roof penetrating building structures, for example chimneys or fame structures for roof windows, in order to protect them from the weather and to provide a seal between the structure itself and the roof, it is common to use flashing covers of sheet metal, for instance aluminium, copper, steel or zinc. Conventionally, such flashing covers have been manufactured by ordinary tin man work from a plane sheet material which is profiled and formed to make a fit at the desired location.

[0003] The comparatively costly adjustment and assembly work on location, which is required when using this conventional craftsmanship, may be avoided by use of pre-manufactured flashing members. When these flashing members are used with, for example, a standard window type mounted in a given roof surface, it is possible to use the same "standard" flashing members regardless of, for example, the slope of an inclined roof surface.

[0004] Typically, a flashing assembly adapted to be used between, for example, a roof window and a sloping roof surface comprises upper and lower flashing members adapted to be mounted in a horizontal position between the upper and lower frame portions of the window and the roof surface, respectively, as well as first and second side flashing members adapted to be mounted in a sloping position between the two side frame portions of the window and the roof surface, respectively. Such a flashing assembly further comprises corner segments adapted to provide a seal between the side flashings and the upper and lower flashings, such corner segments often being integrated in either the upper and lower flashing members or the side flashing members.

[0005] To prevent water from entering under the roof surface, side flashing members are normally formed as gutter-like members with a first flange adapted to be mounted on the window frame and a second flange adapted to be mounted under the roof covering. When the side flashing member is mounted with a slope, the gutter then directs the water downwards.

[0006] However, some type of flashing members are not "standard" as they are dependent upon, for example, whether a single window is mounted in a roof surface or two or more windows are mounted in neighbouring relationship. In this case special flashing members are used to provide a seal between two neighbouring windows, which may be either entire flashing members adapted to

span the width between two windows, side flashing members which are adapted to be connected directly to each other, or it may be additional flashing members which are adapted to create a seal between two neighbouring side flashing members.

[0007] DK-B 154 099 discloses an arrangement comprising a flashing element specifically adapted for connecting two neighbouring side flashing members. The connecting flashing element allows two flashing elements with substantially the same profile to be connected, such that substantially identical first and second side flashing members can be used for a given flashing assembly. However, this arrangement is not standardized, as the connecting flashing element must be produced and stored in different dimensions according to the distance between juxtaposed windows. Furthermore, the provision of an extra element increases the overall costs of the flashing arrangement and complicates the mounting.

[0008] WO 94/00655 discloses a flashing arrangement, in which the flashing elements at the top and side members of the window frame are made of profiles of an elastically deformable material. Each profile has a substantially U-shaped cross-section including a bottom face bordered by one side flange to be arranged against the window frame member and another side flange that is placed in sealing abutment with the underside of the surrounding roofing. In closely spaced neighbouring windows it is possible to adapt the adjacent flashing elements, in that the other side flange of each flashing element is cut off and the flashing elements are subsequently connected with each other by inserting the remaining part of the bottom face of one flashing element under a coupling flange on the other flashing element. Although the elastic deformability of the flashing elements makes it possible to wrap the flashing elements up over the window frame structure during packing and shipping, and furthermore to provide a good sealing abutment with the underside of the roofing, such flashing elements are not suitable for all installation purposes. For instance, such elastically deformable flashings that are made from e.g. rubber or thermoplastic elastomers are more vulnerable to extreme weather, e.g. very large temperature differences and strong wind, as there is a possible risk that the flashing is brought to flutter.

[0009] With this background it is an object of the present invention to provide a sheet flashing member, which provides for a standardized and cost-optimised production, which may easily be adapted to different installation situations and in which the risk of incorrect mounting and insufficient sealing between the roof penetrating structure and the surrounding roofing is substantially reduced.

[0010] This and further objects are met by the provision of a sheet flashing member of the kind mentioned in the introduction, which is furthermore **characterized in that** said sheet flashing member comprises a substantially inelastic material, and that said first flange includes at

least one detachment indication between the first and second edge portions, such that the part of the first flange between the indication and the first edge portion may be detached from the remaining part of the flashing member.

[0011] By providing the flange with such an indication, one and the same sheet flashing member may be used regardless of whether it is to be used in connection with a single roof penetrating structure or roof penetrating structures installed side-by-side. The sheet flashing member may be adapted to the installation situation without any risk of cutting the flange at an inappropriate place thus possibly making the entire flashing member completely unusable, as the width of the flange is not sufficient.

[0012] Each indication may be a visual indication in the shape of at least one longitudinally extending line or a longitudinally extending row of dots, short sections etc. This provides for a good guidance to the installer that is able to follow the indication during the cutting or shearing of the flange. Furthermore, such a visual indication does not at all affect the performance of the flashing member during the mounting or in the mounted position.

[0013] The indication may also comprise at least one 'weakening section'. By this embodiment, the shearing or cutting is facilitated, and it may even be possible for the installer by hand-force only to fold the flange back and forth around the weakening section in order to detach the part lying beyond the indication, i.e. separating the flashing member into two pieces, one of which is intended to be used in the flashing assembly, whereas the other one may be discarded or used for other purposes.

[0014] Each such weakening section may be formed as a notch having a depth not exceeding a major part of the thickness of the first flange. This provides for a particularly easy production.

[0015] A structure including one or more notches may be provided, which notches can in turn be placed either above each other or slightly displaced in relation to each other in one side of the flange, or the underside and the upper side of the first flange may both be provided with notches.

[0016] Each weakening section may comprise a longitudinally extending cord member accommodated in the first flange. Although the sheet flashing member of this embodiment is somewhat more complicated to produce, it is particularly easy to adapt to the appropriate installation situation by a simple pull in the cord member.

[0017] Preferably, the cord member is embossed into the underside or the upper side of the first flange.

[0018] The indication or indications may extend substantially in parallel with the second edge portion of the first flange.

[0019] Engagement means may be provided in order to secure a reliable and easily achieved connection with adjacent sheet flashing members.

[0020] These engagement means may comprise an upstanding flange section at the first edge portion of the first flange, and preferably an upstanding rib structure at

a position between the first and second edge portion, which' provides for a particularly easy mounting of adjacent sheet members.

[0021] The engagement means may comprise a protruding flange section extending at an angle with respect to said upstanding flange section in the direction towards the second flange of the sheet flashing member, and the second flange may be provided with a hollow rib structure.

[0022] In another aspect of the invention, a flashing kit comprising two sheet flashing members is provided. The kit is **characterized in that** a first sheet flashing member is intended to be arranged against a side member of the roof penetrating structure, and a second sheet flashing member is intended to be arranged against an opposite side member of the same roof penetrating structure, or against the adjacent side member of a neighbouring roof penetrating structure.

[0023] Thus, the roof penetrating structure may be built-in as a single unit and other roof penetrating structures may subsequently or at the same time be built-in adjacent the first roof penetrating structure, without the need for replacing the flashing of the first structure with a specially designed flashing system. This entails, i.e., that the decision of whether or not to build e.g. two adjacent roof penetrating structures in a roof does not have to be taken at the moment of investing in a single unit, as further units may be built-in subsequently at a later stage, i.e. totally independently of the first unit.

[0024] The first and second sheet flashing members may be substantially symmetrical to each other.

[0025] Alternatively, the first and second sheet flashing members may be substantially asymmetrical with respect to each other. In particular, the asymmetry may consist in that the first flange of the first sheet flashing member has a different configuration than the first flange of the second sheet flashing member.

[0026] In the case, in which the flashing kit comprises two sheet flashing members each having an upstanding rib structure at a position between the first and second edge portion, the upstanding rib structure of the first sheet flashing member may have a larger width and height than the upstanding rib structure of the second sheet flashing member.

[0027] Further details and advantages connected with the present invention will readily appear from the following description of a number of preferred embodiments.

[0028] In the following the invention will be described in further detail with reference to the schematic drawings, in which

Fig. 1 shows a perspective view of a flashing member according to a first embodiment of the invention, Fig. 2 shows a perspective view of another flashing member according to a first embodiment of the invention, Fig. 3 shows a side view of the flashing members of Figs. 1 and 2 in an installation position,

Fig. 4 shows a perspective view of a flashing member according to a second embodiment of the invention, Fig. 5 shows a perspective view of another flashing member according to a second embodiment of the invention,

Fig. 6 shows a side view of the flashing members of Figs. 4 and 5 in an installation position,

Fig. 7 shows a perspective view of a flashing member according to a third embodiment of the invention,

Fig. 8 shows a perspective view of another flashing member according to a third embodiment of the invention,

Fig. 9 shows a side view of the flashing members of Figs. 7 and 8 in an installation position,

Fig. 10 shows a perspective view of a flashing member according to a fourth embodiment of the invention,

Fig. 11 shows a perspective view of another flashing member according to a fourth embodiment of the invention,

Figs. 12 to 14 show side views of the flashing members of Figs. 10 and 11 in three different installation positions,

Fig. 15 shows a perspective view of a flashing member according to a fifth embodiment of the invention, Fig. 16 shows a perspective view of another flashing member according to a fifth embodiment of the invention,

Figs. 17 to 21 show side views of the flashing members of Figs. 15 and 16 in five different installation positions,

Fig. 22 shows a perspective view of a flashing member according to a sixth embodiment of the invention,

Fig. 23 shows a perspective view of another flashing member according to a sixth embodiment of the invention,

Fig. 24 shows a side view of the flashing members of Figs. 22 and 23 in an installation position,

Figs. 25 to 29 show partial perspective views at a larger scale of a flashing member according to further embodiments of the invention, and

Figs. 30 to 32 show perspective views of three different configurations of different roof penetrating structures.

[0029] The sheet flashing member shown in Fig. 1 and generally designated 1 comprises a first flange 2 to be arranged in proximity with and substantially in parallel with the roof surface and a second flange 3 to be arranged against the roof penetrating structure. In this respect it is noted that the term 'parallel' is intended to embrace some deviations from the exact angle value. The first flange 2 is delimited by a first edge portion 4 and a second edge portion 5, the second edge portion 5 forming the connecting line with the second flange 3. The sheet flashing member 1 comprises any substantially inelastic material that is suitable for roof flashing purposes, a typical example being sheet metal. The flashing member may be

manufactured from any material other than metal, having substantially the same technical properties, examples being hard PVC, reinforced resin, composite materials etc.

[0030] The sheet flashing member 1 may form part of a kit of flashing members comprising two such members, of which the other sheet flashing member 11 is shown in Fig. 2. The two sheet flashing members 1 and 11 may be substantially symmetrical as suggested in Figs. 1 and 2, but may as well have mutually different configuration, in particular with respect to the design of the first flange. The kit may furthermore form part of an entire flashing system that may be provided separately or in connection with a roof penetrating structure such as a roof window. The sheet flashing members of one kit may be used when flashing a single roof penetrating structure or in connection with neighbouring roof penetrating structures such as roof window built-in side by side.

[0031] In the case in which two such roof windows are built-in, the sheet flashing members 1 and 11 are adapted, if necessary, and connected with e.g. the adjacent side members of the two neighbouring windows. In order to enable such an adaptation, the first flange 2, 12 is provided with a detachment indication 6, 16. The detachment indication 6, 16 may be a solely visual indication such as the shown longitudinally extending line, or a row of dots, short line sections etc. As will be described in detail in the following, such an indication may also comprise a weakening section. Likewise, it is possible to have more than one detachment indication on each first flange, thus providing for an even broader range of installation situations.

[0032] In the installation situation shown in Fig. 3, the sheet flashing member 11 has been adapted by cutting, shearing or in any other suitable manner along the indication 16 and subsequently removing the part of the sheet flashing member 11 that is situated between the indication 16 and the first edge portion 14. The flashing members 1 and 11 may be connected with each other by using traditional sealing techniques such as e.g. by applying an adhesive sealing strip to the first flange 2 of the lower sheet flashing member 1 before installing the upper sheet flashing member 11.

[0033] In the embodiment shown in Fig. 4, the sheet flashing member 21 comprises engagement means in the form of an upstanding flange section 27 formed at the first edge portion 24 of the first flange 22. The sheet flashing member 31 shown in Fig. 5 has, as suggested, a different configuration than the sheet flashing member 21 in that the first flange 32 has a larger extent in the width direction than the corresponding first flange 22. In an installation situation, in which the sheet flashing member 21 is already mounted on a roof penetrating structure, the sheet flashing member 31 may be adapted as described in the above by cutting etc. along the indication 36. In the position shown in Fig. 6, the upstanding flange section 27 of the lower sheet flashing member 21 may be connected with the outer side of the second flange 33

of the upper sheet flashing member 31, in addition to or as an alternative to the sealing means described in connection with Fig. 3.

[0034] In the embodiment shown in Fig. 7 the engagement means comprise, in addition to the upstanding flange section 47 a protruding flange section 47a extending at an angle with respect to, in the embodiment shown at substantially right angles to, the upstanding flange section 47 in the direction towards the second flange 43 of the sheet flashing member 41. The second flange 43 is provided with a hollow rib structure 48 that is open towards the outer side of the second flange 43. The sheet flashing member 51 of Fig. 8 is formed in substantially the same manner, and in the installation situation shown in Fig. 9, the sheet flashing member 51 has been adapted by cutting etc. along the indication 56. As is readily apparent from Fig. 9, the protruding flange section 47a is brought into engagement with the hollow rib structure 58 of the sheet flashing member 51.

[0035] In the embodiment of Fig. 10, the sheet flashing member 61 comprises further engagement means in the form of an upstanding rib structure 69 at a position between the first and second edge portions 64 and 65, in addition to the upstanding flange section 67. Furthermore, the sheet flashing member 61 according to this embodiment is provided with two detachment indications, viz. one indication 66a situated between the upstanding rib structure 69 and the second edge portion 65 and one indication 66b situated between the upstanding rib structure 69 and the first edge portion 64. The sheet flashing member 71 shown in Fig. 11 has a different configuration in that the upstanding rib structure 79 has a larger width and height than the upstanding rib structure 69 of the sheet flashing member 61 shown in Fig. 10.

[0036] The sheet flashing members 61 and 71 may be mounted in a number of different installation positions, examples being shown in Figs. 12 to 14.

[0037] In the position shown in Fig. 12, the sheet flashing member 61 has been adapted by cutting along the indication 66b and has subsequently been placed on top of the sheet flashing member 71 such that the upstanding flange section 77 engages with the upstanding rib structure 69.

[0038] In the position shown in Fig. 13, the sheet flashing member 61 has been cut along the indication 66b as described in the above and the sheet flashing member 71 along the line 76b. Due to the fact that the dimensions of the upstanding rib structure 79 are somewhat larger than those of the upstanding rib structure 69, it is possible to press the upper sheet flashing member 71 into engagement with the lower sheet flashing member 61.

[0039] In the position shown in Fig. 14, the sheet flashing member 61 shown in Fig. 10 is cut along the indication 66a, and is subsequently positioned on top of the sheet flashing member 71. The distance between the second edge portion 65 and the indication 66a may advantageously substantially correspond to the distance between the upstanding flange portion 77 and the upstand-

ing rib structure 79 such that a secure engagement is ensured.

[0040] In the embodiment of Fig. 15, the sheet flashing member 161 comprises engagement means in the form of two upstanding rib structures 169a, 169b at positions between the first and second edge portions 164 and 165, and a protruding hollow rib structure 161a and 161b on the second flange 163 and the first upstanding rib structure 169a, respectively, in addition to the upstanding flange section 167. Furthermore, the sheet flashing member 161 according to this embodiment is provided with two detachment indications, viz. one indication 166a situated at the top of the first upstanding rib structure 169a and one indication 166b situated between at the top of the second upstanding rib structure 169b. The sheet flashing member 171 shown in Fig. 16 has a different configuration in that the upstanding rib structures 179a, 179b each has a larger width and height than the upstanding rib structures 169a, 169b of the sheet flashing member 161 shown in Fig. 15.

[0041] The sheet flashing members 161 and 171 may be mounted in a number of different installation positions, examples being shown in Figs. 17 to 21.

[0042] In the positions shown in Figs. 17 and 18, the sheet flashing member 171 is positioned on top of the sheet flashing member 161. In these installation situations, the roof penetrating structures are positioned at extraordinarily large distances from each other, and the flashing members 161 and 171 are not adapted by cutting or shearing along the detachment indications.

[0043] In the position shown in Fig. 19, the sheet flashing member 171 has been adapted by cutting along the indication 176b and has subsequently been placed on top of the sheet flashing member 161 such that the remaining portion of the upstanding flange section 179b engages with the hollow rib structure 161b of the upstanding rib structure 169a, and the upstanding rib structure 179a is placed on top of upstanding rib structure 169b.

[0044] In the position shown in Fig. 20, the sheet flashing member 161 shown in Fig. 15 is cut along the indication 166a, and the sheet flashing member 171 is cut along the indication 176a. The sheet flashing member 171 is subsequently positioned on top of the sheet flashing member 161.

[0045] In the position shown in Fig. 21, the sheet flashing member 161 shown in Fig. 15 is cut along the indication 166b, and the sheet flashing member 171 is cut along the indication 176b. The sheet flashing member 171 is subsequently positioned on top of the sheet flashing member 161.

[0046] In an alternative embodiment of the sheet flashing member according to the invention and shown in Fig. 22, the first flange 182 of the sheet flashing member 181 extends obliquely from the edge portion 185 to the edge portion 184, the edge portion 184 being positioned substantially in parallel with the roof surface in the mounted position of the sheet flashing member. The first flange

182 comprises a flange 187 and an upstanding rib structure 189, a detachment indication 186a being formed at the rib structure 189. The sheet flashing member 191 of Fig. 23 is designed in substantially the same manner.

[0047] In the position shown in Fig. 24, the second flange 183 of the sheet flashing member 181 is arranged against a piece 201 of a roof penetrating structure. The second flange 193 of the sheet flashing member 191 is arranged against a piece 202 of another roof penetrating structure. The first flanges 182, 192 of the sheet flashing members 181, 191 have been cut along the respective detachment indications 186a, 196a and subsequently, the first flanges have been brought into contact with each other to attain a substantially sealed connection by means of any suitable means.

[0048] Sealing means may comprise sealing strips, e.g. of a compressible material, optionally with a possibility of reducing the height of such a sealing strip. Examples of compressible materials are soft foam materials of polyurethane, polystyrene etc. Of course, sealing materials which incorporate adhesive properties such as bitumen or like materials may be used.

[0049] In the following, different designs of the detachment indication will be described in connection with Figs. 25 to 29.

[0050] In order to facilitate the cutting or shearing operation when adapting one or both of the sheet flashing members, it may be advantageous to provide one or some of the indications with a weakening section.

[0051] In the embodiment shown in Fig. 25 such a weakening section is formed as a notch 86. In order not to weaken the first flange 82 of sheet flashing member to a larger extent than is necessary, the notch 86 may have a depth not exceeding a major part of the thickness of the first flange 82.

[0052] The weakening section may be formed as a continuous section as described in Fig. 25, but may alternatively comprise a plurality of recessed sections 96 as shown in Fig. 26.

[0053] In the embodiment of Fig. 27, the underside and the upper side of the first flange 102 are both provided with a notch 106a and 106b.

[0054] In the embodiment of Fig. 28, a weakening section is provided in the form of a longitudinally extending cord member 116 accommodated in the first flange 112. This corresponds in substance to the principle used in connection with e.g. cans for food, biscuit packages etc. As described in the above in connection with the embodiment of Figs. 10 to 12, there may be one or more cord members in different distances from the second flange 113. The cord member 116 may as shown be embossed into the underside of the first flange 112 of the sheet flashing member 111 during manufacture of the sheet flashing member 111. The cord member may be formed from a different material than the flashing member in order to achieve extra strength, or may be formed by the same material as the sheet flashing member.

[0055] In the embodiment of Fig. 29, the indication 126

comprises a weakening section having a first portion in the form of a substantially circular gripping tab 126a and a longitudinally extending portion 126b. In case the sheet flashing member 121 is to be adapted in order to conform to the installation situation, the gripping tab 126a is pressed out from the remaining part of the first flange 112. By pulling the gripping tab 126a in the direction of the longitudinally extending portion 126b, the part of the sheet flashing member 121 to the right of the indication 126 may be detached from the remaining part.

[0056] In Figs. 30 to 32, different configurations of roof penetrating structures are shown diagrammatically.

[0057] In Fig. 30, a single roof penetrating structure 301 is built-in. The roof penetrating structure 301 may be sealed with respect to the surrounding roofing (not shown) by a kit of sheet flashing members generally designated 401, 411, 421, 423 substantially corresponding to the embodiments shown and described in the above. Alternatively, only sheet flashing members 401, 411 of the kind defined by the invention may be used, e.g. for the side pieces of the roof penetrating structure, whereas the other pieces of the structure may be flashed by means of other kinds of flashing members.

[0058] Fig. 31 illustrates a situation, in which a kit of flashing members comprising e.g. sheet flashing members 401 and 411 are used for flashing adjacent pieces of neighbouring roof penetrating structures.

[0059] The shape of the roof penetrating structure is not critical. As suggested in Fig. 32, the sheet flashing member according to the invention may be used as flashing members between substantially triangular roof penetrating structure. Other geometrical shapes are of course conceivable.

[0060] The invention should not be regarded as being limited to the embodiment described in the above but various modifications of and combinations between the various embodiments may be carried out without departing from the scope of the following claims.

[0061] For instance, the sheet flashing member and the kit according to the invention may be used in connection with a variety of roof penetrating structures. In addition to the roof windows already mentioned, other structure may comprise solar panels, skylights, roof access hatches etc.

Claims

1. A sheet flashing member (1;11;21;31;41;51;61;71;81; 91;101;111;121;161;171;181;191) for a roof penetrating structure, comprising a first flange (2;12;22;32;82;92;102;112;122;182; 192) intended to be arranged at least partially in proximity with and substantially in parallel with the roof surface in a mounted position of the sheet flashing member, a second flange (3;13;23;33;43;63;113;183;193) intended to be arranged against the roof penetrating

structure in said mounted position,
said first flange having a first edge portion (4;14;24;
64;164;184) and a second edge portion (5;25;65;
165;185), said second edge portion forming the con-
necting line with said second flange,

characterized in that

said sheet flashing member comprises a substan-
tially inelastic material, and that said first flange (2;
12;22;32; 82;92;102;112;122;182;192) includes at
least one detachment indication (6;16;26;36;56;66a
66b;76a,76b;86;96;106a,106b; 116;126,126a,
126b;166a,166b;176a,176b;186a;196a) between
the first (4;14;24;64;164;184) and second (5;25;65;
165;185) edge portions, such that the part of the first
flange between the indication and the first edge por-
tion may be detached from the remaining part of the
flashing member.

2. A sheet flashing member as claimed in claim 1, in
which said at least one indication is a visual indication
in the shape of at least one longitudinally extending
line or a longitudinally extending row of dots, short
sections etc.
3. A sheet flashing member as claimed in claim 1, in
which said at least one indication comprises at least
one weakening section (86;96;106a;106b;116;
126a,126b).
4. A sheet flashing member as claimed in claim 3, in
which each weakening section is formed as a notch
(86;106a,106b) having a depth not exceeding a ma-
jor part of the thickness of the first flange.
5. A sheet flashing member as claimed in claim 4, in
which the underside and the upper side of the first
flange (102) are both provided with at least one notch
(106a,106b).
6. A sheet flashing member as claimed in claim 3, in
which the at least one wakening section comprises
a longitudinally extending cord member (116) ac-
commodated in the first flange (112).
7. A sheet flashing member as claimed in claim 6, in
which the cord member (116) is embossed into the
underside or the upper side of the first flange (112).
8. A sheet flashing member as claimed in any one of
the preceding claims, in which said at least one in-
dication (6;16;26;36;56;66a,66b;76a,76b;86;96;
106a,106b;116;126,126a, 126b;166a,166b;176a,
176b;186a;196a) extends substantially in parallel
with the second edge portion (5;25;65;165;185) of
the first flange (2;12;22;32;82;92;102;112;122;182;
192).
9. A sheet flashing member as claimed in any of the

preceding claims, in which engagement means are
provided.

10. A sheet flashing member as claimed in claim 9, in
which said engagement means comprise an up-
standing flange section (27;37;47;67;77;167;177;
187;197) at the first edge portion of the first flange.
11. A sheet flashing member as claimed in claim 10, in
which said engagement means comprises at least
one upstanding rib structure (69;79;169a,169b;
179a,179b;189;199) at a position between the first
and second edge portion.
12. A sheet flashing member as claimed in claim 10, in
which said engagement means comprise a protrud-
ing flange section (47a) extending at an angle with
respect to said upstanding flange section (47) in the
direction towards the second flange (43) of the sheet
flashing member (41;51), and in which the second
flange (43) is provided with at least one hollow rib
structure (48;58).
13. A sheet flashing member as claimed in any one of
the preceding claims, in which the first flange (182;
192) of the sheet flashing member (181;191) extends
obliquely from the first edge portion (184) to the sec-
ond edge portion (185), the first edge portion being
positioned substantially in parallel with the roof sur-
face in the mounted position of
the sheet flashing member.
14. A flashing kit comprising at least two sheet flashing
members as claimed in any of claims 1 to 13, **char-
acterized in that** a first sheet flashing member (11;
31;51;71;171;191) is intended to be arranged
against a first member of the roof penetrating struc-
ture, and a second sheet flashing member (1;21;41;
51;161;181) is intended to be arranged against a
second member of the same roof penetrating struc-
ture, or against an adjacent member of a neighbour-
ing roof penetrating structure.
15. A flashing kit as claimed in claim 14, in which said
first and second sheet flashing members (1;11;41;
51; 181;191) are substantially symmetrical to each
other.
16. A flashing kit as claimed in claim 14, in which said
first and second sheet flashing members (21;31;61;
71; 161;171) are substantially asymmetrical with re-
spect to each other.
17. A flashing kit as claimed in claim 16, in which the
first flange (22) of the first sheet flashing member
(31;71;171) has a different configuration than the first
flange (32) of the second sheet flashing member (21;
61;161).

18. A flashing kit as claimed in claim 16 and comprising two sheet flashing members as claimed in claim 11, in which said at least one upstanding rib structure (79;179a,179b) of the first sheet flashing member (71;171) has a larger width and height than the corresponding at least one upstanding rib structure (69; 169a,169b) of the second sheet flashing member (61;161).

Patentansprüche

1. Flächenförmiges Eindeckungselement (1; 11; 21; 31; 41; 51; 61; 71; 81; 91; 101; 111; 121; 161; 171; 181; 191) für einen das Dach durchdringenden Aufbau mit einem ersten Flansch (2; 12; 22; 32; 82; 92; 102; 112; 122; 182; 192), der vorgesehen ist, in einer montierten Stellung des flächenförmiges Eindeckungselements mindestens teilweise in der Umgebung der und im Wesentlichen parallel zu der Dachoberfläche angeordnet zu werden, einem zweiten Flansch (3; 13; 23; 33; 43; 63; 113; 183; 193), der vorgesehen ist, in der montierten Stellung an dem das Dach durchdringenden Aufbau angeordnet zu werden; wobei der erste Flansch einen ersten Kantenabschnitt (4; 14; 24; 64; 164; 184) und einen zweiten Kantenabschnitt (5; 25; 65; 165; 185) aufweist, wobei der zweite Kantenabschnitt die Verbindungslinie zu dem zweiten Flansch bildet, **dadurch gekennzeichnet, dass** das flächenförmiges Eindeckungselement ein im Wesentlichen inelastisches Material aufweist und dass der erste Flansch (2; 12; 22; 32; 82; 92; 102; 112; 122; 182; 192) mindestens eine Trennungsmarkierung (6; 16; 26; 36; 56; 66a, 66b; 76a, 76b; 86; 96; 106a, 106b; 116; 126, 126a, 126b; 166a, 166b; 176a, 176b; 186a; 196a) zwischen dem ersten (4; 14; 24; 64; 164; 184) und dem zweiten (5; 25; 65; 165; 185) Kantenabschnitt aufweist, so dass der Teil des ersten Flansches zwischen der Markierung und dem ersten Kantenabschnitt von dem übrigen Teil des Eindeckungselements getrennt werden kann.
2. Flächenförmiges Eindeckungselement nach Anspruch 1, wobei die mindestens eine Markierung eine sichtbare Markierung in Form von mindestens einer sich in Längsrichtung erstreckenden Linie oder einer sich in Längsrichtung erstreckenden Reihe von Punkten, kurzen Abschnitten etc. ist.
3. Flächenförmiges Eindeckungselement nach Anspruch 1, wobei die mindestens eine Markierung mindestens einen Schwächungsabschnitt (86; 96; 106a, 106b; 116; 126a, 126b) umfasst.
4. Flächenförmiges Eindeckungselement nach Anspruch 3, wobei jeder Schwächungsabschnitt als ei-

ne Aussparung (86; 106a, 106b) ausgebildet ist, die eine Tiefe aufweist, die einen Großteil der Dicke des ersten Flansches nicht überschreitet.

5. Flächenförmiges Eindeckungselement nach Anspruch 4, wobei die Unterseite und die Oberseite des ersten Flansches (102) beide mindestens eine Aussparung (106a, 106b) aufweisen.
6. Flächenförmiges Eindeckungselement nach Anspruch 3, wobei der mindestens eine Schwächungsabschnitt ein sich in Längsrichtung erstreckendes Schnurteil (116) umfasst, das in dem ersten Flansch (112) aufgenommen ist.
7. Flächenförmiges Eindeckungselement nach Anspruch 6, wobei das Schnurteil (116) in die Unterseite oder die Oberseite des ersten Flansches (112) eingepresst ist.
8. Flächenförmiges Eindeckungselement nach einem der vorhergehenden Ansprüche, wobei sich die mindestens eine Markierung (6; 16; 26; 36; 56; 66a, 66b; 76a, 76b; 86; 96; 106a, 106b; 116; 126, 126a, 126b; 166a, 166b; 176a, 176b; 186a; 196a) im Wesentlichen parallel zu dem zweiten Kantenabschnitt (5; 25; 65; 165; 185) des ersten Flansches (2; 12; 22; 32; 82; 92; 102; 112; 122; 182; 192) erstreckt.
9. Flächenförmiges Eindeckungselement nach einem der vorhergehenden Ansprüche, wobei Eingriffsmittel vorgesehen sind.
10. Flächenförmiges Eindeckungselement nach Anspruch 9, wobei die Eingriffsmittel einen aufrechten Flanschabschnitt (27; 37; 47; 67; 77; 167; 177; 187; 197) an dem ersten Kantenabschnitt des ersten Flansches umfassen.
11. Flächenförmiges Eindeckungselement nach Anspruch 10, wobei die Eingriffsmittel mindestens eine aufrechte Rippenstruktur (69; 79; 169a, 169b; 179a, 179b; 189; 199) an einer Position zwischen dem ersten und zweiten Kantenabschnitt umfassen.
12. Flächenförmiges Eindeckungselement nach Anspruch 10, wobei die Eingriffsmittel einen hervorstehenden Flanschabschnitt (47a) umfassen, der sich in einem Winkel in Bezug auf den aufrechten Flanschabschnitt (47) in Richtung zu dem zweiten Flansch (43) des flächenförmiges Eindeckungselements (41; 51) erstreckt, und wobei der zweite Flansch (43) mindestens eine hohle Rippenstruktur (48; 58) aufweist.
13. Flächenförmiges Eindeckungselement nach einem der vorhergehenden Ansprüche, wobei sich der erste Flansch (182; 192) des flächenförmiges Eindek-

kungselements (181; 191) schräg von dem ersten Kantenabschnitt (184) zu dem zweiten Kantenabschnitt (185) erstreckt, wobei in der montierten Stellung des flächenförmiges Eindeckungselements der erste Kantenabschnitt im Wesentlichen parallel zu der Dachoberfläche angeordnet ist.

14. Eindeckungssatz, der mindestens zwei flächenförmiges Eindeckungselemente nach einem der Ansprüche 1 bis 13 umfasst, **dadurch gekennzeichnet, dass** ein erstes flächenförmiges Eindeckungselement (11; 31; 51; 71; 171; 191) vorgesehen ist, an einem ersten Teil des das Dach durchdringenden Aufbaus angeordnet zu werden, und ein zweites flächenförmiges Eindeckungselement (1; 21; 41; 51; 161; 181) vorgesehen ist, an einem zweiten Teil desselben das Dach durchdringenden Aufbaus oder an einem angrenzenden Teil eines benachbarten das Dach durchdringenden Aufbaus angeordnet zu werden.
15. Eindeckungssatz nach Anspruch 14, wobei das erste und zweite flächenförmige Eindeckungselement (1; 11; 41; 51; 181; 191) im Wesentlichen symmetrisch zueinander sind.
16. Eindeckungssatz nach Anspruch 14, wobei das erste und zweite flächenförmige Eindeckungselement (21; 31; 61; 71; 161; 171) im Wesentlichen asymmetrisch in Bezug zueinander sind.
17. Eindeckungssatz nach Anspruch 16, wobei der erste Flansch (22) des ersten flächenförmiges Eindeckungselements (31; 71; 171) eine andere Gestaltung hat als der erste Flansch (32) des zweiten flächenförmiges Eindeckungselements (21; 61; 161).
18. Eindeckungssatz nach Anspruch 16, der zwei flächenförmige Eindeckungselemente nach Anspruch 11 umfasst, wobei die mindestens eine aufrechte Rippenstruktur (79; 179a, 179b) des ersten flächenförmiges Eindeckungselements (71; 171) eine größere Breite und Höhe hat als die entsprechende mindestens eine aufrechte Rippenstruktur (69; 169a, 169b) des zweiten flächenförmiges Eindeckungselements (61; 161).

Revendications

1. Élément de raccordement en tôle (1; 11; 21; 31; 41; 51; 61; 71; 81; 91; 101; 111; 121; 161; 171; 181; 191) destiné à une structure de pénétration de toit, comprenant un premier rebord (2; 12; 22; 32; 82; 92; 102; 112; 122; 182; 192) conçu pour être disposé, au moins partiellement, à proximité de, et de façon essentiellement parallèle à, la surface du toit dans une posi-

tion de montage de l'élément de raccordement en tôle,

un second rebord (3; 13; 23; 33; 43; 63; 113; 183; 193) conçu pour être disposé contre la structure de pénétration du toit dans ladite position de montage, ledit premier rebord présentant une première partie de bordure (4; 14; 24; 64; 164; 184) et une seconde partie de bordure (5; 25; 65; 165; 185), ladite seconde partie de bordure formant la ligne de jointure avec ledit second rebord,

caractérisé en ce que

ledit élément de raccordement en tôle comporte un matériau essentiellement non élastique, et **en ce que** ledit premier rebord (2; 12; 22; 32; 82; 92; 102; 112; 122; 182; 192) comprend, au moins, une indication de détachement (6; 16; 26; 36; 56; 66a, 66b; 76a, 76b; 86; 96; 106a, 106b; 116; 126, 126a, 126b; 166a, 166b; 176a, 176b; 186a; 196a) entre les première (4; 14; 24; 64; 164; 184) et seconde (5; 25; 65; 165; 185) parties de bordure, de telle sorte que la partie du premier rebord entre l'indication et la première partie de bordure peut être détachée de la partie restante de l'élément de raccordement.

2. Élément de raccordement en tôle selon la revendication 1, dans lequel ladite au moins une indication est une indication visuelle se présentant sous la forme d'au moins une ligne s'étendant longitudinalement ou d'une rangée de points, de courts segments, etc. s'étendant longitudinalement.
3. Élément de raccordement en tôle selon la revendication 1, dans lequel ladite au moins une indication comporte, au moins, une zone de fragilité (86; 96; 106a, 106b; 116; 126a, 126b).
4. Élément de raccordement en tôle selon la revendication 3, dans lequel chaque zone de fragilité est configurée sous la forme d'une entaille (86; 106a; 106b) ayant une profondeur ne dépassant pas une part importante de l'épaisseur du premier rebord.
5. Élément de raccordement en tôle selon la revendication 4, dans lequel le côté inférieur et le côté supérieur du premier rebord (102) sont tous deux dotés d'au moins une entaille (106a, 106b).
6. Élément de raccordement en tôle selon la revendication 3, dans lequel la, au moins une, zone de fragilité comporte un élément de cordon s'étendant longitudinalement (116) logé dans le premier rebord (112).
7. Élément de raccordement en tôle selon la revendication 6, dans lequel l'élément de cordon (116) est profilé en bosse dans le côté inférieur ou le côté supérieur du premier rebord (112).

8. Elément de raccordement en tôle selon l'une quelconque des revendications précédentes, dans lequel ladite au moins une indication (6; 16; 26; 36; 56; 66a, 66b; 76a, 76b; 86; 96; 106a, 106b; 116; 126; 126a, 126b; 166a, 166b; 176a, 176b; 186a; 196a) s'étend essentiellement parallèlement à la seconde partie de bordure (5; 25; 65; 165; 185) du premier rebord (2; 12; 22; 32; 82; 92; 102; 112; 122; 182; 192).
9. Elément de raccordement en tôle selon l'une quelconque des revendications précédentes, dans lequel des moyens d'engagement sont fournis.
10. Elément de raccordement en tôle selon la revendication 9, dans lequel lesdits moyens d'engagement comportent une section de rebord debout (27; 37; 47; 67; 77; 167; 177; 187; 197) au niveau de la première partie de bordure du premier rebord.
11. Elément de raccordement en tôle selon la revendication 10, dans lequel lesdits moyens d'engagement comportent au moins une structure de nervure debout (69; 79; 169a, 169b; 179a, 179b; 189; 199) au niveau d'une position située entre les première et seconde parties de bordure.
12. Elément de raccordement en tôle selon la revendication 10, dans lequel lesdits moyens d'engagement comportent une section de rebord en saillie (47a) s'étendant en formant un angle par rapport à ladite section de rebord debout (47) dans la direction du second rebord (43) de l'élément de raccordement en tôle (41; 51) et dans lequel le second rebord (43) est doté d'au moins une structure à nervure creuse (48; 58).
13. Elément de raccordement en tôle selon l'une quelconque des revendications précédentes, dans lequel le premier rebord (182; 192) de l'élément de raccordement en tôle (181; 191) s'étend obliquement à partir de la première partie de bordure (184) vers la seconde partie de bordure (185), la première partie de bordure étant positionnée essentiellement de façon parallèle à la surface du toit dans la position de montage de l'élément de raccordement en tôle.
14. Kit de raccordement comprenant au moins deux éléments de raccordement en tôle selon l'une quelconque des revendications 1 à 13, **caractérisé en ce qu'**un premier élément de raccordement en tôle (11; 31; 51; 71; 171; 191) est conçu pour être disposé contre un premier élément de la structure de pénétration du toit, et **en ce qu'**un second élément de raccordement en tôle (1; 21; 41; 51; 161; 181) est conçu pour être disposé contre un second élément de la même structure de pénétration du toit, ou contre un élément adjacent d'une structure voisine de pénétration du toit.
15. Kit de raccordement selon la revendication 14, dans lequel lesdits premier et second éléments de raccordement en tôle (1; 11; 41; 51; 181; 191) sont essentiellement symétriques l'un par rapport à l'autre.
16. Kit de raccordement selon la revendication 14, dans lequel lesdits premier et second éléments de raccordement en tôle (21; 31; 61; 71; 161; 171) sont essentiellement asymétriques l'un par rapport à l'autre.
17. Kit de raccordement selon la revendication 16, dans lequel le premier rebord (22) du premier élément de raccordement en tôle (31; 71; 171) présente une configuration différente de celle du premier rebord (32) du second élément de raccordement en tôle (21; 61; 161).
18. Kit de raccordement selon la revendication 16 et comportant deux éléments de raccordement en tôle selon la revendication 11, dans lequel ladite au moins une structure de nervure debout (79; 179a, 179b) du premier élément de raccordement en tôle (71; 171) présente une largeur et une hauteur plus grandes que celle de la, au moins une, structure de nervure debout correspondante (69; 169a, 169b) du second élément de raccordement en tôle (61; 161).

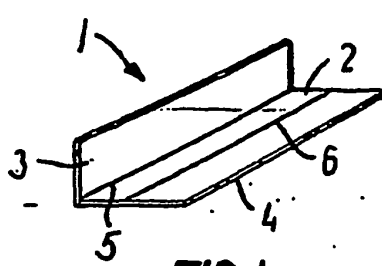


FIG. 1

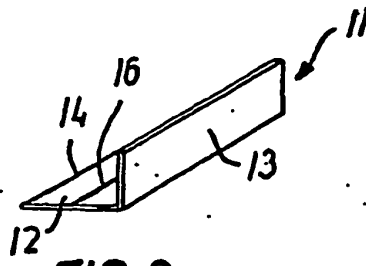


FIG. 2

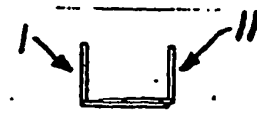


FIG. 3

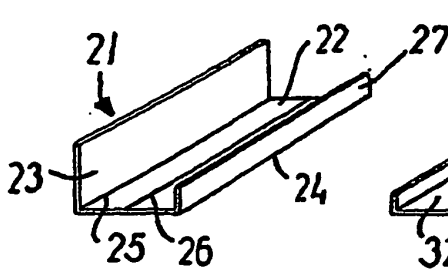


FIG. 4

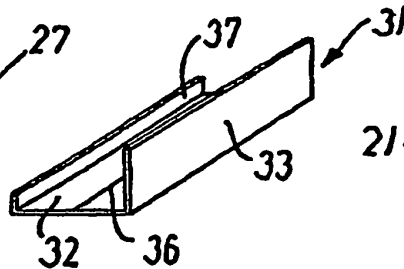


FIG. 5

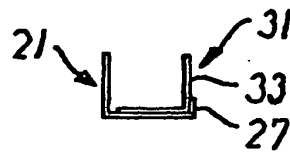


FIG. 6

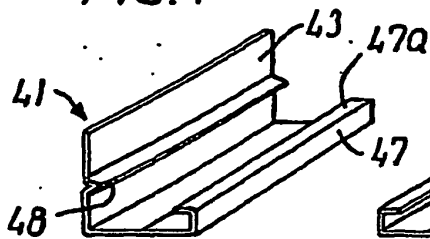


FIG. 7

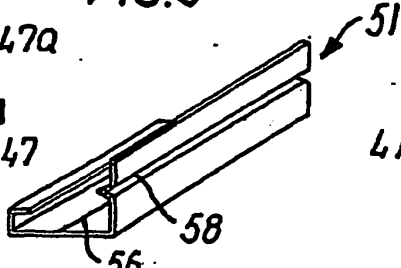


FIG. 8

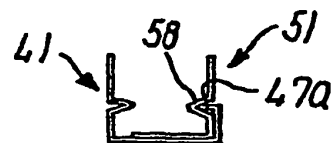


FIG. 9

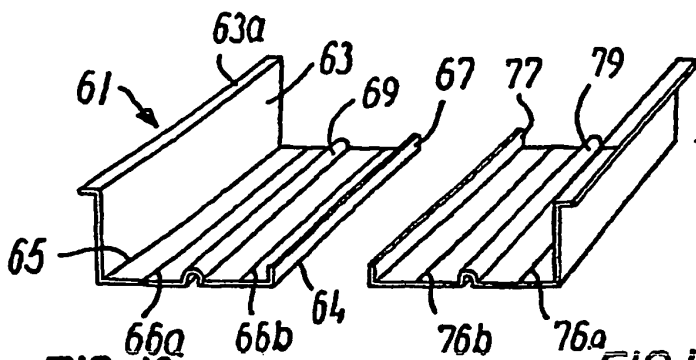


FIG. 10

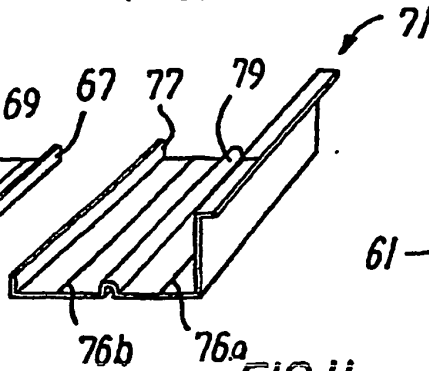


FIG. 11

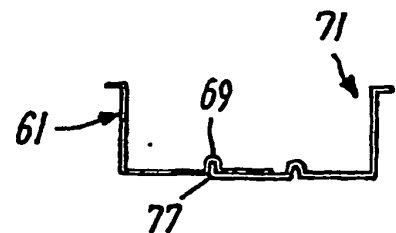


FIG. 12

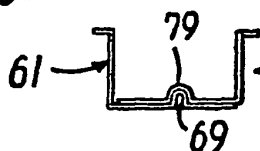


FIG. 13

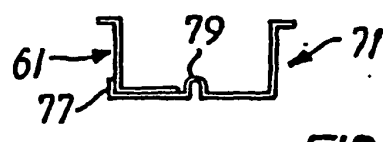
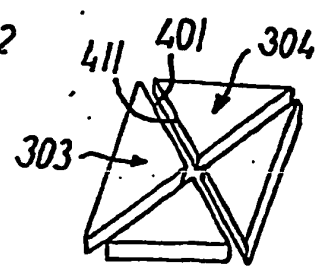
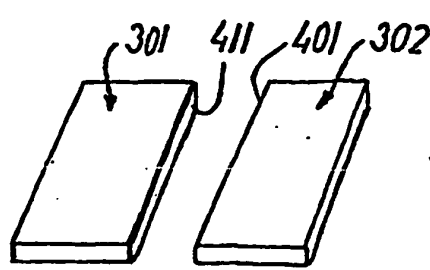
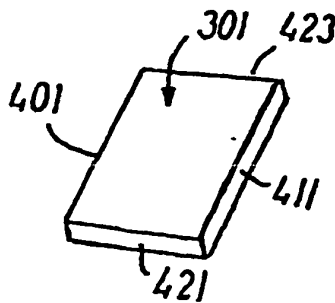
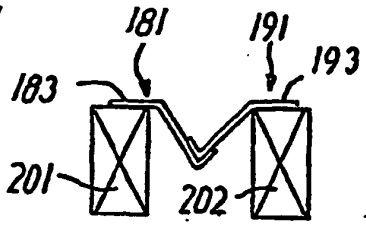
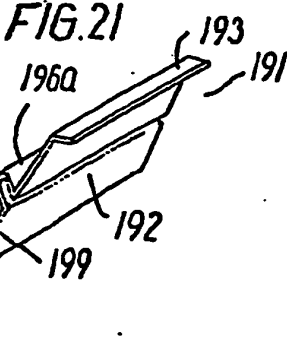
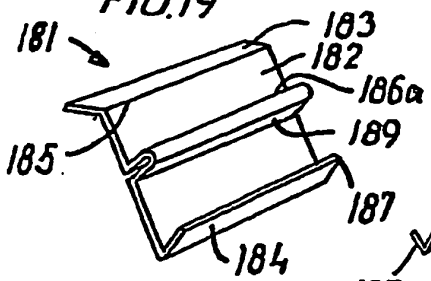
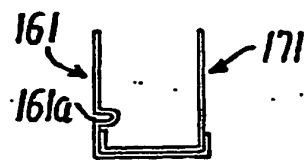
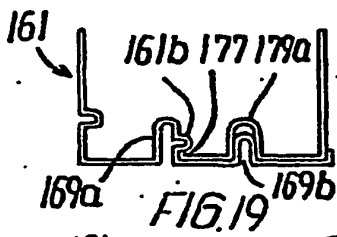
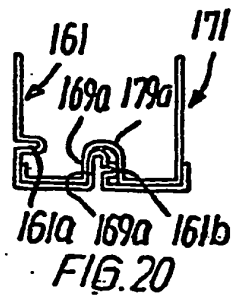
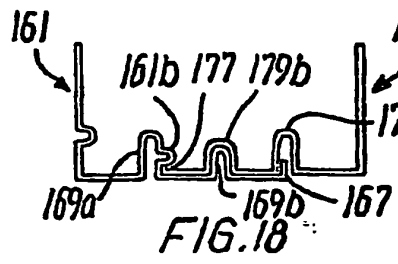
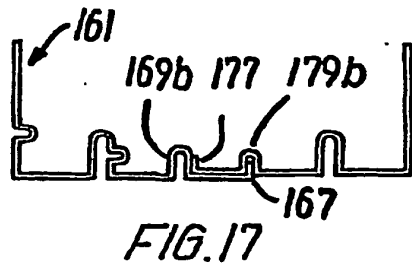
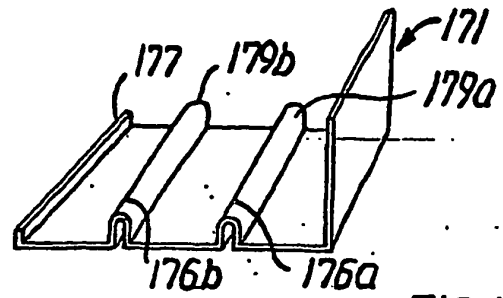
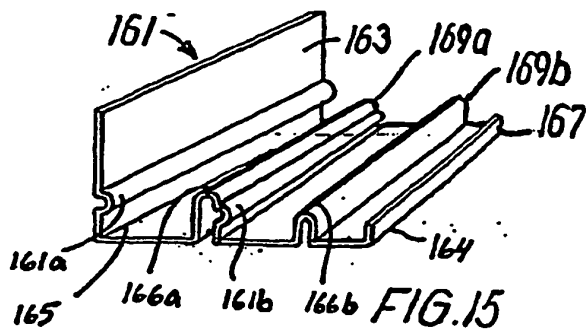


FIG. 14



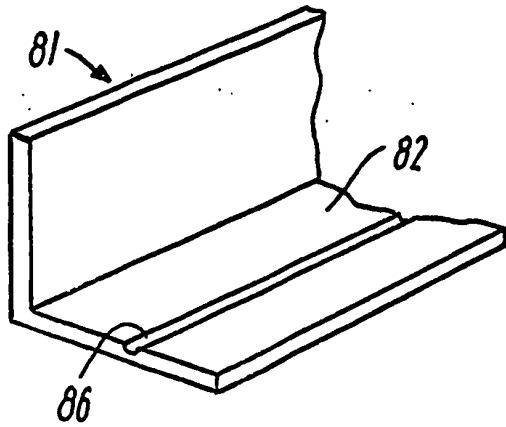


FIG. 25

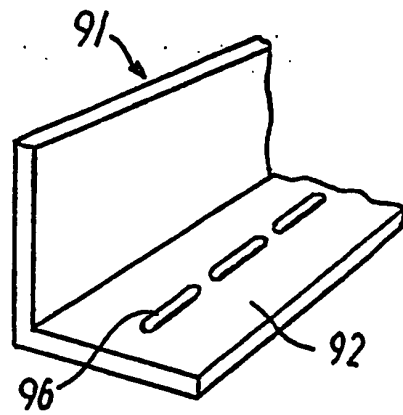


FIG. 26

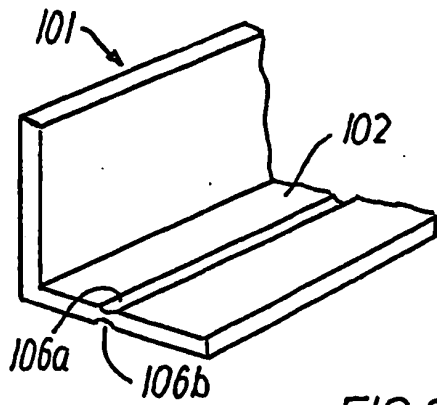


FIG. 27

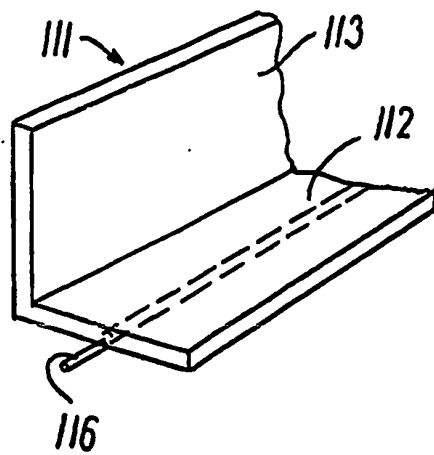


FIG. 28

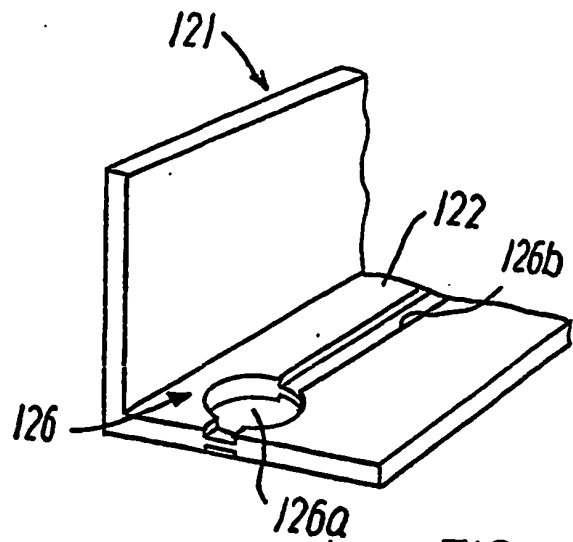


FIG. 29

REFERENCES CITED IN THE DESCRIPTION

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