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(54) **IMPROVED CORNER JOINT FOR FIXING TWO SECTIONS**

(57) A corner joint (1) for fixing two sections (2, 2') is disclosed; the corner joint (1) comprises a first wing (3) and a second wing (4); each wing (3, 4) is suitable for being inserted in a longitudinal channel (20, 20') of one of the two sections (2, 2'); the corner joint (1) comprises a corner body (P) that connects the two wings (3, 4); the peculiarity of the corner joint (1) according to the invention consists in the fact that it comprises a seal (5) disposed on the corner body (P) of the corner joint (1).

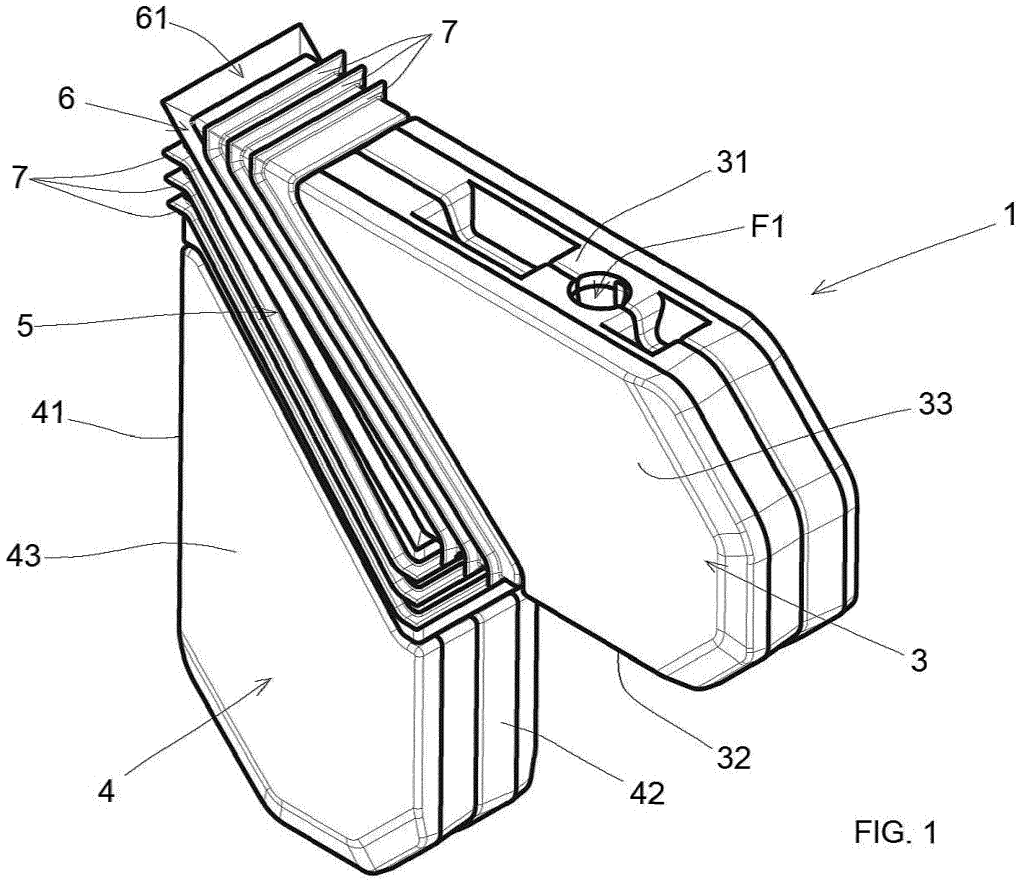


FIG. 1

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Description

[0001] The present patent application for industrial invention relates to an improved corner joint for fixing two sections. The corner joint of the invention is suitable for being inserted in longitudinal channels of two quadrangular sections in order to fix the sections. In particular, the reference sector of the invention is the assembly of window and door frames that are obtained by joining the sections in frame-like configuration.

[0002] However, the same advantages can be also obtained when the sections connected by means of the corner joint according to the invention are used for different purposes.

[0003] The advantages of the present invention will be more evident after a short description of the prior art and of its drawbacks.

[0004] As it is known, a corner joint has an "L"-shape and comprises a first wing, which is suitable for being inserted in the longitudinal channel of a first section, and a second wing, which is suitable for being inserted in the longitudinal channel of a second section.

[0005] The corner joint is used for fixing two consecutive sections that are disposed at 90°. The two sections have the same shape and their ends are cut at 45° and perfectly matched.

[0006] In order to fix two sections by means of a corner joint of the prior art, the first wing of the corner joint is inserted in the channel of the first section, and then the second wing of the corner joint is inserted in the channel of the second section.

[0007] In view of the above, after inserting the wings of the corner joint, the ends of the two sections are disposed one against the other, forming a corner of the window frame.

[0008] An adhesive is generally used to fix and seal the corner joint to the two sections. The adhesive is usually a liquid glue that is injected in the junction of the two sections by means of holes and channels provided on the external surface of the corner joint in order to seal the slot defined by the 45° ends of consecutive sections.

[0009] More precisely, in order to firmly fix the sections, after fixing the sections in place with the corner joint, the adhesive must be inserted in the longitudinal channels of the sections, in such a way that the adhesive is disposed in the junction between the two sections, causing the adhesion of the sections. The adhesive is injected in the junction by means of holes obtained near the ends of the sections.

[0010] In spite of its popularity, the use of the adhesive to seal the two sections is impaired by some drawbacks.

[0011] In fact, the correct, homogeneous distribution of the adhesive along the entire slot between the end of the first section and the end of the second section is not guaranteed. A higher quantity of adhesive than the one that is actually needed for sealing is usually injected to uniformly distribute the adhesive along the entire slot, with an evident waste of material.

[0012] In any case, the injection of a higher quantity of adhesive does not guarantee the perfect sealing of the two sections because, while being injected, the adhesive can enter holes and channels that are different from the ones obtained in the corner joint in correspondence of the slot between the ends of the two sections.

[0013] The use of the adhesive (liquid glue) requires the provision of an injection machine to inject the adhesive inside the sections and the operator needs to provide spare cartridges in case a cartridge is finished during the sealing operation.

[0014] Another drawback of the use of adhesive refers to the fact that, being liquid, the adhesive can get the sections dirty. The same risk also exists for the walls, the table, the floor, as well as any other object or element that is disposed near the area where the two sections are fixed.

[0015] An additional drawback related with the use of the adhesive refers to the fact that the mutual position of the two sections cannot be adjusted in an easy, rapid manner in case of misalignment of the two sections.

[0016] More precisely, after fixing and sealing the two sections, if a user realizes that the sections are not perfectly aligned, two solutions are possible in order to adjust the position of the sections. According to a first solution, the user can forcedly unfix the two sections, cleaning the adhesive residues, and repeat the fixing operation. Otherwise, a second solution consists in discarding the sections and the corner joint, and use a new corner joint and two new sections.

[0017] The first solution is extremely disadvantageous because of the time that is necessary to unfix and clean the two sections.

[0018] The second solution is extremely expensive because it provides for purchasing two new sections and one new corner joint.

[0019] Therefore, the use of adhesives does not solve the problem of misalignment of the two sections in a simple, rapid manner, after fixing the two sections.

[0020] EP2762669A2 discloses a profile assembly according to the preamble of claim 1.

[0021] The purpose of the present invention is to overcome the drawbacks of the prior art, by devising an improved corner joint for fixing two sections that does not require the use of an adhesive for sealing the sections.

[0022] Another purpose of the present invention is to devise a corner joint that is extremely inexpensive and easy to install between the two sections.

[0023] These purposes are achieved according to the invention with the characteristics of the appended independent claim 1.

[0024] Advantageous embodiments appear from the dependent claims.

[0025] The improved corner joint for fixing two sections according to the invention is defined by claim 1.

[0026] For the sake of clarity, the description of the improved corner joint used for fixing two sections according to the invention continues with reference to the ap-

pended drawings, which have a merely illustrative, not limiting value, wherein:

- Fig. 1 is an axonometric view of the corner joint of the invention;
- Fig. 2 is an exploded view of the corner joint of Fig. 1.
- Fig. 3 is a side view of the corner joint of the invention;
- Fig. 3A is an enlargement of the detail enclosed in the circle O of Fig. 3;
- Fig. 4 is a sectional view of the corner joint according to the invention, wherein the wings are inserted in the channels of the first section and of the second section; said corner joint and said sections being cut along a plane passing through the longitudinal axes of the two sections;
- Fig. 4A is an enlargement of the detail enclosed in the circle J1 of Fig. 4;
- Fig. 4B is an enlargement of the detail enclosed in the circle J2 of Fig. 4;
- Fig. 5 is a side view of the seal of the corner joint according to the invention.

[0027] With reference to Figs. 1, 2 and 3, a corner joint according to the invention is disclosed, which is generally indicated with reference numeral (1).

[0028] The corner joint (1) of the invention has been devised to fix a first section (2) and a second section (2').

[0029] In particular, the corner joint (1) is used for assembling two sections (2, 2') suitable for forming a portion of a window frame or the like.

[0030] With reference to Fig. 4, the sections (2, 2') have a quadrangular shape and each section (2, 2') comprises a longitudinal axis (X, X'), an external wall (24, 24') suitable for being directed towards the exterior of a window frame or the like, an internal wall (25, 25') opposite to said external wall (24, 24'), and two lateral walls (not shown in the appended figures) in parallel position and orthogonal to said external wall (24, 24') and said internal wall (25, 25').

[0031] The two sections (2, 2') have a longitudinal channel (20, 20') and an end (21, 21') that defines an opening that provides access to the longitudinal channel (20, 20').

[0032] The two sections (2, 2') are disposed at right angle and are therefore provided with an end (21, 21') cut at 45° relative to the longitudinal axis (X, X') of the section (2, 2'), in such a way that the two ends (21, 21') of the two sections (2, 2') are perfectly matched and generate a junction (25).

[0033] With reference to Figs. 2 and 4, the corner joint (1) used for fixing the two sections (2, 2') comprises a first wing (3) suitable for being inserted in the longitudinal channel (20) of the first section (2), and a second wing (4) suitable for being inserted in the longitudinal channel (20') of the second section (2').

[0034] Each wing (3, 4) comprises an external surface (31, 41) directed towards the external wall (24, 24') of the section (2, 2'), an internal surface (32, 42) directed towards the internal wall (25, 25') of the section (2, 2') and two lateral surfaces (33, 43) in opposite position, each of them being directed towards a lateral wall of the section (2, 2').

[0035] The two wings (3, 4) are orthogonal and, consequently, the external surfaces (31, 41) of the two wings (3, 4) are perpendicular, and the internal surfaces (32, 42) of the two wings (3, 4) are perpendicular. The lateral surface (33, 43) of each wing (3, 4) is disposed in coplanar position with respect to the lateral surface (33, 43) of the other wing (3, 4).

[0036] With reference to Fig. 2, the corner joint (1) comprises a corner body (P) that is disposed between the two wings (3, 4) and connects the two wings (3, 4). The corner body (P) is suitable for being disposed in correspondence of the junction (25) between the two sections (2, 2').

[0037] The corner body (P) comprises a first portion (P1) in proximal position to the first wing (3) and a second portion (P2) proximal to the second wing (4).

[0038] Each portion (P1, P2) of the corner body (P) comprises an external surface (11, 11') in adjacent position to the external surface (31, 41) of the wing (3, 4) in proximal position to the portion (P1, P2); the external surface (11) of the first portion (P1) of the corner body (P) and the external surface (11') of the second portion (P2) of the corner body (P) are inclined by an angle higher than 180°, preferably 270°.

[0039] Each portion (P1, P2) of the corner body (P) also comprises an internal surface (12, 12') in adjacent position to the internal surface (32, 42) of the wing (3, 4) in proximal position to the portion (P1, P2); the internal surface (12) of the first portion (P1) of the corner body (P) and the internal surface (12') of the second portion (P2) of the corner body (P) are inclined by an angle lower than 180°, preferably 90°.

[0040] Moreover, each portion (P1, P2) comprises two lateral surfaces (13, 13') in opposite position, each one of them being orthogonal to the external surface (11, 11') and to the internal surface (12, 12') that belong to the same portion (P1, P2) of the corner body (P). The lateral surfaces (13, 13') of the two portions (P1, P2) of the corner body are disposed in adjacent position, two by two, substantially in coplanar direction. The term "substantially" means that, in addition to being coplanar, the two lateral surfaces (13, 13') can be slightly inclined, while maintaining the advantages of the invention.

[0041] The peculiarity of the present invention is that the corner joint (1) comprises a seal (5) disposed on the corner body (P) of the corner joint (1).

[0042] The seal (5) comprises a first portion (51) that surrounds said first portion (P1) of the corner body (P) and is suitable for going in contact with a portion of the first section (2) near the end (21) of the first section (2), and a second portion (52) that surrounds said second portion (P2) of the corner body (P) and is suitable for going in contact with a portion of the second section (2') near the end (21') of the second section (2').

[0043] The seal (5) comprises a median plane that symmetrically divides the first portion (51) from the second portion (52).

[0044] With reference to Figs. 1, 2 and 5, each portion (51, 52) of the seal (5) comprises:

- a short external wall (511, 521) which forms an angle higher than 180°, preferably 270°, with the short external wall (511, 521) of the other portion (51, 52) of the seal (5); each short external wall (511, 521) is disposed on the external surface (11, 11') of the portion (P1, P2) of the corner body (P);
- a short internal wall (512, 522) which forms an angle lower than 180°, preferably 90°, with the short internal wall (512, 522) of the other portion (51, 52) of the seal (5); each short internal wall (512, 522) is disposed on the internal surface (12, 12') of the portion (P1, P2) of the corner body (P);
- two long lateral walls (513, 523); each long lateral wall (513, 523) is disposed on the lateral surface (13, 13') of the portion (P1, P2) of the corner body (P); the two long lateral walls (513, 523) are disposed two by two in adjacent position and substantially in coplanar direction.

[0045] Also in this case, like in the case of the lateral surfaces (13, 13') of the portions (P1, P2) of the corner body, the term "substantially" means that the two long lateral walls (513, 523) can be slightly inclined. Preferably, the inclination of the two long lateral walls (513, 523) will be identical to the inclination between the lateral surfaces (13, 13') of the portions (P1, P2).

[0046] With reference to Figs. 3A, 4A and 5, the seal (5) comprises a plurality of annular ribs (6, 7) obtained in said external side (59) of the seal (5).

[0047] More precisely, the plurality of annular ribs (6, 7) comprises:

- a central annular rib (6) that lies on said median plane, and
- lateral annular ribs (7) disposed in lateral position relative to said central annular rib (6) and obtained in said first portion (51) and in said second portion (52) of the seal (5).

[0048] With reference to Figs. 3A and 5, each lateral annular rib (7) comprises two long sections (73) obtained on the long lateral walls (513, 523) of the seal (5), and two short sections (71, 72), of which one short external section (71) obtained on the short external wall (511, 521) of the portion (51, 52) of the seal (5), and one short internal section (72) obtained on the short internal wall (512, 522) of the portion (51, 52) of the seal (5). Likewise, the central rib (6) comprises two long sections (63) obtained in the median line in the point where the long lateral walls (513, 523) of the first and of the second portion (51, 52) of the seal (5) are joined, one short external section (61) obtained in the point where the short external walls (511, 521) of the first and of the second portion (51, 52) of the seal (5) are joined, and one internal section (62) obtained in the point where the short internal walls (512, 522) of the first and of the second portion (51, 52) of the seal (5) are joined.

[0049] With reference to Figs. 5, the short external sections (71) of the lateral annular ribs (7) of the portion (51, 52) of the seal (5) are mutually parallel and parallel to the short external section (61) of the central annular rib (6), and the short internal sections (72) of the lateral annular ribs (7) of the portion (51, 52) are mutually parallel and parallel to the short internal section (62) of the central annular rib (6).

[0050] The long lateral sections (73) of the lateral annular ribs (7) obtained on the portion (51, 52) of the seal (5) are mutually parallel and are not parallel to the long lateral sections (63) of the central annular rib (6). More precisely, the long lateral sections (73) of the lateral annular ribs (7) are directed away from the long lateral section (63) of the central annular rib (6), going from the short external wall (511, 521) to the short internal wall (512, 522) of the seal (5).

[0051] With reference to Fig. 3A, the lateral annular ribs (7) obtained on the first portion and on the second portion (51, 52) of the seal (5) are sectionally provided with two sides (75, 76), of which a first side (75) directed towards the central annular rib (6), and a second side (76) opposite to the first side (75). The first side (75) is perpendicular to the seal (5) whereon the lateral annular rib (7) is obtained, whereas the second side (76) is inclined relative to the seal (5) whereon the lateral annular rib (7) is obtained.

[0052] The first wing (3), the second wing (4), and the corner body (P) of the corner joint (1) are made in one piece from a rigid material, preferably aluminum or the like, whereas the seal (5) is made of an elastic material, preferably silicone.

[0053] Optionally, the central annular rib (6) of the seal (5) can be higher than the lateral annular ribs (7) disposed in lateral position relative to said central annular rib (6). In view of the above, the central annular rib (6) is disposed and compressed between the two ends (21, 21') of the sections, hermetically sealing the seal (25). As shown in Fig. 3A, the short external section (61) of the central annular rib (6) of the seal (5) is higher than all the other lateral annular ribs (7) and is compressed by the two ends (21, 21') that generate the junction (see Fig. 4A).

[0054] With reference to Figs. 4, 4A and 4B, the height of the central annular rib (6) can be identical to the thickness of the ends (21, 21') of the two sections (2, 2') in such a way that the ends (21, 21') have no portions in contact, thus obtaining a perfect sealing.

[0055] Alternatively, the height of the central annular rib (6) can protrude from the ends (21, 21') of the two sections (2, 2'). In such a case, after fixing the two sections (2, 2'), the projecting part of the annular rib (6) can be cut and removed with a pointed tool, such as for example a cutter.

[0056] Preferably, the thickness of the corner body (P) is lower than the first and the second wing (3, 4) in such a way that a step (G1, G2) is provided between the corner body (P) and the wings (3, 4) to connect the wing (3, 4) to the corner body (P). The provision of the step (G1, G2) makes it possible to firmly dispose the seal (5) in the corner body (P), preventing the seal (5) from moving towards the first wing (3) or the second wing (4).

[0057] Preferably, the corner joint (1) may comprise fixing means (M) to fix the first wing (3) to the first section (2) and the second wing (4) to the second section (2'). Said fixing means (M) comprise a first screw (Q1) and a second screw (Q2), each of them being inserted in a threaded hole (F1, F2) obtained in a wing (3, 4) and in an opening obtained in the section (2, 2').

[0058] More precisely, with reference to Fig. 4, the corner joint (1) comprises a first threaded hole (F1) and a second threaded hole (F2) that are respectively obtained on the external surface (31) of the first wing (3) and on the external surface (41) of the second wing (4).

[0059] The opening of each section (2, 2') is obtained in said external wall of the section (2, 2'), ending in said longitudinal channel (20, 20').

[0060] The first threaded hole (F1) is suitable for being aligned with the opening of the external wall (24) of the first section (2), whereas the second threaded hole (F2) is suitable for being aligned with the opening of the external wall (24') of the second section (2') when the corner joint (1) is inserted in the longitudinal channels (20, 20') of the two sections (2, 2').

[0061] Each screw (Q1, Q2) comprises a threaded body (C1, C2) and a head (T1, T2); the threaded body (C1, C2) is screwed in the threaded hole (F1, F2) of the wing (3, 4) and the head (T1, T2) is flush with the section (2, 2') against the perimeter edge of the opening of the section (2, 2').

[0062] In view of the above, each wing (3, 4) is firmly fixed to a section (2, 2').

[0063] Following is a description of a process used to fix two sections (2, 2') by means of the corner joint (1) of the invention.

[0064] The process provides for:

- inserting the first wing (3) and the first portion (51) of the seal (5) in the longitudinal channel (20) of the first section (2) until the end (21) of the first section (2) is stopped against the annular central rib (6) of the seal (5);
- inserting the second wing (4) and the second portion (52) of the seal (5) in the longitudinal channel (20') of the second section (2') until the end (21') of the second section (2') is stopped against the annular central rib (6) of the seal (5);
- inserting the first screw (Q1) in the opening of the external wall (24) of the first section (2) and in the first threaded hole (F1) obtained on the external surface (31) of the first wing (3);
- screwing the first screw (Q1) in the first threaded hole (F1);
- inserting the second screw (Q2) in the opening of the external wall (24') of the second section (2') and in the second threaded hole (F2) obtained on the external surface (41) of the second wing (4);
- screwing the second screw (Q2) in the second threaded hole (F2).

[0065] With reference to Figs. 4, 4A and 4B, an annular groove (N1, N2) may be obtained between the first portion (P1) of the corner body (P) and the first wing (3), as well as between the second portion (P2) of the corner body (P) and the second wing (4).

[0066] In such a case, the ends of the seal (5) are provided with two annular veins (H1, H2) that project towards the interior of the gasket (5) and are inserted in said annular grooves (N1, N2).

[0067] The annular veins (H1, H2), which are inserted in said annular grooves (N1, N2), prevent the seal (5) from curling up during the insertion of the first wing (3) in the first section (2) or of the second wing (4) in the second section (2').

[0068] In view of the aforementioned description, the advantages of the corner joint (1) according to the invention are manifest.

[0069] The provision of the seal (5) with the annular central rib (6) and the lateral ribs (7) provides for fixing the two sections (2, 2') in a simple, safe manner. More precisely, being compressed by the walls (24, 24', 25, 25') of the two sections (2, 2'), the lateral ribs (7) are loaded, fixing the corner joint (1) to the two sections (2, 2') under pressure. Being compressed by the ends (21, 21') of the sections (2, 2'), the central annular rib (6) creates a junction between the two sections (2, 2'), hermetically sealing the space between the two ends (21, 21').

[0070] Therefore, the use of the corner joint (1) according to the invention eliminates the drawbacks of the prior art (as described above) because no adhesive or similar products are necessary to seal the sections.

[0071] The present invention also relates to an assembly comprising two sections (2, 2') and a corner joint (1) with the aforementioned characteristics.

[0072] Numerous variations and modifications can be made to the present embodiment of the invention, which are within the reach of an expert of the field, falling in any case within the scope of the invention as disclosed by the appended claims.

Claims

1. Corner joint (1) for fixing a first section (2) and a second section (2'); each section (2, 2') comprising a longitudinal channel (20, 20') and an opening that provides access to said longitudinal channel (20, 20') obtained in one end (21, 21') of the section (2, 2'); the two ends (21, 21') of said two sections (2, 2') being suitable for being disposed in mutual contact,

generating a junction (25); said corner joint (1) comprising:

- a first wing (3) suitable for being inserted in the longitudinal channel (20) of the first section (2);
- a second wing (4) suitable for being inserted in the longitudinal channel (20') of the second section (2');
- a corner body (P) that connects said two wings (3, 4) and is suitable for being disposed in the junction (25) of the sections (2); said corner body (P) comprising a first portion (P1) proximal to the first wing (3) and a second portion (P2) proximal to the second wing (4),

a seal (5) disposed on the corner body (P) of the corner joint (1);
said seal (5) comprising:

- a first portion (51) that surrounds said first portion (P1) of the corner body (P) and is suitable for going in contact with a portion of the first section (2) near the end (21) of the first section (2);
- a second portion (52) that surrounds said second portion (P2) of the corner body (P) and is suitable for going in contact with a portion of the second section (2') near the end (21') of the second section (2');

characterized in that
said seal (5) comprises a median plane that symmetrically divides the first portion (51) from the second portion (52); said seal (5) comprising a plurality of annular ribs (6, 7) comprising:

- a central annular rib (6) that lies on said median plane, and
- lateral annular ribs (7) obtained in said first portion (51) and also obtained in said second portion (52) of the seal (5).

2. The corner joint (1) of claim 1, wherein each wing (3, 4) of the corner joint (1) comprises:

- an external surface (31, 41) that is perpendicular to the external surface (31, 41) of the other wing (3, 4);
- an internal surface (32, 42) that is perpendicular to the internal surface of the other wing (3, 4);
- two lateral surfaces (33, 43) in opposite position that are orthogonal to said internal surface (31, 41) and to said external surface (32, 42) of the wing (3, 4); each lateral surface (33, 43) of a wing (3, 4) being coplanar to the lateral surface (33, 43) of the other wing (3, 4);

wherein each portion (P1, P2) of the corner body (P) comprises:

- an external surface (11, 11') in adjacent position to the external surface (31, 41) of the wing (3, 4) in proximal position to the portion (P1, P2); the external surface (11) of the first portion (P1) of the corner body (P) and the external surface (11') of the second portion (P2) of the corner body (P) being inclined by an angle higher than 180°, preferably 270°
- an internal surface (12, 12') in adjacent position to the internal surface (32, 42) of the wing (3, 4) in proximal position to the portion (P1, P2); the internal surface (12) of the first portion (P1) of the corner body (P) and the internal surface (12') of the second portion (P2) of the corner body (P) being inclined by an angle lower than 180°, preferably 90°
- two lateral surfaces (13, 13') in opposite position; each lateral surface (13, 13') of a portion (P1, P2) of the corner body (P) being orthogonal to the internal surface (12, 12') and to the external surface (11, 11') that belong to the same portion (P1, P2) of the corner body (P); the lateral surfaces of the two portions (P1, P2) of the corner body (P) being disposed two by two in adjacent position, substantially in coplanar direction;

wherein each portion (51, 52) of the seal (5) comprises:

- a short external wall (511, 521) which forms an angle higher than 180°, preferably 270°, with the short external wall (511, 521) of the other portion (51, 52) of the seal (5); each short external wall (511, 521) being disposed on said external surface (11, 11') of the portion (P1, P2) of the corner body (P);
- a short internal wall (512, 522) forming an angle lower than 180°, preferably 90°, with the short internal wall (512, 522) of the other portion (51, 52) of the seal (5); each short internal wall (512, 522) being disposed on said internal surface (12, 12') of the portion (P1, P2) of the corner body (P);
- two lateral long walls (513, 523); each long lateral wall (513, 523) being disposed on said lateral surface (13, 13') of the portion (P1, P2) of the corner body (P); the lateral surfaces of the two portions (P1, P2) of the corner body (P) being disposed two by two in adjacent position and in coplanar direction.

3. The corner joint (1) of claim 2, wherein each lateral annular rib (7) comprises two long sections (73) obtained on the long lateral walls (513, 523) of the seal (5) and comprises two short sections (71, 72), of which a short external section (71) obtained on the

short external wall (511, 521) of the portion (51, 52) of the seal (5), and a short internal section (72) obtained on the short internal wall (512, 522) of the portion (51, 52) of the seal (5); said central rib (6) comprising two long sections (63) obtained in the point where the long lateral walls (513, 523) of the first and second portion (51, 52) of the seal (5) are joined; said central rib (6) comprising a short external section (61) obtained in the point where the short external walls (511, 521) of the first and of the second portion (51, 52) of the seal (5) are joined; said central rib (6) comprising an internal section (62) obtained in the point where the short internal walls (512, 522) of the first and of the second portion (51, 52) of the seal (5) are joined.

4. The corner joint (1) of claim 3, wherein the short external sections (71) of the lateral annular ribs (7) of the portion (51, 52) of the seal (5) are all mutually parallel and parallel to the short external section (61) of the central annular rib (6), and the short internal sections (72) of the lateral annular ribs (7) of the portion (51, 52) are all mutually parallel and parallel to the short internal section (62) of the central annular rib (6).

5. The corner joint (1) of claim 3 or 4, wherein the long lateral sections (73) of the lateral annular ribs (7) obtained on the portion (51, 52) of the seal (5) are mutually parallel and are not parallel to the long lateral sections (63) of the central annular rib (6).

6. The corner joint (1) of any one of the preceding claims, wherein said lateral annular ribs (7) obtained on the first and the second portion (51, 52) of the seal (5) have two sides (75, 76), of which a first side (75) directed towards the central annular rib (6), and a second side (76) opposite to the first side (75); said first side (76) being perpendicular to the seal (5) whereon the lateral annular rib (7) is obtained; and said second side (76) being inclined relative to the seal (5) whereon the lateral annular rib (7) is obtained.

7. The corner joint (1) of any one of the preceding claims, wherein said corner body (P) has a lower thickness than the first and the second wing (3, 4); said corner joint (1) comprising at least one step (G1, G2) between the corner body (P) and the wings (3, 4).

8. The corner joint (1) of any one of the preceding claims, comprising fixing means (M) for fixing the first wing (3) to the first section (2) and the second wing (4) to the second section (2'); said fixing means (M) comprising a hole obtained on the first wing (3) and a hole obtained on the second wing (4); said holes being suitable for receiving locking means (in the description said means can be screws or nuts or pins or the like).

9. Assembly comprising a first section (2) and a second section (2'); each section (2, 2') comprising a longitudinal channel (20, 20'), an end (21, 21') and an opening that provides access to said longitudinal channel (20, 20') defined by said end (21, 21') of the section (2, 2'); said assembly comprising a corner joint (1) according to any one of the preceding claims, wherein the first wing (3) of the corner joint (1) is inserted in the longitudinal channel (20) of the first section (2) and the second wing (4) of the corner joint (1) is inserted in the longitudinal channel (20') of the second section (2'); wherein the seal (5) of the corner joint (1) is stopped inside the sections near the junction (25) between the two sections (2, 2').

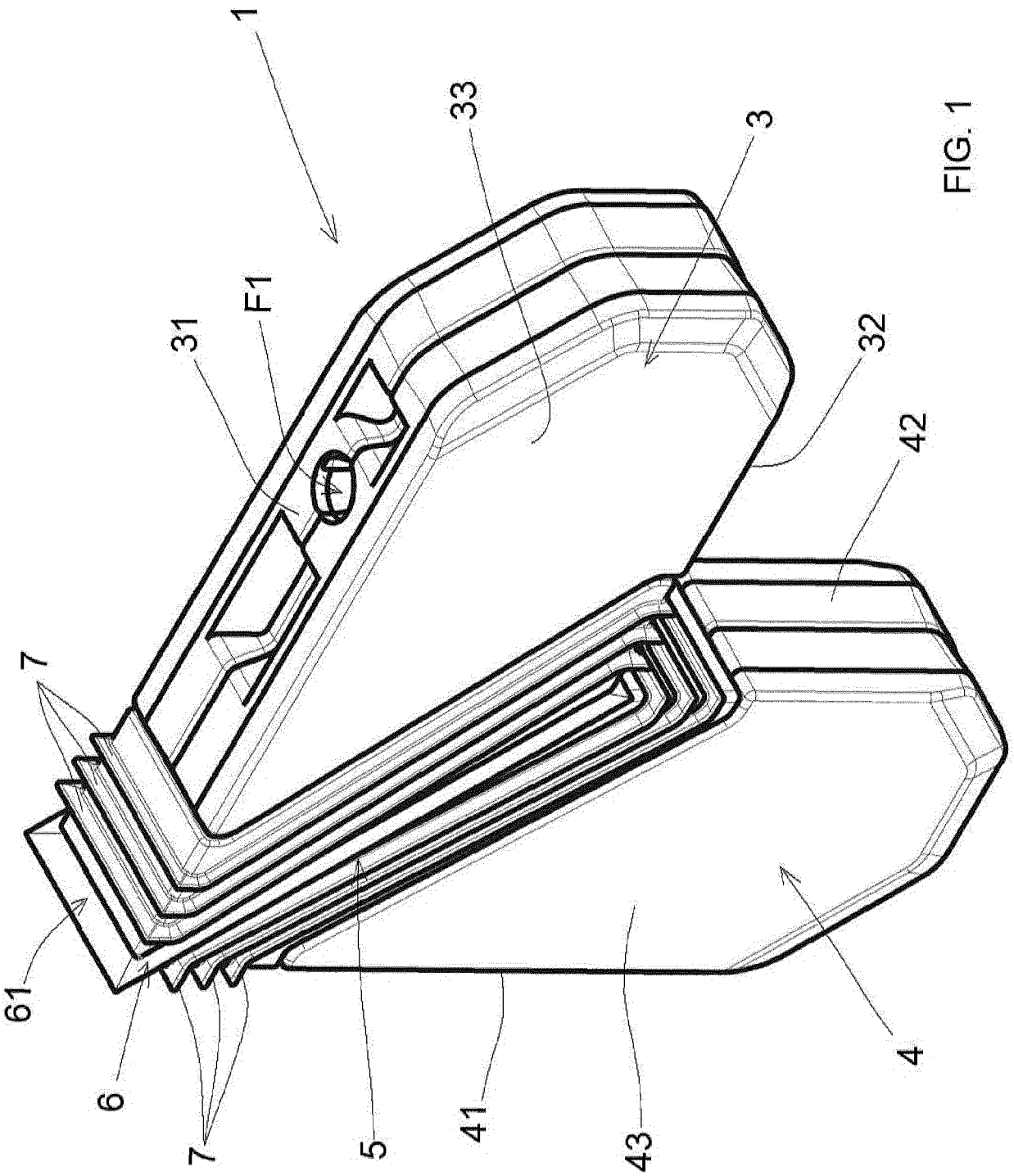


FIG. 1

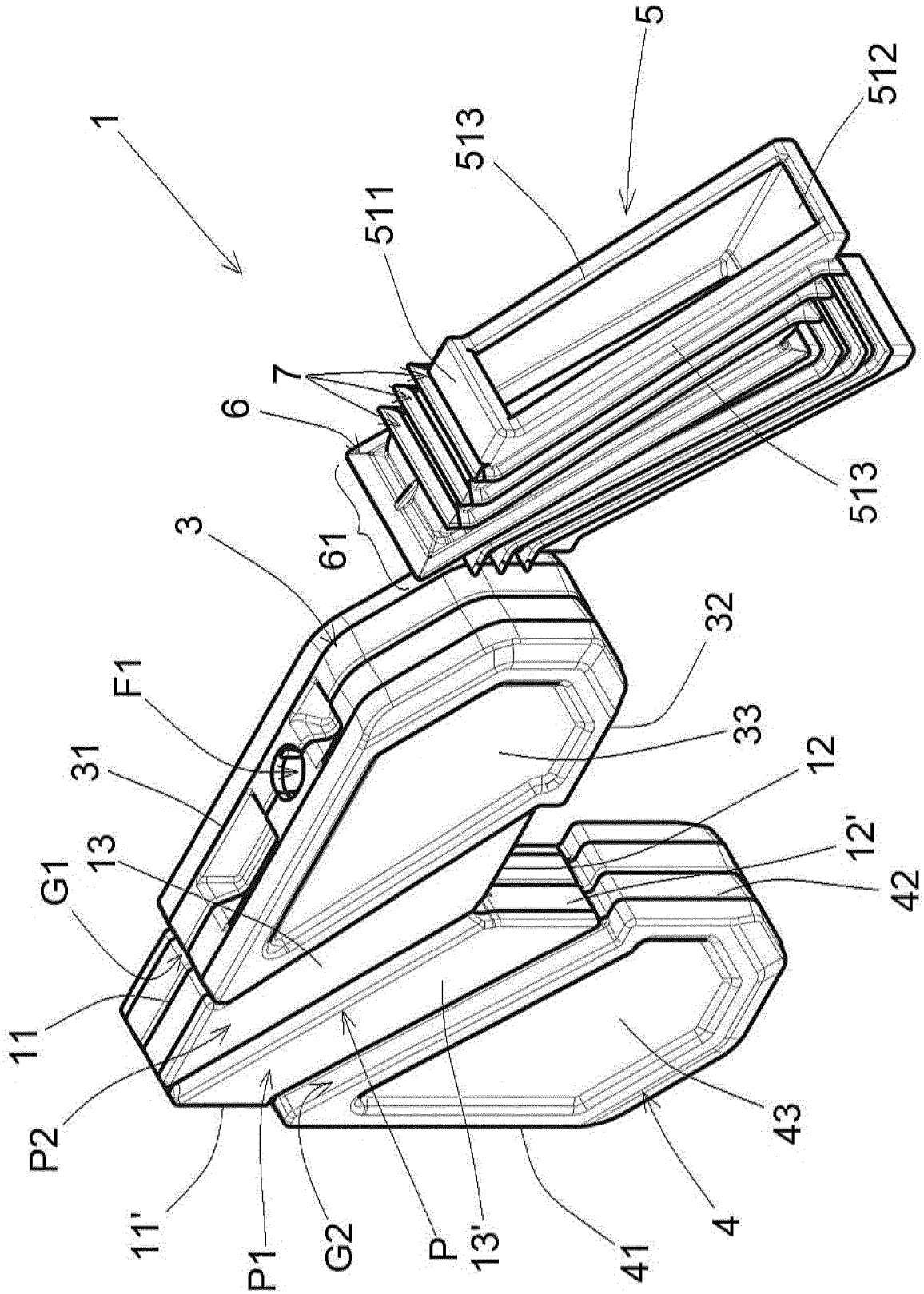

1
5
512
513
511
7
6
513
3
61
32
F1
33
31
12
13
12'
G1
42
11
43
P2
4
11'
P1
G2
P
13'
41

FIG. 2

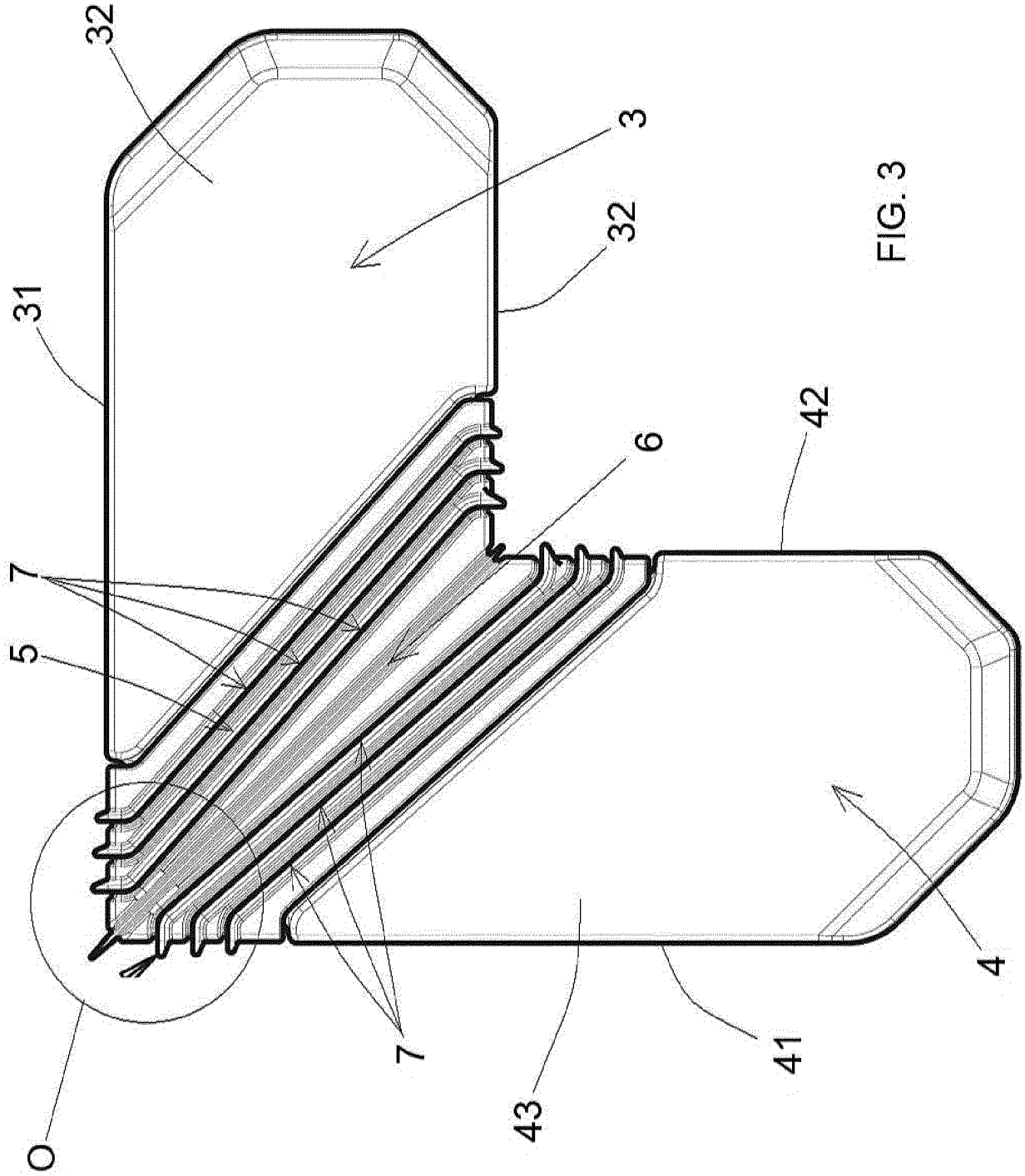


FIG. 3

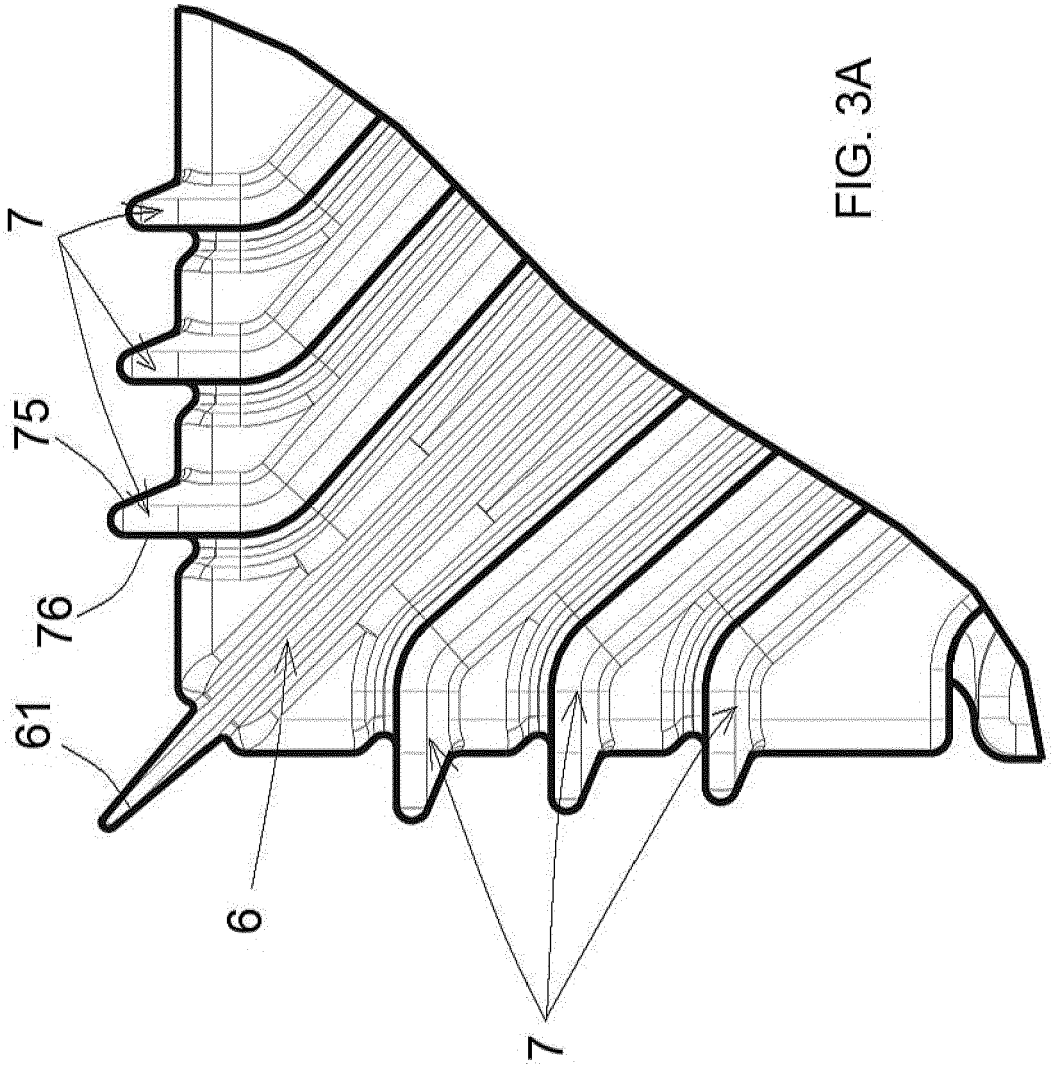


FIG. 3A

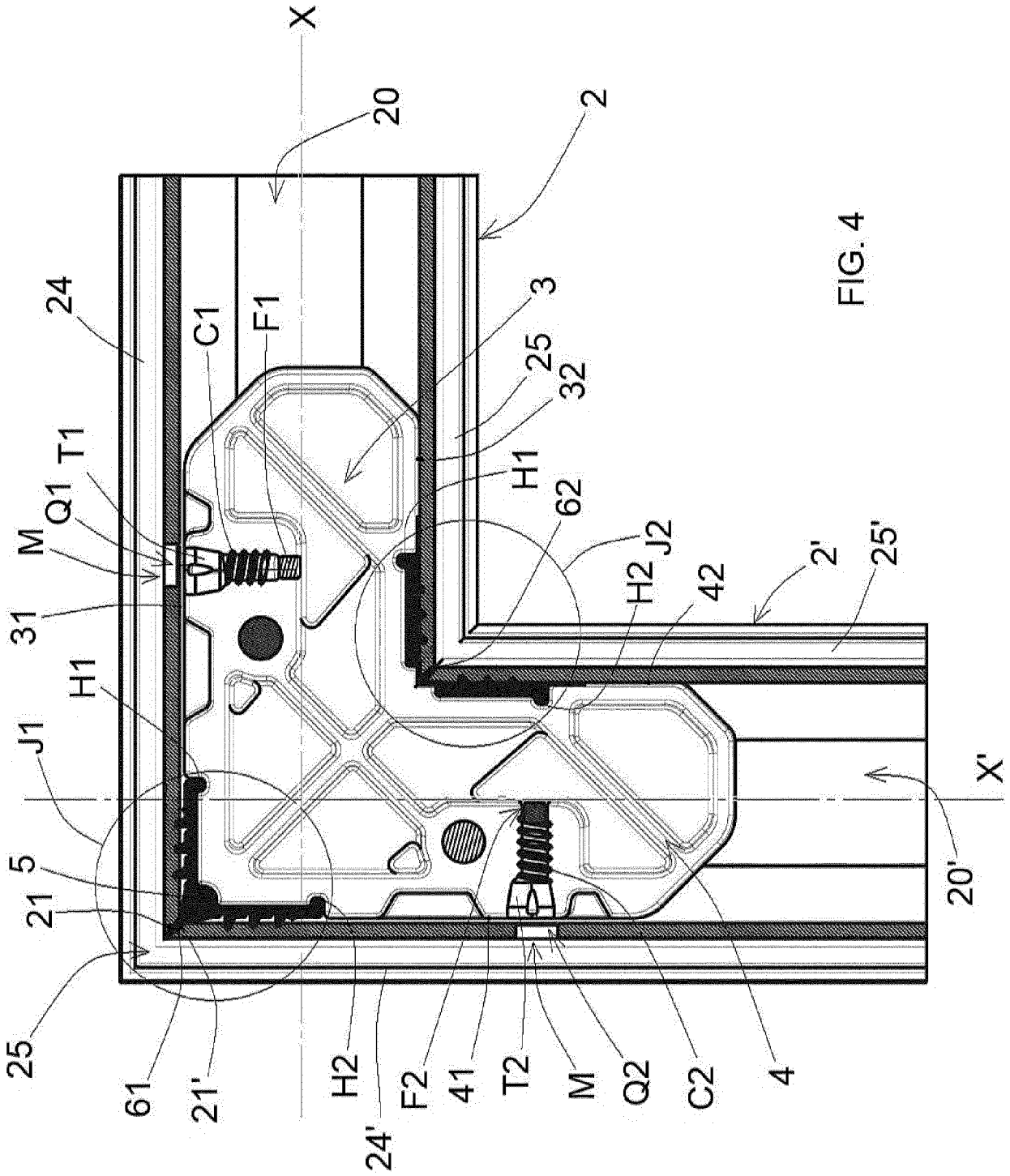

X
20
2
24
C1
F1
3
25
32
H1
62
T1
Q1
M
J2
H2
42
2'
25'
31
H1
J1
X'
5
21
20'
25
61
21'
H2
24'
F2
41
T2
M
Q2
C2
4

FIG. 4

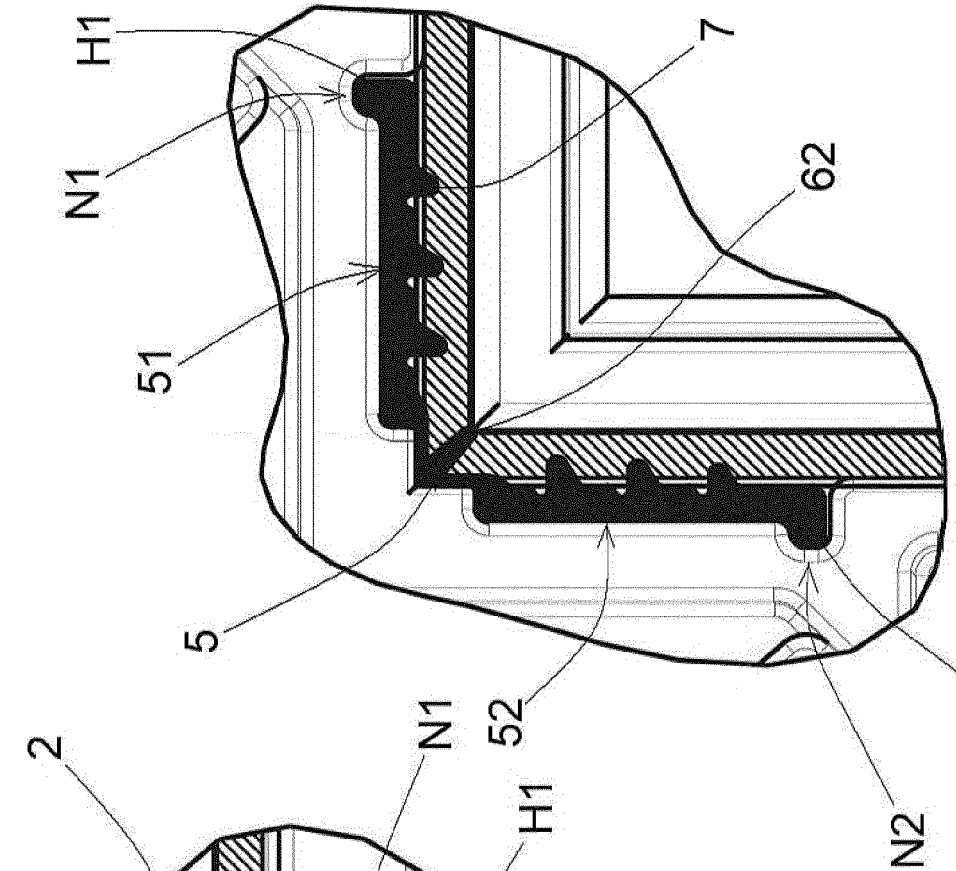


FIG. 4B

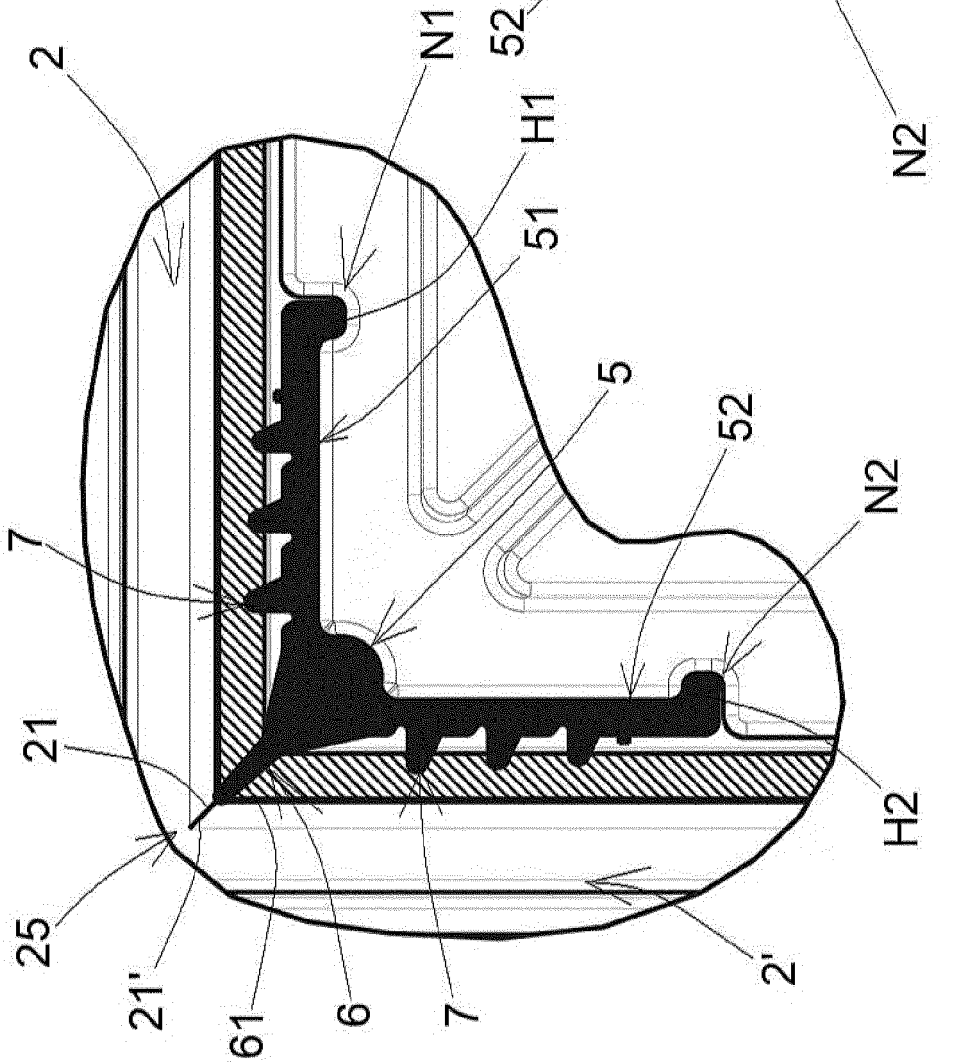


FIG. 4A

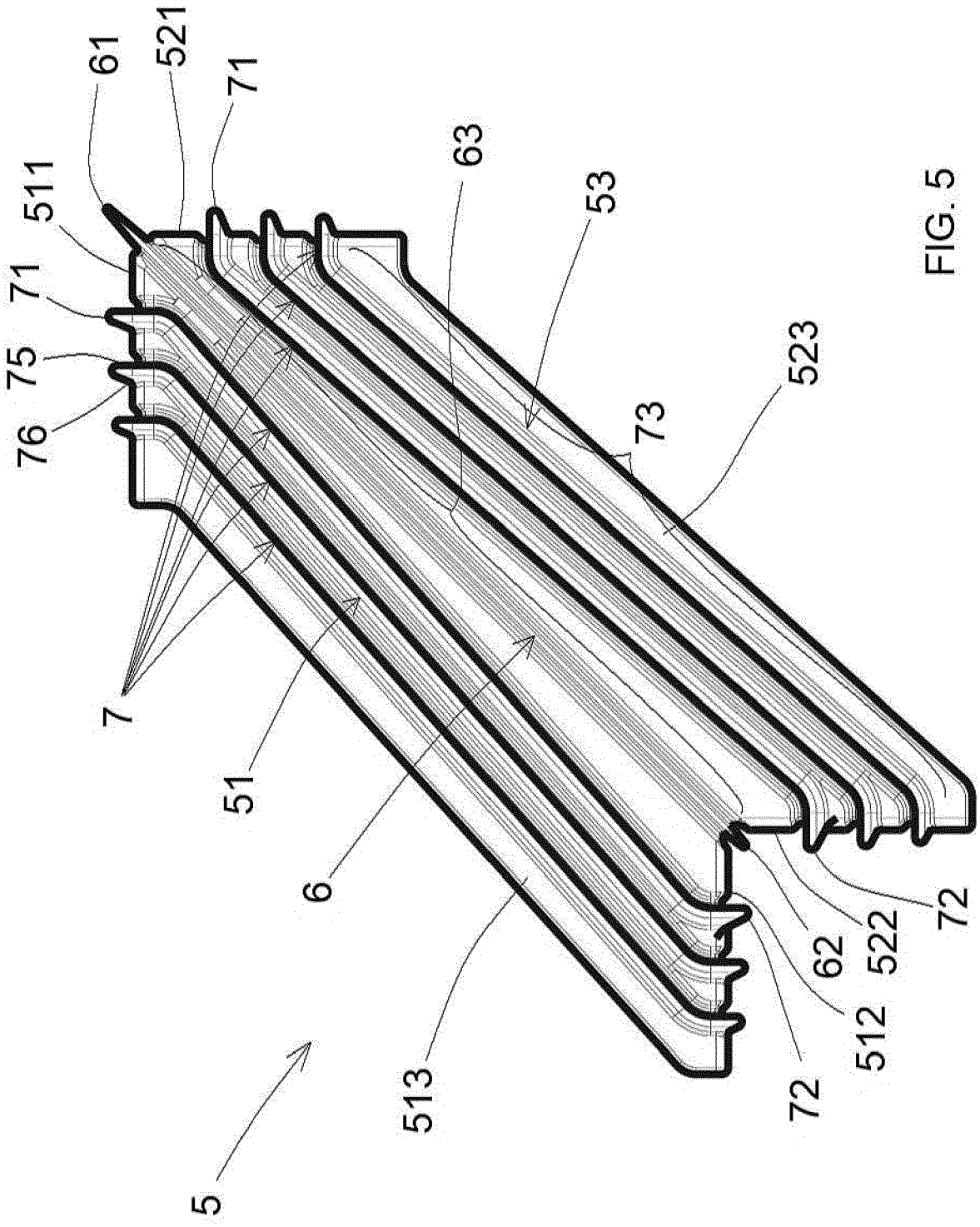


FIG. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 20 15 0442

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	WO 99/67495 A1 (VEKA AG [DE]; KAEUFER HELMUT [DE] ET AL.) 29 December 1999 (1999-12-29) * page 2, last paragraph - page 3, paragraph first; figures *	1-9	
A	WO 2012/139908 A1 (RAYMOND A & CIE [FR]; PAQUET JEROME [FR]; BIZZINI OLIVIER [FR]) 18 October 2012 (2012-10-18) * page 8, lines 9-15 * * page 9, lines 14-25; figures *	1-9	

TECHNICAL FIELDS SEARCHED (IPC)

E06B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	26 May 2020	Gallego, Adoración

CATEGORY OF CITED DOCUMENTS

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26-05-2020

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