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(54) **SILL ASSEMBLY AND SILL**

(57) The invention relates to a sill assembly, for example for a window or door, said sill assembly comprising a sill and at least one plinth block, characterized in that said sill and said plinth block comprise mutually cooperating connecting means for connecting the at least one plinth block to the sill.

The invention further relates to a sill, comprising a

basic sill part and a further sill part, for example a stop element or an extension element, wherein said basic sill part and said further sill part comprise mutually cooperating connecting means for connecting the further sill part to the basic sill part, and wherein said basic sill part and said further sill part are made of a solid plastic material.

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Description

[0001] The invention relates to a sill assembly. The invention further relates to a sill. The sill assembly or sill may for example be used for a window or door.

[0002] A known sill assembly comprises a sill and for example two plinth blocks that are attached thereto, for example at two opposing end zones thereof, wherein window or door frame elements may be attached to the plinth blocks. The plinth blocks may for example be attached to the sill using known attachment means, such as a screw or bolt. The sill may for example be formed by a hollow profile made of plastic or metal, or the sill may be a solid plastic sill.

[0003] It is an object of the invention to improve the known sill assembly and/or sill.

[0004] In an embodiment of the sill assembly according to the invention said sill assembly comprises a sill and at least one plinth block, wherein said sill and said plinth block comprise mutually cooperating connecting means for connecting the at least one plinth block to the sill.

[0005] An advantage of the assembly according to the invention is that said at least one plinth block may be connected to the sill in a quick and/or easy way.

[0006] By eliminating the use of a screw or bolt a cold bridge that may otherwise be formed by the screw or bolt may be prevented.

[0007] The sill and/or the least one plinth block may either be hollow or solid. In particular, the sill and/or the least one plinth block may be formed as a hollow profile or may be made of a solid plastic material.

[0008] The connecting means may provide either a permanent or a releasable connection between the sill and the at least one plinth block. A permanent connection is to be understood as that the plinth block and the sill cannot be disconnected from each other without damaging one or both of the plinth block and the sill. In a releasable connection the sill and at least one plinth block can be disconnected and reconnected to each other.

[0009] Optionally an adhesive such as glue may be applied to abutting surfaces of the plinth block and sill, in order to enhance the connection therebetween.

[0010] The plinth block may also be denoted as a connecting element for connecting the sill to posts of a window or door frame.

[0011] In another embodiment of the sill assembly according to the invention said connecting means are integrally formed with the sill and the at least one plinth block, respectively.

[0012] Integrally formed connecting means may provide a strong and/or easy and/or quick connection of the sill and the plinth block to each other.

[0013] Additionally or alternatively, integrally formed connecting means may reduce susceptibility of the plinth block and/or the sill to damage due to moisture.

[0014] Furthermore, integrally formed connecting means may provide a good and/or watertight and/or airtight sealing between the plinth block and the sill. With

the known assembly the position and/or location of the plinth block with respect to the sill may not be accurately defined, such that it consumes more time to correctly connect the plinth block to the seal and/or more positioning errors may be made.

[0015] In an advantageous embodiment of the sill assembly according to the invention said connecting means are arranged such that the at least one plinth block connects to the sill at a predetermined location and/or with a predetermined orientation, at least in a direction orthogonal to a longitudinal direction of the sill.

[0016] An advantage of this embodiment is that the plinth block is connected to the sill at a correct location and/or orientation, which may increase the speed of connecting the plinth block to the sill and/or may reduce the positioning errors.

[0017] Said location and/or orientation may be defined by the connecting means which may be provided on the sill and the plinth block at a desired location and/or orientation. With use of the connecting means the plinth block may be connected to the sill in only one possible way, such that the location and/or orientation thereof is defined by the location and/or orientation of the connecting means.

[0018] In yet another embodiment of the sill assembly according to the invention said sill comprises a basic sill part and at least one further sill part, for example a stop element or an extension element, wherein said basic sill part and said at least one further sill part comprise mutually cooperating connecting means for connecting the at least one further sill part to the basic sill part.

[0019] An advantage of this embodiment is that the basic sill part may have a similar shape and/or size for many applications, wherein the further sill part may be adapted to a specific application. For example, the basic sill part may be similar, in particular identical for a door or window, while the further sill part may be a stop element, for example in particular a (sill) stop block, for a (moveable) door or window. In case the window is a fixed window said stop element may also be referred to as a glazing stop.

[0020] A further advantage may occur when the sill is made of a solid plastic material, in particular when said sill is made by machining and/or milling. In such a case a (pressed) plastic starting material, for example in the form of a plate or beam, is provided that is machined and/or milled into the shape of a sill. However, if the sill is made of one integral piece a lot of material is machined away, which results in a lot of waste and/or higher production costs and/or increased production time. Furthermore, a relatively thick plastic starting material may be required, which is relatively expensive in comparison to separate, multiple starting material parts that together have a same thickness. If said sill is made of a basic sill part and at least one further sill part, said sill parts may be made separately of separate starting materials, thereby creating less waste and/or lower production costs and/or less production time.

[0021] Additionally or alternatively, in the case that the further sill part is a stop element, the stop element may be connected to the basic sill part after installation of the basic sill part, so that, if the sill is to be installed in a window or door frame, the basic sill part may be installed in the frame together with window glazing or a door while the further sill part is to be installed later. This may leave room for wiring or cables, for example for providing electricity from indoors to outdoors, which is often desired by builders and/or construction workers.

[0022] The further sill part may be any type of sill part, for example, but not limited thereto, a stop element, an extension element, or a water bar. Said stop element may be a stop element for a (moveable) door or window. Said extension element may be provided to extend the sill, such that the sill may be made higher and/or wider and/or longer. Said water bar may be provided as a water barrier.

[0023] In particular, the further sill part, for example the stop element or the extension element, may increase a total or maximum height of the sill. In other words, a maximum height of the basic sill part may be smaller than a maximum height of the combination of the basic sill part with further sill part connected thereto.

[0024] The height of the sill may be defined in normal use of the sill, i.e. when the sill is mounted in a construction or building. The height of the sill may in particular be determined in the vertical direction in use of the sill.

[0025] The sill may comprise one or more further sill parts. Said sill parts may be similar or different sill parts.

[0026] The basic sill part may be made as one continuous length of material, from which continuous length a basic sill part with a desired length may be cut off.

[0027] In yet another embodiment of the sill assembly according to the invention the connecting means of the basic sill part are arranged for connecting with both the at least one further sill part and the at least one plinth block.

[0028] An advantage of this embodiment is that said basic sill part may require only one type of connecting means to which both the further sill part(s) and the plinth block(s) may connect, which results in a relatively simple basic sill part that may in particular be suitable for different applications.

[0029] The basic sill part of this embodiment may provide the user with flexibility to choose the connection location of the further sill part and/or the plinth block.

[0030] The connecting means may be arranged as a substantially continuous type of connection means extending over at least a large part of the length of the basic sill part. In such an embodiment the at least one further sill part and the at least one plinth block may be connected to the basic sill part at any location along the length thereof. The at least one plinth block and the at least one further sill part may in particular be connected to the basic sill part adjacent to each other, optionally with a sealing therebetween.

[0031] The connecting means of the basic sill part for

connecting to the plinth block may optionally be arranged at a different location on the basic sill part than the connecting means of the basic sill part for connecting to the further sill part.

5 **[0032]** The connecting means of the basic sill part for connecting to the plinth block and the connecting means of the basic sill part for connecting to the further sill part may be similar, in particular identical.

10 **[0033]** The connecting means of the plinth block and the further sill part may be similar, in particular identical.

[0034] The connecting means may comprise a click and/or snap connection.

15 **[0035]** In yet another embodiment of the sill assembly according to the invention the mutually cooperating connecting means comprise a recess and a projection, wherein the recess is arranged to receive the projection, wherein said projection is preferably arranged as a snap projection.

20 **[0036]** The recess and the projection may provide a sturdy way of interconnecting the sill assembly. The snap projection may provide a secure way of interconnecting the assembly as well as providing feedback as to whether the sill assembly has been interconnected properly.

25 **[0037]** In such an embodiment the recess functions as a female connection part and the projection as a male connection part. The sill may comprise one of the recess and the projection, and the plinth block may comprise the other one of the recess and the projection. In particular the basic sill part may comprise one of the recess and the projection, and the plinth block and the further sill part may comprise the other one of the recess and the projection.

30 **[0038]** The snap projection preferably comprises outward extending gripping elements and is preferably arranged to be moved from a normal, spread position to a squeezed position during connection of the sill to the plinth block, or during connection of the basic sill part to the plinth block or further sill part, and to move back to its spread position after connection thereof, such that the gripping elements engage to the recess of the other connecting means. Said outward extending gripping elements may in particular extend orthogonal to the longitudinal direction of the snap projection.

35 **[0039]** The recess preferably comprises a neck part, which defines a local narrowing of said recess. Said neck part forces said snap projection into its squeezed position. After passing said neck part of said recess said snap projection may move back to its spread position. The local narrowing may be defined in the width direction of the recess, i.e. orthogonal to the longitudinal direction of the recess.

40 **[0040]** In yet another embodiment of the sill assembly according to the invention said snap projection and/or said neck portion is formed by a profile that is attached to one of the sill and the plinth block, or for example to one of the basic sill part, the further sill part and the plinth block. In particular, a profile forming said neck portion may be arranged in the recess and attached to one of

the sill and the plinth block, or for example to one of the basic sill part, the further sill part and the plinth block. In particular, a profile forming said snap projection may be attached to an outer surface of the other one of the sill and the plinth block, or for example to the other one of the basic sill part, the further sill part and the plinth block. In particular, said sill and/or basic sill part may have a profile attached thereto with the shape of either the neck portion or the snap projection, and the plinth block and/or further sill part may have a different profile attached thereto with the shape of the other one of the neck portion and the snap projection. Said snap projection and/or said neck portion may have a difficult shape to make, for example by machining or milling. The profile may easily be made in such a shape and then attached to one of the sill and the plinth block, or for example to one of the basic sill part, the further sill part and the plinth block. Attachment of the profile to one of the sill and the plinth block, or for example to one of the basic sill part, the further sill part and the plinth block may take place using known attachment means, such as for example screws or glue.

[0041] If said neck portion is formed by a said profile, said profile may have a substantially C-shape transverse cross-section, wherein the open part of the C defines an opening for inserting said snap projection.

[0042] Said profile may be made by any suitable material. For example, said profile may be made a metal, such as aluminum.

[0043] In yet another embodiment of the sill assembly according to the invention the basic sill part comprises a continuous recess or projection extending over substantially the entire length thereof.

[0044] An advantage thereof is that the further sill part and/or the plinth block, which comprises the other of the recess or projection, may be connected to the basic sill part at any desired location over the length thereof, while the connection position in an orthogonal direction to the length of the basic sill part and/or the orientation is pre-defined.

[0045] As described above, this provides for the opportunity to make one continuous length of basic sill part from which multiple basic sill parts may be cut off.

[0046] Preferably the other one of the recess or projection is also a continuous recess or projection extending over substantially the entire length of the plinth block and/or the further sill part. The length of the plinth block and/or further sill part is defined parallel to the length of the basic sill part when the basic sill part is connected to the plinth block and/or further sill part.

[0047] If a profile is provided for forming said snap projection and/or said neck portion, such a profile may also have a continuous length extending over substantially the entire length of the basic sill part and/or the plinth block and/or the further sill part. Alternatively, such a profile may have a length that is shorter than the length of the basic sill part and/or the plinth block and/or the further sill part, wherein such a profile may be connected locally to the basic sill part and/or the plinth block and/or the

further sill part.

[0048] In yet another embodiment of the sill assembly according to the invention said sill and/or said plinth block are made of a solid material, in particular a solid plastic material.

[0049] More in particular, said sill and/or said plinth block are in this embodiment not hollow, in particular not formed of a hollow profile.

[0050] A solid material, for example a solid plastic material has the advantage that it is rigid without being heavy and prevents a cold bridge. Additionally a solid (plastic) material may be weather and/or moisture resistant.

[0051] Furthermore the solid (plastic) material may increase the structural rigidity of the connecting means, and allows for a machining or milling operation to produce the connecting means.

[0052] The solid plastic material may be chosen from the group comprising polyvinylchloride (PVC), polyolefines, for example Low Density Polyethylene (LDPE), Linear Low Density Polyethylene (LLDPE), High Density Polyethylene (HDPE), High Molecular Weight Polyethylene (HMWPE) or Ultra High Molecular Weight Polyethylene (UHMWPE), and polyurethane (PU), for example PU hard foam, or any combination thereof.

[0053] Both PVC, polyolefines, and PU are suitable materials. In particular the polyethylenes as listed can be recycled very well, so that preferably such recycled material is included in the sill and/or plinth blocks. The material is very suitable for use in the "Sustainable building" program in the Netherlands. The recycled material can in an advantageous manner -at last partly- consist of visible particles, which particles preferably have a different colour. Most of the material of the sill and/or plinth blocks may for instance be black, with in it lighter pieces of recycled material, which gives it a natural appearance, when a stone-like appearance is wanted. Alternatively of course a different colour or wood pattern could also be realized in a similar manner. The material has a higher ignition temperature than wood: in order to ignite permanent contact with a flame is necessary.

[0054] Said solid material or solid plastic material may optionally comprise fibres, for example wood fibres. Such a solid material or solid plastic material comprising fibres may also be denoted as a composite material, for example as a wood composite comprising said wood fibres embedded in PU or in any other suitable plastic material.

[0055] Said parts of said sill assembly, for example said plinth block and/or said basic sill part and/or said further sill part, may be made of the same or of different materials, for example as listed above.

[0056] In particular, said basic sill part and/or said plinth block may be made of PU, more in particular of PU hard foam, optionally comprising fibres, such as wood fibres.

[0057] In particular, said further sill part may be made of a polyolefine, for example as listed above.

[0058] Optionally some or all parts of the sill assembly or sill may be painted or coated, for example using a wear

resistance coating. In particular a part of the sill or sill assembly that is made of PU, optionally comprising said fibres, may be coated using such a coating.

[0059] Dependent on material choice, the posts and head of a window or door frame may be painted or coated, but it may not be necessary to paint or coat the sill and/or plinth blocks of the frame. This may provide difficulties in painting or coating a part of the frame comprising only said posts and head, because such a part is not yet stable because the sill and/or plinth blocks is/are missing. If at least a basic sill part and plinth blocks are provided that allow to be painted or coated, said frame comprising at least said basic sill part, said plinth blocks, said posts, and said head, which forms a stable frame, may be painted or coated relatively easy. Said further sill part may optionally be made of a material that does not require or allow for painting or coating, and may be connected to said basic sill part at a later stage, i.e. after painting or coating said frame part comprising at least said basic sill part, said plinth blocks, said posts, and said head.

[0060] In yet another embodiment of the sill assembly according to the invention said sill and/or said plinth block are made by means of machining and/or milling.

[0061] Machining and/or milling provide the advantage of being versatile so that many different shapes of sill assemblies can be made without having to invest in different moulds. Furthermore machining and/or milling may be cheap and/or quick and/or require little energy.

[0062] In particular the basic sill part and the further sill part may be made of solid material, such as solid plastic, preferably by machining and/or milling. As described above, when the sill is made of solid plastic by machining or milling, it is advantageous to provide the basic sill part and the further sill part in order to decrease waste material and/or productions costs and/or time.

[0063] The invention also relates to a sill, intended to be part of a sill assembly according to any of the claims 1 - 9, wherein said sill comprises connecting means for connecting to a plinth block.

[0064] Such a sill has the advantage that it can be used in an assembly according to any one of the claims 1-9 or as described above. Such a sill may therefore have any or more of the advantages of the assemblies as described above.

[0065] The sill may have any one or more of the features of the sill of the sill assembly as described above and/or below and/or in claims 1-9, in any suitable and/or desired combination.

[0066] The invention also relates to a sill, comprising a basic sill part and a further sill part, for example a stop element or an extension element, wherein said basic sill part and said further sill part comprise mutually cooperating connecting means for connecting the further sill part to the basic sill part, and wherein said basic sill part and said further sill part are made of a solid material, in particular a solid plastic material.

[0067] As described above, in the case the sill is made of a solid (plastic) material it may be advantageous if the

sill is made of a basic sill part and one or more further sill parts. Such a sill, in particular the basic sill part and at least one further sill part may be made of thinner pieces of starting material, which may result in less waste and/or lower production costs and/or less production time.

[0068] In particular this is advantageous when said basic sill part and said further sill part are made by means of machining and/or milling. Said basic sill part and said further sill part are in particular made by machining and/or milling a solid, plastic starting material, for example in the form of a plate or beam.

[0069] The solid plastic material may be chosen from the group comprising polyvinylchloride (PVC), polyolefines, for example Low Density Polyethylene (LDPE), Linear Low Density Polyethylene (LLDPE), High Density Polyethylene (HDPE), High Molecular Weight Polyethylene (HMWPE) or Ultra High Molecular Weight Polyethylene (UHMWPE), and polyurethane (PU), for example PU hard foam, or any combination thereof.

[0070] Both PVC, polyolefines, and PU are suitable materials. In particular the polyethylenes as listed can be recycled very well, so that preferably such recycled material is included in the sill and/or plinth blocks. The material is very suitable for use in the "Sustainable building" program in the Netherlands. The recycled material can in an advantageous manner -at last partly- consist of visible particles, which particles preferably have a different colour. Most of the material of the sill and/or plinth blocks may for instance be black, with in it lighter pieces of recycled material, which gives it a natural appearance, when a stone-like appearance is wanted. Alternatively of course a different colour or wood pattern could also be realized in a similar manner. The material has a higher ignition temperature than wood: in order to ignite permanent contact with a flame is necessary.

[0071] Said solid material or solid plastic material may optionally comprise fibres, for example wood fibres. Such a solid material or solid plastic material comprising fibres may also be denoted as a composite material, for example as a wood composite comprising said wood fibres embedded in PU or in any other suitable plastic material.

[0072] Said parts of said sill, in particular said basic sill part and/or said further sill part, may be made of the same or of different materials, for example as listed above.

[0073] In particular, said basic sill part may be made of PU, more in particular of PU hard foam, optionally comprising fibres, such as wood fibres.

[0074] In particular, said further sill part may be made of a polyolefine, for example as listed above.

[0075] As described above, the further sill part may be any type of sill part, for example a stop element, an extension element or a glazing bead. Said stop element may be a stop element for a moveable door or window. Said glazing bead may be an element for a fixed window. Said extension element may be provided to extend the sill, such that the sill may be made higher and/or wider and/or longer.

[0076] In particular, the further sill part, for example the

stop element or the extension element, may increase a total or maximum height of the sill. In other words, a maximum height of the basic sill part may be smaller than a maximum height of the combination of the basic sill part with further sill part connected thereto.

[0077] The height of the sill may be defined in normal use of the sill, i.e. when the sill is mounted in a construction or building. The height of the sill may in particular be determined in the vertical direction in use of the sill.

[0078] The sill may comprise one or more further sill parts. Said further sill parts may be similar or different further sill parts.

[0079] In an embodiment of the sill according to the invention the mutually cooperating connecting means comprise a recess and a projection, wherein the recess is arranged to receive the projection, wherein said projection is preferably arranged as a snap projection.

[0080] The recess and the projection may provide a sturdy way of interconnecting the basic sill part and further sill part. The snap projection may provide a secure way of interconnecting the basic sill part and further sill part as well as providing feedback as to whether these have been interconnected properly.

[0081] In such an embodiment the recess functions as a female connection part and the projection as a male connection part. The basic sill part may comprise one of the recess and the projection and the further sill part may comprise the other one of the recess and the projection.

[0082] The snap projection preferably comprises outward extending gripping elements and is preferably arranged to be moved from a normal, spread position to a squeezed position during connection of the basic sill part to the further sill part, and to move back to its spread position after connection thereof, such that the gripping elements engage to the recess of the other connecting means. Said outward extending gripping elements may in particular extend orthogonal to the longitudinal direction of the snap projection.

[0083] The recess preferably comprises a neck part, which defines a local narrowing of said recess. Said neck part forces said snap projection into its squeezed position. After passing said neck part of said recess said snap projection may move back to its spread position. The local narrowing may be defined in the width direction of the recess, i.e. orthogonal to the longitudinal direction of the recess.

[0084] In yet another embodiment of the sill according to the invention said snap projection and/or said neck portion is formed by a profile that is attached to one of the basic sill part and the further sill part. In particular, a profile forming said neck portion may be arranged in the recess and attached to one of the basic sill part and the further sill part. In particular, a profile forming said snap projection may be attached to an outer surface of the other one of the basic sill part and the further sill part. In particular, said basic sill part may have a profile attached thereto with the shape of either the neck portion or the snap projection, and the further sill part may have a dif-

ferent profile attached thereto with the shape of the other one of the neck portion and the snap projection. Said snap projection and/or said neck portion may have a difficult shape to make, for example by machining or milling.

5 The profile may easily be made in such a shape and then attached to one of the basic sill part and the further sill part. Attachment of the profile to one of the basic sill part and the further sill part may take place using known attachment means, such as for example screws or glue.

10 **[0085]** If said neck portion is formed by a said profile, said profile may have a substantially C-shape transverse cross-section, wherein the open part of the C defines an opening for inserting said snap projection.

[0086] Said profile may be made by any suitable material. For example, said profile may be made a metal, such as aluminum.

15 **[0087]** In yet another embodiment of the sill according to the invention the basic sill part comprises one continuous recess or projection extending over substantially the entire length thereof.

[0088] An advantage thereof is that the further sill part, which comprises the other of the recess or projection, may be connected to the basic sill part at any desired location over the length thereof, while the connection position in an orthogonal direction to the length of the basic sill part and/or the orientation is predefined.

[0089] As described above, this provides for the opportunity to make one continuous length of basic sill part from which multiple basic sill parts may be cut off.

20 **[0090]** Preferably the other one of the recess or projection is also a continuous recess or projection extending over substantially the entire length of the further sill part. The length of the further sill part is defined parallel to the length of the basic sill part when the basic sill part is connected to the further sill part.

25 **[0091]** If a profile is provided for forming said snap projection and/or said neck portion, such a profile may also have a continuous length extending over substantially the entire length of the basic sill part and/or the further sill part. Alternatively, such a profile may have a length that is shorter than the length of the basic sill part and/or the further sill part, wherein such a profile may be connected locally to the basic sill part and/or the further sill part.

30 **[0092]** In a particular embodiment said profile may be connected to said basic sill part only over the length thereof where it is intended to connect a said further sill part. In particular in an area or part of the length of the basic sill part where it is intended to connect a plinth block no such profile may be provided, such that the plinth block is attached to the basic sill part using normal attachment means, for example screws or glue, and in particular not any mutually cooperating connecting means. The mutually cooperating connecting means are in this embodiment used only for connecting the at least one further sill part to the basic sill part. In yet another embodiment the basic sill part comprises a recess or projection extending over only part of the length thereof, and in particular only

over a part of the length where it is intended to connect a said further sill part. In particular in an area or part of the length of the basic sill part where it is intended to connect a plinth block no such recess or projection may be provided, such that the plinth block is attached to the basic sill part using normal attachment means, for example screws or glue, and in particular not any mutually cooperating connecting means. The mutually cooperating connecting means are in this embodiment used only for connecting the at least one further sill part to the basic sill part.

[0093] The sill, in particular the basic sill part and at further sill part thereof, may have any one or more of the features of the sill of the sill assembly as described above and/or below and/or in claims 1-9, in any suitable and/or desired combination.

[0094] The invention further relates to a plinth block, intended to be part of a sill assembly according to any of the claims 1 - 9, wherein said plinth block comprises connecting means for connecting to a sill.

[0095] Such a plinth block has the advantage that it can be used in an assembly according to any one of the claims 1-9 or as described above or below. Such a plinth block therefore may have any or more of the advantages of the assemblies as described above.

[0096] The plinth block may have any one or more of the features of the plinth block of the sill assembly as described above and/or in claims 1-9, in any suitable and/or desired combination.

[0097] The present invention will now be described by way of example with reference to the accompanying drawings. In the drawings:

Figure 1 is a schematic perspective view of a combined window and door frame including a sill assembly according to a first embodiment of the invention; Figure 2 is an exploded view of the combined window and door frame of figure 1;

Figure 3 is a simplified view of the window and door frame of figure 1;

Figure 4 shows mutually cooperating connecting means of the window and door frame of figure 1 in more detail;

Figure 5 shows a detail of connecting a post to a plinth block of the window and door frame of figure 1 in a schematic perspective view;

Figure 6 shows a transverse cross section through the window and door frame of figure 1 in an area of the door;

Figure 7 shows a transverse cross section through the window and door frame of figure 1 in an area of the window;

Figure 8 shows a transverse cross section through the window and door frame of figure 1 in an area of the plinth block and post;

Figures 9A and 9B show a transverse cross section of a part of a sill according to a second embodiment of the invention; and

Figures 10A and 10B show a part of a sill assembly according to a third embodiment of the invention, wherein figure 10A shows a perspective schematic view and figure 10B shows a transverse cross section.

[0098] In all figures like parts are numbered by like numbers. In different embodiments similar elements are numbered by similar numbers increased by 100.

[0099] Figures 1 and 2 show a window and door frame 1. Said frame 1 comprises a basic sill part 2 that extends along a bottom side of the frame 1 in a longitudinal direction. End plinth blocks 3 are connected to both longitudinal end zones of the basic sill part 2. An intermediate plinth block 4 is connected to an intermediate part of the basic sill part 2, in this example to the middle of the basic sill part 2 as seen in the longitudinal direction thereof. The plinth blocks 3, 4 connect to respective posts 5 of the frame 1, which posts 5 extend substantially vertical in use of the frame 1. The posts 5 may be connected to the plinth blocks 3, 4 in a conventional way, for example using screws, bolts or glue. A window stop element 6 is provided between the plinth blocks 3, 4 on one side of the basic sill part 2 as seen in the longitudinal direction thereof and is connected thereto. A door stop element 7 is provided between the plinth blocks 3, 4 on the other side of the basic sill part 2 as seen in the longitudinal direction thereof and is connected thereto. The window stop element 6 and the door stop element 7 are hereby arranged adjacent to the plinth blocks 3, 4, optionally with a sealing provided there between (not shown in figures 1 and 2). As shown in figure 2, in this example the basic sill part 2 comprises a continuous snap projection 8 extending over the entire length thereof, in particular along the upper side thereof. The plinth blocks 3, 4 and stop elements 6, 7 each comprise a respective recess 9 at their bottom sides for receiving the snap projection 8 of the basic sill part 2. The plinth blocks 3, 4 and stop elements 6, 7 may be connected to the basic sill part 2 using these mutually cooperating projection 8 and recesses 9. As the position and orientation of the projection 8 and recesses 9 are defined, the position and orientation of the plinth blocks 3, 4 and stop elements 6, 7 with respect to the basic sill part 2 is defined in a direction orthogonal to the longitudinal direction of the basic sill part 2. The position of the plinth blocks 3, 4 and stop elements 6, 7 along the length of the basic sill part 2 are suitably chosen, such that these are in their longitudinal position as described above. The recesses 9 of the plinth blocks 3, 4 and stop elements 6, 7 are in this example also formed as continuous recesses 9 extending over the entire lengths of the respective plinth blocks 3, 4 and stop elements 6, 7. The length of the plinth blocks 3, 4 and stop elements 6, 7 is hereby defined parallel to the length of the basic sill part 2. As further shown in figure 2, in this example the basic sill part 2 further comprises a continuous recess 10 extending over the entire length thereof, in particular along the bottom side thereof. Said recess

10 is suitable for connecting to a snap projection 11 of a water bar 12, which water bar 12 may thereby be connected to the bottom of the basic sill part 2 along and side end zone thereof. The snap projection 11 hereby extends along the entire length of the water bar 12, in particular along the upper side thereof.

[0100] In the example of figures 1 and 2 a sill assembly of the window and door frame 1 comprises said basic sill part 2, said plinth blocks 3, said stop elements 6, 7 and said water bar 12. It is noted however that said sill assembly may comprise any suitable parts and is not limited to this example. In particular it may comprise less or additional parts, which additional parts may be similar or different parts. It is also possible that said basic sill part is formed as one integral sill with said stop elements 6, 7 and/or said water bar 12, to which sill said plinth blocks may be connected using mutually cooperating connecting means.

[0101] In the example of figures 1 and 2 the basic sill part 2, stop elements 6, 7, plinth blocks 3, 4 and water bar 12 are made of a solid plastics material, for example by machining and/or milling a starting plastic material. The projection 8 and recesses 9 thereof may for example be made by milling. The posts 5 are hollow profiles made of any suitable material.

[0102] Figure 3 is a simplified view of the frame 1 of figures 1 and 2 in which the vertical posts are not shown. The adjacent and in particular abutting relationship of the plinth blocks 3, 4 and stop elements 6, 7 is clearly shown in this figure 3. This figure 3 further shows that the plinth blocks 3, 4 provide a flat upper surface for connecting the vertical posts thereto. Figure 3 further shows that the upper surfaces of the plinth blocks 3, 4 and stop elements 6, 7 are arranged in the same horizontal plane, i.e. extend at the same height and form one continuous, flat surface.

[0103] Figure 4 shows the mutually cooperating connecting means in the form of snap projection 8 of the basic sill part 2 with recesses 9 of plinth blocks 3, 4 and stop elements 6, 7, and recess 10 of the basic sill part 2 with snap projection 11 of the water bar 12 in more detail. This figure 4 shows that the snap projections 8, 11 comprise outward extending gripping elements 13. When the snap projections 8, 11 are inserted in respective recesses 9, 10, the snap projections 8, 11 are pressed inwards by a relatively small, neck part 15 of the recesses 9, 10 from their normal, spread position as shown in figure 4 into a squeezed position (not shown). After passing the neck part 15 the snap projections 8, 11 move back to their spread position, in which position the gripping elements 13 engage onto engaging surfaces 14 of the recesses 9, 10. A strong connection between the basic sill part 2 with plinth blocks 3, 4, stop elements 6, 7, and water bar 12 is hereby made.

[0104] Figure 5 shows the plinth block 3 that is connected to basic sill part 2 using the mutually cooperating connecting means in the form of recess 9 and projection 8 thereof. The vertical post 5 is to be connected to the plinth block 3 using conventional means as described

above. This figure 5 shows that the shape of the upper surface of the plinth block 3 is in this example adapted to and in particular identical to the shape of the lower surface of the post 5. The post 5 is thereby to be fixed to the plinth block 3 in one determined way, in which the mating surfaces of the plinth block 3 and post 5 are aligned.

[0105] Figure 6 shows a door 17 which is closed against the stop element 7 of the sill assembly with a stop 16, which stop element 7 is connected to the basic sill part 2 as described above.

[0106] Figure 7 shows a window 18, in particular the lower, horizontal frame part thereof, which is closed against the stop element 6 of the sill assembly with a stop 19, which stop element 6 is connected to the basic sill part 2 as described above.

[0107] Figure 8 shows the post 5 that is attached to the plinth block 3, which plinth block 3 is connected to the basic sill part 2 as described above.

[0108] Figures 9A and 9B show a basic sill part 102 according to a second embodiment. Only the differences with the basic sill part 2 of figures 1 - 8 will be described here. For a further description of the basic sill part 102 the reader is referred to the description of figures 1 - 8.

[0109] The basic sill part 102 comprises a recess 132 along a longitudinal side surface thereof. Said recess 132 is arranged to receive a projection 131 of an extension element 130. The extension element 130 increases the width of the basic sill part 102. The extension element 130 shown in figure 9A has a smaller width than the extension element 130 of figure 9B. As such, the total width of the sill formed by the basic sill part 102 and extension element 130 is smaller for the sill of figure 9A than the sill of figure 9B. This shows that by connecting suitable elements to the basic sill part the dimensions and/or shape of the sill may be suitably chosen.

[0110] Figures 10A and 10B show a sill assembly according to a third embodiment. Only the differences with the sill assembly of figures 1 - 8 will be described here. For a further description of the sill assembly the reader is referred to the description of figures 1 - 8.

[0111] The sill assembly of figures 10A and 10B comprises a basic sill part 202, and an end plinth block 203 and a stop element 206 connected thereto. Only part of the sill assembly, in particular one longitudinal end part, is shown in figures 10A and 10B, such that the other end plinth block or an intermediate plinth block, if provided, is not shown. In this embodiment the basic sill part 202 comprises a longitudinal recess 209 for receiving snap projections 208 having outward extending gripping elements 213 of the stop element 206 and plinth block 203 (the latter is not shown). The longitudinal recess 209 is in this embodiment formed as a longitudinally extending elongated recess with a substantially rectangular cross section. A longitudinally extending elongated profile 240, for example made of aluminum or any other suitable material, is arranged in the recess 209. Said profile 240 comprises side elements that extend inwards from the longi-

tudinally extending sides of the profile 240 and that define said neck part 215. In this example said profile 240 is connected to the basic sill part 202 by means of screws 241.

[0112] It is noted that the invention is not limited to the shown embodiments but also extends to variants within the scope of the appended claims.

[0113] For example, it is clear that the recesses and projections are provided as an example of the mutually cooperating connecting means only. Any suitable type of connecting means may be provided, as well as any desired length, position, and/or orientation thereof.

Claims

1. Sill assembly, for example for a window or door, said sill assembly comprising a sill and at least one plinth block, **characterized in that** said sill and said plinth block comprise mutually cooperating connecting means for connecting the at least one plinth block to the sill.
2. Sill assembly according to claim 1, wherein said connecting means are integrally formed with the sill and the at least one plinth block, respectively.
3. Sill assembly according to claim 1 or 2, wherein said connecting means are arranged such that the at least one plinth block connects to the sill at a predetermined location and/or orientation, at least in a direction orthogonal to a longitudinal direction of the sill.
4. Sill assembly according to any of the preceding claims, wherein said sill comprises a basic sill part and at least one further sill part, for example a stop element or an extension element, wherein said basic sill part and said at least one further sill part comprise mutually cooperating connecting means for connecting the at least one further sill part to the basic sill part.
5. Sill assembly according to claim 4, wherein the connecting means of the basic sill part are arranged for connecting with both the at least one further sill part and the at least one plinth block.
6. Sill assembly according to any of the preceding claims, wherein the mutually cooperating connecting means comprise a recess and a projection, wherein the recess is arranged to receive the projection, wherein said projection is preferably arranged as a snap projection.
7. Sill assembly according to claim 6 as dependent on claim 4 or 5, wherein the basic sill part comprises one continuous recess or projection extending over substantially the entire length thereof.
8. Sill assembly according to any of the preceding claims, wherein said sill and/or said at least one plinth block are made of a solid material, in particular a solid plastic material.
9. Sill assembly according to claim 8, wherein said sill and/or said at least one plinth block are made by means of machining and/or milling.
10. Sill, arranged and intended to be part of a sill assembly according to any of the claims 1 - 9, wherein said sill comprises connecting means for connecting to at least one plinth block.
11. Sill, comprising a basic sill part and at least one further sill part, for example a stop element or an extension element, wherein said basic sill part and said at least one further sill part comprise mutually cooperating connecting means for connecting the at least one further sill part to the basic sill part, and wherein said basic sill part and said at least one further sill part are made of a solid material, in particular a solid plastic material.
12. Sill according to claim 11, wherein said basic sill part and said at least one further sill part are made by means of machining and/or milling.
13. Sill according to claim 11 or 12, wherein the mutually cooperating connecting means comprise a recess and a projection, wherein the recess is arranged to receive the projection, wherein said projection is preferably arranged as a snap projection.
14. Sill according to claim 13, wherein the basic sill part comprises at least one continuous recess or projection extending over substantially the entire length thereof.
15. Plinth block, arranged and intended to be part of a sill assembly according to any of the claims 1 - 9, wherein said plinth block comprises connecting means for connecting to a sill.

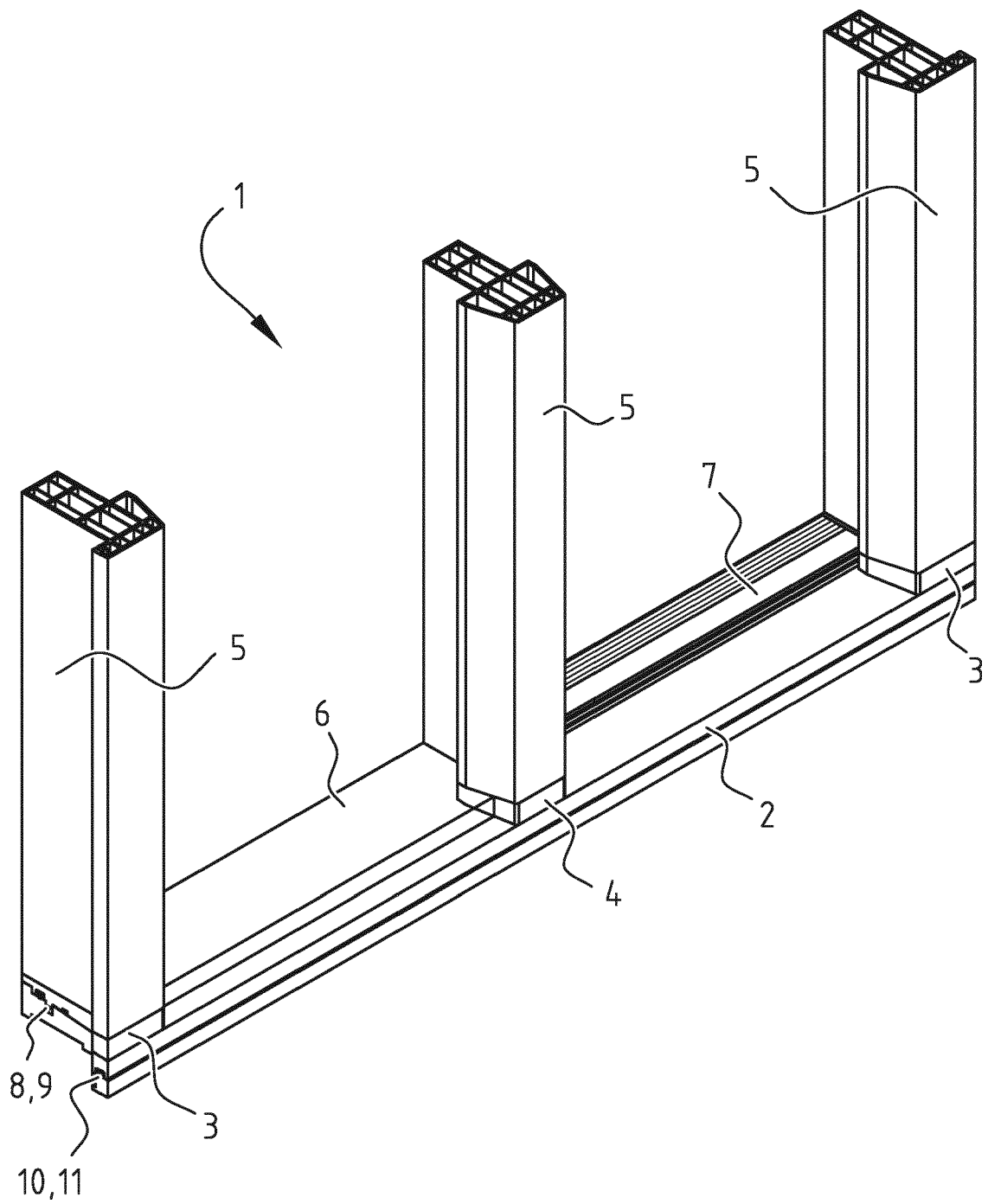


FIG. 1

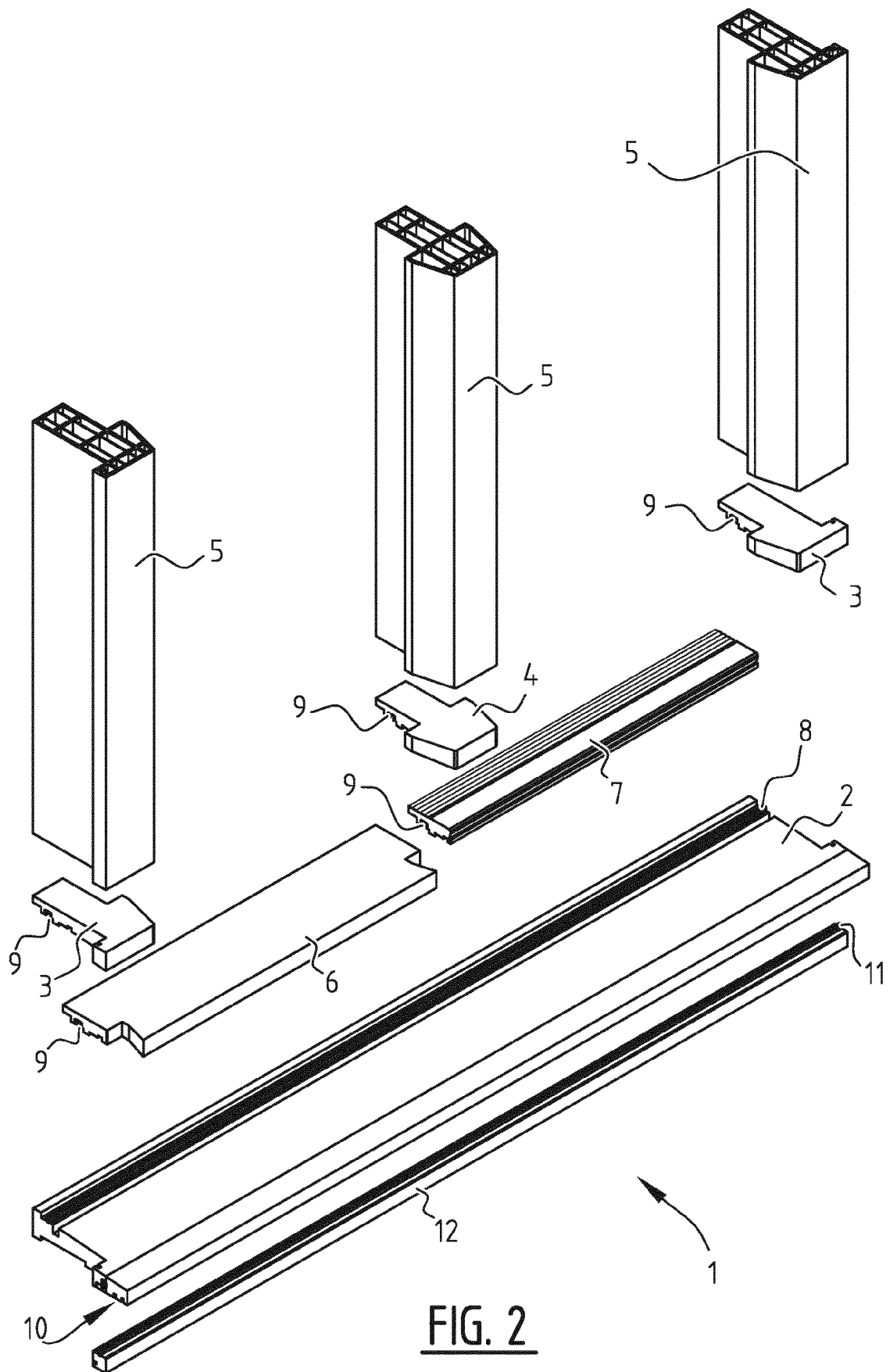


FIG. 2

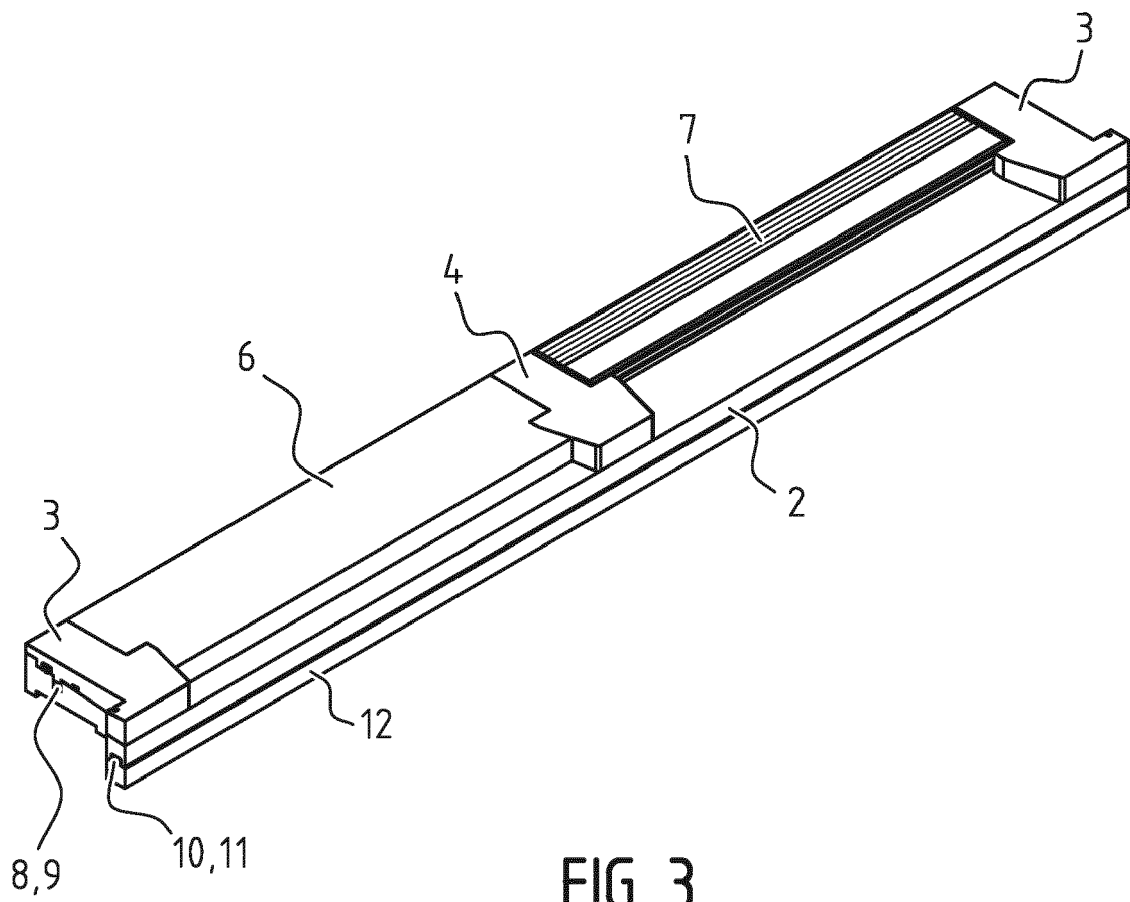


FIG. 3

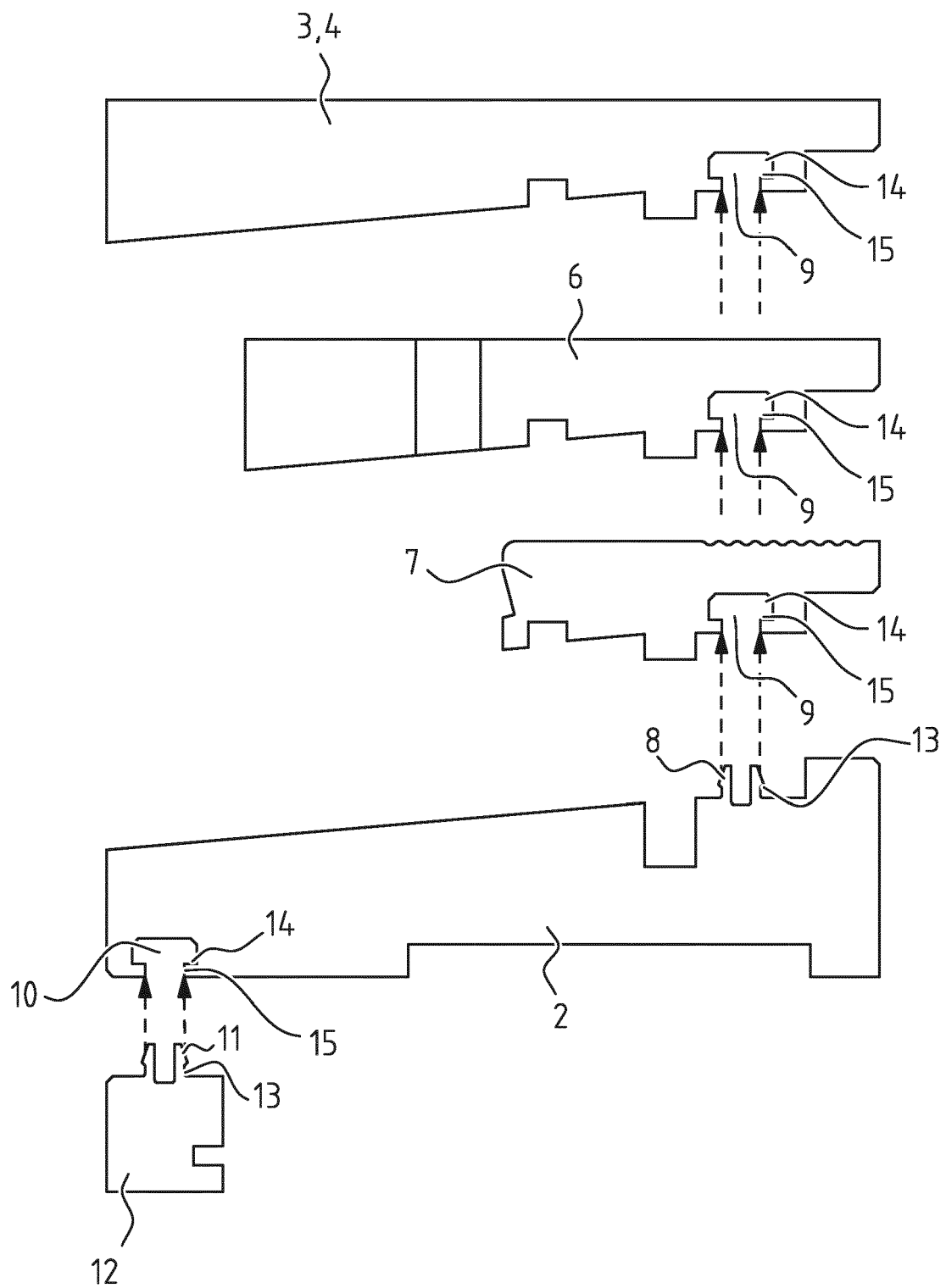


FIG. 4

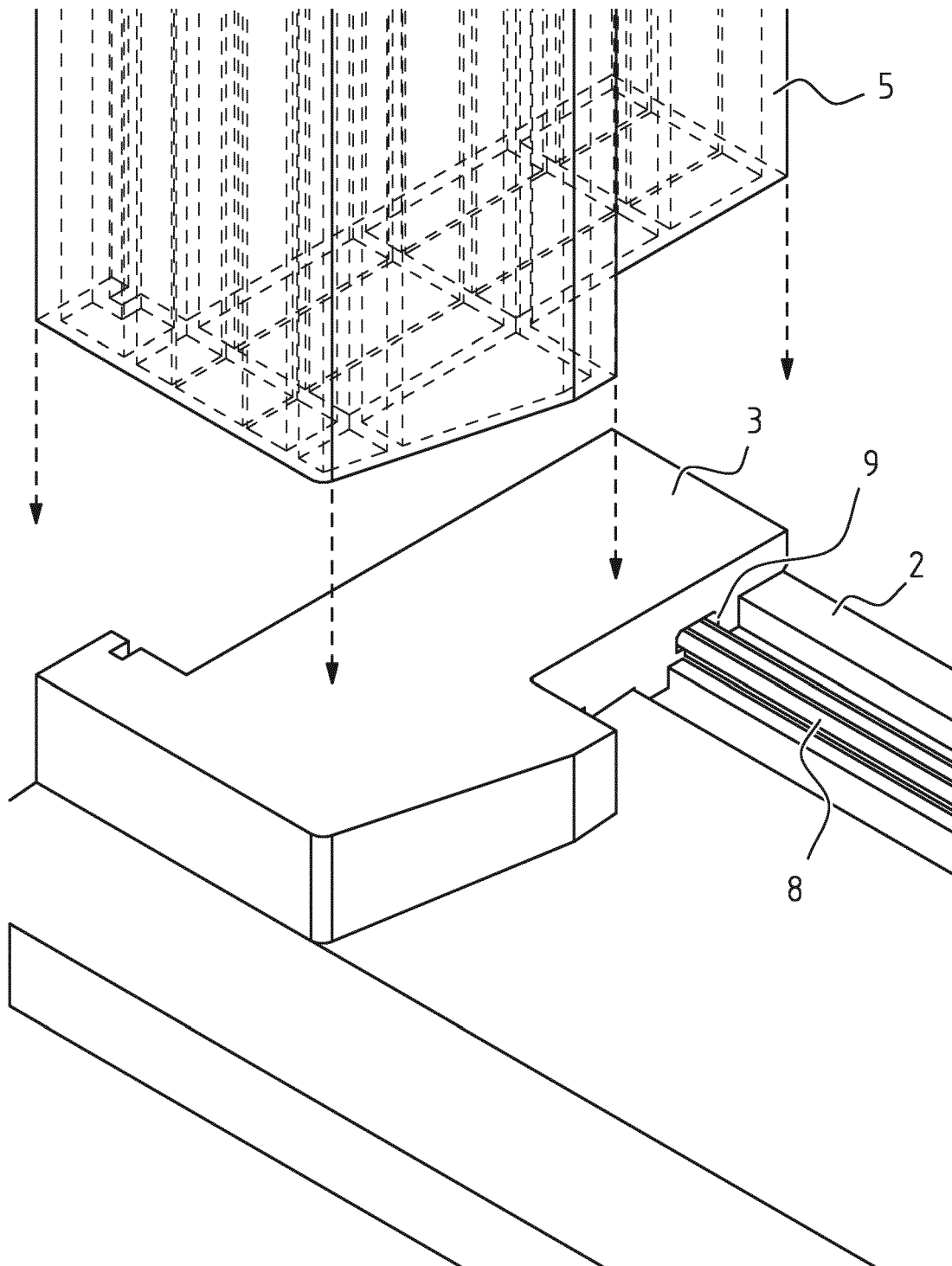
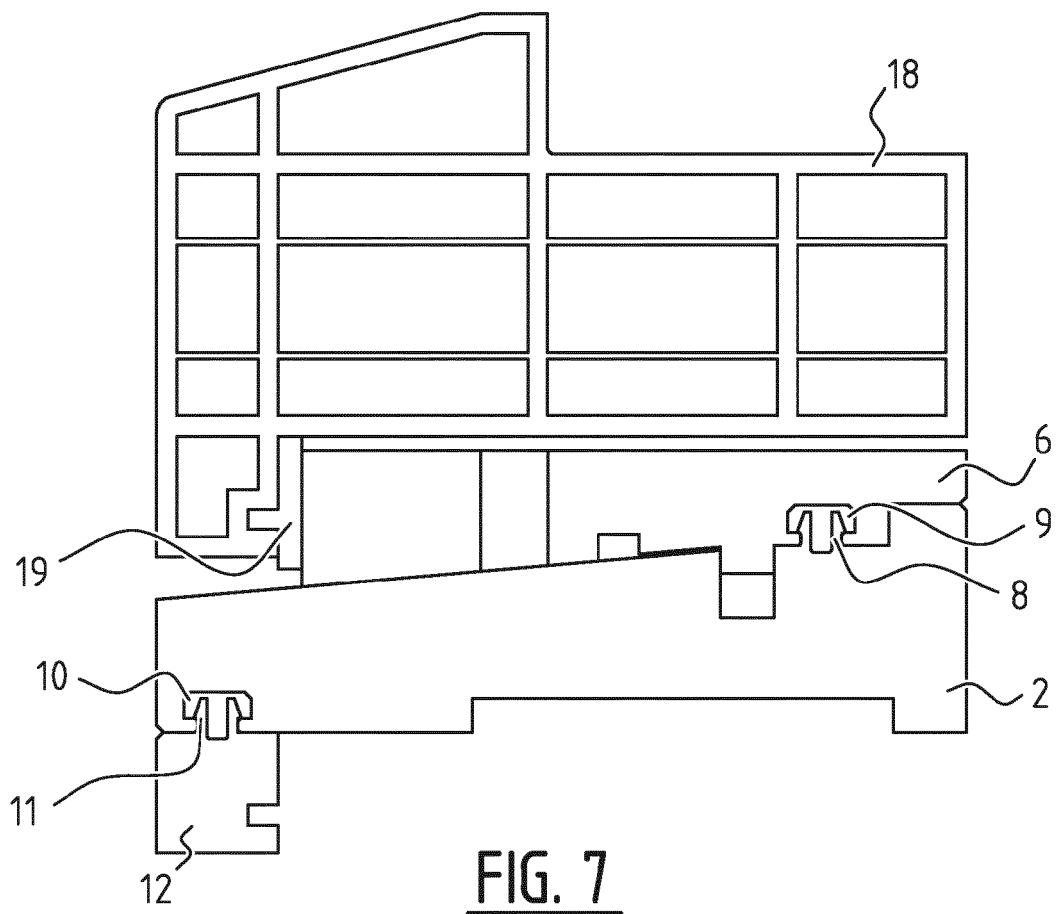
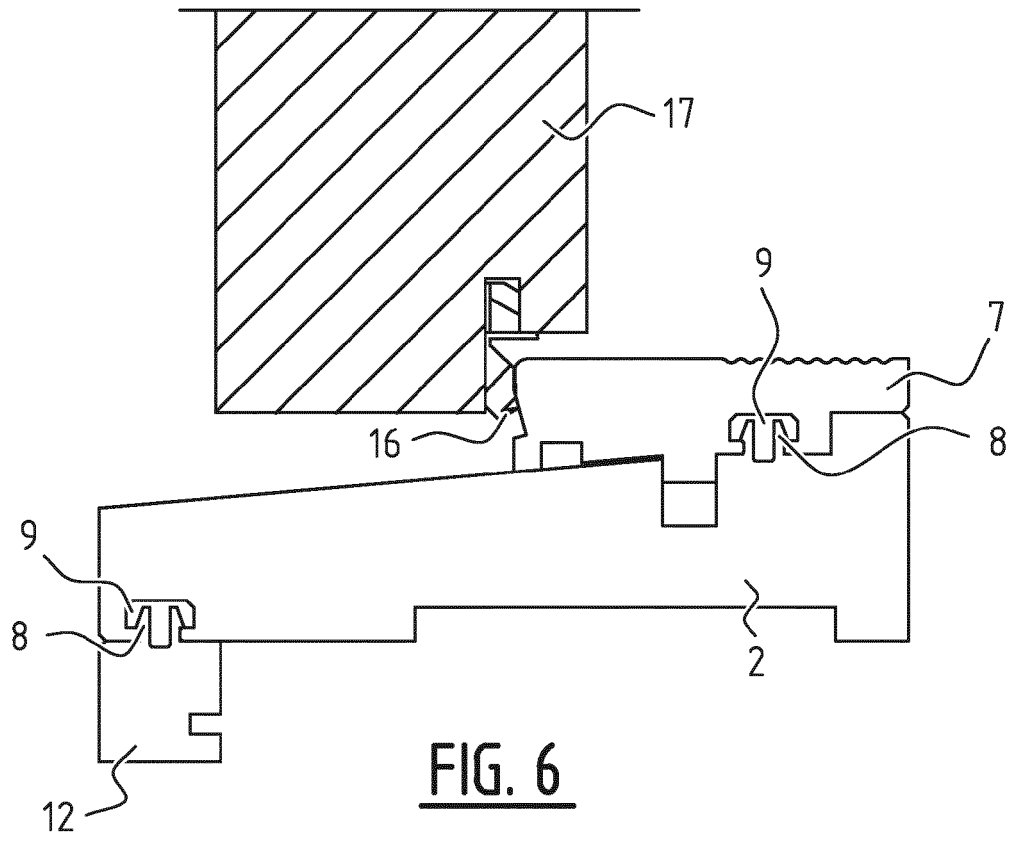


FIG. 5



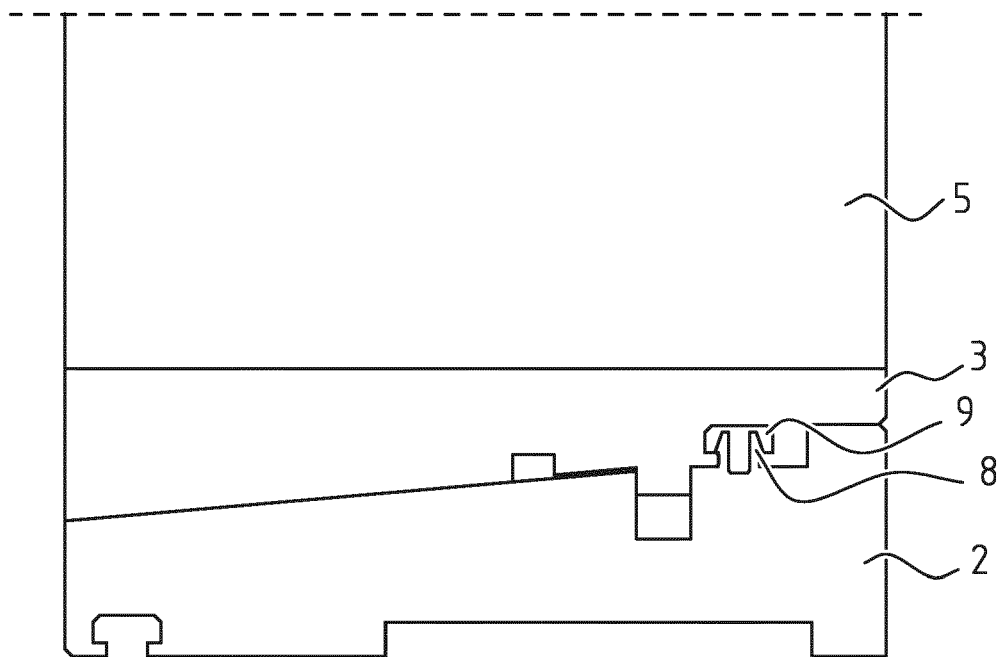


FIG. 8

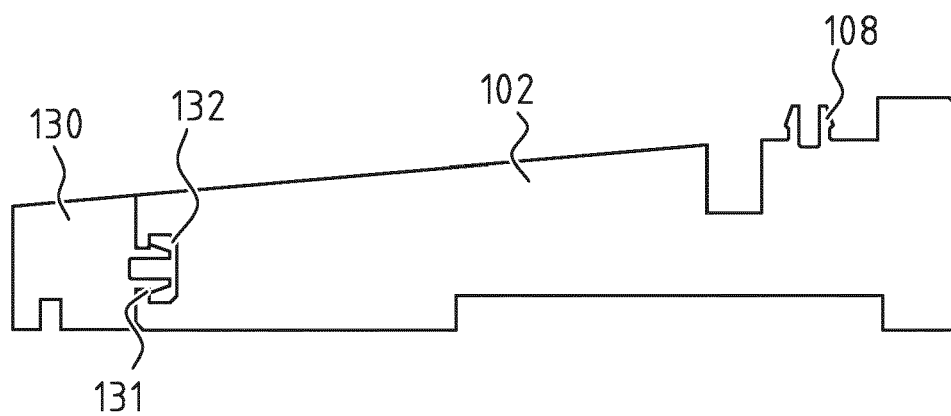


FIG. 9A

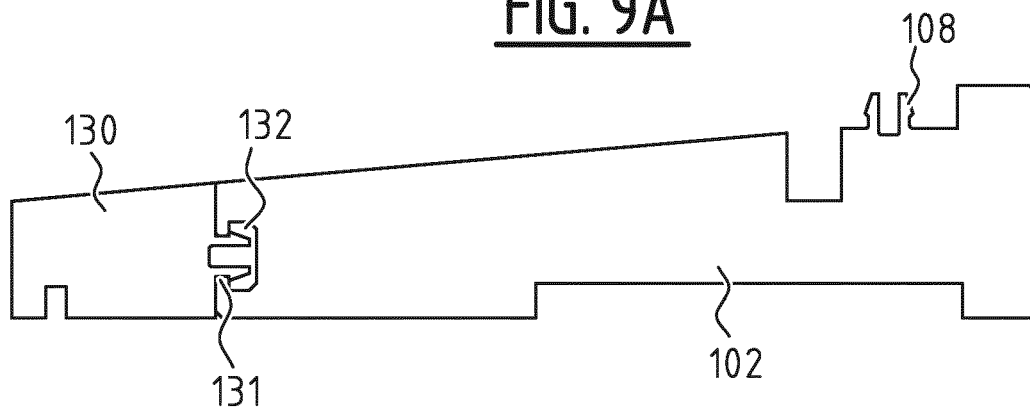


FIG. 9B

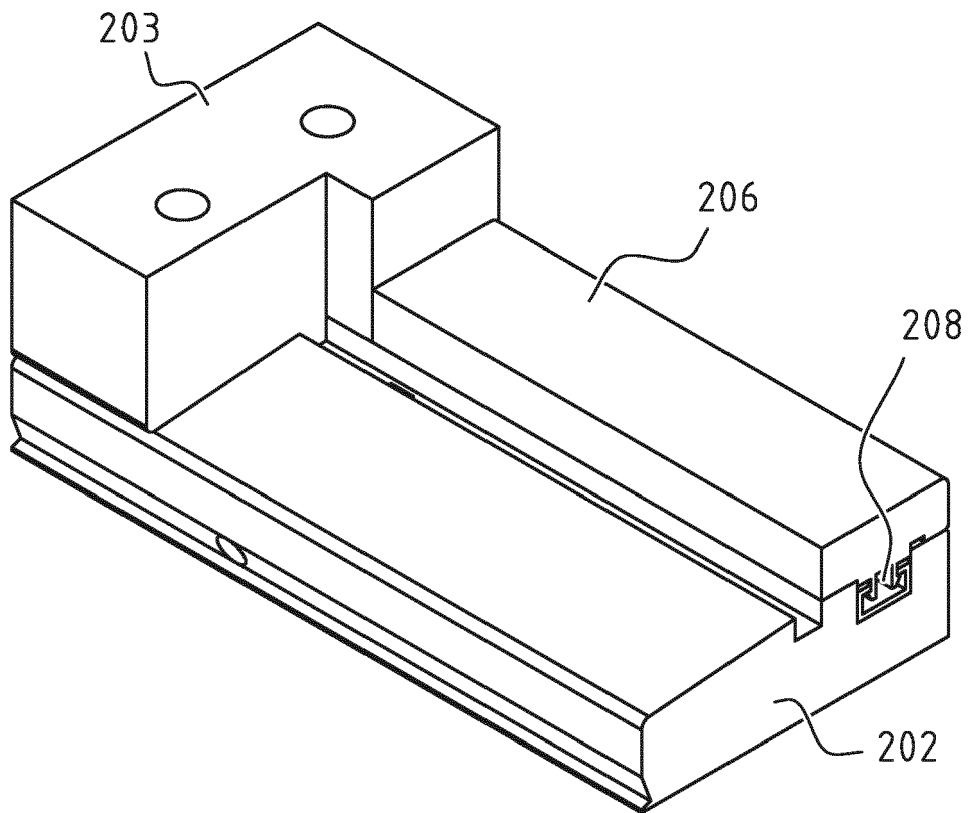


FIG. 10A

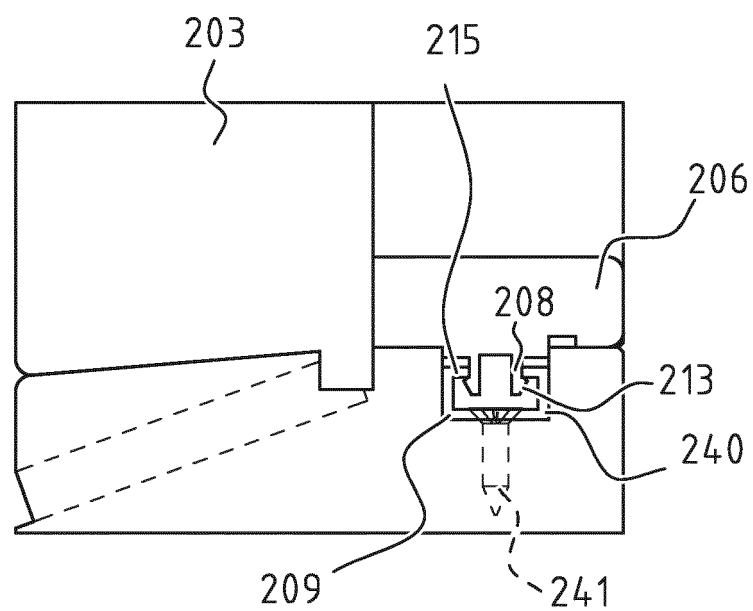


FIG. 10B



EUROPEAN SEARCH REPORT

 Application Number
 EP 18 15 3281

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 2 202 378 A2 (HAUTAU GMBH [DE]) 30 June 2010 (2010-06-30) * paragraph [0030]; figures 1,4 *	1-15	INV. E06B3/96 E06B1/70 E06B3/964
X	GB 2 148 992 A (NORCROS INVESTMENTS LTD) 5 June 1985 (1985-06-05) * page 1, line 108 - line 119 *	1-3,6, 8-15	
X	DE 20 2008 014802 U1 (FREY INGE [DE]) 18 March 2010 (2010-03-18) * paragraph [0032]; figures *	1-3,6,8, 10,15	
X	DE 20 2004 004703 U1 (GRETSCH UNITAS GMBH [DE]) 3 June 2004 (2004-06-03) * paragraphs [0031], [0032]; figures 1-4 *	1-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			E06B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 15 June 2018	Examiner Verdonck, Benoit
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 18 15 3281

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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15-06-2018

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 2202378 A2	30-06-2010	DE 102008063303 A1 EP 2202378 A2	01-07-2010 30-06-2010

GB 2148992 A	05-06-1985	GB 2148992 A IE 55787 B1 NL 8403314 A	05-06-1985 16-01-1991 03-06-1985

DE 202008014802 U1	18-03-2010	NONE	

DE 202004004703 U1	03-06-2004	NONE	

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