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(54) **MODULAR SILL FOR A SLIDING DOOR OR WINDOW, SLIDING DOOR OR WINDOW AND METHOD FOR MOUNTING A SILL FOR A SLIDING DOOR OR WINDOW**

(57) A modular sill (1) for a sliding door or window comprising a plurality of sill components (2) each of which has a seat (3) suitable for housing a respective guide (G) for a sliding leaf (A). In particular, the sill components (2) are configured to be reciprocally disposed so that, during use, the guides (G) are parallel to one another. Furthermore, the modular sill (1) comprises at least one connection component (4), suitable for connecting and spacing apart a first sill component and a second sill component, extending along a longitudinal direction (X) substantially aligned with the seat (3). In particular, the sill components (2) and the connection component (4) are configured to be interconnected to one another.

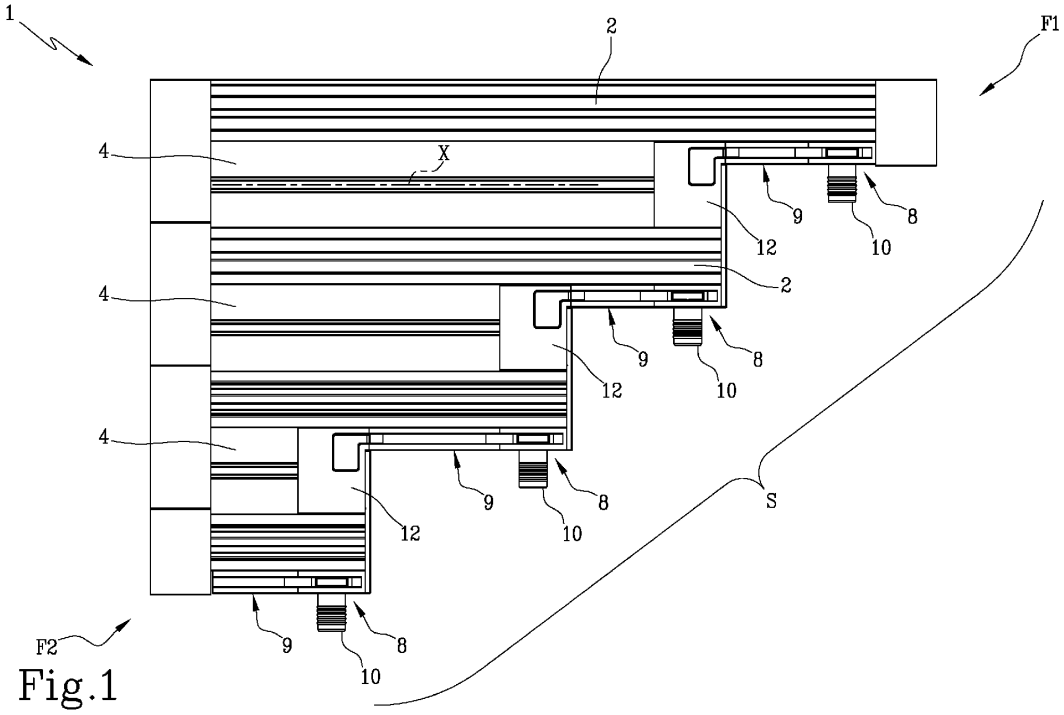


Fig.1

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Description

TECHNICAL FIELD

[0001] The present invention has as its object a modular sill for a sliding door or window, a sliding door or window and a method for mounting a sill for a sliding door or window.

PRIOR ART

[0002] As is known, there are doors with sliding leaves having one or more sliding leaves on a respective track in order to cause the opening or closing of a passage opening.

[0003] Generally, such doors comprise a guide device (or sill) that supports the tracks and holds them in position allowing the correct movement of the leaves.

[0004] Disadvantageously, such guide devices can usually support a limited number of leaves and therefore have a limited operational flexibility.

[0005] Disadvantageously, moreover, some of the aforementioned guide devices must be incorporated, or embedded, inside the screed and, therefore, their assembly must take place completely on site before casting the screed.

[0006] Therefore, these guide devices require the design and choice of the fixtures to take place before the screed is cast, waiving the possibility of customisation and/or future modifications.

[0007] In fact, a modification to the configuration of the guide devices would require the complete remaking of the screed and, therefore, of the entire floor.

[0008] In other words, the guide devices in accordance with the prior art have a strongly limited operational flexibility.

OBJECTS OF THE INVENTION

[0009] In this context, an object of the present invention is to make available a modular sill for a sliding door or window with greater operational flexibility than the prior art.

[0010] A further object of the present invention is to propose a modular sill and a sliding door or window that are quick and easy to install.

[0011] Another object of the present invention is to make available a modular sill for a sliding door or window that allows to support a basically unlimited number of sliding leaves.

[0012] A further object of the present invention is to propose a method for mounting a sill for a sliding door or window that is flexible and independent of the construction of the screed.

[0013] The defined technical task and the specified aims are substantially achieved by a modular sill for a sliding door or window, a sliding door or window and a method for mounting a sill for a sliding door or window, which comprise the technical features set forth in one or more of the appended claims.

[0014] The dependent claims correspond to possible embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] Additional features and advantages of the present invention will become more apparent from an approximate, and thus non-limiting, description of a preferred, but non-exclusive embodiment of a modular sill for a sliding door or window, a sliding door or window and a method for mounting a sill for a sliding door or window, as illustrated in the appended drawings, in which:

- figure 1 is a top view of a modular sill for a sliding door or window in accordance with a possible embodiment of the present invention;
- figure 2 is a sectional view of the modular sill of figure 1;
- figure 3 is a representation in exploded view and in section of the modular sill of figure 2;
- figures 4A-4B are top views of a possible embodiment of a sliding door or window according to respective operational configurations in accordance with a further aspect of the present invention;
- figure 5 is a sectional view of the sliding door or window of figures 4A-4B.

DETAILED DESCRIPTION

[0016] With reference to the accompanying figures, a modular sill for a sliding door or window has been generally indicated with reference numeral 1, which will be reported below as modular sill 1.

[0017] With particular reference to figures 2 and 4A, the modular sill 1 comprises a plurality of sill components 2 each of which has a seat 3 suitable for housing a respective guide "G" for a sliding leaf "A".

[0018] For example, the seat 3 can be a grooved housing suitable for receiving a guide "G".

[0019] In particular, the sill components 2 are configured to be reciprocally disposed so that, during use, the guides "G" are parallel to one another.

[0020] The modular sill 1 comprises at least one connection component 4 suitable for connecting and spacing apart a first sill component and a second sill component (figures 2 and 3).

[0021] The connection component 4 extends, preferably prevalently, along a longitudinal direction "X" substantially aligned with the seat 3.

[0022] Preferably, the connection component 4 extends along the longitudinal direction "X" substantially over the entire length of the first sill component or of the second sill component between which it is interposed.

[0023] In the present description, the term "connection component" is mainly used in its singular form and is to be understood as "at least" one connection component.

In other words, according to what is described and in accordance with the invention, the possibility for the connection components to be multiple and variable in number is envisaged.

[0024] Advantageously, the sill components 2 and the connection component 4 are configured to be interconnected to one another so as to make the mounting procedures easier compared to the devices of the prior art.

[0025] Preferably, the modular sill 1 comprises a plurality of connection components 4 in order to create a succession of substantially parallel guides "G".

[0026] In this way, the present invention makes available a modular sill 1 that can support an unlimited plurality of leaves "A" showing an increased operational flexibility compared to the devices of the prior art.

[0027] In other words, the structural modularity given by the possibility of interconnecting an indefinite plurality of sill components 2 and of connection components 4 allows the modular sill 1 to be adapted to doors and windows having an indefinite number of leaves, guaranteeing the present invention a marked operational flexibility.

[0028] Purely by way of example and as illustrated in the accompanying figures (particularly figures 2 and 4A-4B), the modular sill 1 may comprise four sill components 2 interconnected by three connection components 4 in order to create a door or window comprising, for example, three movable leaves and a fixed leaf.

[0029] According to further possible embodiments not illustrated in the accompanying figures, the modular sill 1 can comprise a different number of sill components 2 and of connection components 4 without altering the inventive concept underpinning the present invention.

[0030] Advantageously, the sill components 2 may be identical to one another. For example, the sill components 2 may have the same geometric shape and/or the same cross-section. In addition, the sill components 2 can extend over the same length or over lengths that are different from one another. Further, the connection components 4 may be identical to one another. In this way, the present invention allows to minimize the number of the components that are necessary for creating the modular sill 1, thus guaranteeing a reduction in complexity and construction and storage costs.

[0031] As illustrated in the accompanying figures, each sill component 2 can extend mainly along a direction substantially aligned with the seat 3 over a respective length. Preferably, the sill components 2 have respective lengths that are different from one another, giving high modularity to the present invention. In other words, each sill component 2 can have a respective length that is different from the lengths of the remaining sill components 2 so as to guarantee the modular sill 1 a marked adaptability and at the same time reduce invasiveness of the mounting operations on the floor. In this way, the sill components, once connected to the respective connection components 4, are able to give the modular sill 1 a "stepped" shape (indicated with "S" in figure 1), at least at one of the final ends "F1" and/or "F2" in the direction of the length of the sill itself.

[0032] In accordance with a further particularly advantageous aspect of the present invention, the sill components 2 and the connection component 4 together define a platform configured to be disposed, during use, above the floor screed. Preferably, the platform has a prevalently flat lower surface 11 suitable for being disposed, during use, to rest on the floor screed.

[0033] In this way, the present invention guarantees the possibility of modifying the specifications of the door or window, for example the number of sliding leaves included therein, even at a phase subsequent to the construction of the screed.

[0034] For example, the present invention allows an easy modification of the shape of the modular sill 1 simply by removing a possible finishing element "C" (better described below) applied to the sill in order to restore the aesthetic/surface continuity of the floor, and by modifying the number of sill components 2 and/or connection components 4 to adapt the modular sill 1 to a different number of leaves "A".

[0035] Advantageously, the platform has a thickness of less than 20 mm, preferably less than 18 mm, allowing to house the modular sill 1 substantially flush with the external surface of the floor and to rest on the screed.

[0036] In the present discussion, the term "thickness" in relation to the aforementioned platform refers to a footprint measured along a vertical direction substantially perpendicular to a lying plane of the modular sill 1, i.e. with respect to the floor surface during a use configuration of the modular sill 1.

[0037] Advantageously, once the sill components 2 and the connection components 4 are interconnected, the platform may be seamless, thus guaranteeing complete structural continuity that makes it possible to simplify floor finishing operations and overcomes the need to apply filling filler material, for example putty.

[0038] According to a further advantageous aspect, the connection component 4 can define a supporting base 7 for a finishing element "C". For example, the finishing element may comprise a portion of parquet and/or a portion of tile and/or the like applied to the sill in order to restore the aesthetic/surface continuity of the floor.

[0039] In this way, the present invention makes available a modular sill 1 with a marked aesthetic appeal and in which the only visible portions can be the seats 3 and/or the guides "G".

[0040] In addition, the interconnection between the sill components 2 and the connection components 4 makes the modular sill 1 substantially self-supporting, facilitating mounting operations and giving it a marked stability during use.

[0041] Preferably, the modular sill 1 may comprise fixing means (not illustrated in the accompanying figures) suitable for constraining the sill components 2 and/or the connection components 4 to the floor screed so that the modular sill 1 is, during use, disposed, even more preferably in a stable position, above the screed. For exam-

ple, the fixing means may comprise screw couplings and/or gluing portions.

[0042] In accordance with a further particularly advantageous aspect illustrated in figures 2 and 3, the sill components 2 and the connection component 4 have respective interconnection portions 5 that are complementarily shaped to form a mating coupling.

[0043] Purely by way of non-limiting example, the sill components 2 and the connection component 4 can be reciprocally engageable guaranteeing a high ease of assembly to the modular sill 1.

[0044] For example, the sill components 2 can have an undercut that is shaped to receive an engagement edge obtained on a corresponding connection component 4. Preferably, the undercut and the engagement edge extends laterally to the respective sill and connection components along the direction of extent of the seat 3.

[0045] In accordance with a possible embodiment and as illustrated in the accompanying figures, each of the sill components 2 may have a substantially symmetrical shape. In particular, the interconnection portions 5 of each sill component 2 may be disposed at opposite ends relative to an axis of symmetry of the sill component 2.

[0046] Furthermore, the connection component 4 may have a substantially symmetrical shape. In particular, the interconnection portions 5 of the connection component 4 may be disposed at opposite ends relative to an axis of symmetry of the connection component itself.

[0047] Advantageously, the symmetry of the sill components 2 and/or of the connection component 4 makes it possible to simplify the assembly operations of the modular sill 1.

[0048] With reference to figures 2 and 3, the modular sill 1 may comprise connection means 6 that can be activated between a sill component 2 and a connection component 4 in order to create a connection, preferably reversible, between them.

[0049] In this way, the connection means 6 makes it possible to create a more stable and effective connection between the sill components 2 and the connection components 4.

[0050] For example, the connection means 6 may comprise screws, rivets, pins, and/or gluing parts.

[0051] Preferably, the modular sill 1 can be provided with water outflow means 8, comprising a channel 9 for collecting a liquid, in particular rainwater, and one drainage conduit 10 suitable for promoting an outflow of liquid from the channel 9 to an environment external to the modular sill 1. Purely by way of non-limiting example, the collection channel 9 can extend parallel to the seat 3 (figures 1 and 5).

[0052] Furthermore, the water outflow means 8 may comprise an insulating cap 12 suitable for preventing rainwater from depositing in the seats 3.

[0053] The modular sill 1 may also comprise protection components 13 connectable to the sill components 2 to protect their structural integrity and/or for aesthetic finishing reasons.

[0054] With reference to figures 4A-4B, the present invention refers to a sliding door or window 100 comprising a frame 101 provided with a first upright 102 and a second upright 103, and a modular sill 1 in accordance with what has been previously described. In particular, the modular sill 1 extends between the first upright 102 and the second upright 103.

[0055] Furthermore, the sliding door or window 100 comprises a plurality of guides "G" each of which is housed in a respective seat 3 of the plurality of sill components 2.

[0056] In particular, the guides "G" can be reversibly connected to the sill components 2 giving a marked adaptability to the sliding door or window 100. In this way, the sliding door or window 100 allows the use of guides "G" of different types depending on the particular operational needs.

[0057] As illustrated in the accompanying figures, the sliding door or window 100 comprises a plurality of leaves "A" installed on respective guides "G". In particular, at least one leaf is reversibly movable at least between a closed position (figure 4A), in which it is disposed in a position proximal to the first upright 102 of the frame 101 so as to at least partially close off the passage opening, and an open position (figure 4B), in which it is disposed in a distal position relative to the first upright 102 and at least partially overlaps another leaf "A", in order to at least partially open the passage opening.

[0058] Purely by way of non-limiting example, the door or window 100 may be a lift and slide type door or window.

[0059] In accordance with a further aspect, the present invention refers to a method for mounting a sill for a sliding door or window, comprising the steps of providing a modular sill 1 in accordance with what has been previously described and of fixing the modular sill 1 to a floor screed.

[0060] Preferably, the step of fixing the modular sill 1 to the screed comprises a sub-step of gluing the modular sill 1 to the floor screed and/or a sub-step of achieving a fixing to the floor screed through threaded means of the modular sill 1.

[0061] It is therefore noted that the present invention achieves the proposed objects by realizing a modular sill for a sliding door or window, a sliding door or window and a method for mounting a sill for a sliding door or window having an increased operational flexibility compared to the prior art.

Claims

1. A modular sill (1) for a sliding door or window comprising:

   - a plurality of sill components (2), each of which has a seat (3) suitable for housing a respective guide (G) for a sliding leaf (A), said sill components (2) being configured to be reciprocally dis-

posed so that, during use, the guides (G) are parallel to one another;
- at least one connection component (4) suitable for connecting and spacing apart a first sill component and a second sill component, wherein said at least one connection component (4) extends along a longitudinal direction (X) substantially aligned with said seat (3),

wherein said sill components (2) and said connection component (4) are configured to be interconnected to one another.

2. The modular sill in accordance with claim 1, wherein each sill component (2) is developed prevalently along a direction substantially aligned with said seat (3) for a respective length, said sill components (2) presenting respective lengths differing from each other.

3. The modular sill in accordance with claim 1, wherein said sill components (2) are identical to one another.

4. The modular sill in accordance with one or more of the preceding claims, wherein said sill components (2) and said connection component (4) together define a platform configured to be disposed, during use, on top of the floor screed, preferably wherein said platform has a thickness of less than 20 mm, preferably less than 18 mm.

5. The modular sill in accordance with claim 4, wherein said platform is continuous.

6. The modular sill in accordance with one or more of claims 4-5, wherein said platform has a prevalently flat bottom surface (11) suitable for being disposed, during use, so as to rest upon the floor screed.

7. The modular sill in accordance with one or more of the preceding claims, wherein said sill components (2) and said at least one connection component (4) have respective interconnection portions (5) that are complementarily shaped to form a mating coupling.

8. The modular sill in accordance with claim 7, wherein each of said sill components (2) has a substantially symmetrical shape, the interconnection portions (5) of each sill component being disposed at opposite ends relative to an axis of symmetry of the sill component; and wherein said at least one connection component (4) has a substantially symmetrical shape, the interconnection portions (5) of said at least one connection component (4) being disposed at opposite ends relative to an axis of symmetry of said at least one connection component (4).

9. The modular sill in accordance with one or more of the preceding claims, comprising a plurality of connection components in order to create a succession of substantially parallel guides (G).

10. The modular sill in accordance with claim 9, wherein said connection components are identical to one another.

11. The modular sill in accordance with one or more of the preceding claims, comprising connection means (6) that can be activated between a sill component and a connection component (4) in order to create a reversible connection between them.

12. The modular sill in accordance with one or more of the preceding claims, wherein said at least one connection component (4) defines a supporting base (7) for a finishing element (C).

13. The modular sill in accordance with one or more of the preceding claims, comprising water outflow means (8), comprising at least one channel (9) for collecting a liquid, in particular rainwater, and at least one drainage conduit (10) suitable for promoting an outflow of liquid from said channel (9) to an environment external to said modular sill.

14. A sliding door or window comprising:

- a frame having a first upright (102) and a second upright (103);
- a modular sill (1) in accordance with one or more of the preceding claims, said modular sill extending between said first upright (102) and said second upright (103);
- a plurality of guides (G), each housed in a respective seat (3) of said plurality of sill components (2); and
- a plurality of leaves (A) installed on respective guides (G), at least one of said leaves (A) being reversibly movable at least between a closed position, in which it is disposed in a position proximal to said first upright (102) of the frame so as to at least partially close off the passage opening, and an open position, in which it is disposed in a distal position relative to said first upright (102) and at least partially overlaps another leaf (A), in order to at least partially open the passage opening.

15. A method for mounting a sill for a sliding door or window, comprising the steps of:

- providing a modular sill (1) in accordance with one or more of claims 1-13;
- fixing said modular sill (1) to a floor screed;

wherein the step of fixing said modular sill (1) to the

screed comprises a sub-step of gluing said modular sill (1) to the floor screed and/or a sub-step of achieving a fixing to the floor screed through threaded means of said modular sill (1).

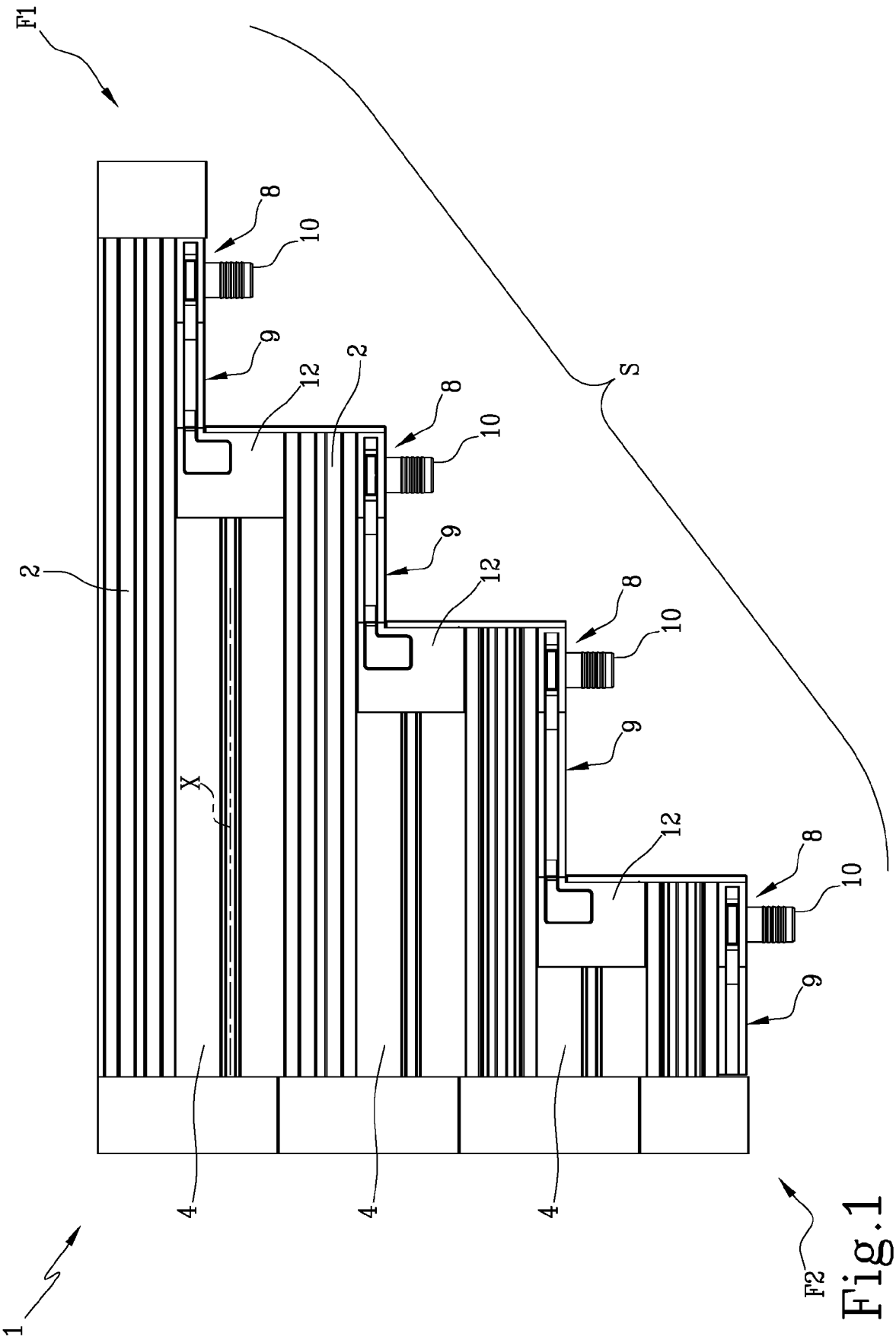


Fig.1

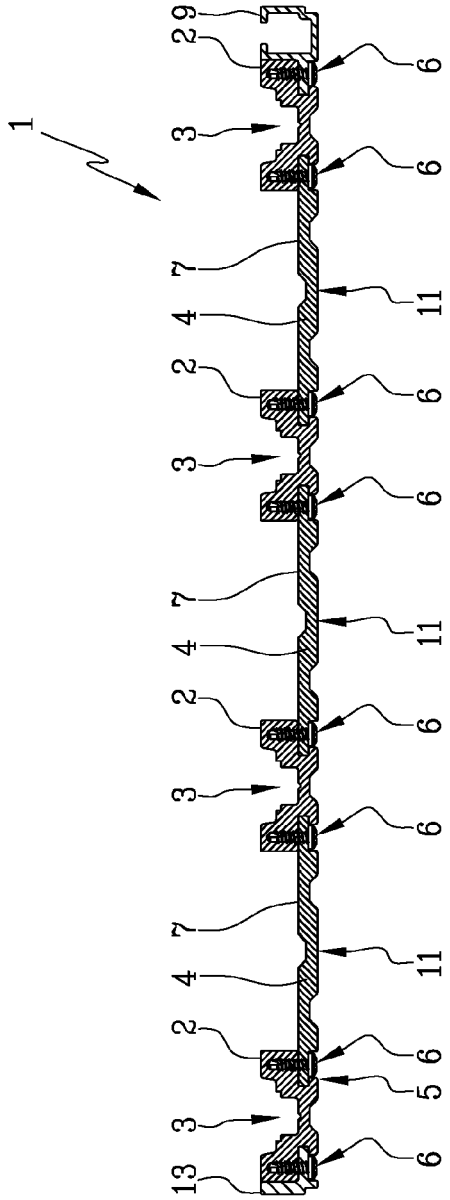


Fig.2

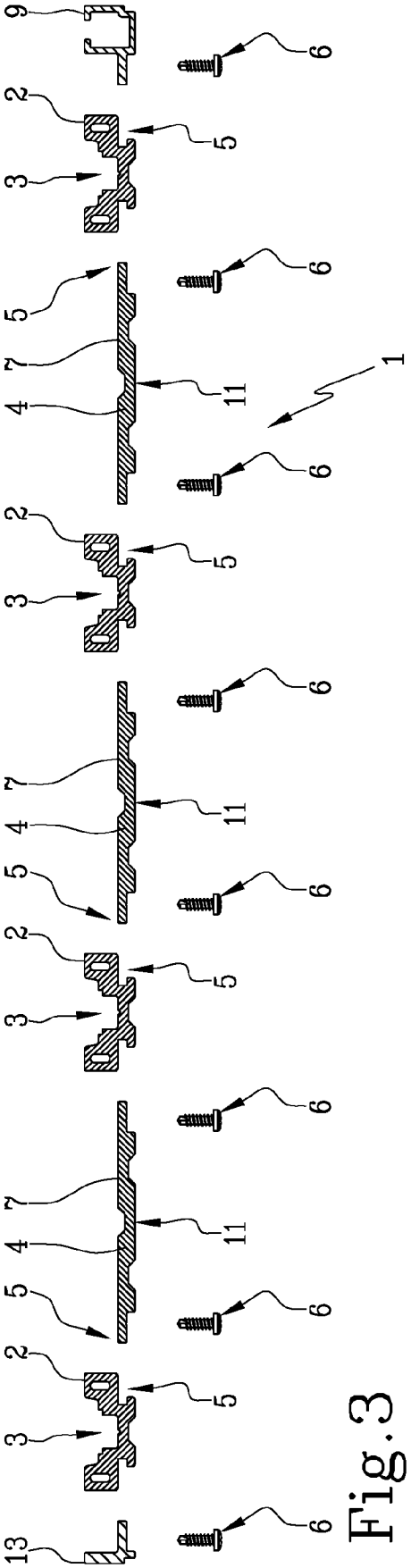


Fig.3

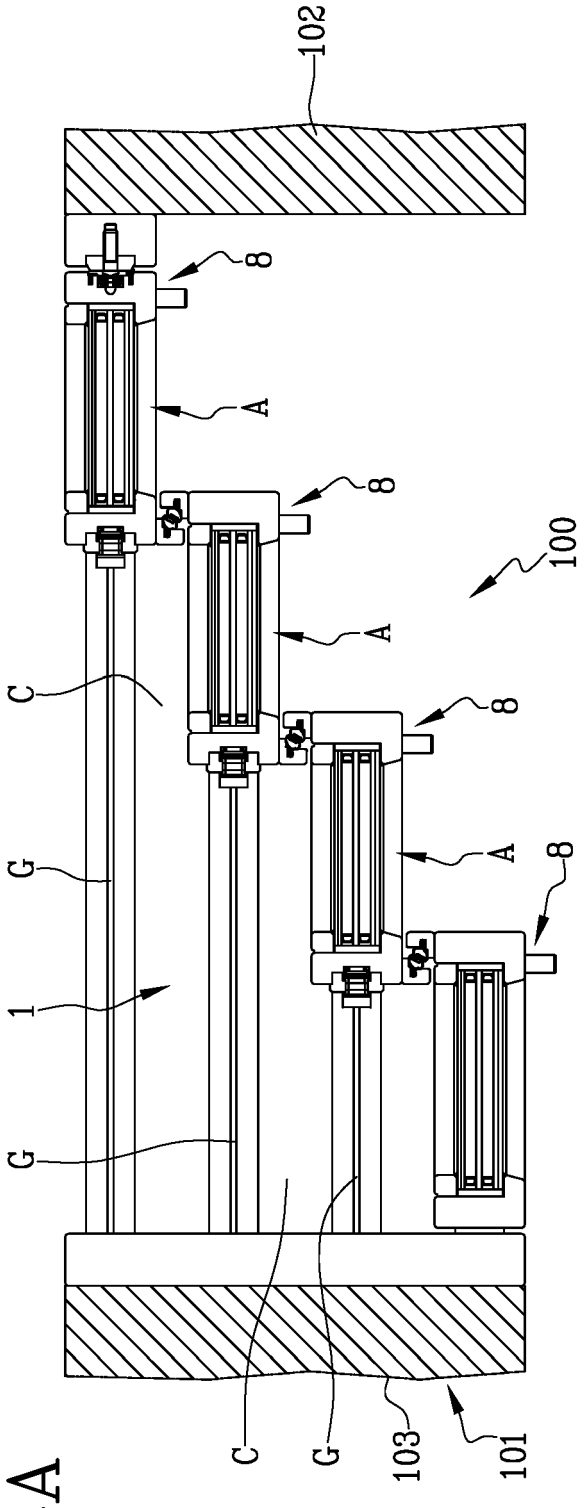


Fig.4A

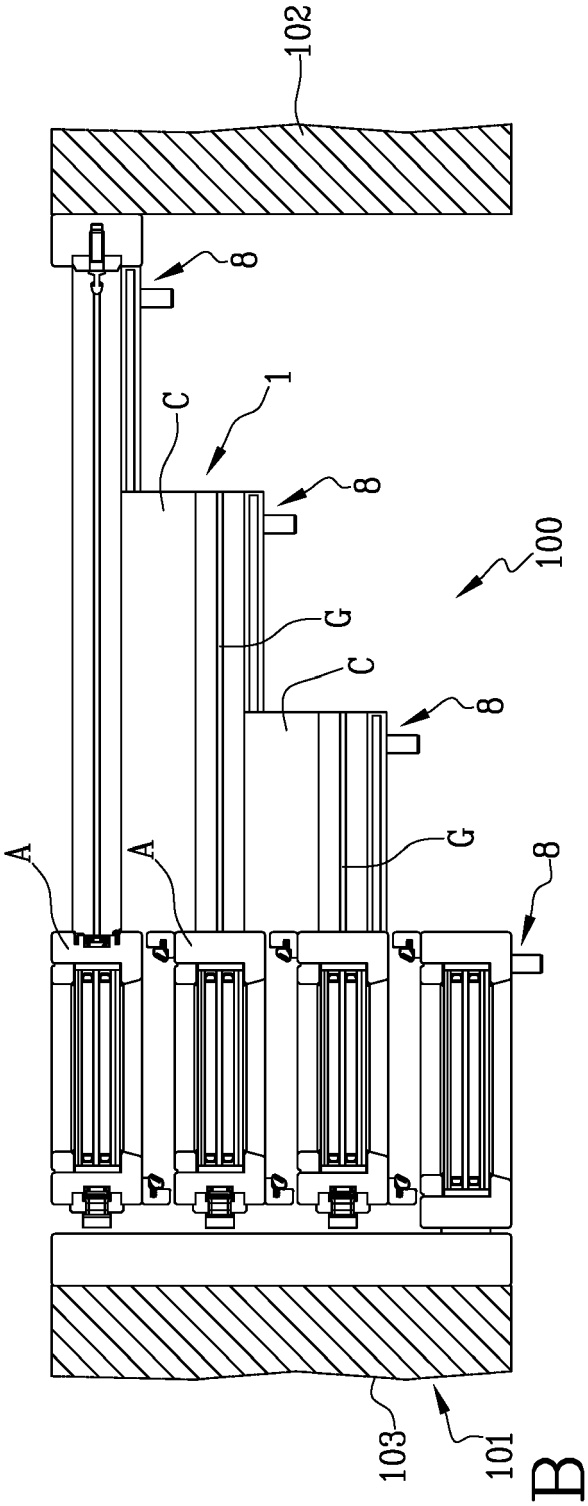


Fig.4B

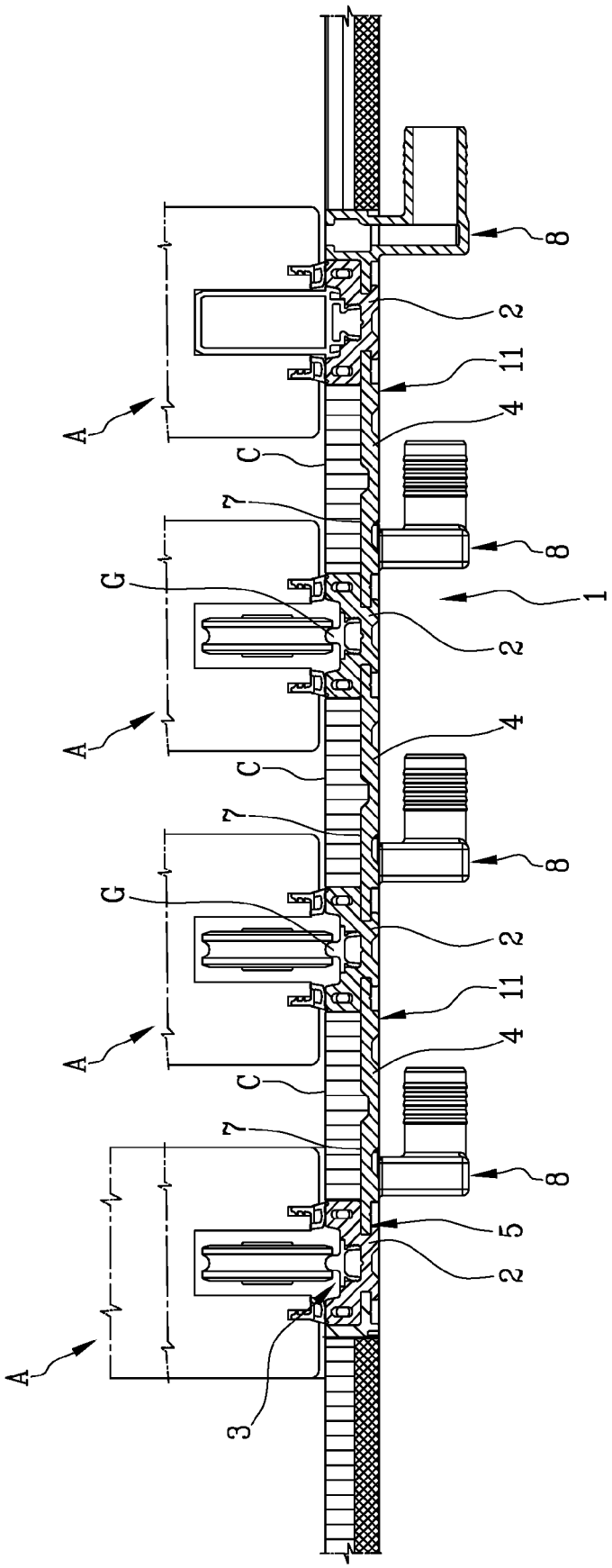


Fig.5

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EUROPEAN SEARCH REPORT

Application Number
EP 24 17 1438

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2020/224486 A1 (ANDERSON HOWARD C [US] ET AL) 16 July 2020 (2020-07-16) * figure 3 * -----	1-6,9, 10,12-15	INV. E06B3/46 E06B1/70 E05D15/06 E05D15/08
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A	US 11 492 832 B2 (GLAZCON PRODUCTION INC [US]) 8 November 2022 (2022-11-08) * figures 12A, 12B * -----	2	

TECHNICAL FIELDS SEARCHED (IPC)

E06B
E05D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	19 July 2024	Crespo Vallejo, D

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