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(54) Framework for sliding doors and windows in general, which can be built into a wall

(57) A framework for sliding doors and windows in general that can be built into a wall and comprises a flattened box-like body (1) inside which it is possible to slidingly accommodate a sliding door and the like, the framework further comprising, on at least one of the external faces of the main walls (5) of the box-like body (1), at least one recessed seat (12) for accommodating electrical systems, hydraulic systems and the like, the seat being elongated substantially vertically, parallel to the uprights that form the framework.

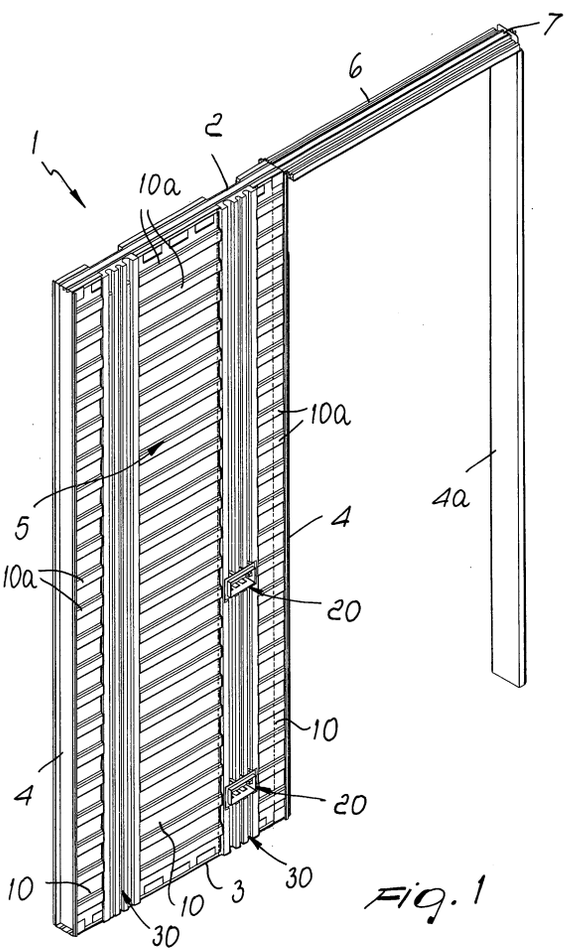

Fig. 1

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Description

[0001] The present invention relates to a framework for doors and windows in general, which can be built into a wall.

[0002] As is known, various kinds of frameworks for sliding doors or door frames and windows, glazing units, fixtures, casings, standing finishes in general that can be built into a wall are already commercially available; one aspect that is common to all known solutions consists in that it is generally particularly difficult to provide electrical or hydraulic systems in the region that accommodates the framework of the sliding door.

[0003] The solutions already in use are particularly complicated, since they entail providing, on the box-like body of the framework of the sliding door, pre-cut portions for removing a section that allows to form openings in which the junction box for the electrical components can be inserted.

[0004] This embodiment, besides being complicated from a constructive standpoint, also suffers the drawback of allowing placement in a very limited number of points, and therefore it is not always capable of solving the problem correctly.

[0005] The aim of the invention is to solve the problems described above by providing a framework for sliding doors and windows in general that can be built into a wall, which allows to accommodate and contain different types of utility systems, such as for example electrical systems, data communications systems, hydraulic systems, and so forth.

[0006] Within this aim, an object of the invention is to provide a framework that allows to considerably facilitate all installation operations, by providing an article that allows to perform the connection of the auxiliary systems in the manners that are most practical and convenient.

[0007] Another object of the present invention is to provide a framework for sliding doors and windows in general that can be built into a wall which, thanks to its particular constructive characteristics, is capable of giving the greatest assurances of reliability and safety in use.

[0008] Another object of the present invention is to provide a framework for sliding doors or door frames and windows, glazing units, fixtures, casings, standing finishes in general which will be called hereinafter generically "windows", and that can be easily obtained starting from commonly commercially available elements and materials and is further competitive from a merely economical standpoint.

[0009] This aim and these and other objects that will become better apparent hereinafter are achieved by a framework for sliding doors and windows in general that can be built into a wall, according to the invention, comprising a flattened box-like body inside which it is possible to slidingly accommodate a sliding door and the like, characterized in that it comprises, on at least one of the external faces of the main walls of said box-like body, at least one recessed seat for accommodating electrical systems, hydraulic systems and the like, said at least one seat being elongated substantially vertically.

[0010] Further characteristics and advantages of the present invention will become better apparent from the description of a preferred but not exclusive embodiment of a framework for sliding doors and windows in general that can be built into a wall, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a schematic perspective view of the framework according to the invention;
Figure 2 is a view of the framework with a stretched plaster grip net applied thereto and with electrical junction boxes inserted therein;
Figure 3 is a view of the detail of the upper end of a seat for recessing utility systems;
Figure 4 is a schematic exploded view of the lower part of the framework, illustrating the electrical junction box;
Figure 5 is a perspective view of the lower end of the framework, with the electrical junction box applied thereto;
Figure 6 is a schematic front elevation view of the framework;
Figures 7, 8 and 9 are transverse sectional views of the framework with different types of seats for accommodating utility systems.

[0011] With reference to the figures, the framework for sliding doors and windows in general that can be built into a wall, according to the invention, comprises a box-like body 1 that has a substantially flat shape and is formed by means of an upper cross-member 2 and a lower cross-member 3, which are connected by uprights 4 that can be coupled mechanically.

[0012] A guiding profiled element 6 is connected to the upper cross-member 2 and forms the sliding track for the sliding door and engages with a snap action, by means of a clamp-like clip or clamp 7, the upright 4a that delimits the opening of the door.

[0013] The main walls 5 of the box-like body have the particularity that they are obtained by means of corrugated metal sheets 10, in which the corrugation or corrugations is (are) arranged transversely; said metal sheets engage mechanically the cross-members 2 and 3 in order to form the box-like body.

[0014] Moreover, the corrugated metal sheets 10 are connected to an insert 11, which forms the seat 12 for accommodating the utility systems.

[0015] The insert 11 is constituted by means of a profiled element, which is advantageously shaped like an opened-out letter omega, with a central portion 15 that forms the bottom of the seat flanked by lateral edges 16 that end with folded wings 17, on which the corrugated metal sheets 10 that form the main walls 5 are connect-

ed.

[0016] The inserts 11 can be provided at the opening edge and run parallel to the upright so as to be straight and are advantageously arranged opposite one another, so as to form the seat 12 on both faces.

[0017] It is also possible to provide the seat on the opposite edge or optionally provide two seats for each face, as shown schematically in the transverse sectional views of Figures 7 to 9.

[0018] The arrangement of the seat is such that the user can insert an electrical junction box, generally designated by the reference numeral 20, in any selected position.

[0019] As clearly shown in the drawings, the electrical junction box 20 is in fact provided, on its edges, with tabs 21, which can be inserted below the corrugations of the metal sheets 10 and can optionally be locked by a screw or positioned in the recessed regions between two laterally adjacent corrugations 10a, so that the user can place the junction boxes without any difficulty at any point of the vertical extension of the door.

[0020] Moreover, in order to facilitate placement in the seat 12, filling elements 30 are provided which are advantageously formed by an extruded element made of expanded plastic material, which forms channels 31, for example having different sizes, for accommodating electrical tubes, any fluid passage ducts, and so forth.

[0021] With the described solution, therefore, in the seats 12 the filling inserts 30 already provide for the guided positioning of channels, tubes, wires and the like, allowing the installation technician to apply any electrical or hydraulic system even in the region where the framework for the sliding door is provided.

[0022] It is very important that the arrangement described above allows to position the junction boxes at any height and also allows to apply the selected number of boxes without any limitation.

[0023] The assembly can be completed by providing a net made of stretched metal plate 40, which is fixed, for example by means of spot welds, to the main faces of the box-like body so as to allow easier plastering in order to complete the recessing of the framework in a wall.

[0024] From what has been described above it is thus evident that the invention achieves the intended aim and objects, and in particular the fact is stressed that a framework is provided which is particularly functional, since it is obtained by coupling simple elements; moreover, the presence of a continuous seat on the outer faces of the main walls makes it particularly easy and practical to install electrical and hydraulic systems.

[0025] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0026] The term "substantially" is intended to mean that the feature to which it referes may have slight variations (for example in the order of some mm. or degrees) with respect to the indicated configuration (such as, for example, vertical or transversal etc.), as it is known to the persons skilled in the art.

[0027] All the details may further be replaced with other technically equivalent elements.

[0028] In practice, the materials used, as well as the contingent shapes and dimensions, may be any according to requirements.

[0029] The disclosures in Italian Patent Application No. MI2004A001284 from which this application claims priority are incorporated herein by reference.

[0030] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A framework for sliding doors and windows in general adapted to be built into a wall, comprising a flattened box-like body (1) inside which a sliding door and the like is slindingly accomodatable, **characterized in that** it comprises, on at least one of the external faces of the main walls of said box-like body (1), at least one recessed seat (12) for accommodating utility systems, such as electrical systems, hydraulic systems and the like, said at least one seat (12) being elongated substantially vertically.

2. The framework according to claim 1, **characterized in that** said box-like body (1) comprises an upper cross-member (2) and a lower cross-member (3), which are joined by uprights (4) that can be coupled mechanically, a guiding profiled element (6) being connected to said upper cross-member (2) and forming a track for the sliding of said sliding door and engaging by snap action, by means of a clamp-like clip (7), the upright that delimits the opening of said sliding door.

3. The framework according to the preceding claims, **characterized in that** said main walls (5) comprise corrugated metal sheets (10) in which the corrugations are arranged substantially transversely, said corrugated metal sheets (10) being connected to at least one insert (11) that forms said seat (12) for accommodating utility systems.

4. The framework according to one or more of the preceding claims, **characterized in that** said insert (11) comprises a profiled element that is substantially shaped like an opened-out letter omega, with a central portion (15) that forms the bottom of said seat, which is flanked by lateral edges (16) that end

with folded wings (17) on which said corrugated metal sheets (10) are connected.

5. The framework according to one or more of the preceding claims, **characterized in that** said inserts (11) are provided correspondingly on both of said main walls (5).

6. The framework according to one or more of the preceding claims, **characterized in that** said inserts (11) are provided at the opening edge and run substantially parallel to the upright.

7. The framework according to one or more of the preceding claims, **characterized in that** said inserts (11) are provided at the edge that lies opposite the opening edge of said sliding door.

8. The framework according to one or more of the preceding claims, **characterized in that** it comprises at least one electrical junction box (20) that can be detachably inserted in said seat (12) formed by said inserts (11) and has tabs (21) that can be inserted below the corrugations (10a) of said corrugated metal sheets (10).

9. The framework according to one or more of the preceding claims, **characterized in that** said tabs (21) can be applied at said folded wings (17) of said inserts (11) between two corrugations (10a).

10. The framework according to one or more of the preceding claims, **characterized in that** it comprises, in said seat (12), filling elements (30) made of expanded plastic material.

11. The framework according to one or more of the preceding claims, **characterized in that** said filling elements (30) form channels (31).

12. The framework according to one or more of the preceding claims, **characterized in that** said channels (31) are adapted to accommodate ducts for the passage of fluids, electrical cables and the like.

13. The framework according to one or more of the preceding claims, **characterized in that** it comprises a net (40) made of stretched metal sheet that can be associated with said walls (5).

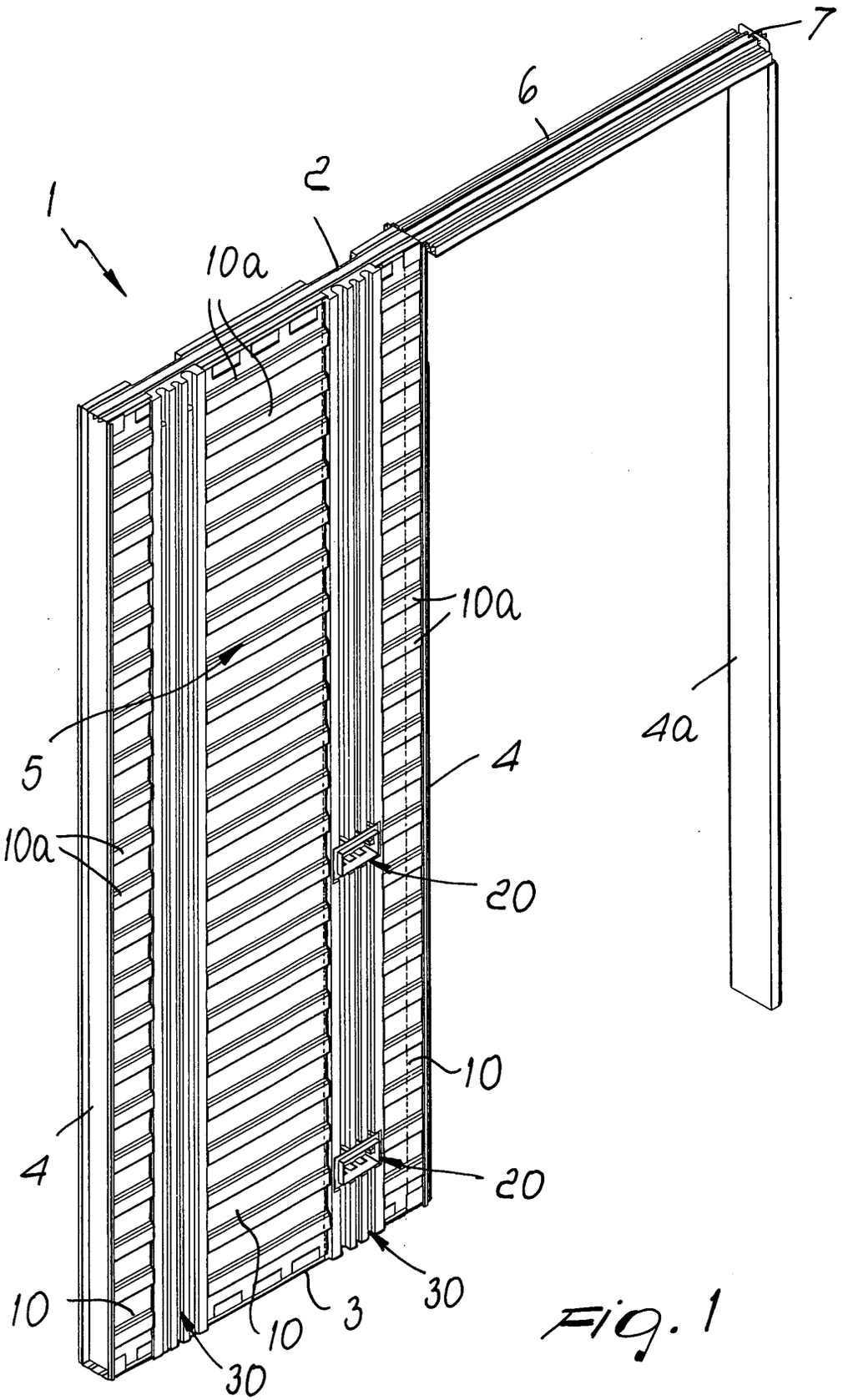


Fig. 1

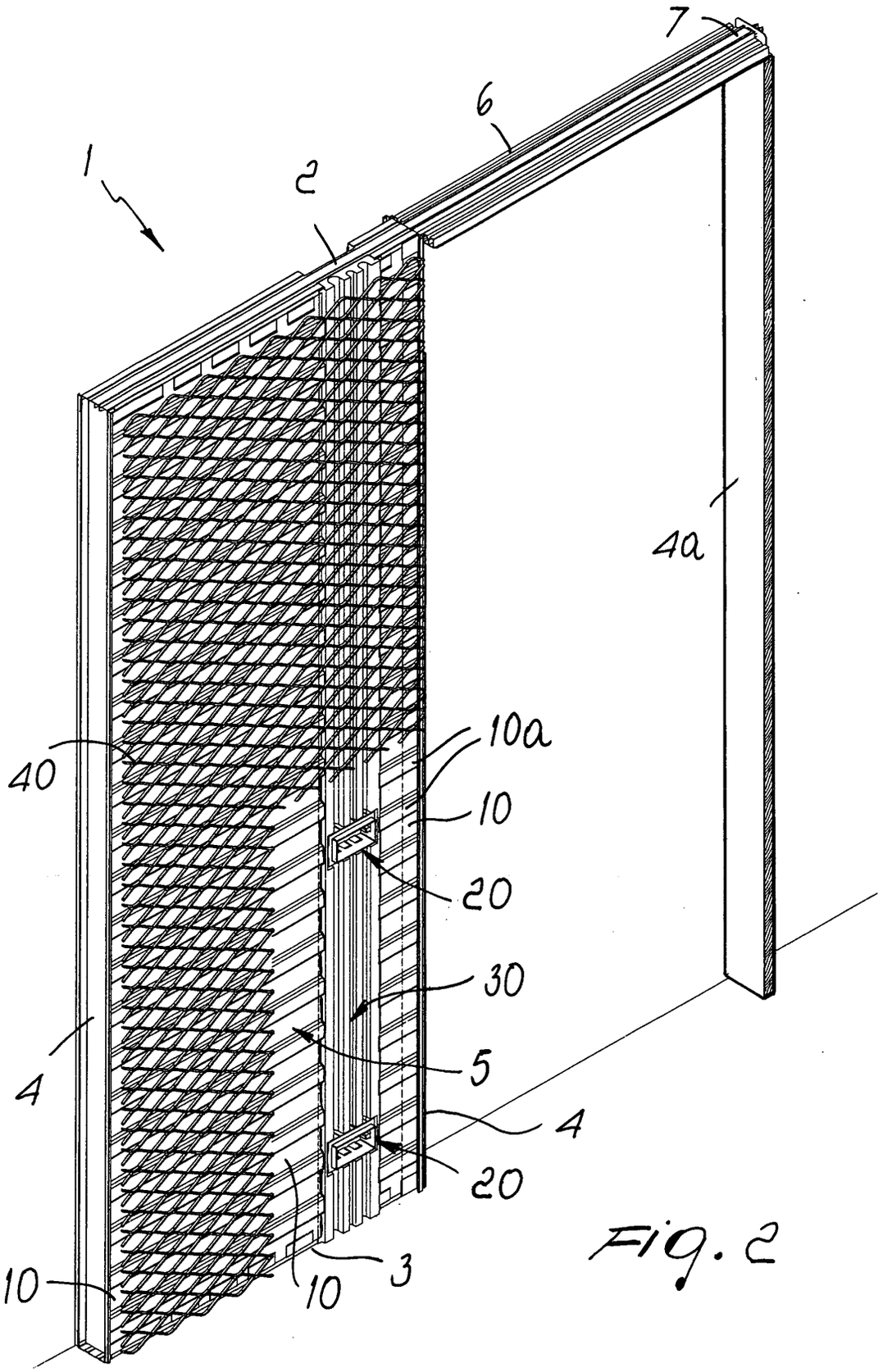
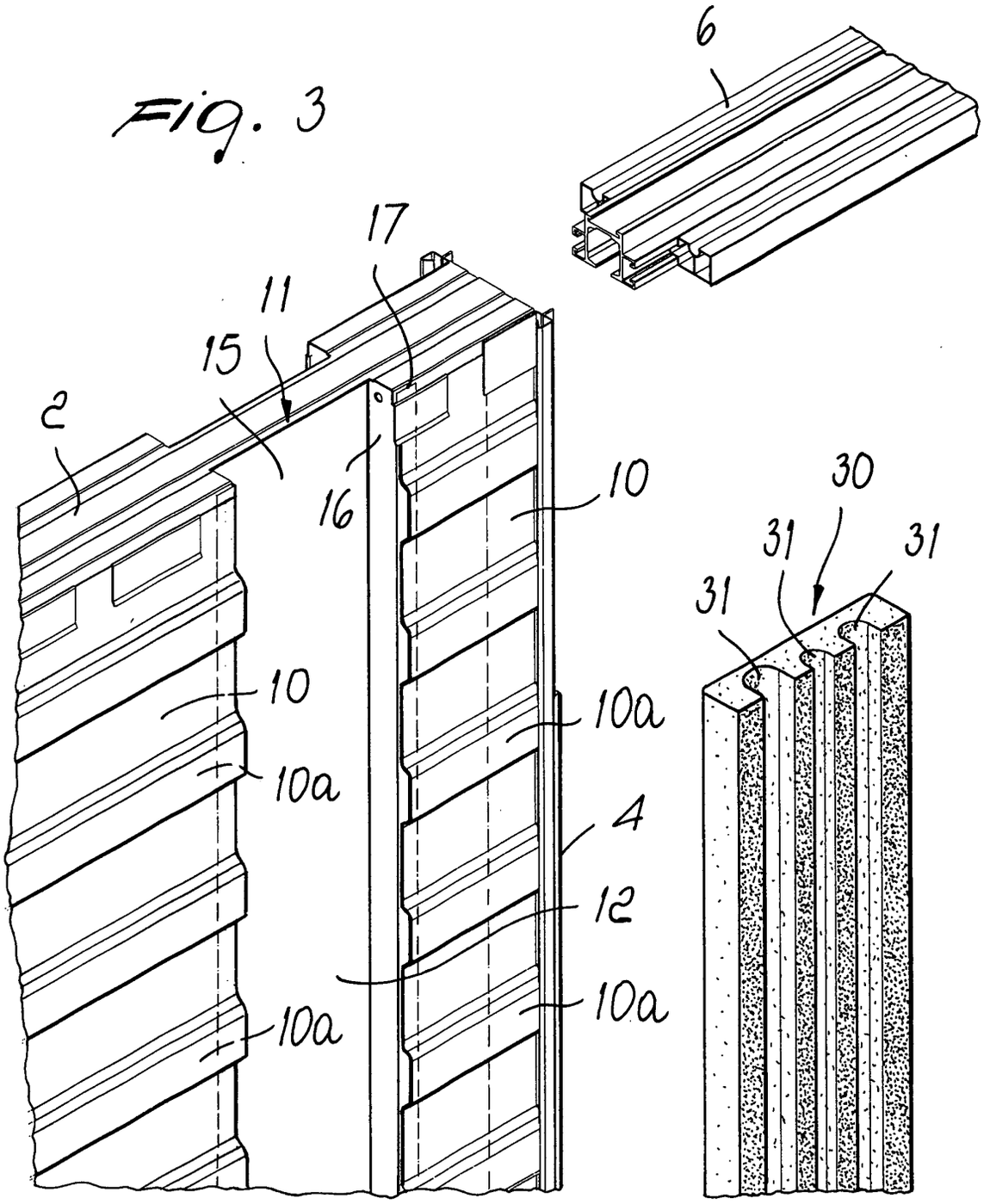


Fig. 2

Fig. 3



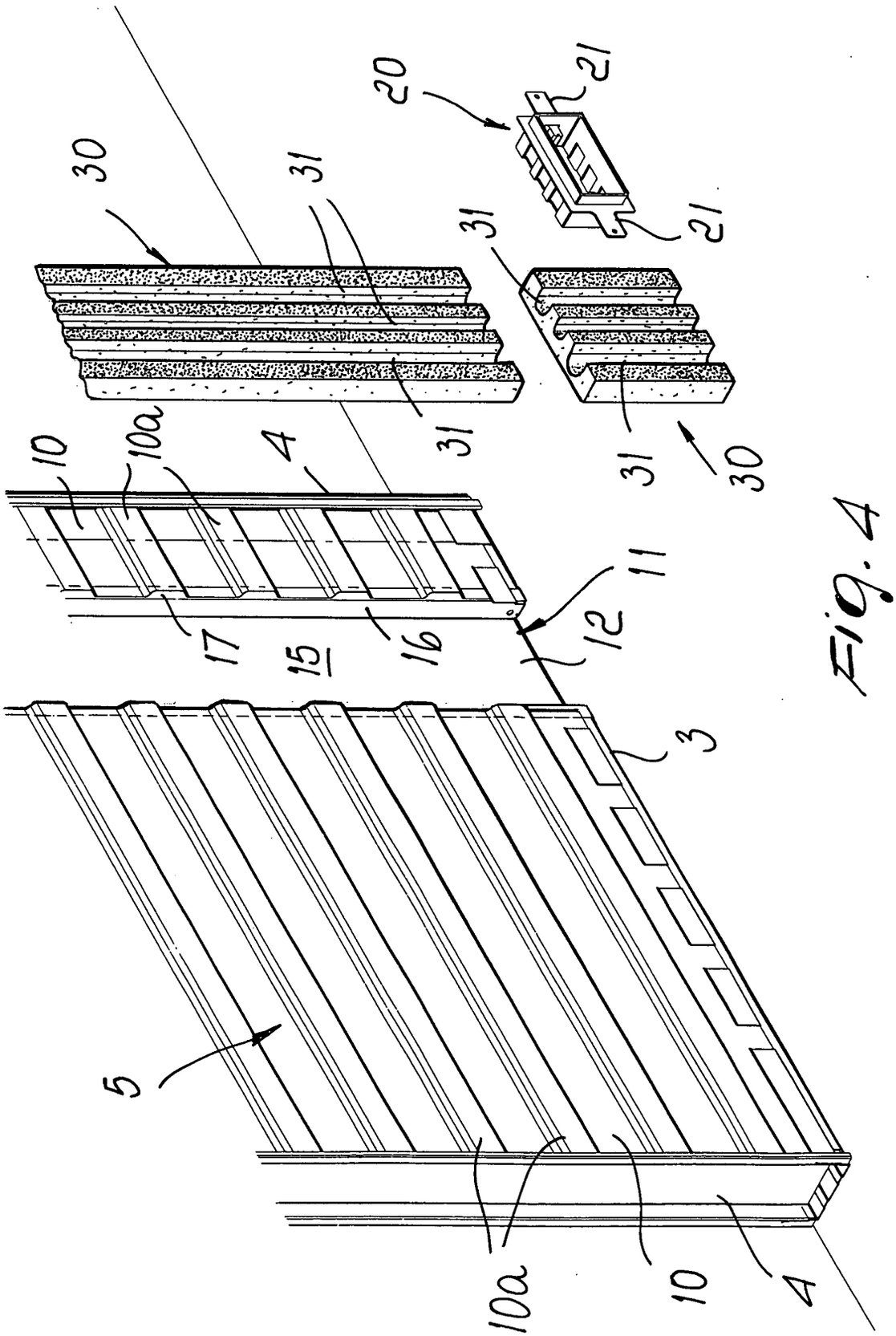


Fig. 4

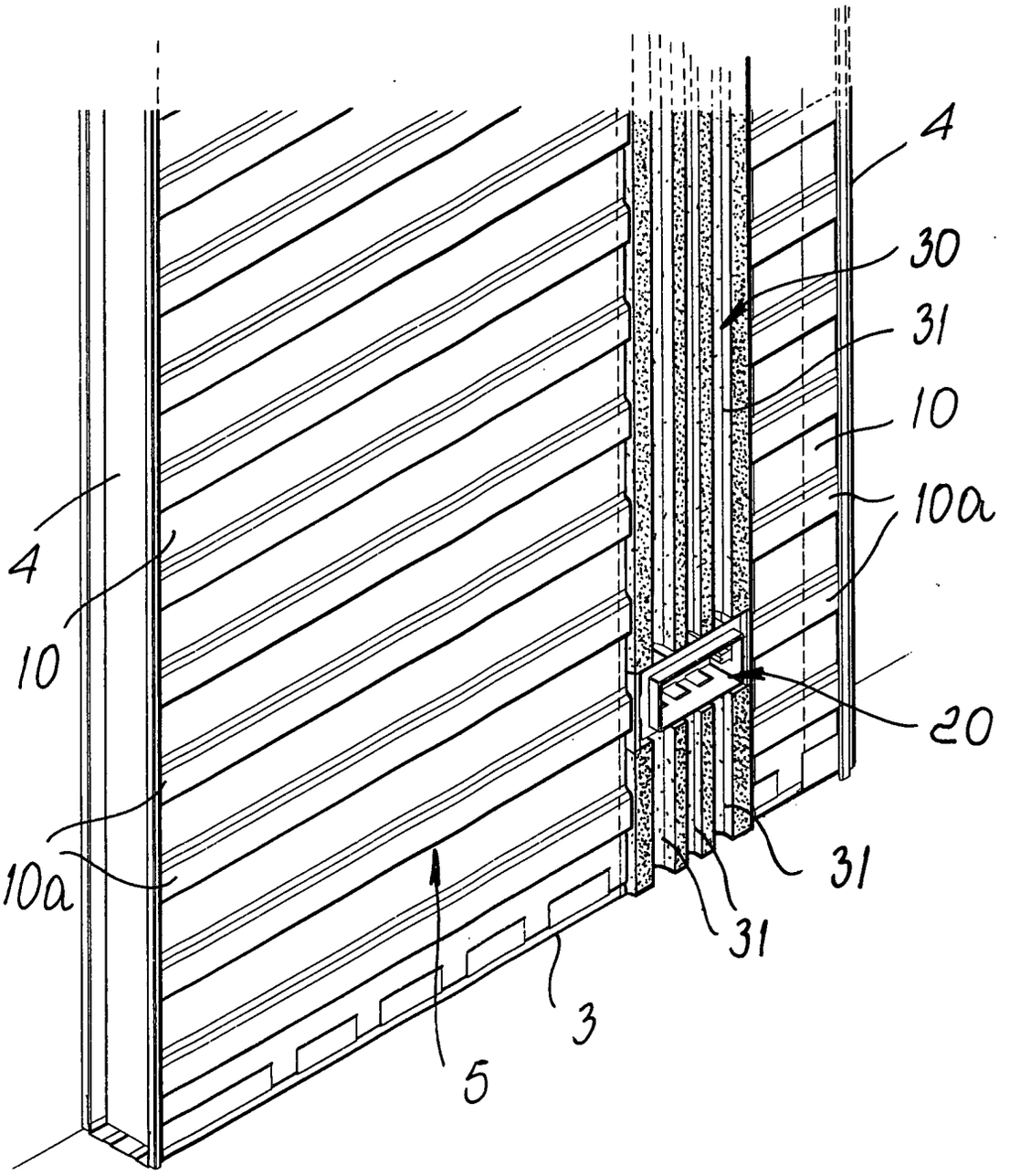


Fig. 5

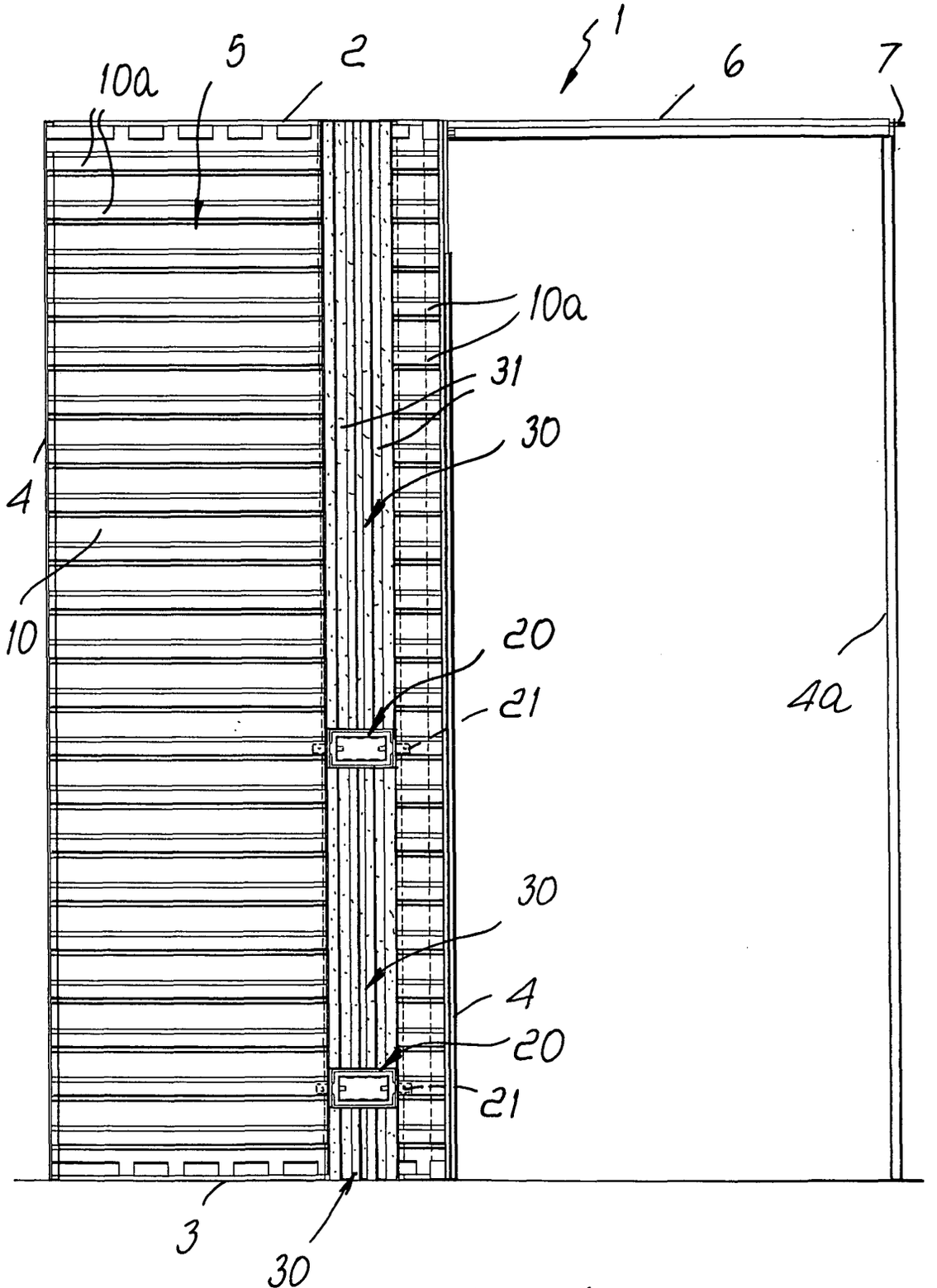


Fig. 6

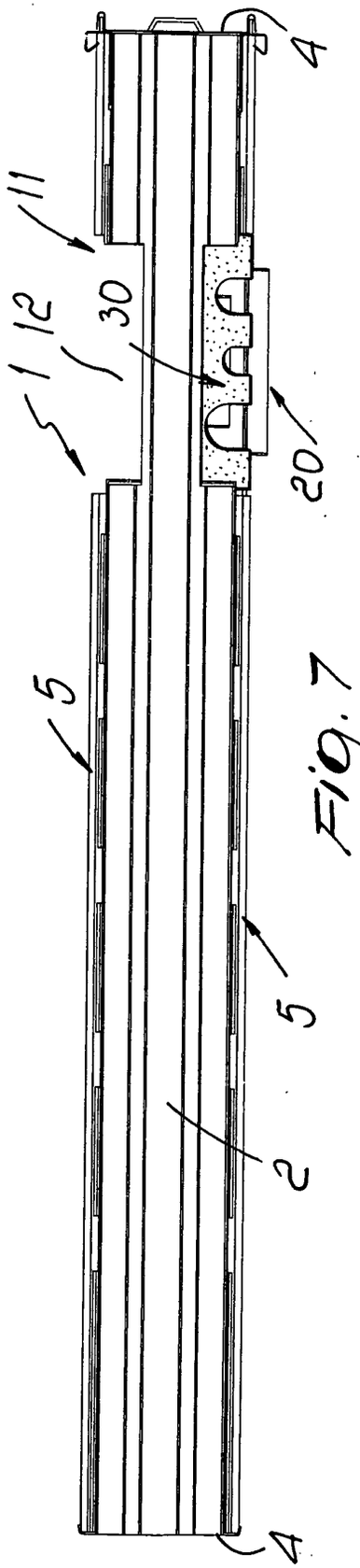


Fig. 7

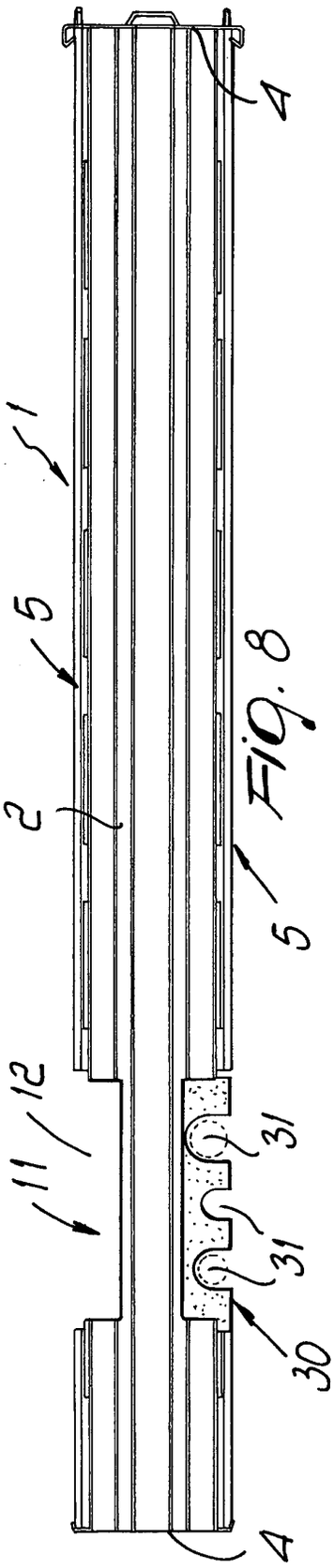


Fig. 8

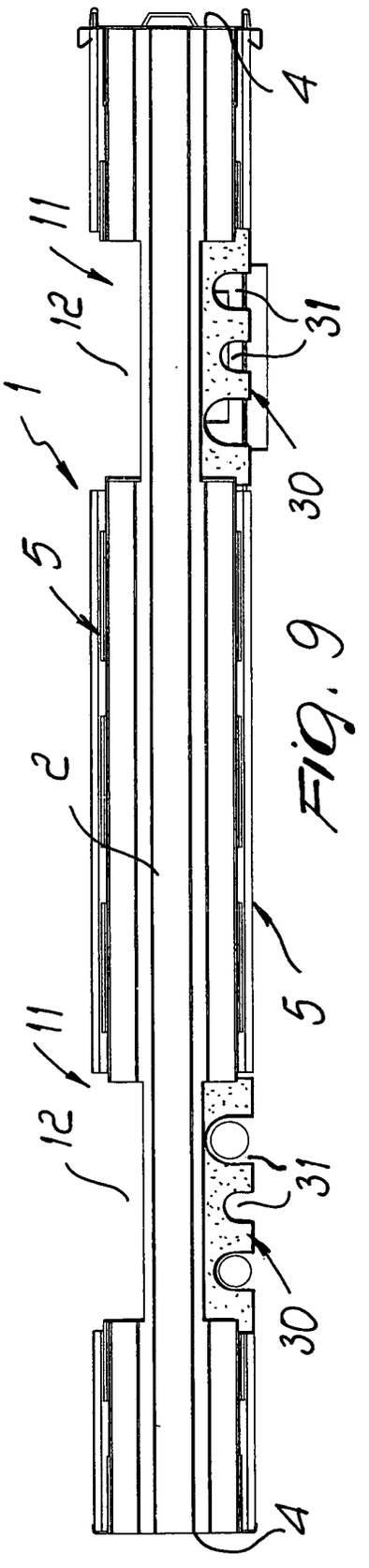


Fig. 9