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(54) **POOL, PARTICULARLY OF THE TYPE WITH FACILITATED INSTALLATION**

(57) A pool (1), particularly of the type with facilitated installation, which comprises a plurality of transverse modules (2) which are substantially U-shaped and are mutually associated so as to define the lower base and the side walls of the pool (1); two closure bulkheads (3, 4) are respectively associated with the first and with the last transverse module (2) so as to define, together with the transverse modules (2), a supporting structure of the pool (1); a tub-shaped impermeable element is accommodated inside and rests upon such supporting structure; angular reinforcement elements (5) are associated with the transverse modules (2) at the corner portions of the supporting structure which are defined between the side walls and the lower base.

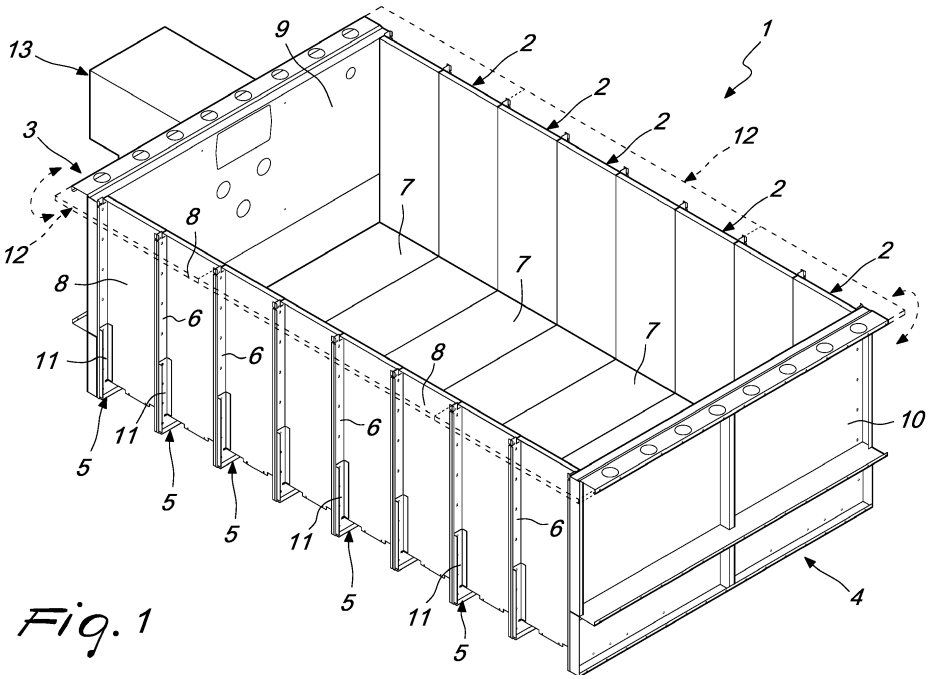

Fig. 1

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Description

[0001] The present invention relates to a pool, particularly of the type with facilitated installation.

[0002] In the sector of pools for private use, different types of pools are known including pools made of masonry, where substantially a waterproofed masonry structure is built in the excavation, pools made of fiberglass, made of plastic material, and modular pools, i.e. pools made from prefabricated modules which are then assembled on-site.

[0003] Such types of conventional pools each have a series of peculiarities that are positive but at the same time are not devoid of drawbacks.

[0004] For example, a masonry pool allows the construction of any kind of pool in terms of shape and size but, obviously, it requires excavation and masonry activities that are extremely burdensome from the point of view both of time and economic expenditure.

[0005] Pools made of fiberglass or plastic material consist of low-cost prefabricated basins which are then accommodated in an excavation that is made to measure, allowing rapid installation but resulting in a low-cost product with scant appeal, giving the impression of not particularly high-end work with colors limited to those with which the fiberglass is provided.

[0006] Furthermore, because they have a structure that is not self-supporting, they require an installation procedure that entails alternating between filling the excavation with gravel and filling the pool with water.

[0007] Modular pools on the other hand offer an intermediate solution between the two solutions illustrated above, making it possible to reduce installation times by partially prefabricating the pool itself while simultaneously offering a high-end product.

[0008] However, such pools of the modular type are not devoid of drawbacks, among which is the fact that, although they reduce the difficulty of installation compared to masonry pools, they still require major excavation work with the installation of perimetric reinforcement structures which are adapted to prevent the collapse of the pool.

[0009] In addition, the side walls of the supporting structure of the pool are made with thicknesses that are such as to aid the work of such perimetric reinforcement structures, but which take away useful space from the basin.

[0010] All this inevitably leads to the need to provide modular pools, for installation on-site, since they cannot be transported with ease.

[0011] The aim of the present invention consists in providing a pool of the modular type that makes it possible to overcome the limitations of the known art.

[0012] This aim and other objects which will become better apparent hereinafter are achieved by a pool, particularly of the type with facilitated installation, which comprises a plurality of transverse modules which are substantially U-shaped and are mutually associated so as to define the lower base and the side walls of said pool, two closure bulkheads which are respectively associated with the first and with the last of said transverse modules so as to define, together with said transverse modules, the supporting structure of said pool, and a tub-shaped impermeable element which is accommodated inside and rests upon said supporting structure, characterized in that it comprises angular reinforcement elements which are associated with said transverse modules at the corner portions of said supporting structure which are defined between said side walls and said lower base.

[0013] Further characteristics and advantages of the invention will become better apparent from the detailed description of a preferred, but not exclusive, embodiment of a pool, particularly of the type with facilitated installation, according to the invention, illustrated by way of non-limiting example in the accompanying drawings wherein:

- Figure 1 is a perspective view of a preferred embodiment of the pool according to the present invention;
- Figure 2 is a partially exploded perspective view of the pool shown in Figure 1;
- Figure 3 is a perspective view of an enlarged-scale detail of the pool shown in the previous figures;
- Figure 4 is a partially exploded perspective view of the detail shown in Figure 3;
- Figure 5 is a partially exploded perspective view of a transverse module of the pool shown in the previous figures.

[0014] With reference to the figures, the pool according to the present invention, generally designated by the reference numeral 1, comprises a plurality of transverse modules 2 which are substantially U-shaped and are mutually associated so as to define the lower base and the side walls of the pool 1.

[0015] To complete the supporting structure of the pool 1, together with the transverse modules 2, two closure bulkheads 3 and 4 are also provided which are respectively associated with the first and with the last transverse module 2 so as to define the accommodation for a tub-shaped impermeable element, not shown for the sake of graphic simplicity, which is accommodated inside and rests upon the supporting structure.

[0016] According to the invention, angular reinforcement elements 5 are provided which are associated with the transverse modules 2 at the corner portions of the supporting structure which are defined between the side walls.

[0017] Advantageously, the transverse modules 2 have a substantially flat transverse cross-section, i.e. with a transverse thickness that is considerably reduced with respect to their longitudinal extension, with flanged edges 6 which are flanged outward in such a manner as to facilitate their mutual association and increase their flexural stiffness.

[0018] In the proposed embodiment, such transverse modules 2 are mutually associated by way of bolting at

the flanged edges 6.

[0019] More specifically, the transverse modules 2 each comprise at least one central panel 7, which defines a portion of the lower base, and two mutually opposite side panels 8, which define respectively a portion of the side walls of the pool 1.

[0020] Conveniently, the side panels 8 are oriented substantially at right angles with respect to the corresponding central panel 7 in such a manner as to give each transverse module 2 a substantially U-shaped geometric configuration.

[0021] Advantageously, the panels 7 and 8 are made of sheet metal.

[0022] Similarly, the two closure bulkheads 3 and 4 comprise two sheet metal bodies 9 and 10 which are respectively associated with the first and with the last transverse module 2 with bolting.

[0023] Considering the angular reinforcement elements 8, these comprise L-shaped brackets 11 which are associated, for example with bolting, with the side panels 8 and with the central panels 7 at the flanged edges 6 in such a manner as to locally embrace, in a lower region and laterally, each transverse module 2.

[0024] To complete the supporting structure of the pool 1, a perimetric edge 12 is provided which is associated in an upper region with the transverse modules 2 in such a manner as to maintain the linearity of the side walls of the pool 1, and which can be of the tilting type in order to limit the lateral space encumbrances of the pool 1 during the steps of transport.

[0025] Advantageously, the machine room 13 intended for the filtration and/or the disinfection of the water of the pool 1 can be directly associated with one of the two closure bulkheads 3 or 4.

[0026] Finally, longitudinal stiffening elements 14 are provided which are associated with the transverse modules 2 at the central panel 10 on the outer side.

[0027] Such stiffening elements 14 and the angular reinforcement elements 5 are shaped so as to define a plurality of resting base portions which are substantially mutually coplanar and are designed to rest on a foundation provided on the bottom of the excavation of the pool 1.

[0028] In practice it has been found that the pool, according to the invention, responds to the technical problem explained above in that it possesses a self-supporting structure, which can be preassembled at the factory, can be transported by road by virtue of its limited encumbrances, and delivered finished with a limited need for excavation works.

[0029] In fact, the pool thus conceived, which can indifferently be installed at-grade, below grade or mid-grade, requires, for at-grade or mid-grade installation, an excavation not much bigger than the structure itself, by approximately 20 centimeters in width, in that it does not require work on the perimeter after being laid on the excavation.

[0030] The pool simply needs a small bottom support foundation, while the filling-in can take place with gravel directly on the structure without additional construction work as occurs in the known art where walls, supports, external buttresses or the like are used.

[0031] Another advantage of the pool according to the invention consists in that the upper perimetric edge, in a tilting solution for transport, makes it possible to lay a rim of concrete, stone or other material of width for example of approximately 25-30 centimeters without any additional construction work.

[0032] Another advantage of the pool according to the present invention consists in that, since the machine room has everything necessary for filtration and/or disinfection, it is assembled with the structure and becomes an integral part of it and is ready for use because it has already been tested at the factory.

[0033] The pool therefore is assembled, filled with water and put into operation for 24 hours, emptied and sent to the customer.

[0034] The pool thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0035] Moreover, all the details may be substituted by other, technically equivalent elements.

[0036] In practice, the materials used, as well as the contingent shapes and dimensions, may be any according to the requirements and to the state of the art.

[0037] The disclosures in Italian Patent Application No. 102018000021064 from which this application claims priority are incorporated herein by reference.

[0038] 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 pool (1), particularly of the type with facilitated installation, which comprises a plurality of transverse modules (2) which are substantially U-shaped and are mutually associated so as to define the lower base and the side walls of said pool (1), two closure bulkheads (3, 4) which are respectively associated with the first and with the last of said transverse modules (2) so as to define, together with said transverse modules (2), a supporting structure of said pool (1), and a tub-shaped impermeable element which is accommodated inside and rests upon said supporting structure, **characterized in that** it comprises angular reinforcement elements (5) which are associated with said transverse modules (2) at corner portions of said supporting structure which are defined between said side walls and said lower base.

2. The pool (1) according to claim 1, **characterized in that** said transverse modules (2) have a substantially flat transverse cross-section, with flanged edges (6) which are flanged outward in such a manner as to facilitate their mutual association and increase their flexural stiffness.

3. The pool (1) according to claim 1 or 2, **characterized in that** said transverse modules (2) are mutually associated by bolting at said flanged edges (6).

4. The pool (1) according to claim 3, **characterized in that** said transverse modules (2) each comprise at least one central panel (7), which defines a portion of said lower base, and two mutually opposite side panels (8), which define respectively a portion of said side walls, said lateral panels (8) being oriented substantially at right angles with respect to said central panel (7) in such a manner as to give said transverse module (2) a substantially U-shaped geometric configuration.

5. The pool (1) according to one or more of the preceding claims, **characterized in that** said panels are made of sheet metal.

6. The pool (1) according to one or more of the preceding claims, **characterized in that** said angular reinforcement elements (5) comprise L-shaped brackets (11) which are associated with said side panels (8) and with said central panels (7) at said flanged edges (6) in such a manner as to locally embrace, in a lower region and laterally, each one of said transverse modules (2), said L-shaped brackets (11) being bolted together with said flanged edges (6).

7. The pool (1) according to one or more of the preceding claims, **characterized in that** it comprises a perimetric edge (12) which is associated in an upper region with said transverse modules (2) so as to maintain the linearity of said side walls.

8. The pool (1) according to one or more of the preceding claims, **characterized in that** said perimetric edge (12) is of the tilting type in order to limit the lateral space occupations of said pool (1) during steps of transport.

9. The pool (1) according to one or more of the preceding claims, **characterized in that** said two closure bulkheads (3, 4) comprise two sheet metal bodies (9, 10) which are associated respectively with the first and with the last of said transverse modules (2) by bolting.

10. The pool (1) according to one or more of the preceding claims, **characterized in that** it comprises longitudinal stiffening elements (14) which are associated with said transverse modules (2) at the central panel (7) on the outer side, said stiffening elements (14) and said angular reinforcement elements (5) defining a plurality of resting base portions which are substantially mutually coplanar and are designed to rest on a foundation provided on the bottom of the excavation of said pool (1).

11. The pool (1) according to one or more of the preceding claims, **characterized in that** it comprises at least one machine room (13) which is designed for filtering and/or disinfection and which is directly associated with one of said two closure bulkheads (3, 4).

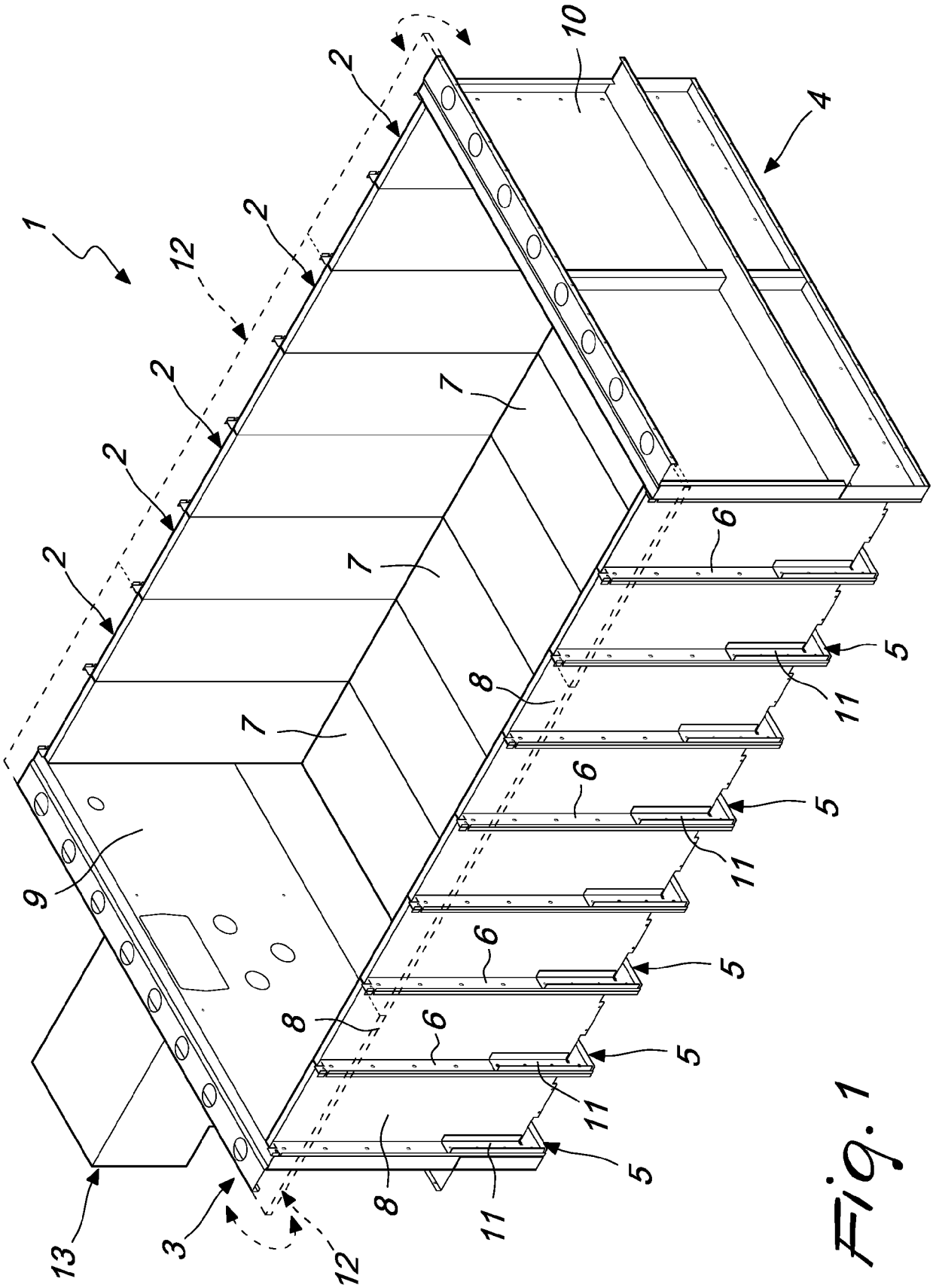

Fig. 1

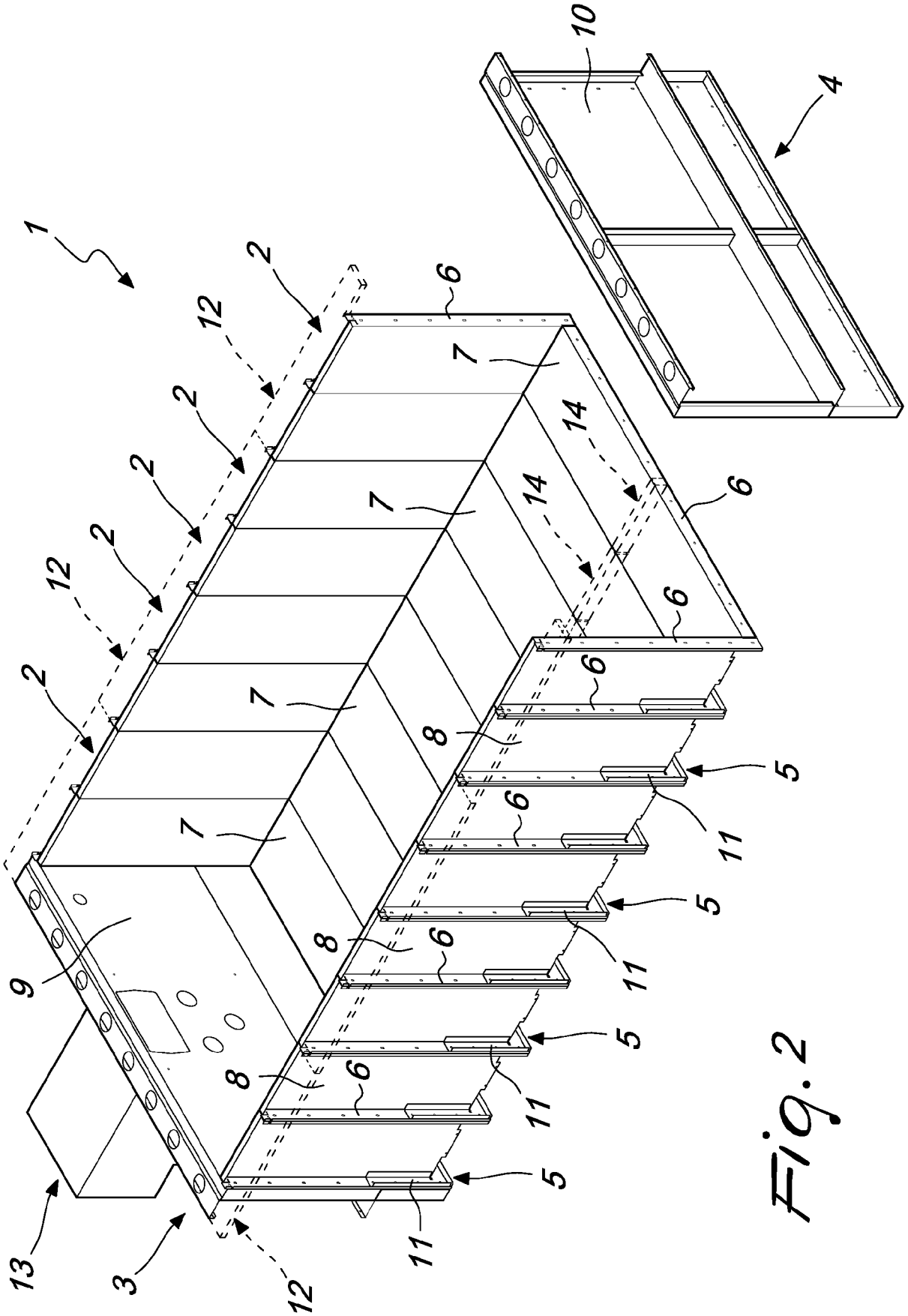

Fig. 2

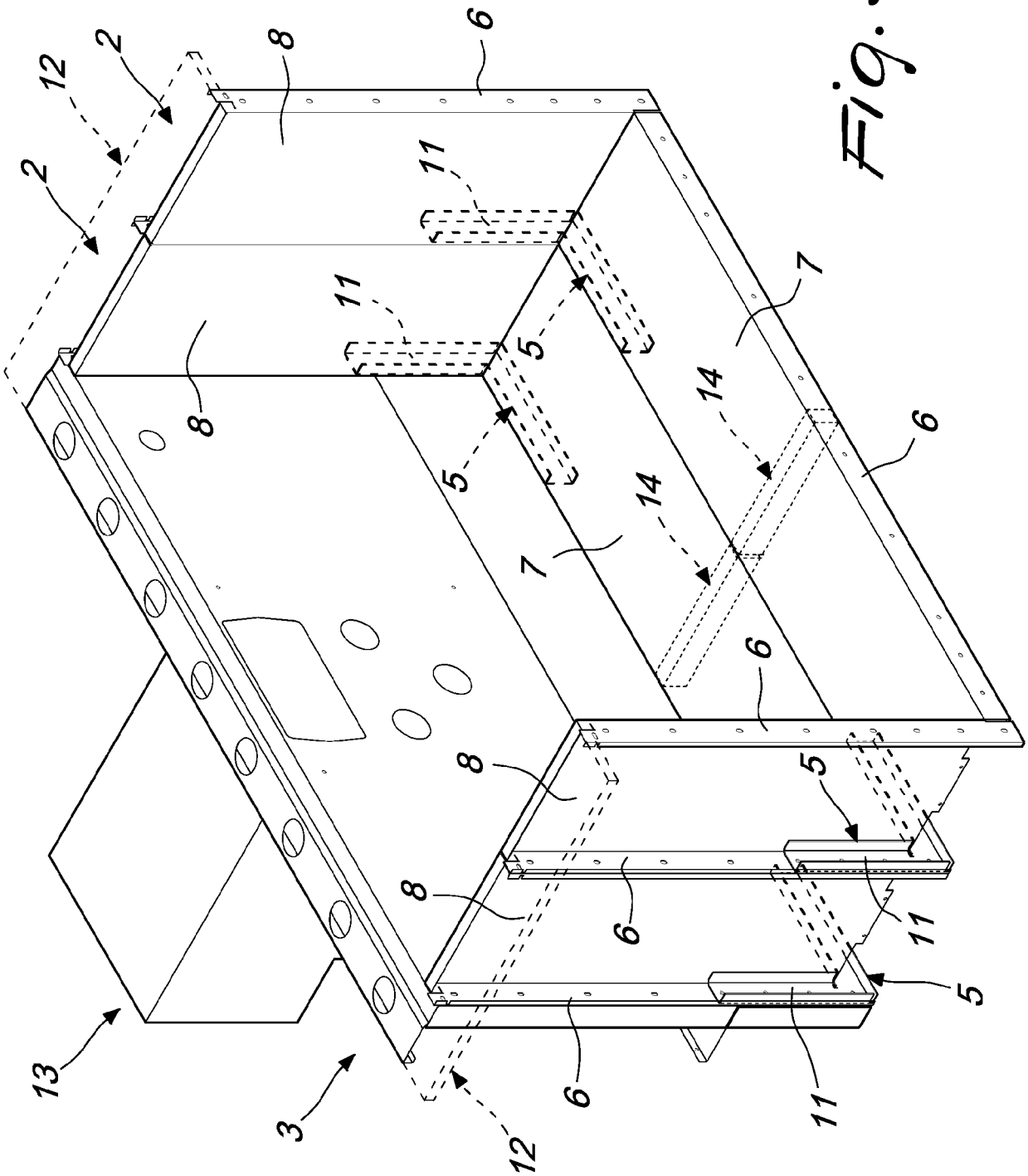

Fig. 3

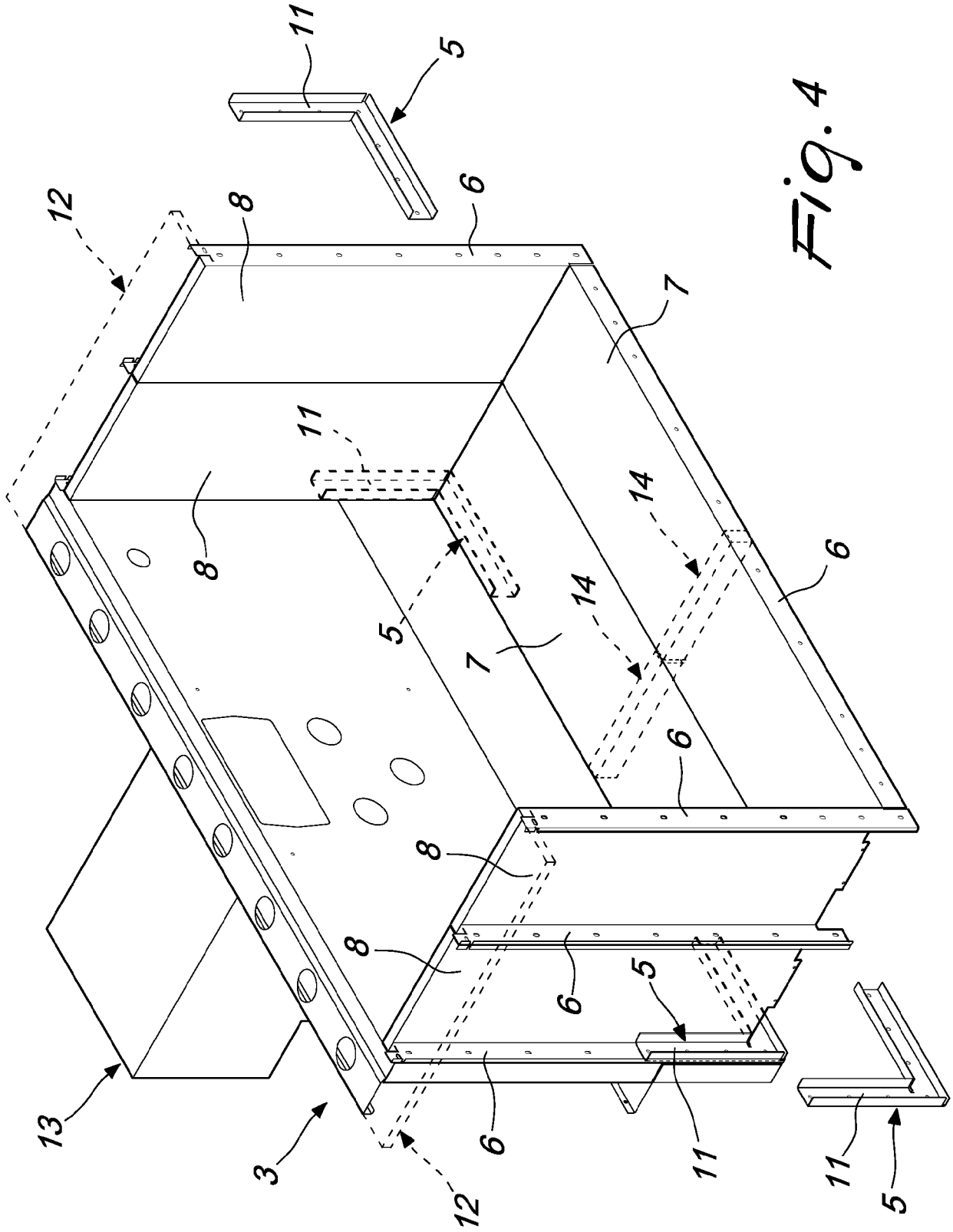

Fig. 4

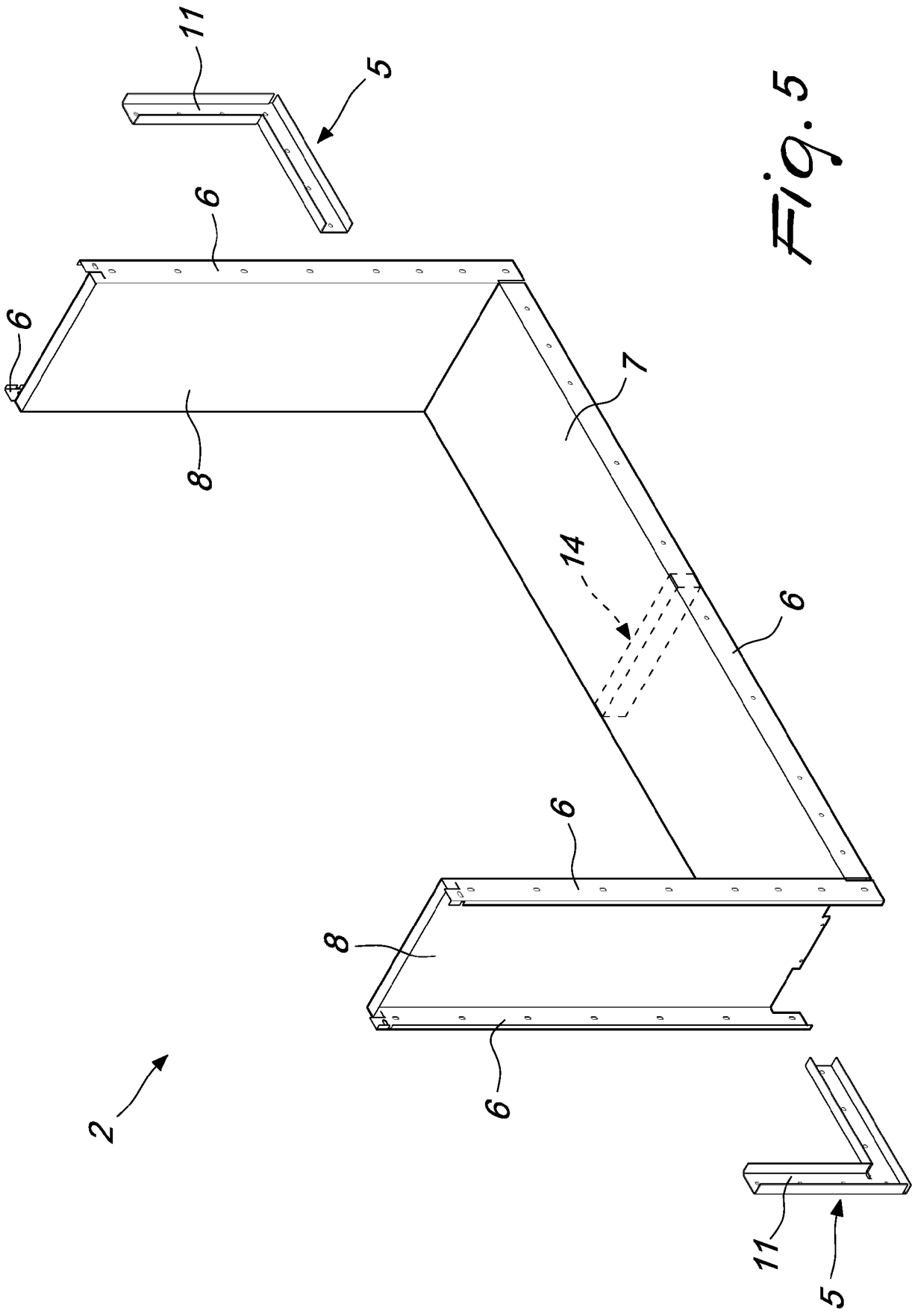

Fig. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 19 21 9267

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	WO 2010/008260 A1 (I T P SERVICES MAROC [MA]) 21 January 2010 (2010-01-21) * the whole document *	1-11	INV. E04H4/00
A	WO 2005/064100 A1 (WBA CONSULTORIA E VENDAS INTER [BR]; RIBEIRO JOSE LUIZ WHITAKER [BR]) 14 July 2005 (2005-07-14) * page 4, line 32 - page 5, line 28 * * page 6, line 26 - page 7, line 24 *	1-11	
A	FR 2 833 636 A1 (AQUAPARADISE [FR]) 20 June 2003 (2003-06-20) * figure 4 * * page 10, lines 9-31 *	11	
A	AU 448 003 B2 (IMPAC TRADING COMPANY PTY. LIMITED) 18 April 1974 (1974-04-18) * the whole document *	1-11	
A	FR 1 500 146 A (M. JEAN SECAIL [FR]) 3 November 1967 (1967-11-03) * the whole document *	1-11	TECHNICAL FIELDS SEARCHED (IPC) E04H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	25 March 2020	Schnedler, Marlon

CATEGORY OF CITED DOCUMENTS

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25-03-2020

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2010008260 A1	21-01-2010	MA 31210 B1	01-03-2010
		WO 2010008260 A1	21-01-2010
WO 2005064100 A1	14-07-2005	BR 0300763 A	09-09-2003
		DE 602004010796 T2	24-12-2008
		EP 1611302 A1	04-01-2006
		ES 2298867 T3	16-05-2008
		MX PA05009928 A	21-03-2006
		PT 1611302 E	27-03-2008
		US 2006179561 A1	17-08-2006
		WO 2005064100 A1	14-07-2005
FR 2833636 A1	20-06-2003	NONE	
AU 448003 B2	18-04-1974	NONE	
FR 1500146 A	03-11-1967	FR 93108 E	14-02-1969
		FR 1500146 A	03-11-1967

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Patent documents cited in the description

- IT 102018000021064 **[0037]**