(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 719 711 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
08.11.2006 Bulletin 2006/45

(51) Int Cl.:
B65D 19/18 *(2006.01)*

(21) Application number: **06380068.4**

(22) Date of filing: **06.04.2006**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK YU

(30) Priority: **06.05.2005 ES 200501035 U**

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(54) Collapsible container

(57) A container for transporting goods consisting of a lower base (1), two small panels (2) and two large panels (3). The small panels (2) are provided with first connection means consisting of a plurality of projections arranged in extension of both side edges of said small panel (2), perpendicular thereto, aligned in two parallel rows, defining a first group of projections (4) and a second group of projections (4'), and the large panels (3) are provided with second connection means consisting of two parallel grooves, a first groove (5) and a second groove (6), arranged on the inner face of the large panels (3) close to their side edges. The projections (4) constituting the first group of projections are accommodated with the ability to slide over the first groove (5) and projections (4') of the second group of projections are accommodated with the ability to slide over the second groove (6).

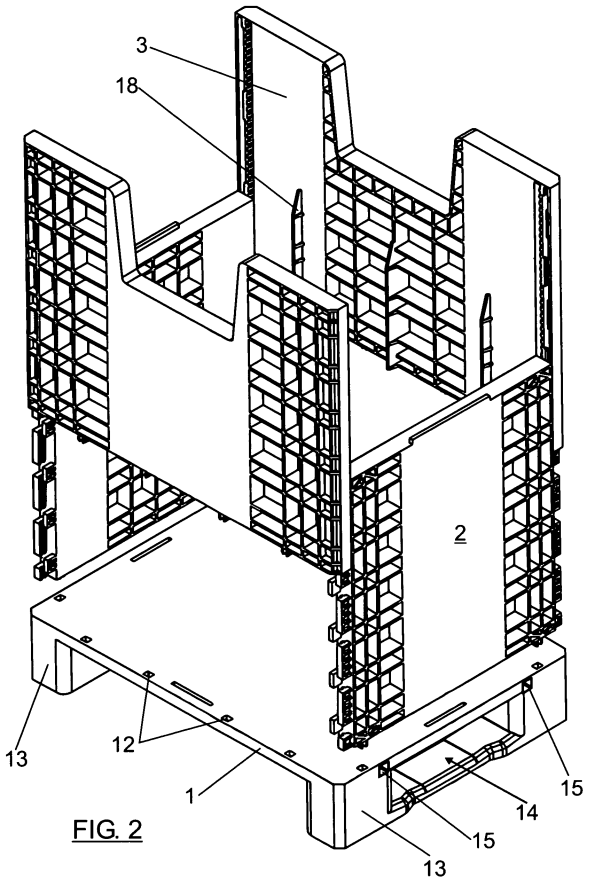

FIG. 2

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Description

FIELD AND OBJECT OF THE INVENTION

[0001] The invention is comprised within the field of components for storing and transporting goods and more specifically relates to a container used for handling and transporting different types of goods such as large cylindrical objects, such as beer kegs for example, the mentioned containers being easy to assemble, with the possibility of stacking the same.

STATE OF THE ART

[0002] Transporting goods such as large cylindrical objects is currently done either directly loading them, one by one, from the warehouse into the delivery truck, or else through pallets having areas for accommodating the cylindrical objects on the top surface thereof responsible for fixing said objects to the pallet so that said objects do not fall off the pallet and therefore not damaged during handling and transporting of the load.

[0003] Another solution is to use containers in which the objects to be transported are wholly contained inside them, their side walls being of equal or greater height than the height of said objects. Said containers are normally produced from a parallelepiped body of straight generatrices.

[0004] Said containers were made of wood at first, joining their side panels by means of nails or similar means, and the manufacture of these containers in many cases was expensive since the joining means used and the manual labor required were considerable, and furthermore the mentioned joints of the containers deteriorated quickly with use and it was necessary to repair the container rather frequently, fairly reducing the useful life of the container.

[0005] Then the manufacture of containers made of plastic began, which had side walls permanently joined by means of heat welding, or they were even manufactured by injection molding in a single body, whereby manufacturing costs were reduced. The drawback with this type of containers is that they require a large storage space for the same when they are empty, and more importantly if one of their walls is damaged they become unusable in many cases and must be discarded.

[0006] A need has therefore been detected to provide a container for transporting goods of this type of cylindrical objects, which is easy to manufacture and easy to assemble, and which more importantly has the possibility of also being easily disassembled, and will consist of a lower base and side walls which can be joined together in simple manner and without requiring additional auxiliary means such as nails, heat welding, etc.

[0007] This objective is achieved by means of the invention as it is defined in claim 1, the various embodiments of the invention being defined in the dependent claims.

DESCRIPTION OF THE INVENTION

[0008] The present invention relates to a container used for transporting goods such as cylindrical objects, constituted from a rectangular prismatic body with its upper side open, which is made up of a lower base, two small panels and two large panels.

[0009] Said container is characterized in that the small panels have first connection means and the large panels have second connection means, said first connection means consisting of a plurality of projections arranged in extension of both side edges of said small panel, perpendicular thereto, aligned in two parallel rows, defining a first group of projections and a second group of projections, and the second connection means of which consist of two parallel grooves, a first groove and a second groove, arranged on the inner face of the large panels close to their side edges. The projections constituting the first group of projections are arranged with the ability to slide over the first groove, and projections of the second group of projections are arranged with the ability to slide over the second groove.

[0010] It is therefore achieved by means of the particular configuration of the first and second joining means that the assembly of the panels constituting the box is very simple and especially very fast, and it is also achieved that the disassembly thereof is an easy task, as a result of which said panels can be disassembled when desiring to store empty containers by just extracting the small panels from the large panels or vice versa by simple sliding, which enables saving considerable space for the case of large amounts of empty containers to be stored.

[0011] Now explaining more in detail the configuration of the first and second joining means, the projections of the first group of projections have two longitudinal grooves, a first groove and a second groove parallel to one another located on the innermost side face of the projections, the first groove furthermore having a plurality of longitudinal ribs perpendicular to its innermost side face, aligned in two rows, defining a first group of ribs and a second group of ribs. The ribs forming the first group of ribs are fitted into the first groove and the ribs forming the second group of ribs are fitted into the second groove once the container has been assembled.

[0012] A very safe and solid constitution of the joints between small and large panels is thus achieved because there is a double grooving and double ribbing, making the distribution of loads that the panels are subjected to optimal.

[0013] The ribs of the first group of ribs are located in an alternating manner in relation to the ribs of the second group of ribs, along the innermost face of the first groove of the large panel. The projections of the first group of projections are also located in an alternating manner in relation to the projections of the second group, along the side edge of the small panel.

[0014] This distribution basically corresponds to a sav-

ings in material, obtaining a mechanical performance that is equivalent to that of using projections that cover the entire length of the edges of the small panels or ribs that cover the entire length of the first grooves of the large panels.

[0015] Both the small panels and the large panels have on their lower edge a plurality of elements for joining them to the lower base of the container, consisting of bosses perpendicular to said lower edges, while the lower base of the container has a plurality of holes located opposite the mentioned bosses, such that said bosses are inserted into said holes once the container has been assembled.

[0016] A quick joining of the large and small panels with the lower base is thus achieved.

[0017] In turn, the lower base of the container has two lower seatings extending from the small panels, a space being defined under the container so as to allow inserting transporting machinery, each one of the mentioned seatings having a transverse opening.

[0018] Therefore, and as a result of the mentioned space and the mentioned openings, the handling and transporting of the containers loaded with the goods is more effective with the machinery normally used in transporting and storage tasks, such as a mechanical forklift truck or forklift, being able to insert forklift forks through the mentioned openings.

[0019] The lower base furthermore has at least two holes parallel to the large panels, located on both sides of the openings, in which container stiffening metallic inserts are inserted.

[0020] The bending resistance of the lower base of the container is thus considerably increased when the load is considerable.

[0021] The lower face of the lower base has a plurality of anti-slip blocks, the purpose of which is to assure that there is no slipping between the box and the forklift fork and that the handling of the containers is therefore as safe as possible.

[0022] In turn, the small panels have a longitudinal guide on their upper edge and the lower base will have side recesses on its lower face configured to house the mentioned guides when one container is stacked on another. As a result of the position and configuration of said guide and of the corresponding recesses which are located opposite the guides when two or more containers are stacked, the relative slipping of one container as regards another one stacked with it will be fixed, preventing containers located in higher positions from falling to the ground during their handling and damaging the barrels or even the person who is handling the containers.

[0023] The large panels have partitions arranged on their inner face parallel to the side edges of the container, located such that they are tangent to the outline of the cylindrical object, configured to reduce movements of the objects while transporting the container. The width of the free end of the partitions gradually decreases in an upward direction, defining a mouth for introducing the objects inside the container.

[0024] The main function of the mentioned partitions is to adjust the space in which the objects to be transported are placed, so that they move as little as possible during their transporting; in turn the function of the mentioned recessing of the free end thereof is to facilitate introducing said objects in the mentioned spaces of the container by acting as a mouth of said spaces.

[0025] Finally, the large panels have a large indentation from their upper edge which, in collaboration with the space that is left by the seatings of the lower base, makes the insertion of the machinery for transporting the containers more efficient, since the maneuvering space for said machines is increased.

DESCRIPTION OF THE DRAWINGS

[0026] A set of drawings which aid in better understanding the invention and which are expressly related to embodiments of said invention is very briefly described below, presented as illustrative and non-limiting examples thereof.

Figure 1 depicts a perspective view of the container object of the present invention once it has been assembled.

Figure 2 depicts a perspective view of the container object of the present invention when the large panels are being assembled to the small panels.

Figure 3 shows a perspective view of one of the large panels forming the container object of the present invention.

Figure 4 shows a detail of part of one of the large panels of Figure 3.

Figure 5 shows a perspective view of one of the small panels forming the container object of the present invention.

Figure 6 shows a detail of part of one of the small panels of Figure 5.

Figure 7 is a lower plan view of the lower base forming the container object of the present invention.

Figure 8 shows a detail of the lower part of the joint between a large panel and a small panel, which is joined to the lower base.

Figure 9 shows a top plan view of the container object of the present invention in which a plurality of cylindrical objects, such as barrels, has been deposited.

DESCRIPTION OF A PREFERRED EMBODIMENT OF THE INVENTION

[0027] The stackable, collapsible container object of the present embodiment will be used for transporting cylindrical objects, and more specifically for barrels or other similar containers; as can be seen in Figure 1 and more clearly in Figure 2, it is made up of a lower base 1, two small panels 2 parallel to one another and perpendicular to the lower base 1, and two large panels 3 parallel to one another and perpendicular to the small panels 2.

[0028] To join the small panels 2 to the large panels 3, the former are provided with joining means consisting of a plurality of projections 4-4', said projections being arranged in extension of the panel itself, perpendicular to its side edges. Such projections are arranged in two rows along the mentioned edge, defining a first group of projections 4 and a second group of projections 4', as can be seen in Figure 5 and in greater detail in Figure 6, the projections of both groups being alternating, covering the entire length of the edge of the small panel 2.

[0029] In turn, the large panels 3 have second joining means consisting of parallel grooves made on the inner face of said large panels 3, a first groove 5 and a second groove 6, as can be seen in Figure 3 and more clearly in Figure 4.

[0030] The spacing of the mentioned projections 4, 4' with respect to the edge of the small panel 2 and between one another, as well as their thickness, and the spacing and width of the grooves 5 and 6 with respect to the edge of the large panel 3, as well as their width, are such that projections 4 are fitted into the first groove 5 and projections 4' are fitted into the second groove 6, the assembly of the small panels 2 with the large panels 3 being carried out by simply sliding one over the other, sliding projections 4 over the first groove 5 and projections 4' over the second groove 6.

[0031] To achieve a tighter joint between the small panels 2 and the large panels 3, the projections 4 of the first group of projections have a first channel 7 and a second channel 8, depicted in Figure 6, and both are parallel and made on the innermost side face of the projections, while on the other hand a plurality of ribs grouped in two rows are arranged in the first groove 5, a first group of ribs 9 and a second group of ribs 10 being defined as can be seen in Figure 4, the ribs of both groups being arranged in an alternating manner, covering the length of the first groove 5, there being a certain space between the ends of the ribs of the two groups.

[0032] The mentioned ribs 9, 11 respectively fit into the first channel 7 and the second channel 8 made in projections 4 of the first group of projections existing on the edges of the small panels 2, their fitting together being carried out by means of sliding the large panels with respect to the small panels or vice versa. The joint between the large panels 3 and small panels 2 is shown more clearly in Figure 8.

[0033] As can be observed in the figures, both the lower base 1 and the small panels 2 and large panels 3 have a plurality of reinforcements corresponding to the particular demands of such components when the container is under a full load.

[0034] The connection between the large panels 3 and the small panels 2 to the lower base 1 is done through a plurality of bosses 11 arranged on the lower edge of the mentioned panels, which will be fitted into holes 12 made on the periphery of the upper face of the lower base 1, such circumstance being seen with particular clarity in Figure 2. In the present embodiment of the invention, the mentioned bosses 11 are snap-fit type couplings which have two parallel pins spaced a short distance from one another, with a hook-like side ending which on one hand facilitates their insertion into the holes 12, and on the other acts as a retaining means so that the lower base 1 remains firmly joined to the large panels 3 and small panels 2, their disassembly being simple, just pressing them towards the space separating both pins and releasing the lower base 1 from the mentioned panels.

[0035] The lower base has two side seatings 13 (Figures 1 and 2) which are located in extension of the small panels 2, their main purpose being to define a space between them and under the container in which load lifting and transporting machinery can be inserted, such as forklift forks. Each one of the side seatings 13 additionally has a through opening 14, in the present embodiment the side seatings 13 will have a rectangular section, being able to adopt any other shape complying with the requirements for which it has been designed, and in the same way the opening will also have an approximately rectangular outline.

[0036] Near the upper corners of the opening 14, just below the upper face of said lower base 1, respective holes 15 parallel to the large panels 3 are made, completely traversing the lower base 1 from face to face. The holes 15 will house inserts of a metallic nature which will cover the length of the lower base and will act as a resistant structure, increasing the stiffness of the container, making it more resistant to breaking under large loads.

[0037] For the purpose of making the stacking of the containers safer, preventing the existence of relative slipping between stacked containers, the small panels 2 have longitudinal guides 17 arranged in extension of the outer face of said panels intended for being seated and fitted into homologous side recesses 20 made on the lower face of the lower base 1 next to the edge thereof coincident with the edge of the small panel 2.

[0038] The large panels 3 can be provided with an indentation 22 from their upper edge coinciding with the space existing between the seatings 13 of the lower base 1, and the lower face of the lower base 1 may furthermore have a plurality of anti-slip blocks 16, the main function of which is to prevent slipping of the containers with respect to the machinery handling them. The mentioned anti-slip blocks will usually be made of rubber, being able to be made of any material of similar features.

[0039] Figure 9 shows how the large panels 3 have on their inner face approximately equidistant partitions 18 perpendicular to said inner face and parallel to the side edges of the container, and their location is such that they are tangent to the circular outline of the object 21 to be transported when the container is loaded, such that the space intended for housing the objects is adjusted and said objects are prevented from moving unnecessarily during transport. The free ends of the partitions 18 are recessed, decreasing the width of said free end in the upwards direction, so as to facilitate introducing the objects 21 into the container.

Claims

1. A container for transporting goods, constituted from a rectangular prismatic body with its upper face open, which is made up of a lower base (1), two small panels (2) and two large panels (3), **characterized in that** the small panels (2) are provided with first connection means and the large panels (3) are provided with second connection means, the first connection means of which consist of a plurality of projections arranged in extension of both side edges of said small panel (2), perpendicular thereto, aligned in two parallel rows, defining a first group of projections (4) and a second group of projections (4'), and the second connection means of which consist of two parallel grooves, a first groove (5) and a second groove (6), arranged on the inner face of the large panels (3) close to their side edges, and **in that** the projections (4) constituting the first group of projections are arranged with the ability to slide over the first groove (5) and projections (4') of the second group of projections are arranged with the ability to slide over the second groove (6).

2. A container according to claim 1, **characterized in that** the projections (4) of the first group of projections has two longitudinal grooves, a first channel (7) and a second channel (8), parallel to one another located on the innermost side face of the projections (4), **in that** the first groove (5) has a plurality of longitudinal ribs perpendicular to its innermost side face, aligned in two rows, defining a first group of ribs (9) and a second group of ribs (10) and **in that** the ribs (9) forming the first group of ribs are fitted into the first channel (7) and the ribs (10) forming the second group of ribs are fitted into the second channel (8) once the container has been assembled.

3. A container according to claim 2, **characterized in that** the ribs (9) of the first group of ribs are located in an alternating manner in relation to the ribs (10) of the second group of ribs along the innermost face of the first groove (5) of the large panel (3).

4. A container according to any of the previous claims, **characterized in that** the projections (4) of the first group of projections are located in an alternating manner in relation to the projections (4') of the second group along the side edge of the small panel (2).

5. A container according to any of the previous claims, **characterized in that** the both small panels (2) and the large panels (3) have on their lower edge a plurality of elements for joining them to the lower base (1) of the container, consisting of bosses (11) perpendicular to said lower edges, and **in that** the lower base (1) of the container has a plurality of holes (12) located opposite the mentioned bosses (11), such that said bosses (11) are inserted into said holes (12) once the container has been assembled.

6. A container according to any of the previous claims, **characterized in that** the lower base (1) of the container has two lower seatings (13) extending from the small panels (2), a space being defined under the container for allowing the insertion of transporting machinery, each one of the mentioned seatings having a transverse opening (14).

7. A container according to any of the previous claims, **characterized in that** the lower base (1) has at least two holes (15) parallel to the large panels (3) located on both sides of the openings (14) in which container stiffening metallic inserts are inserted.

8. A container according to any of the previous claims, **characterized in that** the lower base (1) has on its lower face a plurality of anti-slip blocks (16).

9. A container according to any of the previous claims, **characterized in that** the small panels (2) have on their upper edge a longitudinal guide (17) and the lower base (1) will have on its lower face side recesses (20) configured to house the mentioned guides (17) when one container is stacked on another.

10. A container according to any of the previous claims, **characterized in that** the large panels (3) have partitions (18) arranged on their inner face parallel to the side edges of the container, located such that they are tangent to the outline of the cylindrical object, configured to reduce movements of the objects while transporting the container.

11. A container according to claim 11, **characterized in that** the width of the free end of the partitions (18) gradually decreases in an upward direction, defining a mouth for introducing the objects inside the container.

12. A container according to any of the previous claims, **characterized in that** the large panels (3) have a large indentation (22) from their upper edge.

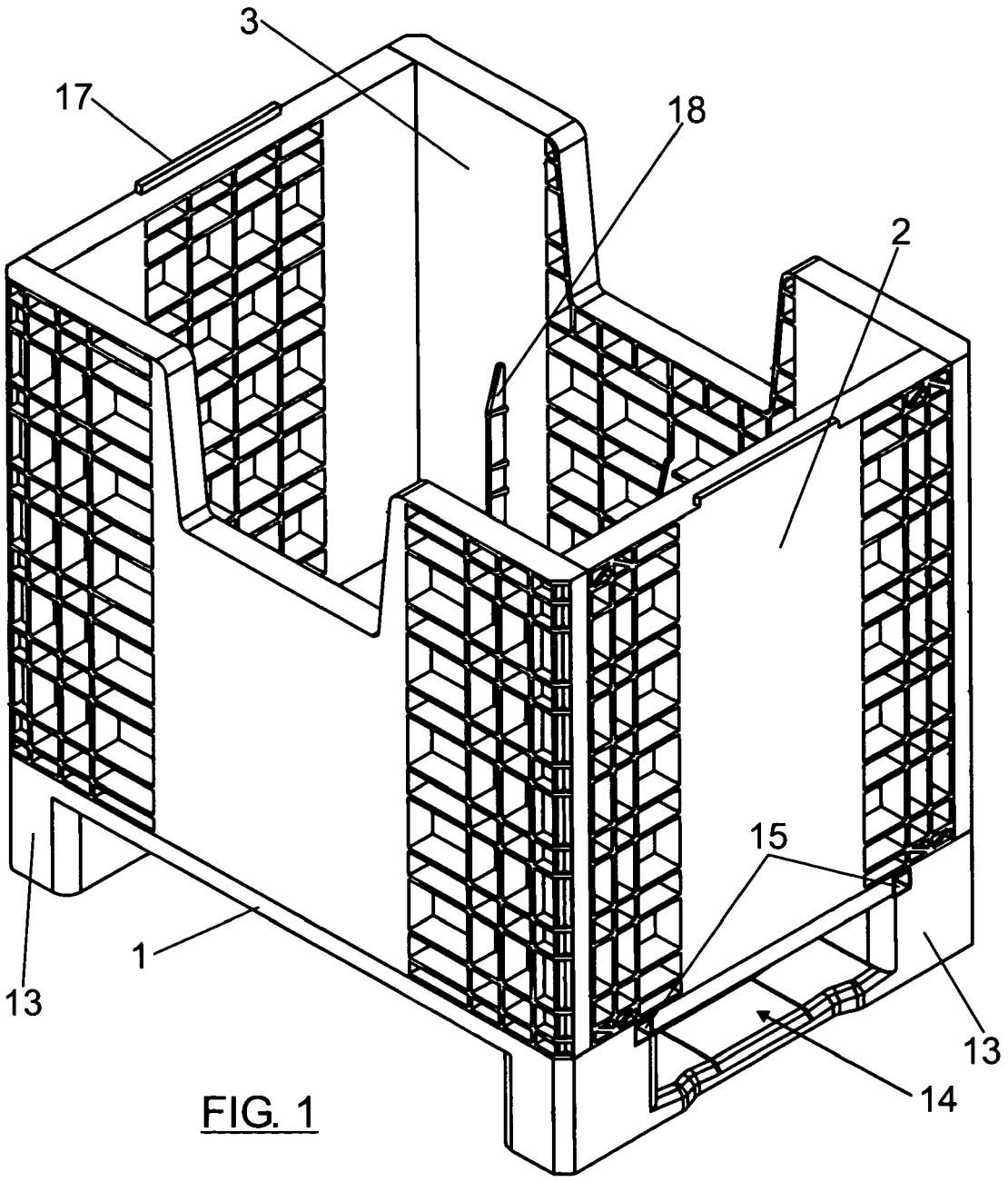


FIG. 1

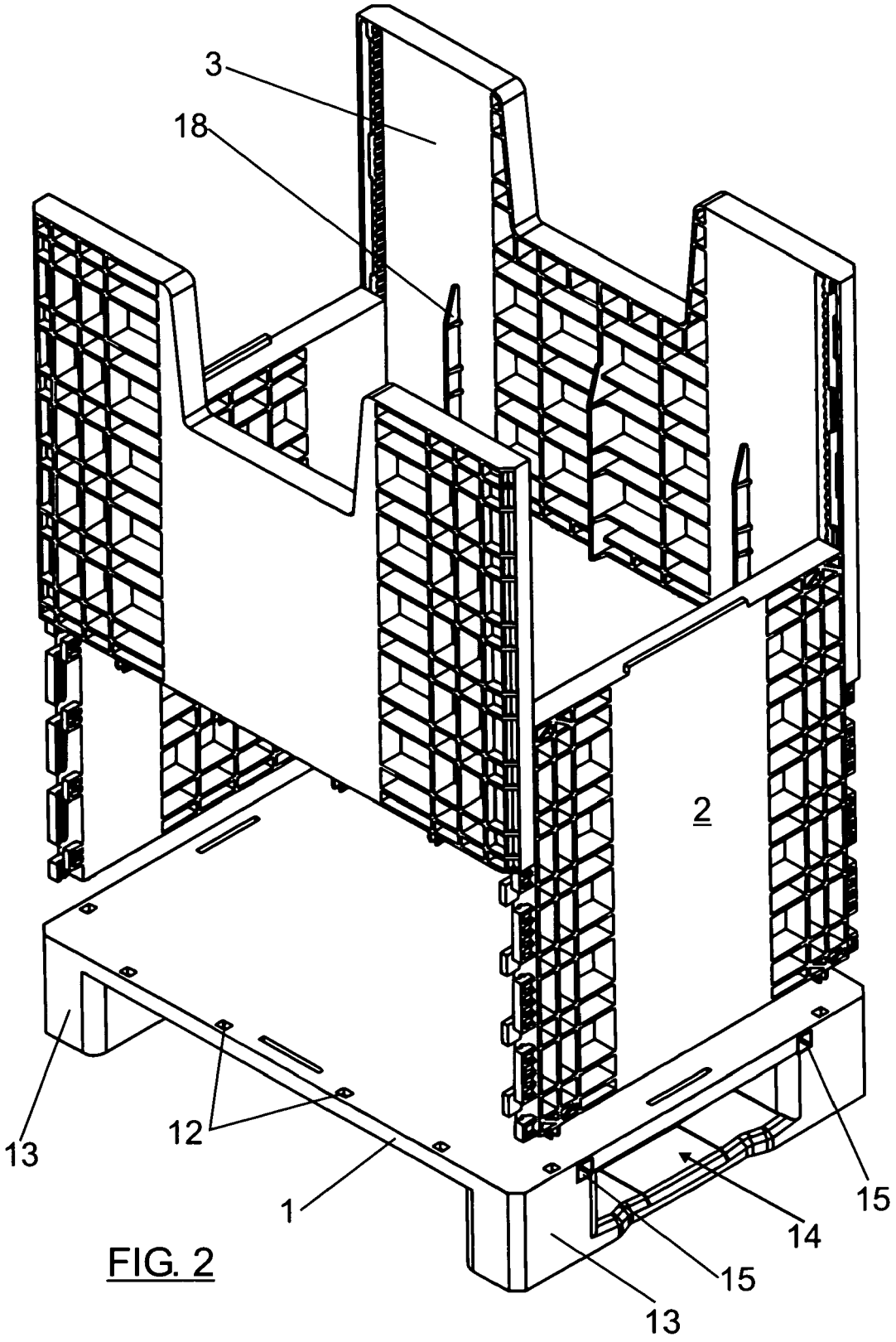


FIG. 2

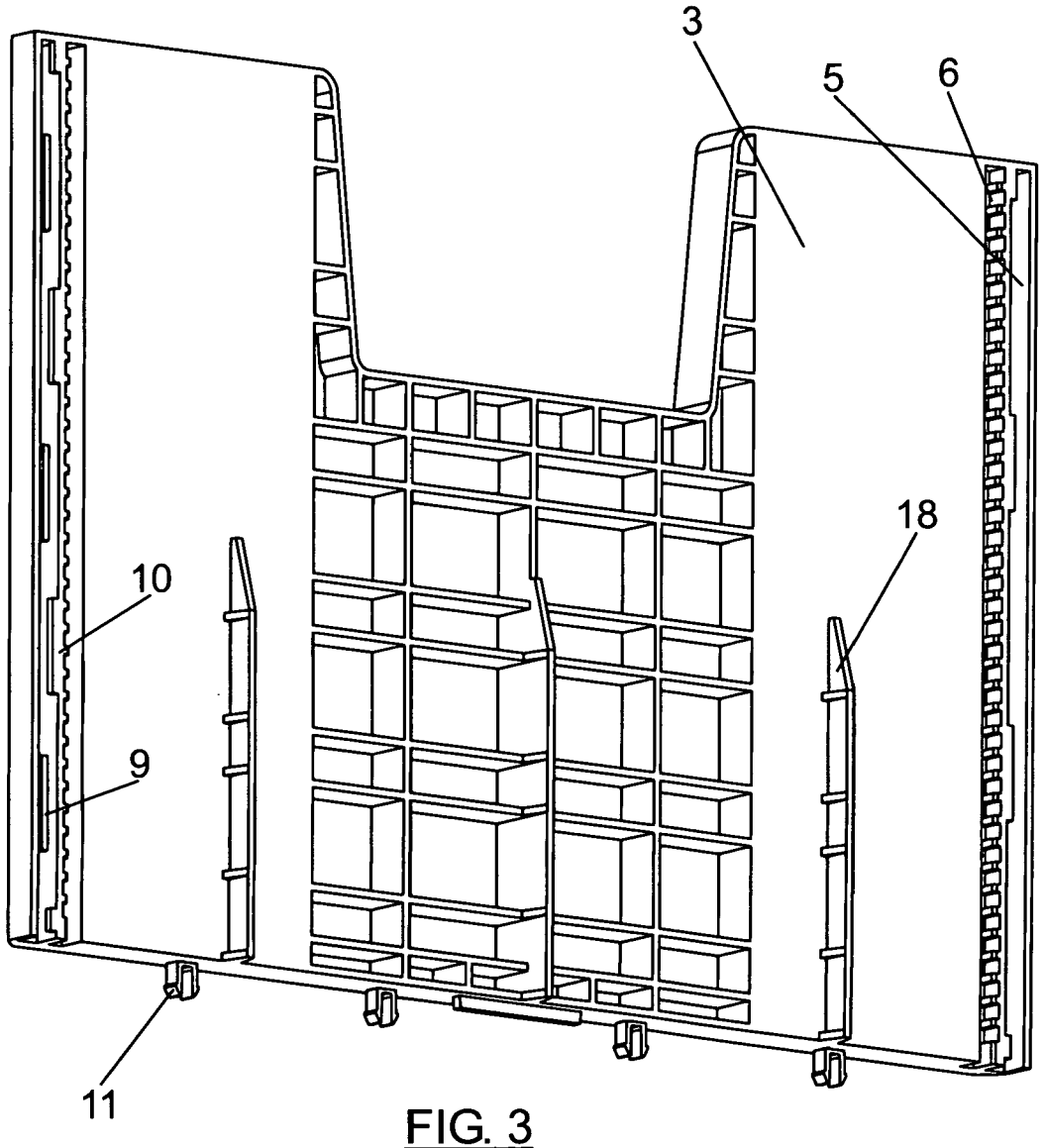
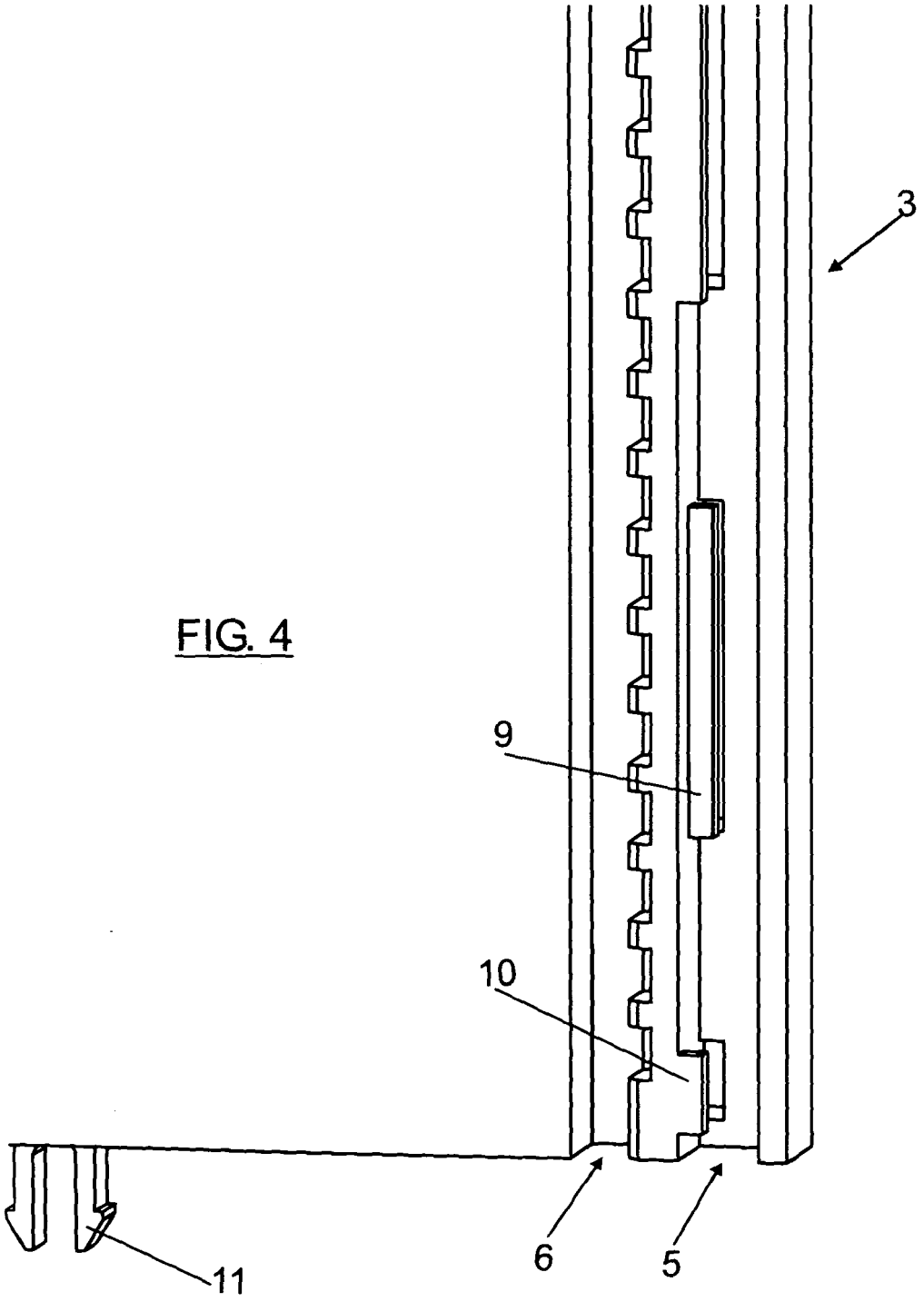


FIG. 3

FIG. 4



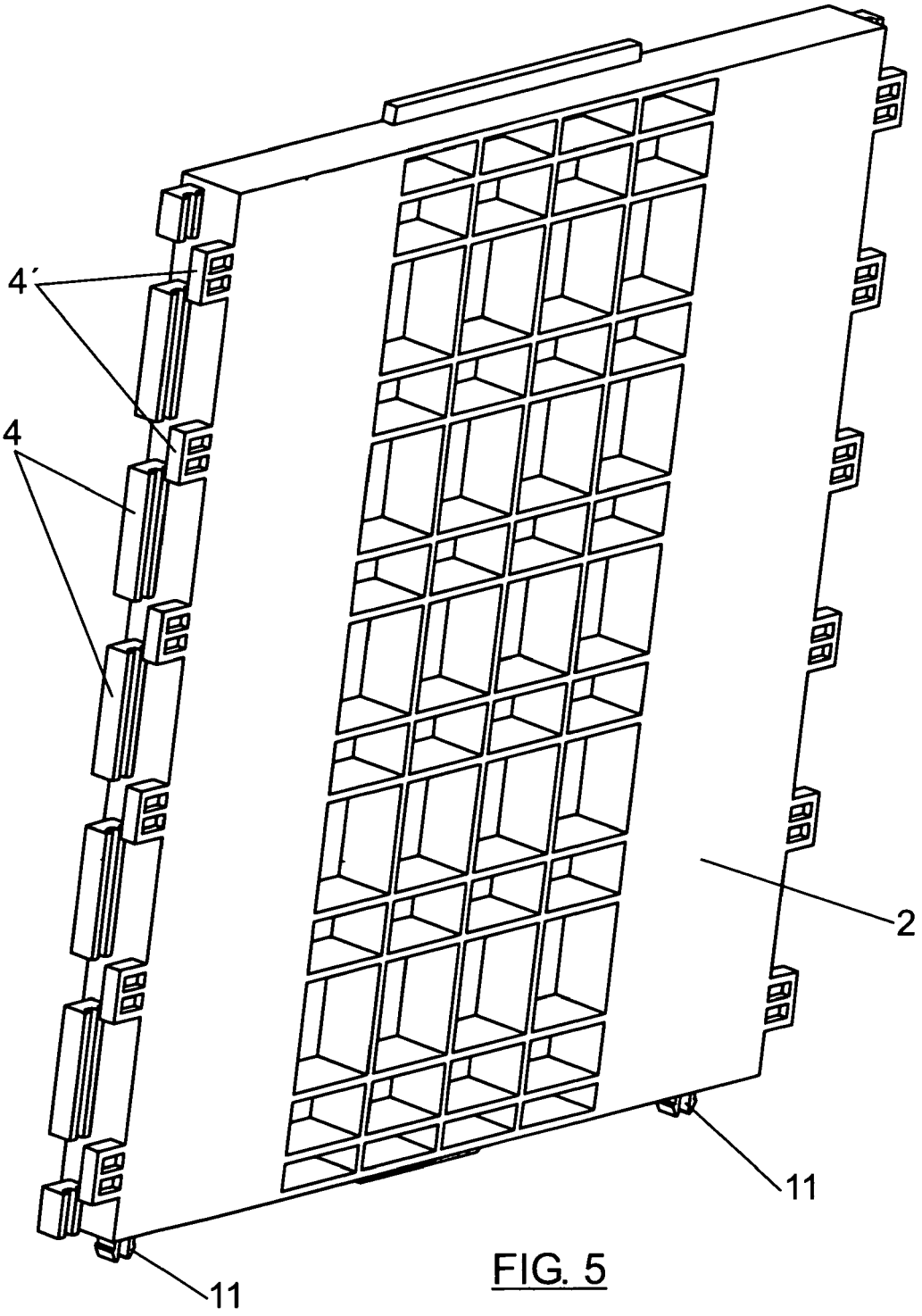
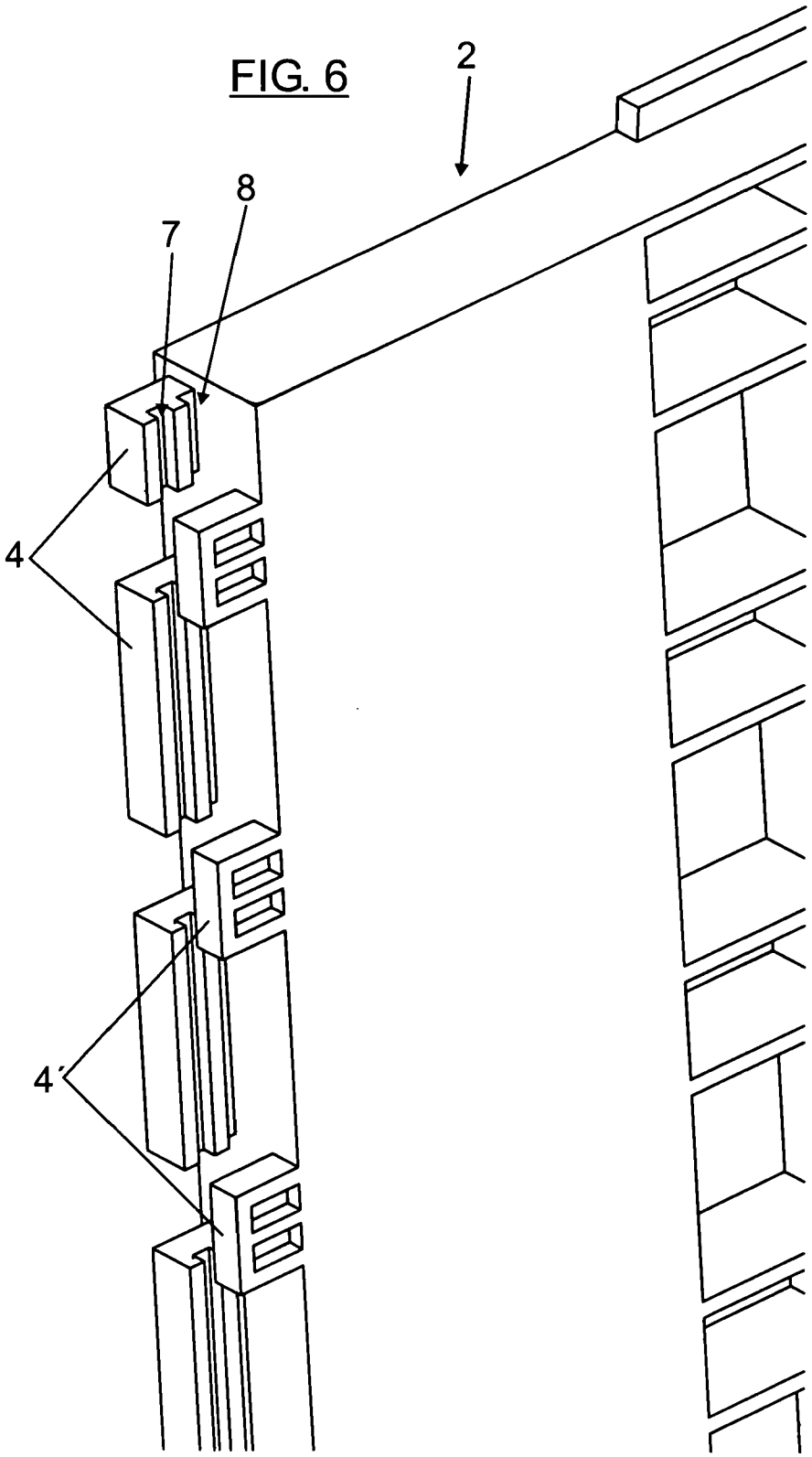


FIG. 5

FIG. 6



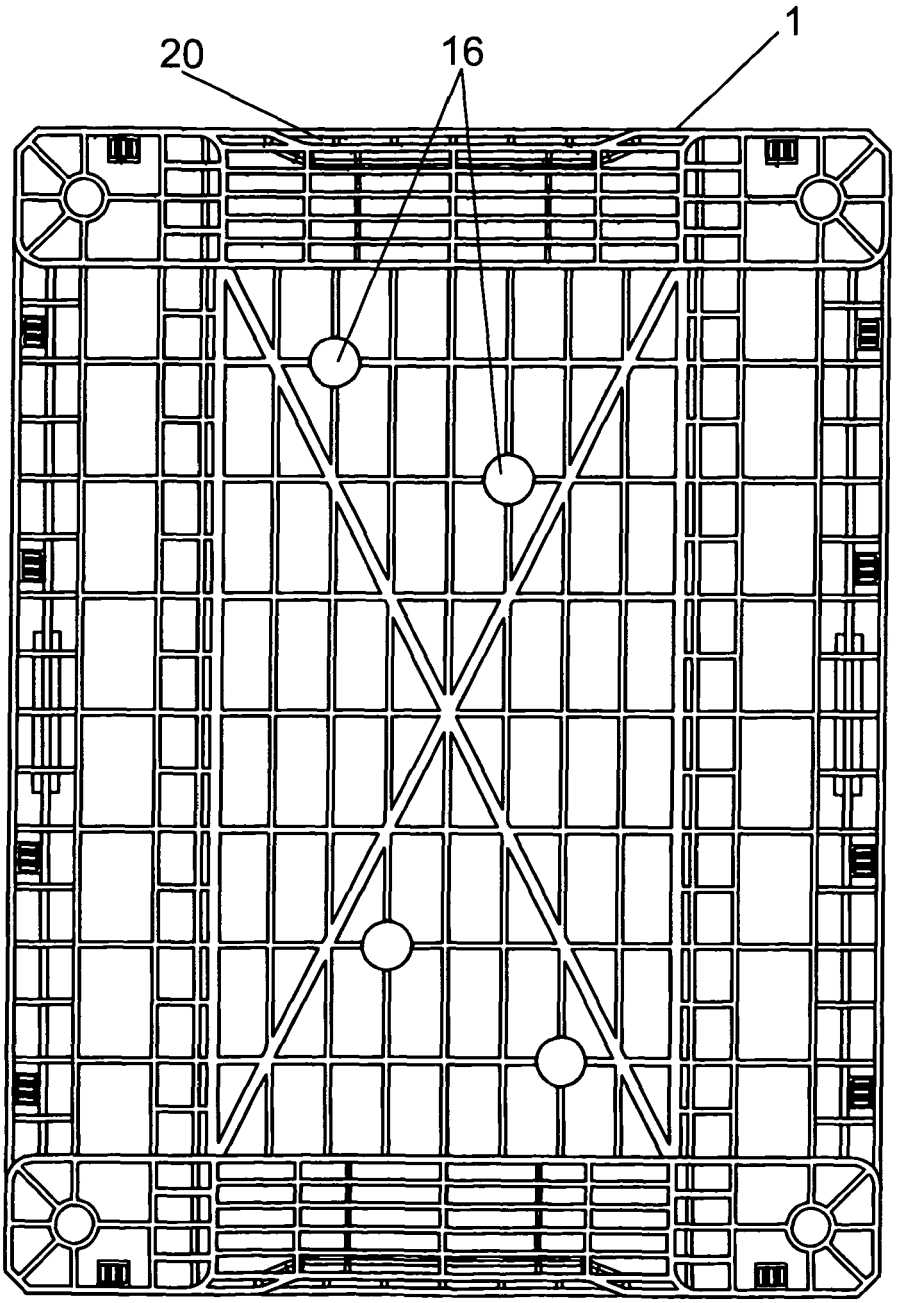
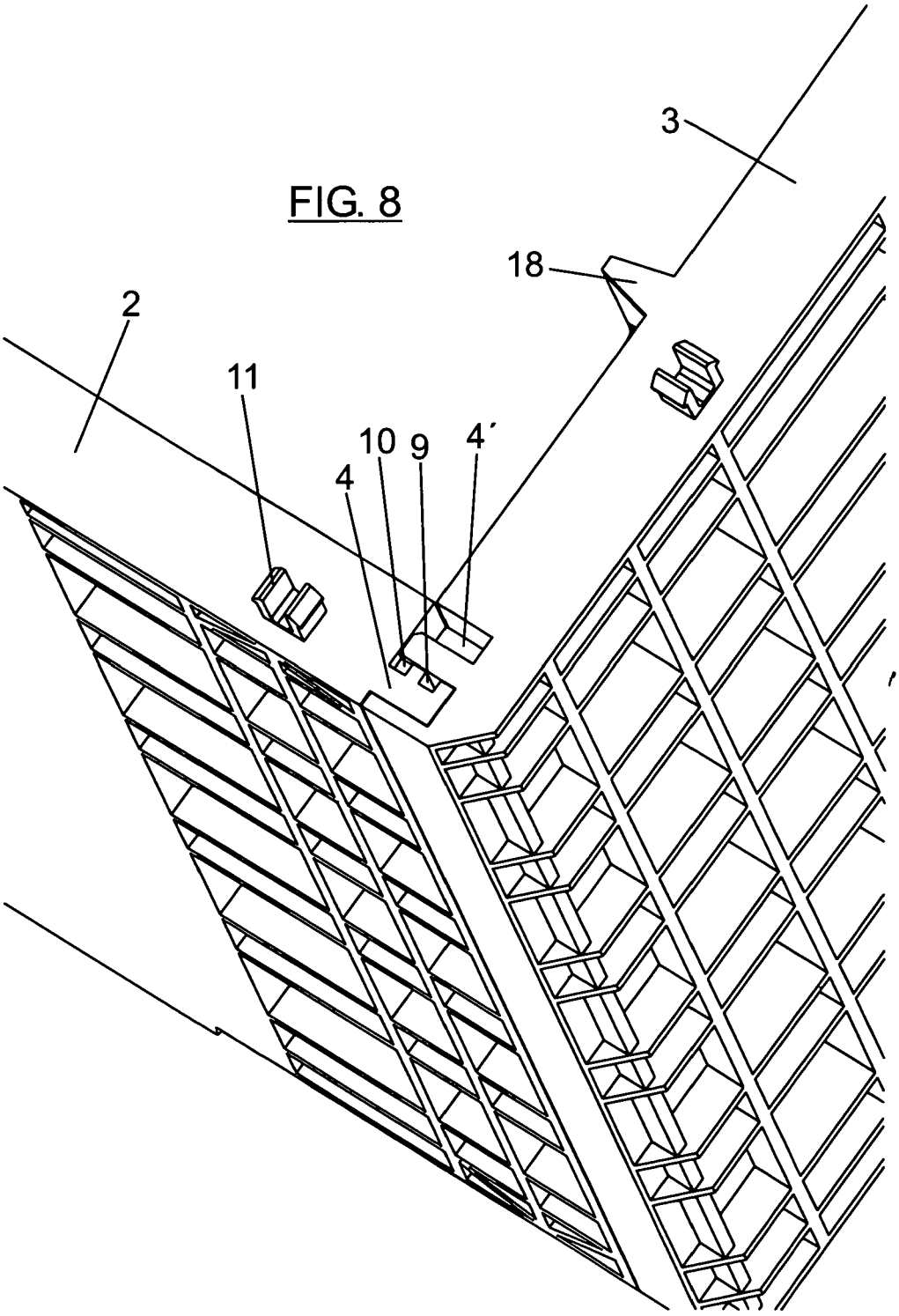


FIG. 7

FIG. 8



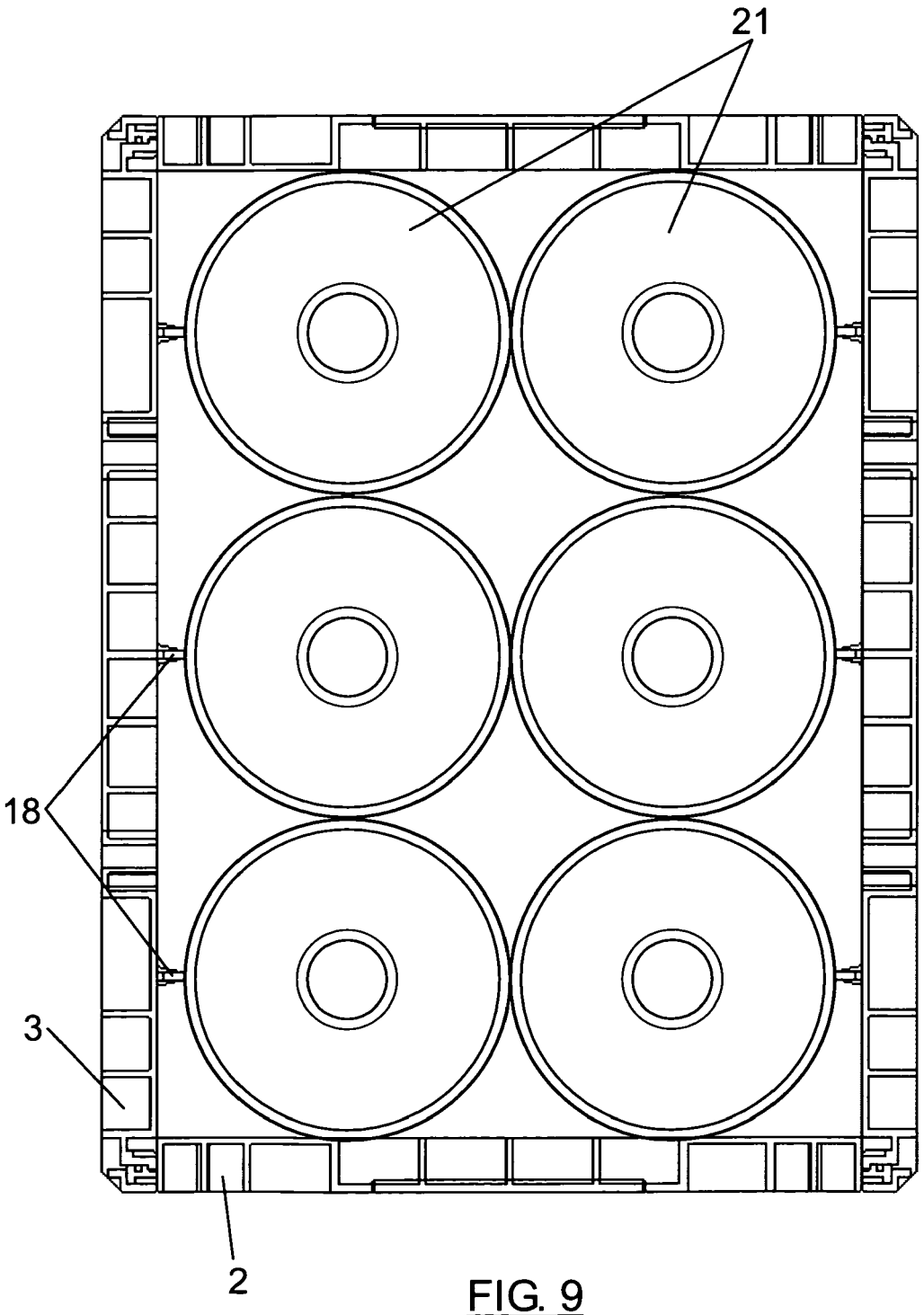


FIG. 9

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 38 0068

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	US 4 635 562 A (KREEGER ET AL) 13 January 1987 (1987-01-13) * figures 1,2 * -----	1	INV. B65D19/18

TECHNICAL FIELDS SEARCHED (IPC)

B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	14 August 2006	Bridault, A

CATEGORY OF CITED DOCUMENTS

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14-08-2006

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