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(54) **CONTAINER WITH COLLAPSIBLE FREIGHT PLATFORM**

(57) Container with foldable load platform intended for transporting different pieces, so that once the container assembly is empty; it can be folded occupying a reduced space. It is **characterized in that** it comprises a foldable load container having two opposite side walls with the addition of a central folding line (5) and two side folding lines (6) parallel and separated by a distance from the corner joints (7) of adjacent side walls. Therefore some characteristic inner spaces are created in the folded position of the load container, which allow housing different fastening elements therein, unlike conventionally occurs wherein housing these fastening elements within the inside fold of load container is not possible.

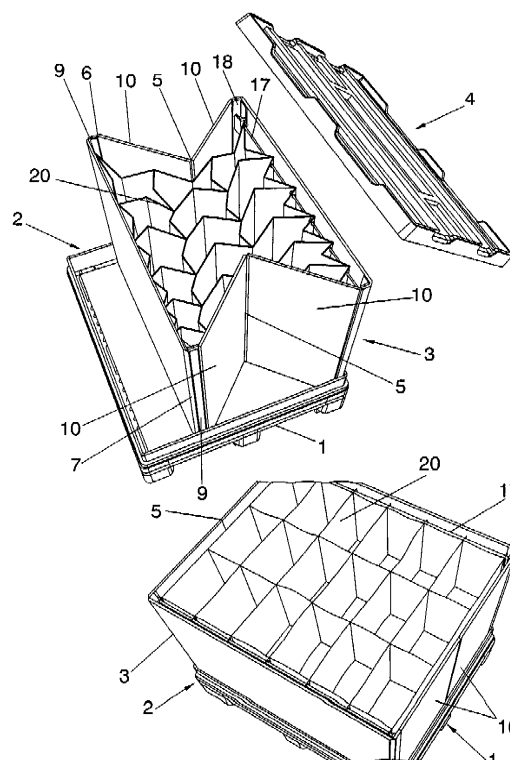


FIG. 1

Description

OBJECT OF THE INVENTION

[0001] The present invention, as the title of this specification states, relates to a container with foldable load platform which is the of type including a platform as a pallet, a load container that is foldable and a lid for covering the assembly, both in folded position and in unfolded or work position, that is when the container is filled with the product or products to be transported and/or contained.

[0002] On this premise, the objective of the invention is a new method for folding the load container, characteristic structure of which allows a fold that creates an inner space for maintaining fastening elements therein that are required to hold the products to be contained and transported, with the load container being in the unfolded position, unlike other containers in which it is required to remove these elements included into the container before folding, since if these are not removed the fold of the respective container could not be performed.

BACKGROUND OF THE INVENTION

[0003] Currently containers with foldable load platform generally comprising a lower platform as a base, a foldable load container itself and a lid for covering the assembly, both in folded position and in the unfolded position are known.

[0004] These load containers usually includes different fastening elements therein in order to separate the load or holding the same by separating some parts from others, so that when folding it is required to previously remove these fastening elements and place them on the platform next to the folded load container.

[0005] When unfolding is performed, it will be required to replace again the fastening elements within the load container and so on.

[0006] It should be noted that the structure of folding lines existing in these load containers does not allow maintain the fastening elements within such containers in the folded position, the need of having to remove and introduce such fastening elements constituting a drawback.

[0007] The German Invention Patent with publication number DE 102004006416 relates to a reusable packaging for transporting piece goods, with a bottom (1) and side walls (2-5) dismountable from the bottom wherewith have to be arranged during the transport of the container as an empty product in the grouped state (25) on the bottom (1). **Characterized in that** it includes additional side walls (14-17), height of which is less than the height of the side walls (2-5) that have been mentioned in the first place and that, in addition to transport space for the side walls (2-5) grouped together, provide additional transport space (27) to the means for packaging the piece product inside the container.

[0008] It is also known the Spanish patent ES 2211800 T3 related to a foldable container which basically comprises a structure as that described in the initial statement of this paragraph of the background, its first claim being **characterized in that** the bottom or support floor support (13) of the load container is fixed as a flip-top piece or a plurality of flip-top pieces (14) to one or respectively to a plurality of side walls (3) of the load container load.

[0009] These two mentioned patents include load containers, fold of which does not allow maintaining the different fastening elements therein, i.e. these have to be removed before folding and then placed them back inside in the unfolded position, before introducing the load again.

[0010] In all cases, the foldable structure of the container allows the empty return of the containers with a reduced volume, presenting however in all cases, the drawback of not being able to include the various fastening elements into the folded position, such as referred above.

[0011] As for the retention and fixation elements of the walls of the container to the base platform, where the mentioned walls are unfolded, the containers of the state of the art generally have latches that are fixed to the walls.

These latches, 2 on each side of the container are usually located at the container base and are manually actuated. To perform the retention and fixation of the walls, the mentioned walls have some holes, usually reinforced with an extra piece, through which the retaining latch passes.

[0012] On the other hand, the German Invention Patent mentioned above includes small side partition walls (15) linked to the base or base platform, lifting the mounting height of the lid in order to create enough space for further returning the foldable parts, various elements used in the transportation of goods inside the container. These elements are in general support bars, partition walls, retention pieces, bags, separators, necklaces, etc.

[0013] Other documents related to the invention are the following:

- Spanish Invention Patent with publication number 2117187.
- French Invention Patent with application number 9007090.
- Spanish Utility Model with number application U96018028.
- Spanish Utility Model with number application U9602755.
- German Invention Patent with publication number DE19806075.
- German Invention Patent with publication number DE102005059950.

DESCRIPTION OF THE INVENTION

[0014] In order to achieve the objectives and avoid the drawbacks mentioned in the preceding paragraphs, the

invention proposes a container with foldable load platform initially comprising a platform base, a load container that is foldable, and a lid for covering the assembly both in a folded situation and in an unfolded or work situation, when the load container is ready for loading the goods therein.

[0015] The base platform may be of the type including a perimeter partition wall that defines a lower space wherein the folded container is stored, being hidden thanks to the lid setting over said perimeter partition wall,

[0016] In turn, the container comprises four side walls with a rectangular planar configuration, but it could also have a quadrilateral shape.

[0017] On this premise, a first feature of the invention is that the container includes in two of its side walls of a central folding line and two side folding lines that do not coincide with the corner joints of adjacent side walls as occurs in all conventional containers of this type, instead those two side folding sheets are close and parallel to the corner aforementioned joints, which creates some characteristic inner spaces within the container in the folded position that allow maintaining various fastening elements therein, which are required to better hold the load within the container or to distribute the same in a certain way.

[0018] Thus, the folded position of the container in question creates two pairs of faced end portions of opposite side walls adjacent to the corner joints of the side walls. In turn, the folded position creates two centered angular portions housed within the load container.

[0019] This load container may comprise the four mentioned side walls with bottom or without bottom.

[0020] In the first case the outer bottom will be determined by, for example, the upper face of the platform base.

[0021] Other features of the invention relate to the structure showed by different fastening elements that include the load container therein, and which do not need to be removed when folding the load container.

[0022] It is thus possible different embodiments of the fastening elements inside the container, some of which may be simultaneously folded and unfolded when folding and unfolding the container.

[0023] In this way, the space defined by the perimeter partition wall of the base platform will be only used to house the load container in its folded position without requiring increasing said space for housing other fastening elements as has been conventionally the case.

[0024] It could also be the possibility of dispense the small perimeter partition wall of the base platform, where-with the lid could include a perimeter skirt support allowable height of which would allow housing the container in folded position.

[0025] The invention also covers the provision of two preferred embodiments of the system for retaining and fixing the walls of the container to the base platform of the container. In a first embodiment, the system is a retention system via ramp and locking pin. At the base of

the container a ramp is placed on the sides wherein the wall has the fold. The ramp, starting from the load surface of the base, goes into the perimeter channel wherein the walls are placed in their unfolded position penetrating the side wall through a hole made in the mentioned wall. Furthermore, in the inner side walls of said channel, placed a little distanced from the center in order to avoid the hinging area of the walls, is located the retention element.

[0026] This element, when the walls are placed in position, penetrates through a window made in the walls. In this way, when the walls tend to be dislodged from their position meet the retention element. However, if the walls are pulled by their folding side inwards and outwards the walls can be dislodged from their position. This is achieved through the configuration of the undercut of the retention element, the shape of the reinforcing window presented by the walls in their holes and the shape and final tilting of the ramp.

[0027] In a second preferred embodiment of the mentioned retention and fixation system the system is a retention system via latch cable knob. In this system in the peripheral channel of the base wherein the walls are folded, a rod is placed as a bridge. At the same height, in the walls an automatic latch system is placed, which, when the walls are placed in site it is embedded in the previous bridge. This latch system is always in closed position thanks to a spring or similar, and for releasing thereof a tension member is actuated. The tension member can be operated in a comfortable and ergonomic manner from the upper edge of the walls, through a pulling handle.

[0028] Both two preferred embodiments of the retention and fixation system presents advantages over the state of the art in that these improve the ergonomics of the system because the user has not to bend or trigger the usual 4 latches, and it also provides a faster, easier and direct assembly, i.e. with the same maneuver of placing the walls, the fixation is being performed.

[0029] Next, to facilitate a better understanding of this specification and being an integral part thereof some figures wherein the object of the invention has been represented in an illustrative and not limitative manner are attached.

BRIEF DESCRIPTION OF THE DRAWINGS

[0030]

Figure 1. - Shows a perspective view of the container with foldable load platform, object of the invention. It basically comprises a base platform, a load container and a lid. The load container is foldable, emphasizing that in the folded position maintaining inside various fastening elements of the load contained within the container is possible.

Figure 2. - Shows a schematic view of the load container in folded position.

Figures 3 to 6. - Show various embodiments of the load container with different structures and configurations of the fastening elements.

Figure 7. - Shows a general view of a first preferred embodiment of the retention and fixation system.

Figures 8 and 9. - Show a detailed view of the fixing holes of the first preferred embodiment of the retention and fixation system.

Figure 10 and 11. - Show a detailed view of the fixing elements of the preferred embodiment of the retention and fixation system.

Figure 12. - Shows a general view of a second preferred embodiment of the retention and fixation system.

Figures 13 to 18. - Show a detailed view of the elements of the second preferred embodiment of the retention and fixation system.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0031] Considering the numbering adopted in the figures, the container with foldable load platform includes a platform base 1 provided with a small perimeter partition wall 2 of low height, a load container 3 that is foldable and a lid 4 for covering the assembly in the folded position hiding the folded load container 3 within the space defined by the small perimeter partition wall 2, which lid 4 that in this case will be coupled in correspondence with the free edge of said small perimeter partition wall 2.

[0032] The lid 4 will also cover the mouth of the load container 3 in the unfolded position of use.

[0033] The load container 3 has a rectangular planar configuration, such load container 3 comprising four side walls, opposite in pairs, so that two opposite side walls are affected with a central folding line 5 and two side folding lines 6 arranged in those same opposite side walls in proximity and parallel to the corner joints 7 that are jointly connected to the adjacent side walls.

[0034] Therefore some characteristic inner spaces 8 are generated within the load container 3 in the folded position, that allow maintaining inside various fastening elements that are required to immobilize or attach different types of loads, contrary to what happens conventionally where load containers cannot house these fastening elements therein in the folded position due to the folding system, whereby it is necessary to remove such fastening elements prior to folding, and then install them inside the unfolded container. It is also noted that in the invention at hand the fastening elements can be firmly attached to the load container load.

[0035] The folded position of the load container 3 forms two pairs of end portions 9 of side walls adjacent to the corner joints 7 of the side walls. In turn, the folded position creates two centered angular portions 10 housed within the respective load container 3 in the folded position.

[0036] The load container 3 can include a foldable bottom 11 as shown in Figure 3. In this case such bottom 11 includes a centered separation line 12 parallel to the

corner joints in such bottom 11 with the two respective opposite side walls.

[0037] In a first embodiment shown in Figure 2, the fastening elements comprise fixed stops 13, jointly connected to the inner faces of the side walls, both of the different parts 9 and 10 of the opposite walls that are folded and the other two paired walls.

[0038] In a second embodiment shown in Figure 3, the fastening elements comprise some separator plates 14 which in turn can support combs 15. Said separator plates 14 are joined to the side walls having no folding lines.

[0039] In a third embodiment shown in Figure 4 the fastening elements comprise some separator plates 14 associated with foldable packages 16 that define separate compartments.

[0040] In a fourth embodiment shown in Figure 5, the fastening elements comprise a set of parallel bars 17 fixed through their ends to vertical columns 18 arranged in correspondence with the faced end portions 9 in correspondence with the corner joints 7 of the side walls. In this case, on the mentioned parallel bars 17 lamellar pieces 19 hanging from said bars 17 are coupled.

[0041] In another embodiment shown in Figure 6, on the centered angular portions 10 some fixed combs 15 are fixed.

[0042] Another possibility shown in Figure 1 could consist of a crisscross of lamellar bodies 20 hanging from two parallel bars 17 arranged as described above.

[0043] In another preferred embodiment shown in Figures 7 to 11, the retention system included in the container is a retention system via a ramp and locking pin comprising:

- At least one ramp (23) for each of the two opposite side walls including a central folding line (5), the at least one ramp (23) being situated in the loading surface of the base (1).
- At least one locking pin (24) for each of the two opposite side walls including a central folding line (5) located in the loading area of the base (1):
- At least one hole (21, 22) in each of the two opposite side walls including a central folding line (5) through which the at least one ramp and the at least one pin are introduced. The hole through which the locking pin (24) is inserted has a reinforcement comprising two pieces that are fixed on each other on both sides of the hole as shown in figures 8 and 9.

[0044] In another preferred embodiment shown in Figures 12 to 18, the retention system is a retention system via a latch and cable knob comprising:

- A rod (32) as a bridge located in the peripheral channels of each of the two opposite side walls including a central folding line (5).
- An automatic latch system (28) located at the same height of the rod in each of the two opposite side

walls including a central folding line (5), the latch system comprising at least one carved closure (29), a latch (30) and a spring (31). This latch (30) is introduced in its closed position into the rod (32) as a bridge by fixing the walls of the container. The automatic latch system will preferably be fixed to the container wall by using rivets (33).

- A tension member (27) will preferably be a steel cable attached through one end to the automatic latch system (28) and through the other end to a pulling handle (25). The tension member (27) will be covered by a cable-cover guide (26) that will be in turn fixed to the wall of the container (10). Preferably said fixation will be made by an adhesive placed between said guide (26) and said wall of the container (10).
- A pulling handle (25) for actuating the latch (28) through the tension member (27), located at the top of each of the two opposite side walls including a central folding line (5), comprising an inner handle and an outer handle attached to each other on both sides of the opposite side walls including a central folding line (5).

Claims

1. Container with foldable load platform, comprising a base platform, a load container itself that is foldable and a lid for covering the assembly, both in the folded position and in the unfolded position, the load container having at least four side walls parallel in pairs, **characterized in that** two opposite side walls include a central folding line (5) and two side folding lines (6) parallel and separated by a distance from the corners (7) designed to create internal spaces (8) in its folded position, defined between end portions (9) and other centered angular portions (10) of the side walls including the folding lines (5 and 6) and between the other two paired side walls, said internal spaces (8) being designed to house fastening elements.
2. Container with foldable load platform, according to claim 1, **characterized in that** the fastening elements comprise parallel bars (17) fixed by their ends to vertical columns (18) arranged in correspondence with the faced end portions (9) and in correspondence with the corner joints (7) of the side walls of the load container (3).
3. Container with foldable load platform, according to claim 1, **characterized in that** the fastening elements comprise fixed stops (13) jointly connected to the inner faces of the side walls, both of the different parts (9 and 10) on opposite foldable walls and on the other two paired walls.
4. Container with foldable load platform, according to

claim 1, **characterized in that** the fastening elements comprise separator plates (14) which in turn support some combs (15), said separator plates (14) being joined to the side walls of the load container (3).

5. Container with foldable load platform, according to claim 1, **characterized in that** the fastening elements comprise separator plates (14) associated with a foldable packages (16) defining separate compartments.
6. Container with foldable load platform, according to claim 1, **characterized in that** the fastening elements comprise some fixed combs (15) fixed on the centered angular portions (10) of the side walls of the load container (3).
7. Container with foldable load platform, according to claim 1, **characterized in that** the fastening elements consist of a crisscross of lamellar bodies (20) hanging from two parallel bars (17) coupled by their ends to some vertical columns (18).
8. Container with foldable load platform, according to claim 1, **characterized in that** said container comprises at least one system for retaining the side walls of the container to the base platform.
9. Container with foldable load platform, according to claim 8, **characterized in that** the at least one retention system is a retention system via a ramp and locking pin comprising:
 - at least one ramp for each of the two opposite side walls including a central folding line (5), the at least one ramp being situated on a loading surface of the base platform;
 - at least one locking pin in each of the two opposite side walls including a central folding line (5), the at least one locking pin being situated in the loading surface of the base;
 - at least one hole in each of the two opposite side walls including a central folding line (5) through which the at least one ramp and the at least one pin are introduced.
10. Container with foldable load platform, according to claim 8, **characterized in that** the at least one retention system is a retention system via a latch and cable knob comprising:
 - a rod by way of a bridge located in peripheral channels of each of the two opposite side walls including a central folding line (5);
 - an automatic latch system located at the same height of the rod in each of the two opposite side walls including a central folding line (5), the latch system comprising at least a carved closure, a

latch and a spring;

- a tension member, the tension member being covered by a cable-cover guide, joined by one end to the automatic latch system and by the opposite end to a pulling handle; and,
- a pulling handle to trigger the latch through the tension member, located at the top of each of the two opposite side walls including a central folding line (5), comprising an inner handle and an outer handle.

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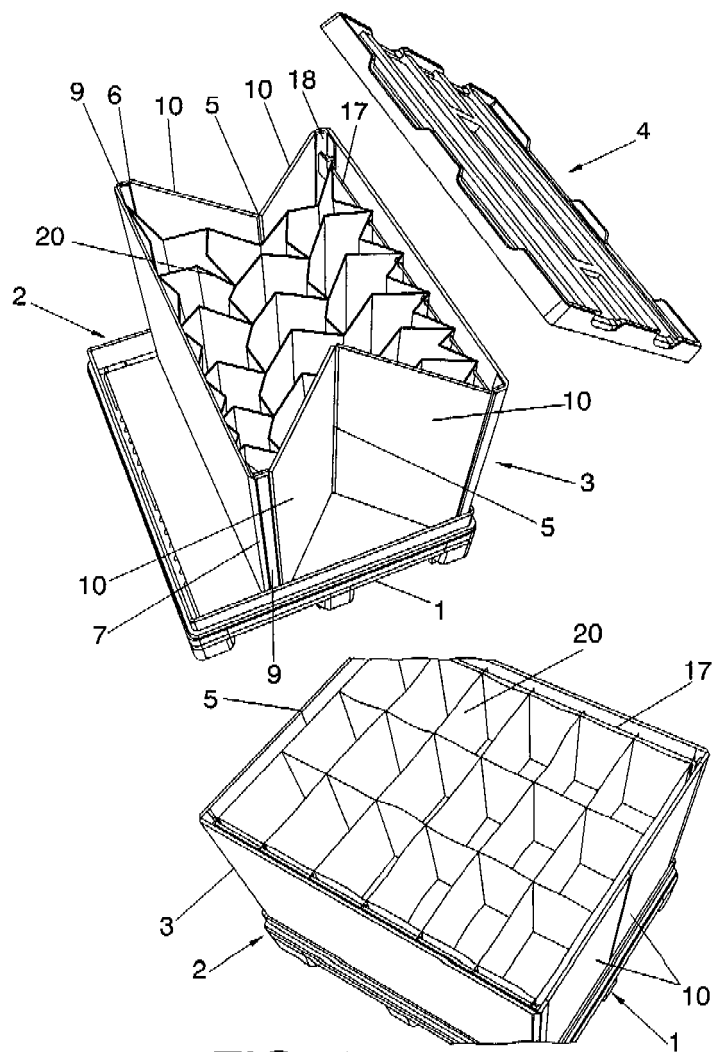
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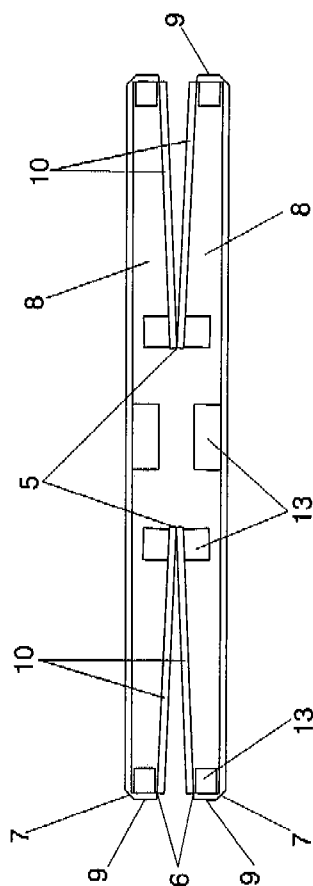


FIG. 2

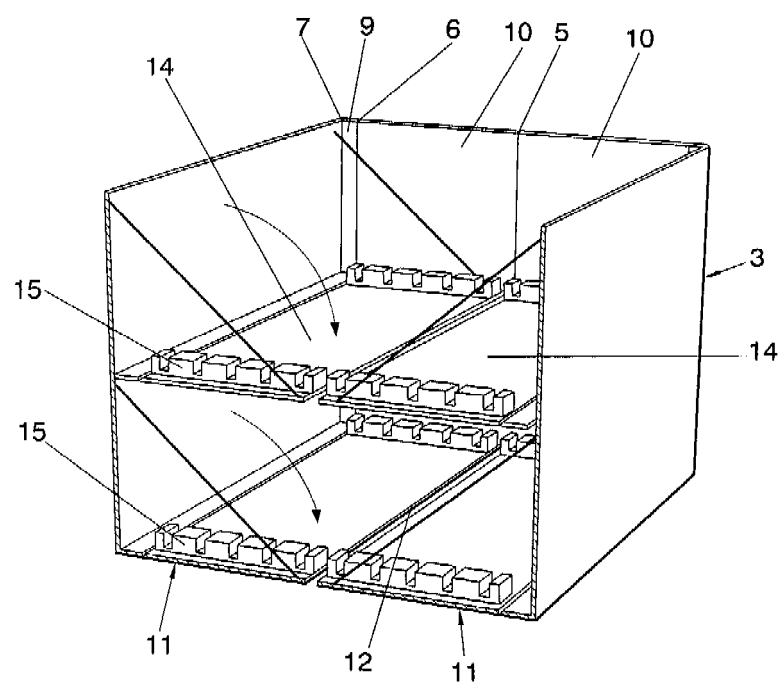


FIG. 3

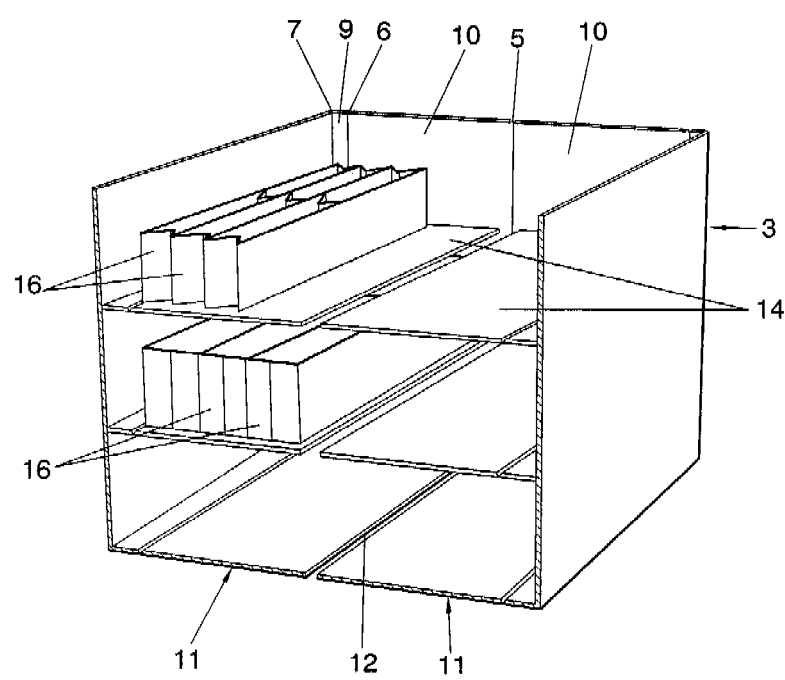


FIG. 4

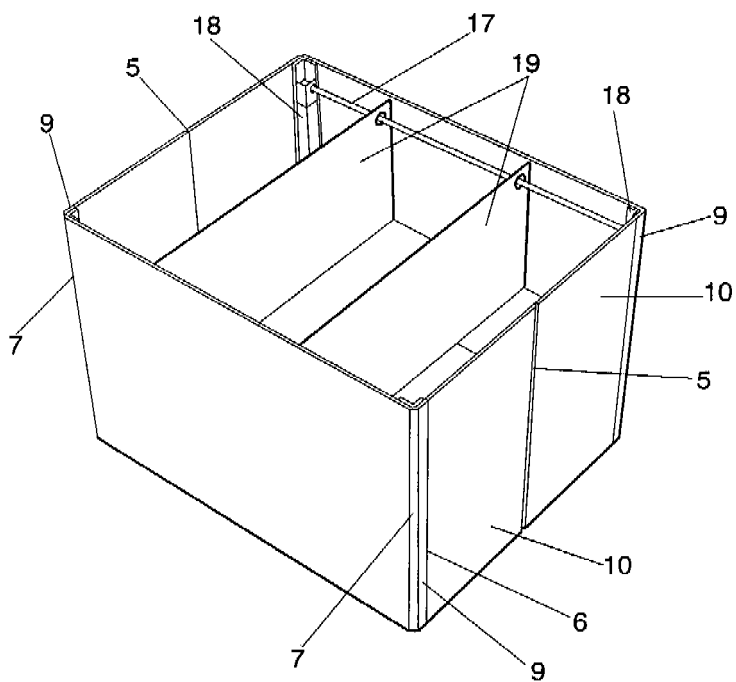


FIG. 5

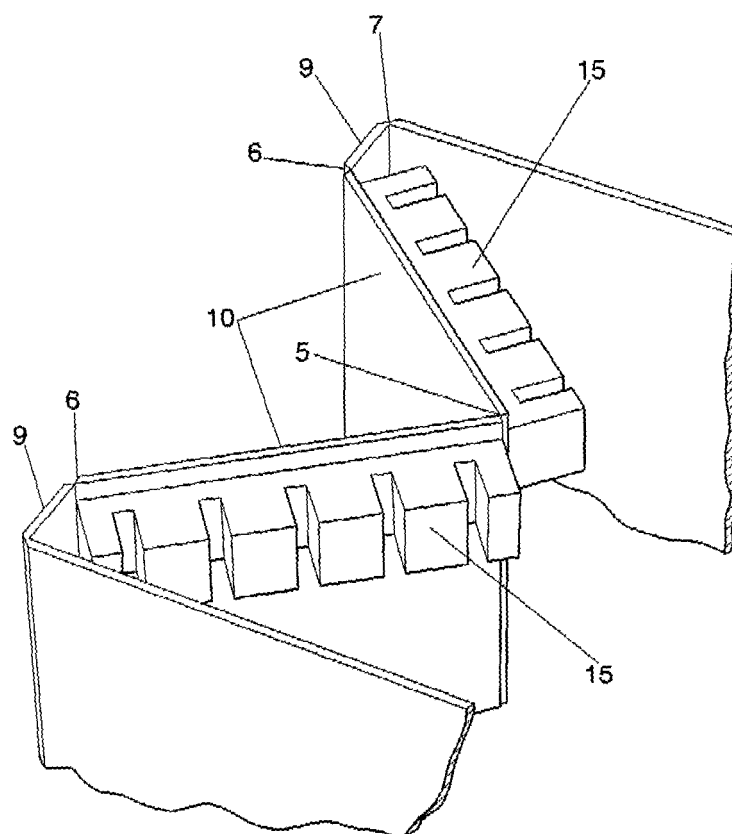


FIG. 6

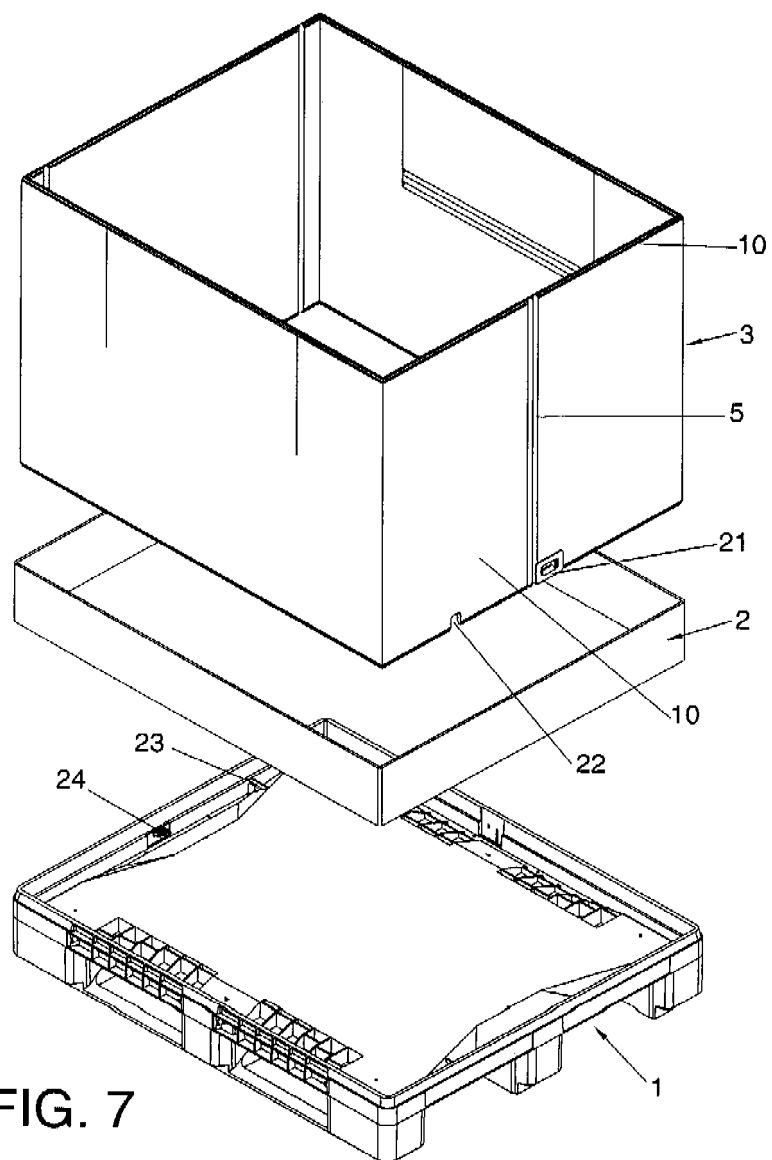
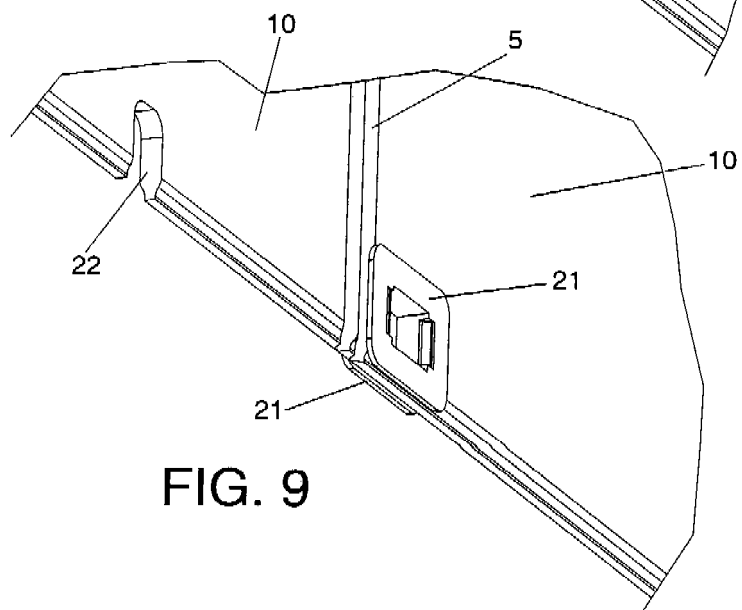
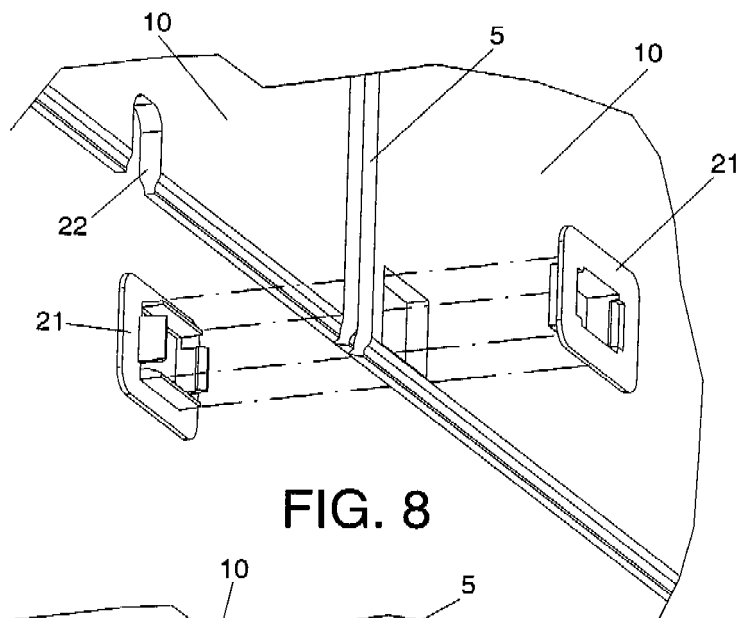


FIG. 7



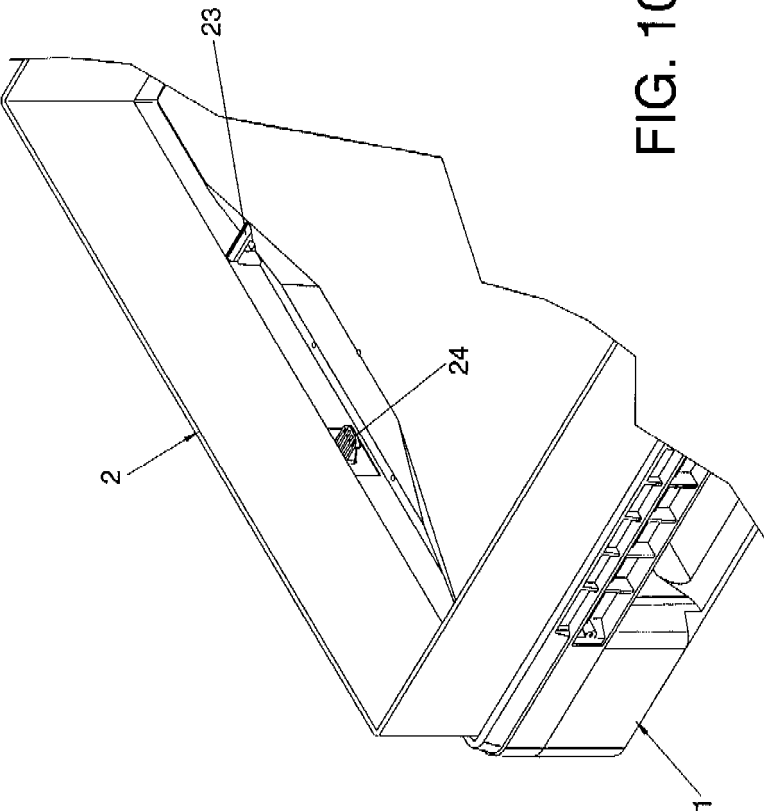


FIG. 10

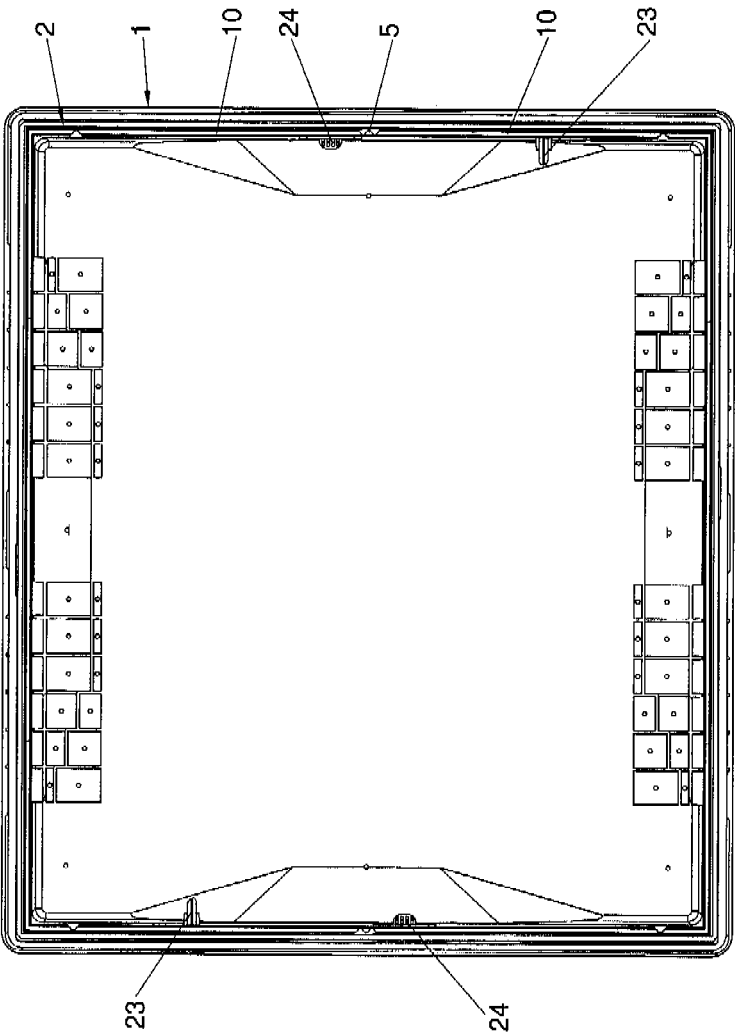


FIG. 11

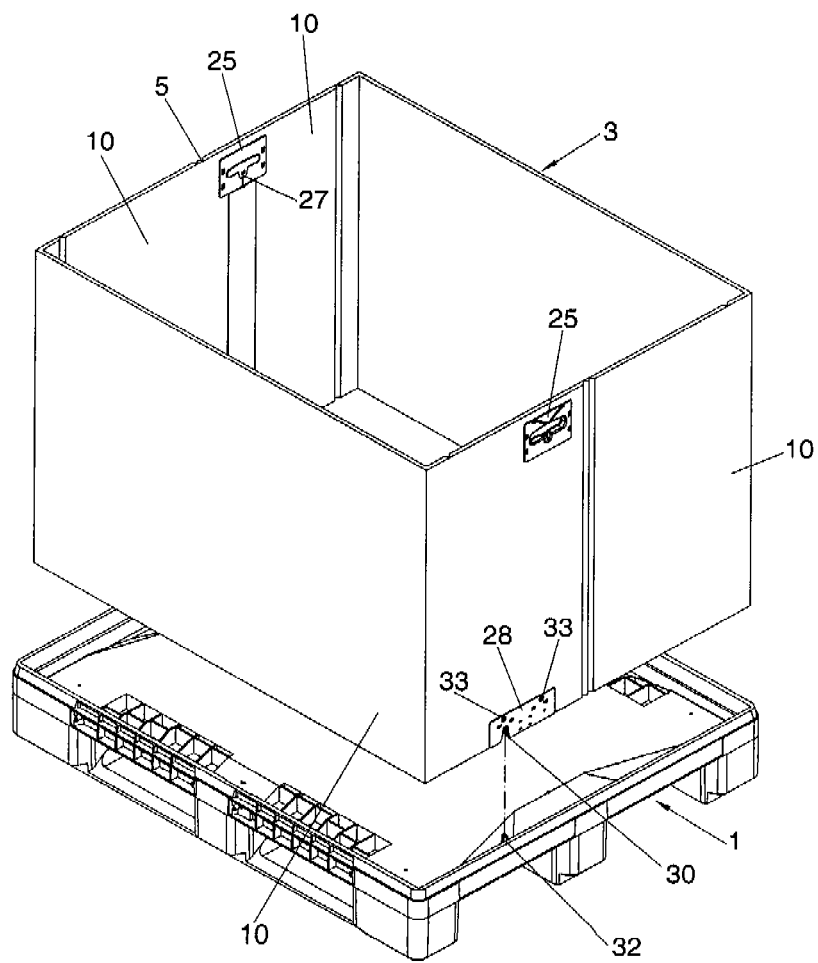


FIG. 12

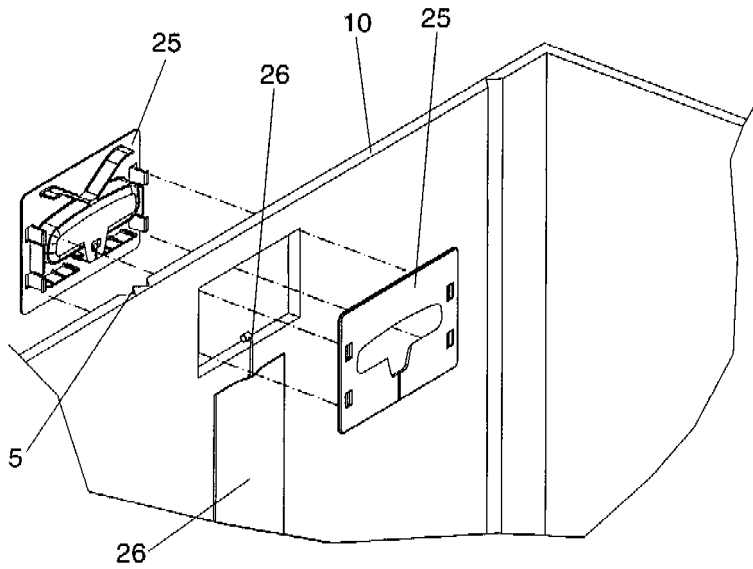


FIG. 13

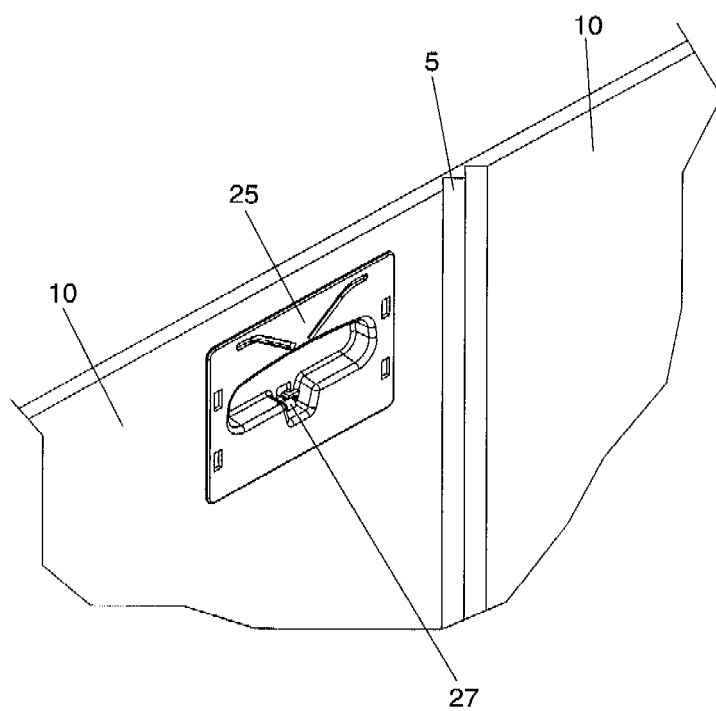


FIG. 14

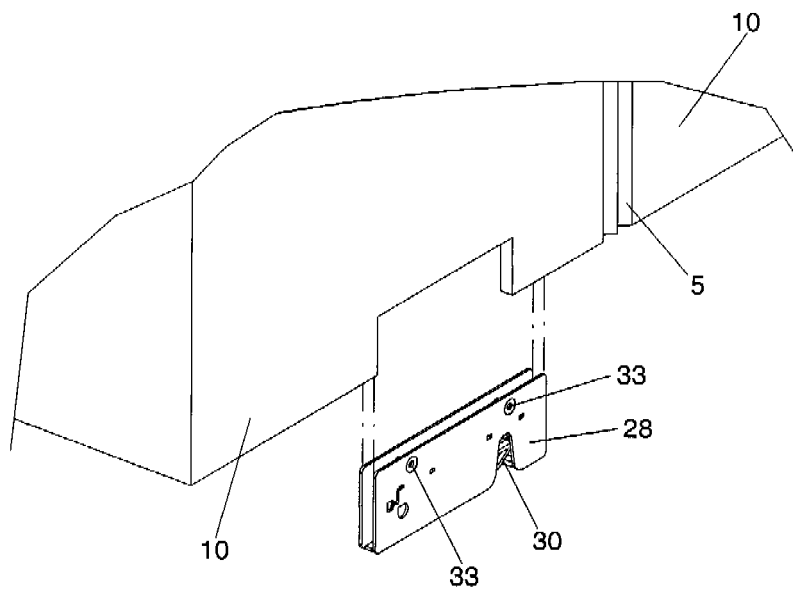


FIG. 15

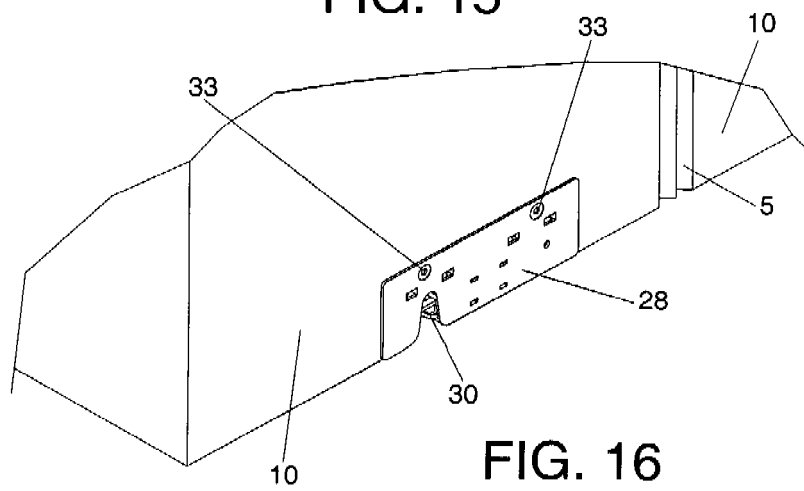
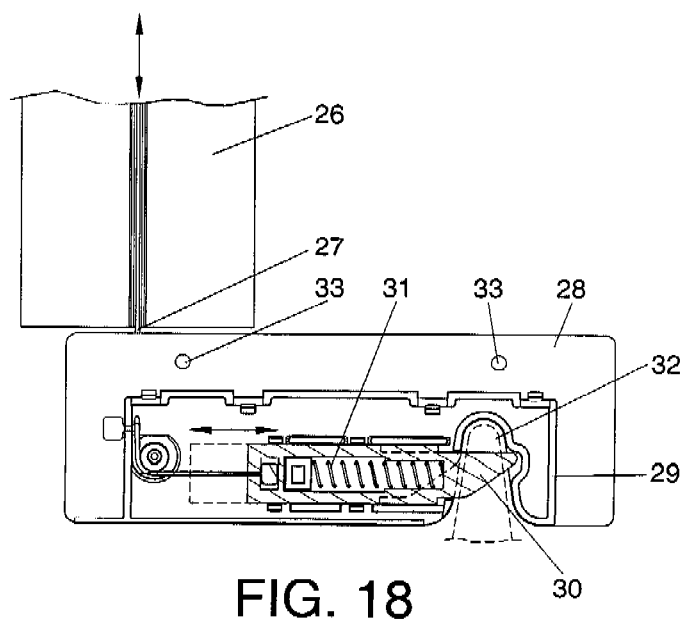
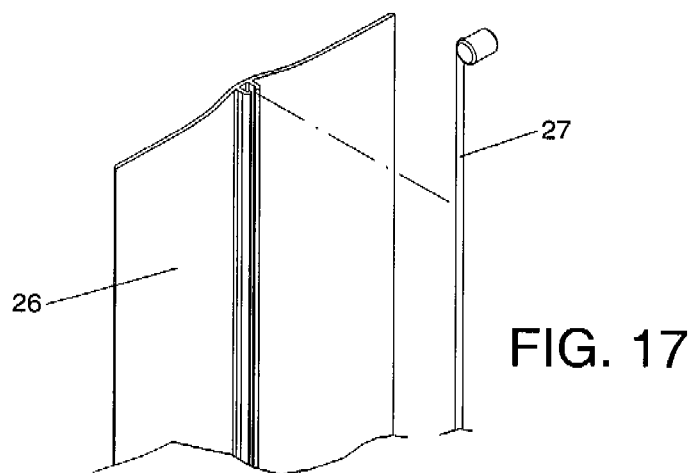


FIG. 16



INTERNATIONAL SEARCH REPORT

International application No.
PCT/ ES 2010/070441

A. CLASSIFICATION OF SUBJECT MATTER

see extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B65D19

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

INVENES,EPODOC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 2004006416 A1 (KTP KUNSTSTOFF PALETTENTECHNIK) 25.08.2005, figures 1-5; abstract from DataBase EPODOC, extraido of EPOQUE (cited in the application)	1
A	ES 2117187 T3 (VOLKSWAGEN AKTIENGESELLSCHAFT POSTFACH) 01.08.1998, column 6, line 35 - column 10, line 58; figures 1-23 (cited in the application)	1
A	FR 2706861 A1 (DETOURNAY) 30.12.1994, Abstract; figures 1,2	1
A	ES 1035493 U (TARPACK) 01.05.1997, claims 1-6; figures 1-9 (cited in the application)	1
A	EP 1312558 A1 (MARFANI) 21.05.2003, Abstract; figures 1-5	5,7

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance.		
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Date of the actual completion of the international search

15.October.2010 (15.10.2010)

Date of mailing of the international search report

(19/10/2010)

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Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/ ES 2010/070441

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Form PCT/ISA/210 (patent family annex) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ ES 2010/070441

CLASSIFICATION OF SUBJECT MATTER

B65D 19/12 (2006.01)

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REFERENCES CITED IN THE DESCRIPTION

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