

(19)



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(11)

EP 1 683 728 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
26.07.2006 Bulletin 2006/30

(51) Int Cl.:
B65D 19/38 (2006.01)

(21) Application number: **06380017.1**

(22) Date of filing: **19.01.2006**

(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

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(30) Priority: **19.01.2005 ES 200500099**

(54) **Pile-up container for storing and transporting components with a generally planar configuration.**

(57) The present invention relates to a pile-up container for storing and transporting components with a generally planar configuration, comprising a notably planar framework (1) in which support pillars (3) are assem-

bled for supporting the components to be transported and are finished on their upper and lower ends with plug-gable sections (5,6) in order to act as pile-up pillars for two or more superimposed containers.

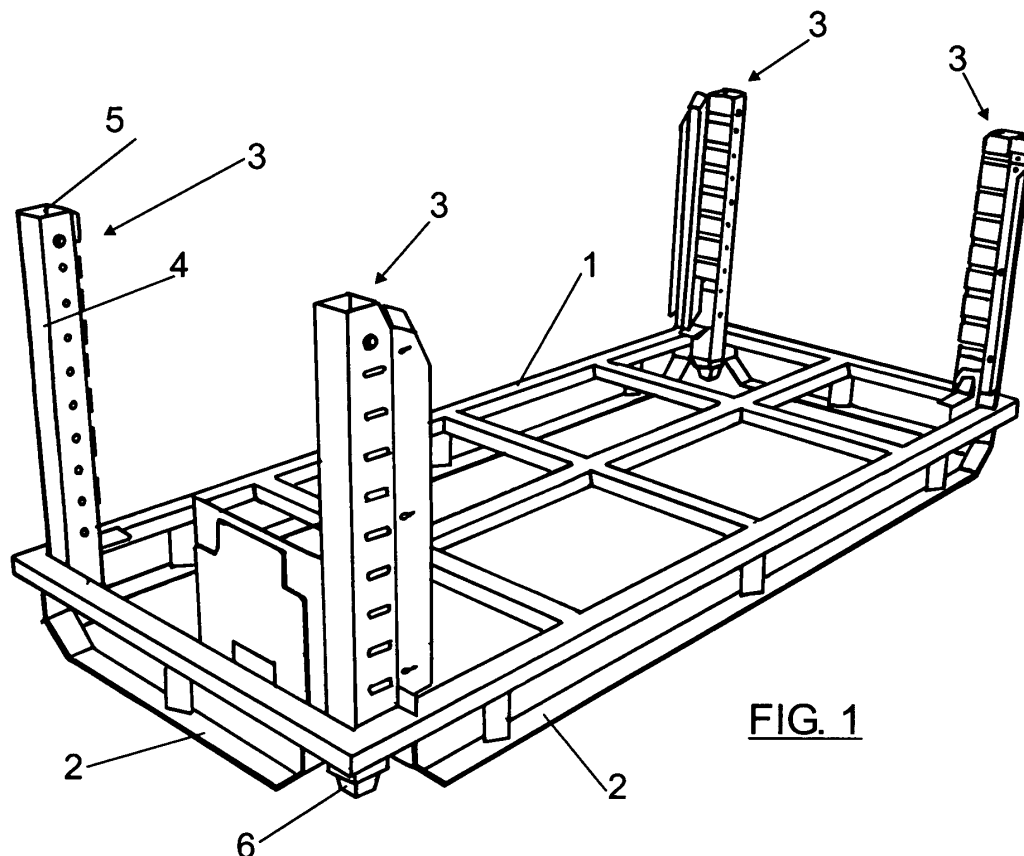


FIG. 1

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Description

[0001] The present invention refers to a pile-up container for storing and transporting components with a generally planar configuration, such as vehicle body components, solar panels, etc.

[0002] Known containers for the purpose set forth include a notably planar framework of a generally rectangular shape, a series of pile-up pillars perpendicular to the framework that are generally arranged such that they coincide with the vertices thereof, and a series of support pillars for the components to be transported, generally four of these which are also perpendicular to the framework, which are located inside the pile-up pillars.

[0003] The pile-up pillars are finished on their ends with pluggable sections in order to allow piling up two or more containers by superimposing them with the pile-up pillars in a matching position.

[0004] The support pillars generally have a grooved profile and have folding palettes assembled thereupon which support the components to be transported.

[0005] This constitution demands that two types of pillars are assembled and fixed on the framework: the pile-up pillars and the support pillars.

[0006] The present invention has as its object simplifying the constitution of the containers by eliminating the pile-up pillars, which implies cost savings both in material and in construction manual labour, as well as weight loss.

[0007] To this end, according to the invention, the support pillars are constituted and arranged such that they also serve as pile-up pillars, thus performing a double function, such as serving for supporting the components to be transported and also for piling up two or more containers.

[0008] This double function for the support pillars is achieved, according to the invention, by finishing the support pillars at their upper and lower ends with pluggable sections, these being located and fixed perpendicularly to the frame in order to act as pile-up pillars. To this end, the lower section of the support pillars partially projects from the lower surface of the framework, in order to allow coupling of the upper section of pillars belonging to a framework located immediately below by plugging.

[0009] The support pillars may end in their lower portion in an outer contour section approximately equal to the inner contour section of said pillars.

[0010] For the purpose of not modifying the structure or configuration of the profile shaping the support pillars, the lower section of smaller contour can be constituted by a plate that can be fixed to the lower end of the grooved body. This plate will have a section that decreases towards its free base, having a maximum section approximately equal to the inner section of the grooved body of the pillars. The plate may be finished at the larger base with a peripheral flange that will rest upon the free edge of the walls of the profile forming the support pillar, the edge of the profile belonging to the support pillar located immediately below resting upon this flange.

[0011] The support pillars will be arranged preferably coinciding with the vertices of the frame, approximately coinciding with the position that would be occupied by the pile-up pillars.

[0012] The constitution discussed also allows reducing the dimensions of the framework, since in traditional containers the contour of the framework must be greater than that limited by the support pillars, since the pile-up pillars will be arranged outside these support pillars.

[0013] The constitution and the features of the framework of the invention will be better understood with the following description, made with reference to the drawings attached, in which a non-limiting embodiment is shown.

[0014] In the drawings:

Figure 1 shows a perspective view of a container constituted according to the invention.

Figure 2 shows the opposing lower and upper ends of support pillars corresponding to superimposed containers, in a position immediately before that of plugging in the pillars.

[0015] The container of the invention, as shown in Figure 1, includes a framework 1, of a generally rectangular contour, made up of longitudinal and transverse profiles and provided with lower resting flat bars 2. Four support pillars are fixed to this framework, coinciding with its corners, which have reference number 3. As in the traditional manner, these pillars consist of a U-shaped section grooved profile 4 in which folding palettes are assembled in order to support the components to be transported or stored.

[0016] According to the invention, the pillars 4 are finished on their ends with pluggable upper 5 and lower 6 sections.

[0017] Preferably the U-shaped profile 4 forming the support 3 will not strain at all, such that the upper section 5 of the pillars will be defined by the upper portion of the profiles 4, without any alterations in its configuration or section. As regards the lower section 6, as can best be seen in Figure 2, it is made up of a plate of decreasing section towards its lower base, which ends at its upper portion in a maximum section that matches the inner section of the upper section 5 of the profiles 4. Furthermore, this plate 6 can be finished at its upper portion with a peripheral flange 7 that will rest upon the lower edge of the walls of the profile 4.

[0018] On the other hand, the pillars 3 will project from the lower surface of the framework 1 in a portion 8 that will not reach the surface defined by the flat bars 2, remaining slightly retracted with respect to the same.

[0019] With this constitution, when superimposing two containers, the plate 6 of the pillars 3 of the upper framework 1 may be coupled upon the mouth and the upper section 5' of the profile 4' belonging to opposing pillars of a container located immediately below it.

[0020] The constitution set forth allows using the sup-

port pillars 3 as pile-up pillars without altering the configuration of the profile 4 forming the pillars 3.

[0021] The container of the invention, with respect to traditional containers, allows eliminating the pile-up pillars, with the resulting cost savings and weight loss of the framework. Furthermore, as has already been mentioned, the framework 1 will have smaller dimensions, since in traditional containers the pile-up pillars must remain located outside the support pillars 3. 5

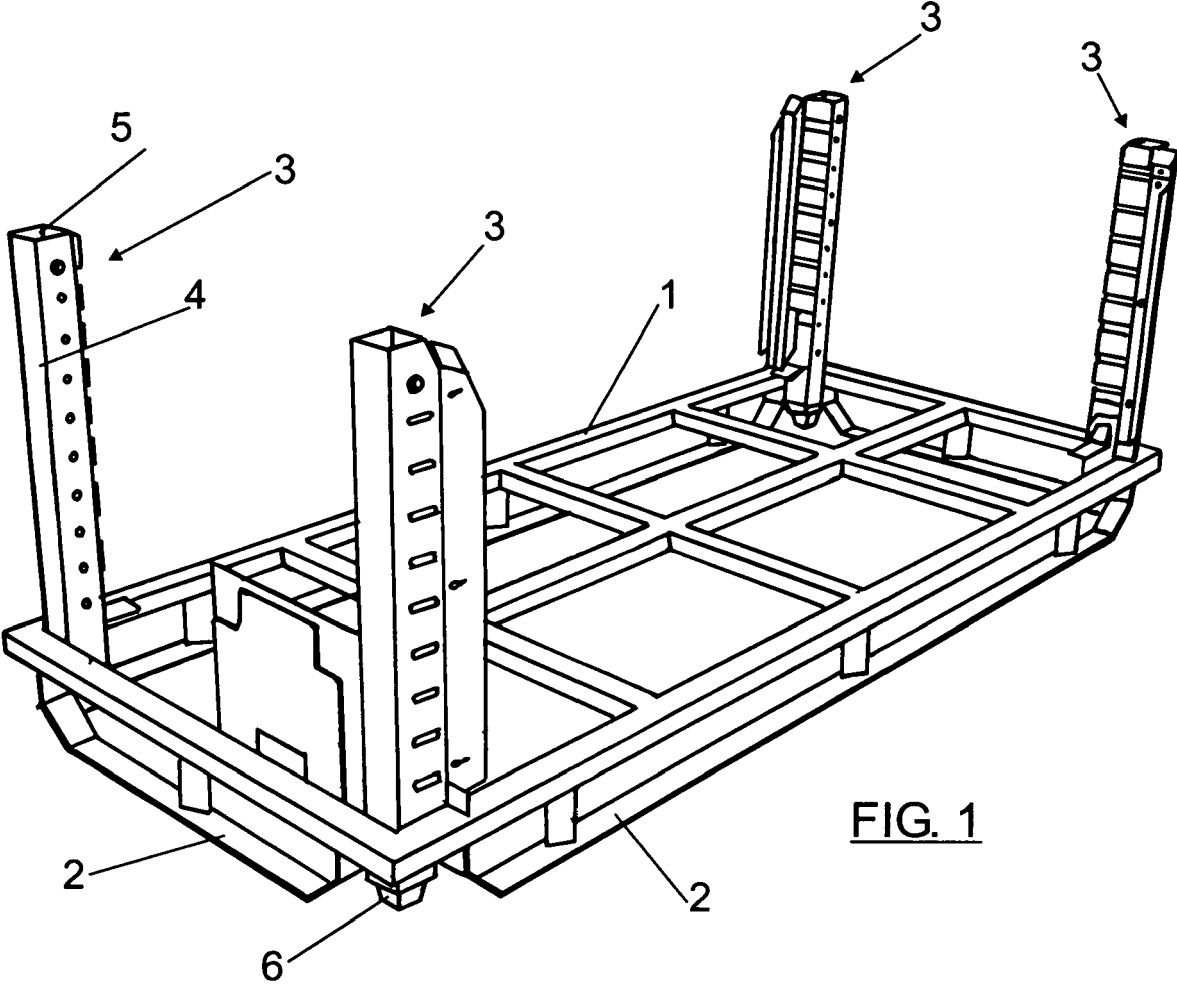
[0022] The flange 7 of the plate 6 serves as a resting element for said plate on the lower edge of the profile it is fixed to and also as a resting means for the upper edge of the profile 4' of the column located immediately below it in the pile of containers. 10

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Claims

1. A pile-up container for storing and transporting planar components comprising a notably planar framework with a rectangular contour in which support pillars are assembled for supporting the components to be transported, **characterised in that** the support pillars are finished on their upper and lower ends with pluggable sections and are perpendicularly fixed to the framework, coinciding with its corners, in order to act as pile-up pillars, the lower section of said support pillars partially projecting from the lower surface of the framework, in order to allow coupling by plugging of the upper section of pillars belonging to a framework located immediately below it. 20 25 30
2. A container according to claim 1, **characterised in that** the support pillars end in their lower portion in a section with an outer contour that is approximately equal to the inner contour of said pillars. 35
3. A container according to claim 2, **characterised in that** the lower section of smaller contour is made up of a plate that can be fixed to the lower end of the profile forming the support pillar. 40
4. A container according to claims 2 and 3, **characterised in that** the lower section has a section that decrease towards its free base and has a maximum section approximately equal to the inner section of the grooved body of the pillars. 45
5. A container according to claim 2, **characterised in that** the plate that can be fixed to the lower end of the profile forming the support pillars is finished on its larger section with a peripheral flange that rests upon the lower edge of the walls of said profile. 50

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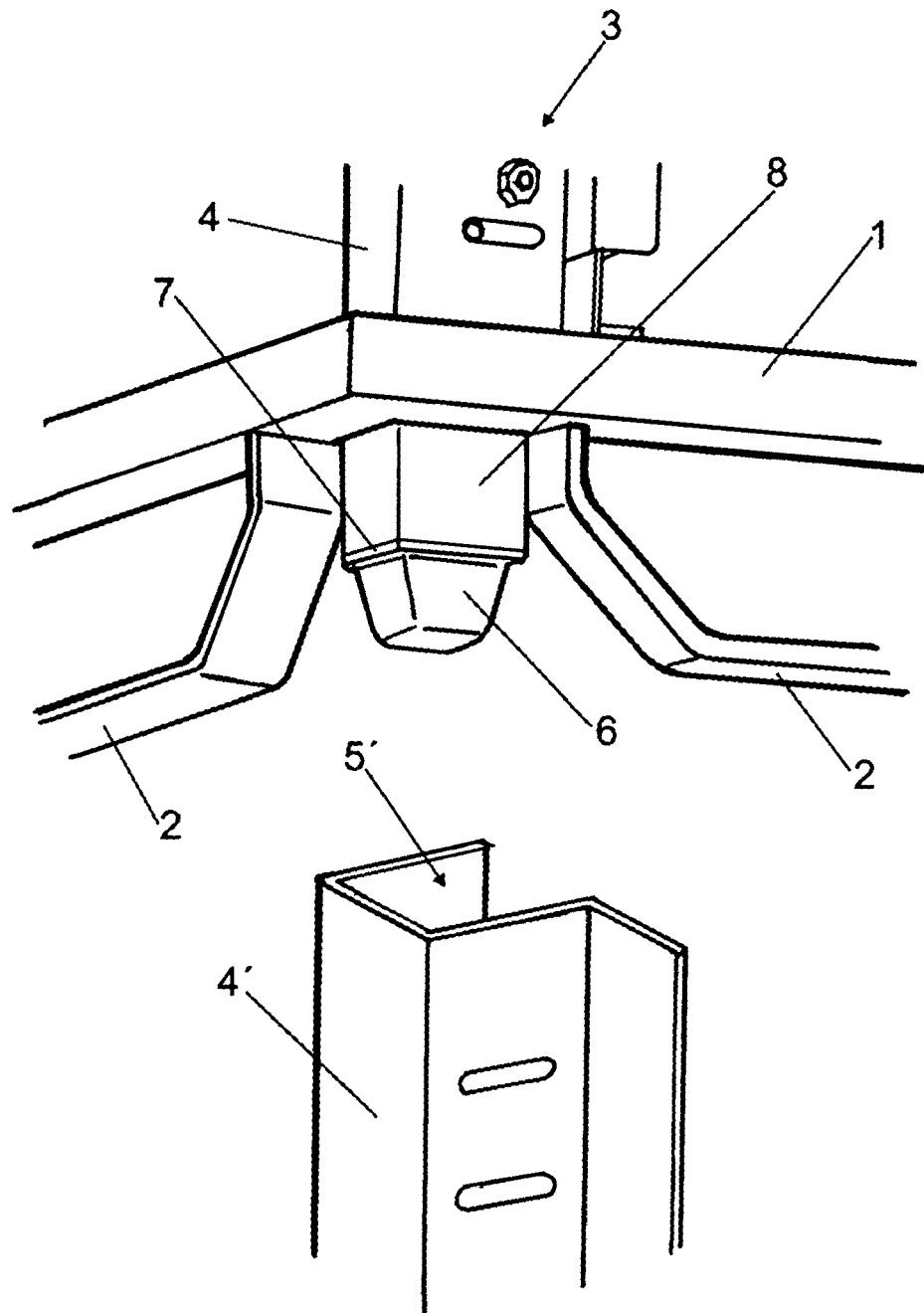


FIG. 2



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 06 38 0017

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			TECHNICAL FIELDS SEARCHED (IPC)
			B65D B65G
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		3 May 2006	Zanghi, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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