



(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
30.03.2016 Bulletin 2016/13

(51) Int Cl.:
B65D 19/44 (2006.01) B65D 19/22 (2006.01)

(21) Application number: **13885089.6**

(86) International application number:
PCT/ES2013/070811

(22) Date of filing: **22.11.2013**

(87) International publication number:
WO 2014/188017 (27.11.2014 Gazette 2014/48)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(71) Applicant: **Ruiz Carmona, Manuel**
03190 Pilar de la Horadada (Alicante) (ES)

(72) Inventor: **Ruiz Carmona, Manuel**
03190 Pilar de la Horadada (Alicante) (ES)

(74) Representative: **Ungria López, Javier**
Avda. Ramón y Cajal, 78
28043 Madrid (ES)

(30) Priority: **21.05.2013 ES 201330614 U**

(54) **PALLET WITH UPPER FIXING SURFACE**

(57) The invention relates to a pallet (1) with an upper fixing surface (7), comprising an upper surface (7), a lower surface (8) and a side surface (9) such that the upper surface (7) comprises a perimeter edge (2) and a series of main ribs (3) arranged orthogonally in relation to each other, which divide the upper surface (7) into quadrangular housings (4), forming a staggered configuration be-

tween the quadrangular housings (4), such that by means of the perimeter edge (2), the main ribs (3) and the quadrangular housings (4) an upper surface (7) with an irregular profile, wherein a load is fixed, is defined. The quadrangular housings (4) also comprise inner ribs (11) which divide each quadrangular housing (4) into a series of fixing openings (12).

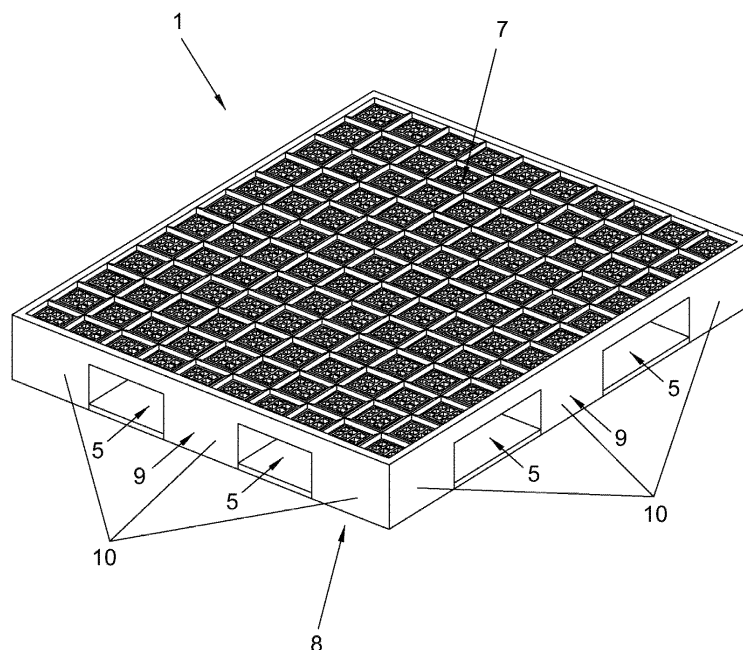


FIG. 1

Description

OBJECT OF THE INVENTION

[0001] The present invention refers to a pallet made of plastic material, which comprises an irregular upper surface for loading goods, that is to say it presents irregularities that cause the goods to be immobilised, which in turn helps to secure the goods on the pallet object of the invention.

TECHNICAL PROBLEM TO ADDRESS AND BACKGROUND OF THE INVENTION

[0002] Placing goods such as beverage bottles inside plastic boxes is common practice both when storing and when delivering said goods. If said boxes are placed onto the type of pallets commonly known nowadays, they move and slide over them since the aforementioned pallets are made of stringers, usually made of wood, that make up a flat and smooth upper surface and do not contain means of securing the load placed on the pallets.

[0003] A common design of a pallet structure consists of a sufficiently rigid and resistant assembly of stringers, usually made of wood, which hold the weight of the load. In this rigid assembly there is an upper surface, generally flat, where the goods supported by the pallet are placed, and a lower supporting surface, which occasionally is replaced by legs or an assembly of legs, that distribute the load supported by the pallet to the ground. The legs can be linked together through longitudinal lower extensions, which constitute sections binding said legs together. There are always openings between the legs so that the arms of a fork lift truck or a hand pallet truck can be introduced inside these openings.

[0004] In the state of the art, several documents disclosing pallets used for storing and transporting products are known. Among others, the document ES 1 079 113 U discloses an improved structure of a pallet consisting of a modular structure, so that the parts or components that may be damaged during use may be replaced without having to discard the pallet in its entirety.

[0005] Another document, WO 2006 013 308 A1, disclosing a pallet made of plastic material, where the plastic material is mixed with nanotubes providing this way lightness, loading capacity and more resistance to impact is known.

[0006] Another document, BE 1 010 793 A3, disclosing a modular pallet that allows the dimensions of the pallet to be modified according to the needs of the user, is also known.

[0007] All known pallets offers a smooth upper surface where the load is placed, so none of them offer own securing means that prevent the load from moving and sliding on the pallet. When a load needs to be fixed to a pallet, the usual practice is to use external means to bind together the pallet and the load.

DESCRIPTION OF THE INVENTION

[0008] In order to avoid the drawbacks mentioned above and to achieve the aforementioned goals, the invention discloses a pallet made of plastic material that has an upper fixing surface, so that said upper fixing surface helps to secure the loads placed on the pallet.

[0009] The pallet with an upper fixing surface which is the object of the invention comprises an upper surface, a lower surface, and a side surface. In the aforementioned pallet, the upper surface comprises a perimeter edge, a series of main ribs arranged orthogonally in relation to each other, which divide the upper surface into quadrangular housings, forming a staggered configuration of the quadrangular housings.

[0010] In the pallet with an upper fixing surface which is the object of the invention, an upper surface with an irregular profile wherein a load is fixed is defined, by means of the perimeter edge, the main ribs and the quadrangular housings.

[0011] In the pallet with an upper fixing surface which is the object of the invention the quadrangular housings comprise inner ribs which divide each quadrangular housing into a series of fixing openings.

[0012] In the pallet with an upper fixing surface which is the object of the invention the fixing openings are through openings.

[0013] In the pallet with an upper fixing surface which is the object of the invention the lower surface comprises a perimeter area and a central area shaped like a cross, the perimeter area and the central area defining lower openings.

[0014] In the pallet with an upper fixing surface which is the object of the invention, the perimeter area and the central area comprise ribs that define openings between the aforementioned ribs.

DESCRIPTION OF THE DRAWINGS

[0015] To complete the description and in order to give a better understanding of the characteristics of the invention, this description is accompanied by a series of drawings that are an integral part thereof, wherein, for illustration purposes and without limitation, the following has been represented:

Figure 1 shows a perspective view of the pallet which is the object of the invention.

Figure 2 shows a plan view of the pallet which is the object of the invention, showing the upper surface of the aforementioned pallet, and a detailed view of a quadrangular housing.

Figure 3 shows a view of the lower surface of the pallet which is the object of the invention.

Figure 4 shows a view of the pallet which is the object

of the invention, loaded with boxes.

[0016] The numerical references featured in the drawings correspond to the following parts or components:

1. pallet,
2. perimeter edge,
3. rib,
4. quadrangular housing,
5. openings,
6. box,
7. upper surface,
8. lower surface,
9. side surface,
10. junction
11. inner rib,
12. fixing opening,
13. slot,
14. perimeter area,
15. central area,
16. lower openings.

DESCRIPTION OF PREFERRED EMBODIMENT

[0017] The pallet (1) which is the object of the invention is a pallet especially designed to support, on its upper surface (7) boxes (6) of the type used to store and distribute beverage bottles, so that the shape and the components that configure the upper surface (7) provide said upper surface (7) with an irregular surface that prevents the aforementioned boxes (6) from moving.

[0018] The pallet (1) which is the object of the invention (as seen on figure 1), comprises an upper surface (7), a lower or supporting surface (8), and a series of junctions (10) between the two surfaces (7, 8). The junctions (10) configure a series of openings (11) in the side surfaces (9) where the arms of a fork lift truck or a hand pallet truck are introduced in order to move the pallet (1).

[0019] The terms upper and lower, which refer to the surfaces, are relative terms that refer to the position of the pallet (1) according to figure 1, where the pallet (1) is ready to be loaded.

[0020] What has been described above, except for the fact that the pallet (1) which is the object of the invention is made of plastic material, conforms to the description of any pallet (1) in use nowadays.

[0021] The novelty of the invention is the upper surface (7) of the pallet (1) which is the object of the invention, since until now the upper surface (7) of pallets (1) has been designed as a smooth surface where goods are placed, but when goods need to be fastened to a pallet (1), external means to secure the goods are used, either wrapping the goods with a plastic film or using bands or strips fastening the goods to the pallet (1).

[0022] The upper surface (7) of the pallet (1) which is the object of the invention comprises a series of main ribs (3), arranged orthogonally in relation to each other, which divide the upper surface (7) into quadrangular

housings (4) and a perimeter edge (2) around the entire upper surface (7) of the pallet (1), that helps to secure the goods.

[0023] The main ribs (3) form a staggered configuration of the quadrangular housings (4), so that the quadrangular housings (4) provide a surface located at a lower height in comparison with the main ribs (3).

[0024] Similarly, the quadrangular housings (4) comprise inner ribs (11) which divide each of the quadrangular housings (4) into a series of fixing openings (12) where the boxes making up the goods for which the pallet (1) object of the invention has been designed for, are embedded and secured. The fixing openings (12) are holes, which provide savings in plastic material when the pallet (1) is made.

[0025] Since the boxes (6) making up the goods are placed on the upper surface (7) so that, due to the configuration of said upper surface (7), they cannot move or slide over it but the boxes (6) are nevertheless unattached to it, removing the boxes from the pallets is simple, which facilitates the job of workers in charge of delivering the boxes on arrival to any location since the boxes (6) are easily removed from the pallet (1) by lifting the boxes (6). Similarly, if the pallet (1) loaded with all the boxes (6) needs to be removed from the delivery vehicle, it can also be easily removed using a fork lift truck or a hand pallet truck, without taking the risk of the boxes (6) to move or slide over the pallet (1) and fall, since they are fixed to the upper surface (7).

[0026] Finally, the lower surface (8) of the pallet (1) (as seen in figure 3) comprises a perimeter area (14) and a central area (15) shaped like a cross, defining a series of inner openings (16); similarly, both the perimeter area (14) and the central area (15) comprise a series of ribs (3), which give shape to openings (5) between the aforementioned ribs (3). The configuration of the lower surface (8) of the pallet (1) prevents the pallets (1) from sliding when they are stacked, both when stacked empty as well as when stacked loaded with boxes (6). Similarly, when several pallets (1) loaded with boxes (6) are stacked with the pallets (1) placed immediately above each other, the shape of the lower surface (8) gives stability to the stack and connects the boxes (6) locking them together by means of ribs (3).

[0027] In the pallet (1) object of the invention, a series of slots (13) are located all along the lower surface (8) that help to hold the pallet (1) when it is stacked with boxes (6).

[0028] The invention must not be limited to the particular embodiments disclosed in this document. Those skilled in the art can develop other embodiments in view of the disclosure made herein. In consequence, the scope of the invention is defined by the claims that follow.

Claims

1. A pallet (1) with an upper fixing surface comprising

an upper surface (7), a lower surface (8) and a side surface (9) **characterized in that** the upper surface (7) comprises:

- a perimeter edge (2), 5
- a series of main ribs (3) arranged orthogonally in relation to each other, which divide the upper surface (7) into quadrangular housings (4), forming a staggered configuration between the quadrangular housings (4), 10

such that, by means of the perimeter edge (2), the main ribs (3) and the quadrangular housings (4) an upper surface (7) with an irregular profile wherein a load is fixed is defined. 15

2. A pallet with an upper fixing surface according to claim 1, **characterized in that** the quadrangular housings (4) comprise inner ribs (11) which divide each quadrangular housing (4) into a series of fixing openings (12). 20
3. A pallet with an upper fixing surface according to claim 2, **characterized in that** the fixing openings (12) are through openings. 25
4. A pallet with an upper fixing surface according to any of the precedent claims, **characterized in that** the lower surface (8) comprises a perimeter area (14) and a central area (15) shaped like a cross, the perimeter area (14) and the central area (15) defining the lower openings (16). 30
5. A pallet with an upper fixing surface according to claim 4, **characterized in that** the perimeter area (14) and the central area (15) comprise ribs (3) defining openings (5) between the aforementioned ribs (3). 35

40

45

50

55

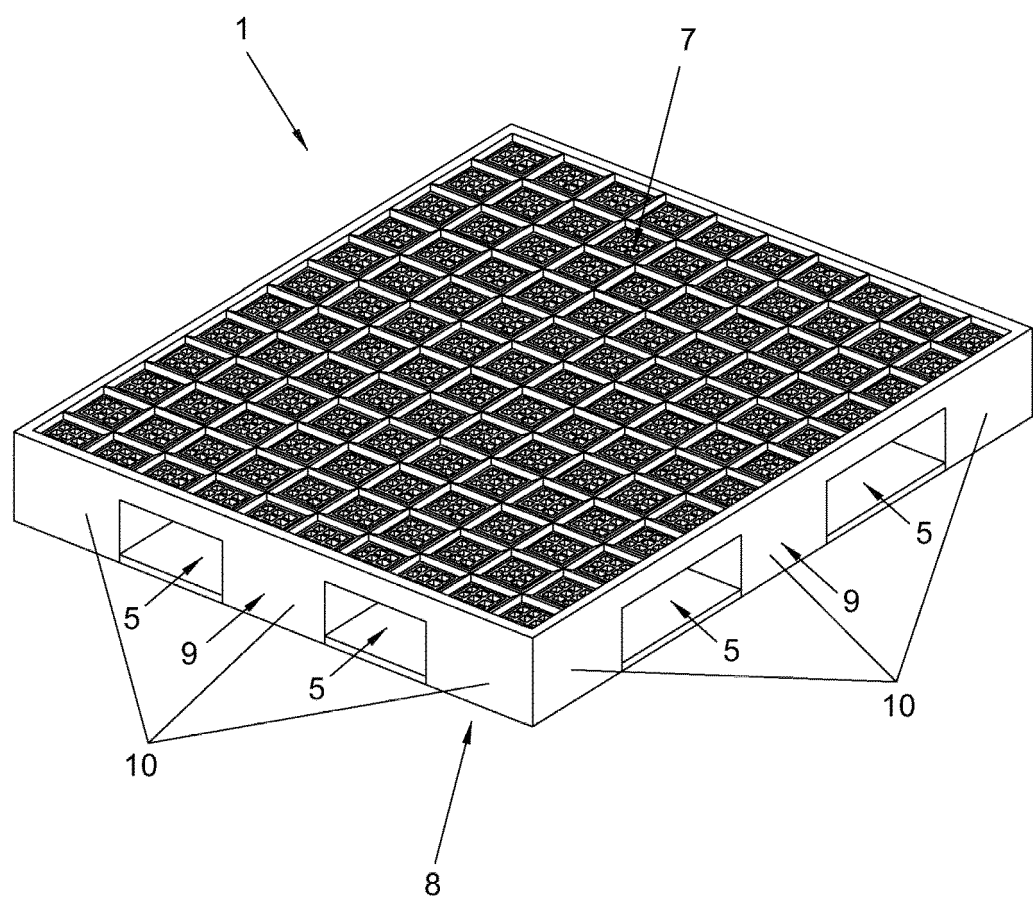


FIG. 1

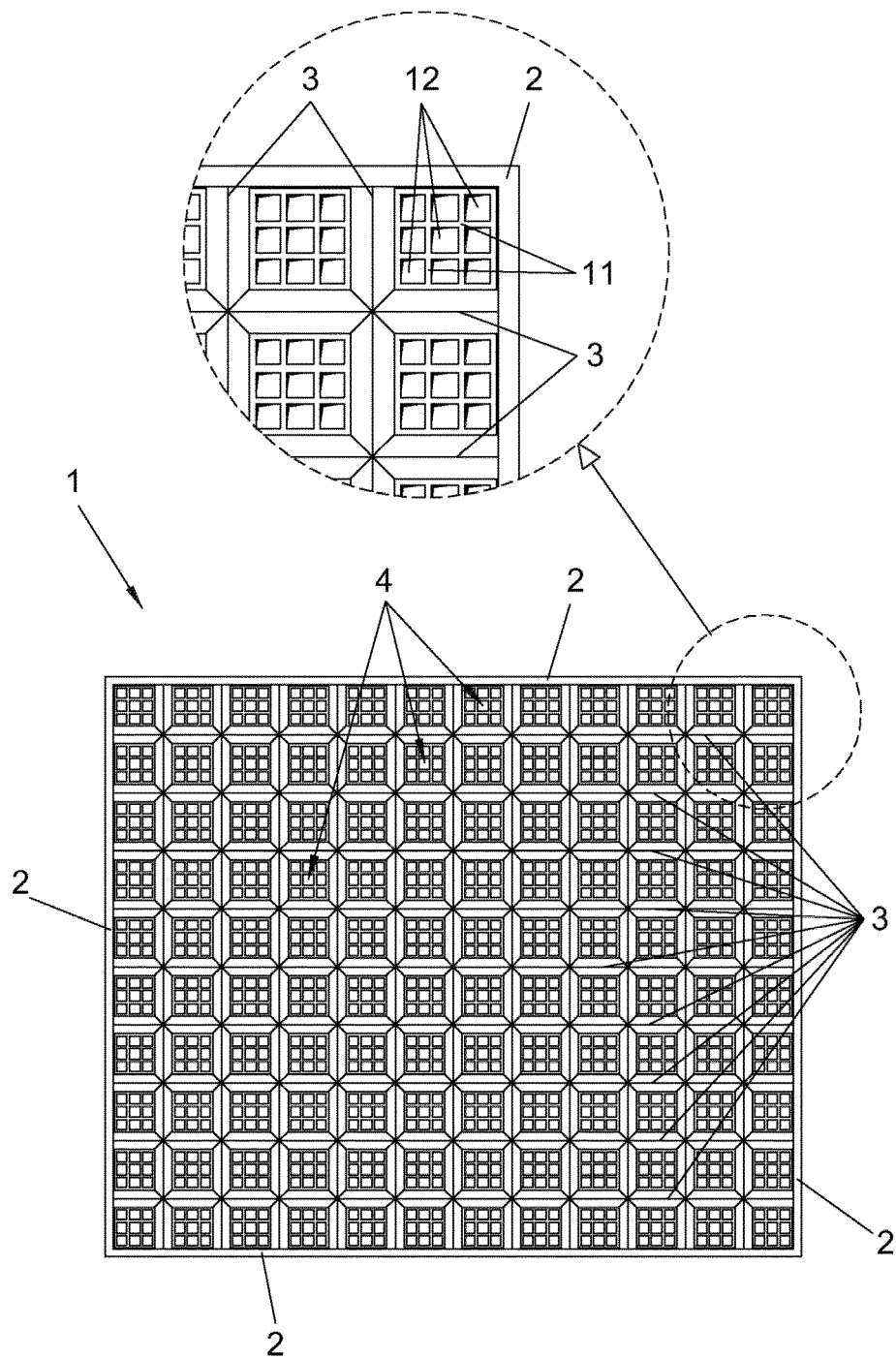


FIG. 2

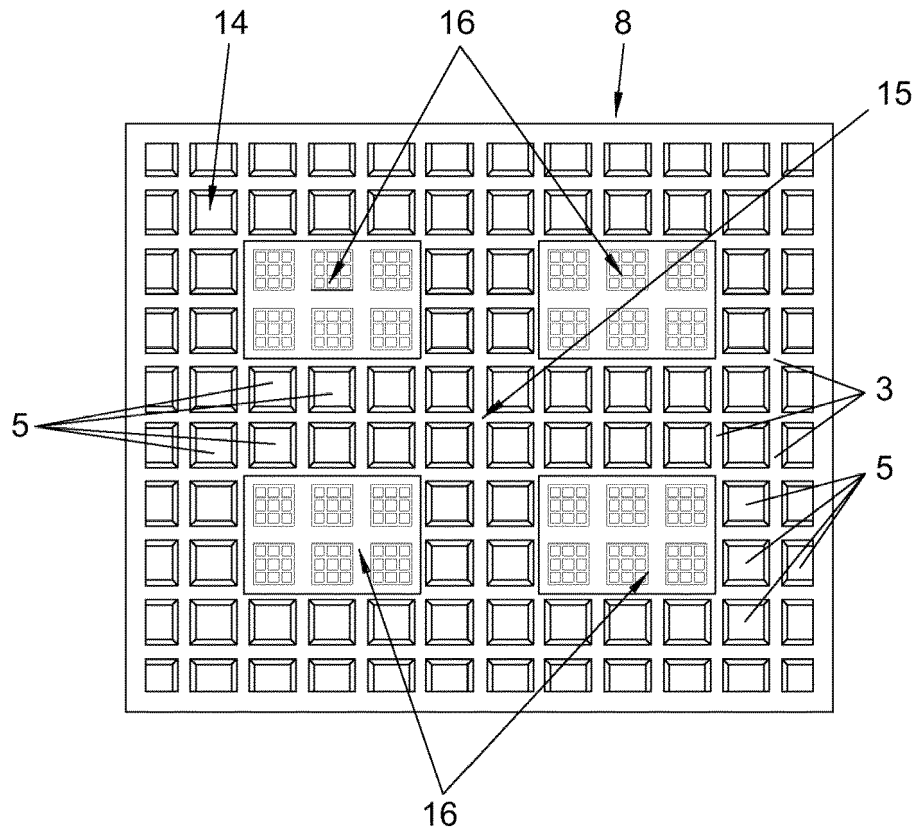


FIG. 3

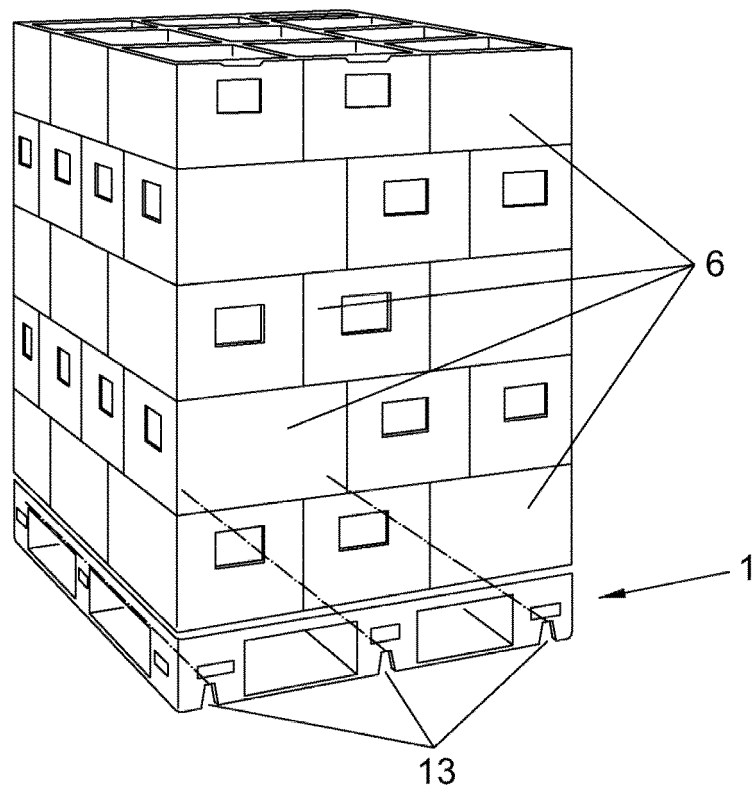


FIG. 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2013/070811

A. CLASSIFICATION OF SUBJECT MATTER

B65D19/44 (2006.01)**B65D19/22** (2006.01)

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)

B65D

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)

EPODOC, INVENES, WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 202004002611U U1 (LINPAC MATERIALS HANDLING GERM) 29/07/2004, paragraphs[1 - 7]; paragraph [19]; figures.	1
Y		2-5
Y	DE 202008007119U U1 (WILHELM OETTING KUNSTSTOFFVERF) 25/09/2008, figures.	2-5

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

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance.

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure use, exhibition, or other means.

"P" document published prior to the international filing date but later than the priority date claimed

"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

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

18/03/2014

Date of mailing of the international search report

(21/03/2014)

Name and mailing address of the ISA/

OFICINA ESPAÑOLA DE PATENTES Y MARCAS

Paseo de la Castellana, 75 - 28071 Madrid (España)

Facsimile No.: 91 349 53 04

Authorized officer

I. Coronado Poggio

Telephone No. 91 3496860

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

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2013/070811

Information on patent family members

Patent document cited in the search report	Publication date	Patent family member(s)	Publication date
DE202008007119U U1	25.09.2008	NONE	
DE202004002611U U1	29.07.2004	NONE	

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

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- ES 1079113 [0004]
- WO 2006013308 A1 [0005]
- BE 1010793 A3 [0006]