



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
03.07.2019 Bulletin 2019/27

(51) Int Cl.:
B65D 5/00 (2006.01) **B65D 71/00 (2006.01)**
B65D 5/22 (2006.01) **B65D 5/32 (2006.01)**

(21) Application number: **18211209.4**

(22) Date of filing: **10.12.2018**

(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
Designated Validation States:
KH MA MD TN

(72) Inventors:
• **MILLAN RODRIGUEZ, HORACIO**
48012 BILBAO (ES)
• **GALLO LAYA, JAVIER**
48001 BILBAO (ES)

(74) Representative: **Rebate Conde, Maria Fernanda**
Eurosigno
C/ Txakursolo, 23
48992 Getxo (ES)

(30) Priority: **26.12.2017 ES 201731590**

(71) Applicant: **Cartonajes Lantegi, S.L.**
48160 Derio (ES)

(54) **SELF-MOUNTABLE AND STACKABLE TRAY**

(57) The invention consists of a tray made from the development of a rectangular sheet with folding and cutting lines to determine a base (3), two side sections (4), and two end sections (8) or end walls, with the particular feature that the end walls are extended by lateral expansions (9) which remain concealed inside a prolongation wall or extension (5) of the side sections (4), the assembly being complemented by an enclosure (2) that is placed below and against the base and encloses the two end

walls of the tray, both on the inner face and the outer face thereof, essentially reinforcing the structure of the tray and establishing a lower raised surface with respect to the support surface as a result of the fact that said reinforcing enclosure has protruding elements of the same material attached to the outer surface thereof in the form of feet (15) that facilitate the positioning and stacking of the trays.

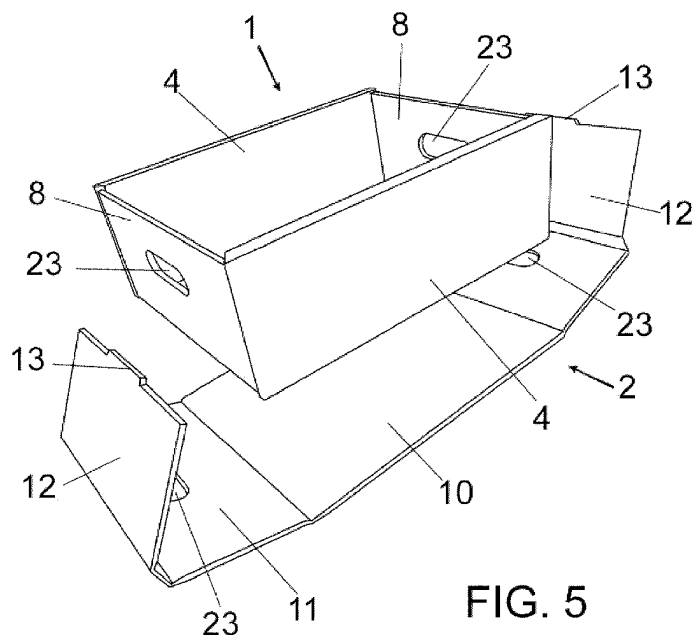


FIG. 5

Description

OBJECT OF THE INVENTION

[0001] The present invention relates to a self-mountable and stackable tray that is made of cardboard, and a fundamental characteristic thereof is the fact that the tray is complemented by an enclosure that is placed against the base and the end walls of the tray, reinforcing the same and establishing a lower raised surface with respect to the support surface as a result of the fact that said reinforcing enclosure has protruding elements of the same material attached to the outer surface thereof in the form of feet that facilitate the positioning and stacking of the trays.

BACKGROUND OF THE INVENTION

[0002] Several different types of cardboard trays are known, both for the transportation and storage of objects, fruit, vegetables and other objects.

[0003] In this sense, cardboard trays obtained from the development of a rectangular sheet of cardboard are known, with folding and cutting lines for determining a central or base section, two side sections with the function of lateral reinforcement, and two lateral extensions that fold inwards and over themselves to form a double wall on said lateral reinforcing sections, further comprising two end sections, corresponding to the smaller sides of the base, which during the mounting thereof form the end walls, complementing these end sections of the end walls with lateral extensions which in the mounting or assembly of the tray are intercalated between the extensions that form the sides of the tray and the extensions that are placed against the same from the double wall.

[0004] Although this structure is interesting due to the easy mounting thereof, it has limitations, both with regard to the structural resistance and stability in the storage and stacking thereof, for which improvements may be made.

DESCRIPTION OF THE INVENTION

[0005] Now, the self-mountable and stackable tray contemplated herein beginning with the structuring of this type of tray is characterized in that it comprises an additional enclosure that affects both the base and the end walls of the tray, thereby reinforcing the tray in these areas and providing it with greater stability, based on the special structuring thereof, as will be described below.

[0006] Said enclosure is obtained from a rectangular sheet of cardboard with transverse folding and cutting lines that determine a central section that is placed against the lower face of the base of the main tray, on the outside of the same, and two end sections, with an intermediate folding line, that are placed against both the end walls of the tray, clamping them both on the outside and inside thereof, thereby forming a reinforcing assembly

that is attached to the tray as a result of the fact that said end extensions have flaps that can be inserted in slots made for said purpose corresponding to the base of the tray in the area of confluence with the aforementioned end walls.

[0007] This way, a tray with great resistance is achieved, which is suitable for transporting heavy objects.

[0008] Another characteristic of the tray of the invention is that said enclosure has on the outer and lower face thereof, corresponding to the base, pieces in the form of feet, also made of cardboard, which are attached to said outer face, corresponding to the four vertices thereof, but with a separation according to the thickness of the walls that determine the mouth of the same, in order to allow the trays to be stacked with respect to one another in a snug and insertable way, which ensures complete stabilization of the trays in the stacking thereof.

[0009] In addition to facilitating the stacking and stabilization of the trays, the feet also prevent possible moisture existing on the ground from affecting the tray, by acting as separating elements.

[0010] The tray can be obtained in different sizes that are compatible with one another when stacked, by means of multiples of the two plan dimensions thereof, preferably maintaining the same height, in order to allow for multiple stacking combinations based on the different needs of space for each product, the same able to be designed to be adapted in the plan grouping thereof to the plan dimensions of a pallet, for which the pallet will have on the lower base thereof a small perimeter frame in which the legs of the trays to be stacked will fit, preventing the movement thereof.

[0011] When the trays are different sizes, they can be stacked such that the smaller ones are arranged first on the pallet, forming the necessary levels, the medium sized trays on top of the same, also forming the necessary levels, and the largest ones on the medium sized ones, the assembly being perfectly stabilized and defining a support structure wherein the number of "load" walls increase in a downwards direction, which ensures the resistance and stability of the assembly, even if the trays are loaded with very heavy products.

[0012] The assembly herein described can be complemented by angular corner elements or protectors that provide support for an upper enclosure lid of the assembly, said stacking able to be fastened by retractable plastic straps and/or strips.

DESCRIPTION OF THE DRAWINGS

[0013] As a complement to the description provided below, and for the purpose of helping to make the characteristics of the invention more readily understandable, in accordance with a preferred practical embodiment thereof, said description is accompanied by a set of figures, which by way of illustration and not limitation represent the following:

Figure 1 shows a plan view of the sheet from which the main body of the self-mountable and stackable tray object of the present invention is obtained.

Figure 2 shows a plan view of the sheet that makes up the enclosure that couples the tray obtained from the sheet of the preceding figure.

Figure 3 shows a plan view of the four portions or feet that are intended to be fixed by means of adhesive or by any other conventional means to the central section of the enclosure of figure 2.

Figure 4 shows a general perspective view corresponding to the intermediate mounting process of the enclosure of figure 2 on the main body of the tray that is obtained from the sheet in figure 1.

Figure 5 shows a lower plan view of the tray with the enclosure already mounted and wherein one can see the four legs that allow for the stable stacking of the trays.

Figure 6 shows a lower perspective view of the tray properly mounted.

Figure 7 shows a perspective view of a way of stacking different sized trays, showing how the smaller trays occupy the lower positions on the upper base of the pallet, the trays increasing in size the higher they are in the stack of trays.

Figure 8 shows a plan view of the configuration of the pallet to ensure complete stability in the stacking of the trays of the invention on the same.

PREFERRED EMBODIMENT OF THE INVENTION

[0014] With reference to the figures described, it can be seen how the self-mountable and stackable tray of the invention is obtained from the development of a rectangular cardboard sheet (1) that must be complemented by another independent sheet in the form of an enclosure (2) that reinforces the main body of the tray obtained from the development of the sheet (1).

[0015] The sheet (1) has folding and cutting lines for determining a central section determining the base (3), two side sections (4) corresponding to the lateral reinforcing sections of the tray with two extensions (5) that fold inwards and are placed against said side sections, forming a double wall for said lateral reinforcing sections, being fixed to the base (3) by means of protrusions (6) established on the free edge thereof, able to be inserted in windows (7) established on the aforementioned base (3), all without the need of adhesives and in a completely manual and simple way.

[0016] The tray is enclosed by the end sections (8) determining the end walls, which extend in lateral exten-

sions (9) which in the mounting thereof fold inwards, being concealed between the double walls that are defined in the lateral reinforcing sections, thereby remaining immobilized.

[0017] Now, the tray thereby obtained is complemented by an enclosure (2), also made of cardboard, and which has a central section (10) intended to be placed against the base (3) of the main body of the tray, after the mounting of the same, such that this central section (10) is extended by lateral sections (11) that in turn are extended by end extensions (12) such that said lateral sections (11) fold on the outer surface of the end walls of the tray while the end extensions (12) fold on the inner face of said end walls, coupling to the base (3) of the tray by means of protuberances (13) or flaps that can be inserted in windows (14) made on the base (3).

[0018] This way a tray is obtained with a double wall on the base thereof and a triple wall on the walls of the lateral reinforcing sections and the end walls, resulting in a strong resistance, and furthermore achieving a simple and efficient mounting that is entirely manual.

[0019] On the other hand, provided on the outer face of the central section (10) of the enclosures (2) are rectangular pieces fixed to the same in the form of feet (15), which raise the base of the tray with respect to the support surface, in addition to constituting stacking means with other trays of the same type or of different sizes, for which said feet (15) are arranged distanced from the edge of the base of the enclosure at a quantity according to the width of the walls of the tray which is stacked.

[0020] The tray can be made in different sizes, preferably in multiples of one another, able to be built, for example, in three sizes, small (16), medium (17) and large (18), as shown in figure 7, such that the same can be stacked as shown in said figure 7 on a pallet (21), on the upper base (19) of which a perimeter frame (20) is established which delimits the support surface of the legs of the tray, preventing them from moving horizontally, the pallet being complemented by a series of angular profiles (22) corresponding to the vertices thereof, which not only establish a limit for the immobilization of the stacked trays, but also provide support for an upper enclosure lid of the assembly of stacked trays, the stacking able to be complemented by straps and/or shrink wrap.

[0021] Lastly, it must be mentioned that the tray corresponding to the end walls will include gripping windows (23), as is common in these types of trays, and which will affect both the main body of the tray and the enclosure on the outer face thereof.

Claims

1. A self-mountable and stackable tray, made of cardboard and formed from the development of a rectangular cardboard sheet with folding and cutting lines for determining a central section or base (3), two side sections (4) corresponding to the lateral reinforcing

sections of the tray with two extensions (5) that fold inwards and are placed against said side sections (4), forming a double wall for said lateral reinforcing sections, being fixed to the base (3) by means of protrusions (6) established on the free edge thereof, able to be inserted in windows (7) established on the aforementioned base (3), the base (3) from which end sections (8) emerge and which determine the end walls, which extend in lateral extensions (9) that in the mounting thereof fold inward, remaining concealed between the double walls that define the lateral reinforcing sections, **characterized in that** the tray is complemented by an enclosure (2), made of a rectangular and independent cardboard sheet, which has a central section (10) that can be placed externally against the base (3) of the main body of the tray, after the mounting of the same, the central section (10) that is extended by side sections (11) that in turn are extended by end extensions (12), which fold over the outer face and inner face of the end walls, coupling to the base (3) of the tray by means of protuberances (13) or flaps that may be inserted in windows (14) on said base (3) with the particular feature that the central section (10) includes rectangular pieces fixed to the face of the same that have the function of legs (15) that raise the base of the tray with respect to the support surface, legs (15) that are arranged distanced from the edge of the base of the enclosure a quantity according to the width of the walls of said tray in order to define stacking means for the same.

2. The self-mountable and stackable tray, according to claim 1, **characterized in that** the tray is able to be formed in different sizes, multiples of one another, and compatible in the stacking thereof on a pallet, wherein there is an upper base in which a perimeter frame is established for supporting and immobilizing the legs (15) of the trays arranged on the same.
3. The self-mountable and stackable tray, according to claim 1, **characterized in that** the pallet is complemented by four angular profiles (22) corresponding to the corners thereof as a delimiting element for the stacking of the trays and as a support for an upper enclosure lid of the assembly.
4. The self-mountable and stackable tray, according to claim 1, **characterized in that** the end walls include gripping windows (23), complementary gripping windows (23) on the outer face of the enclosure (2) at the level of said end walls.

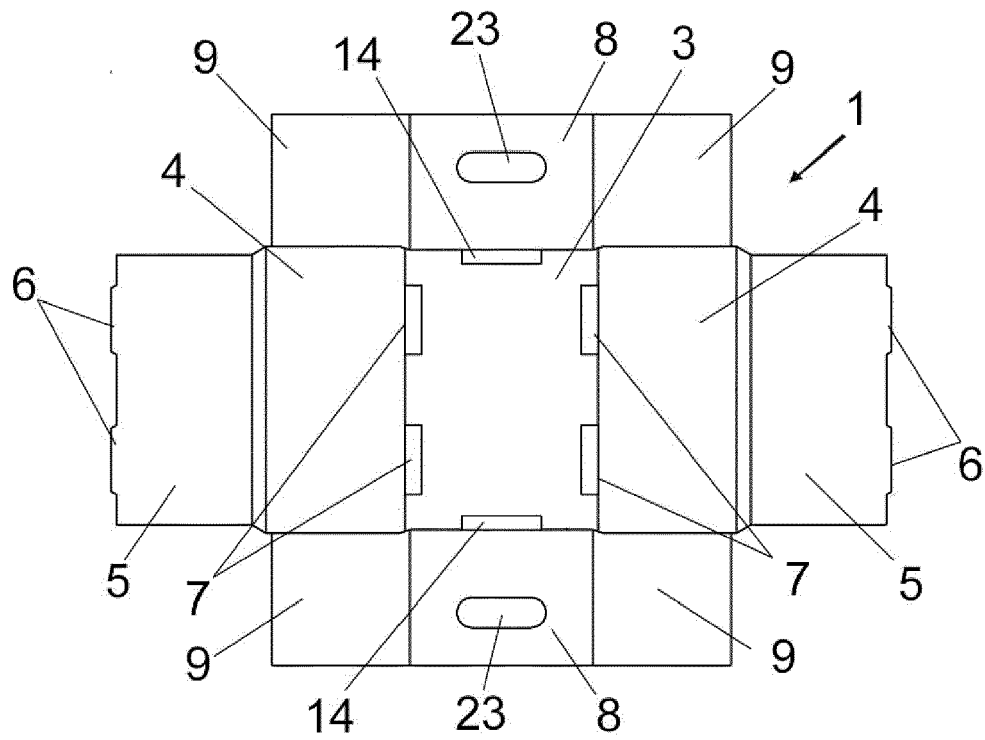


FIG. 1

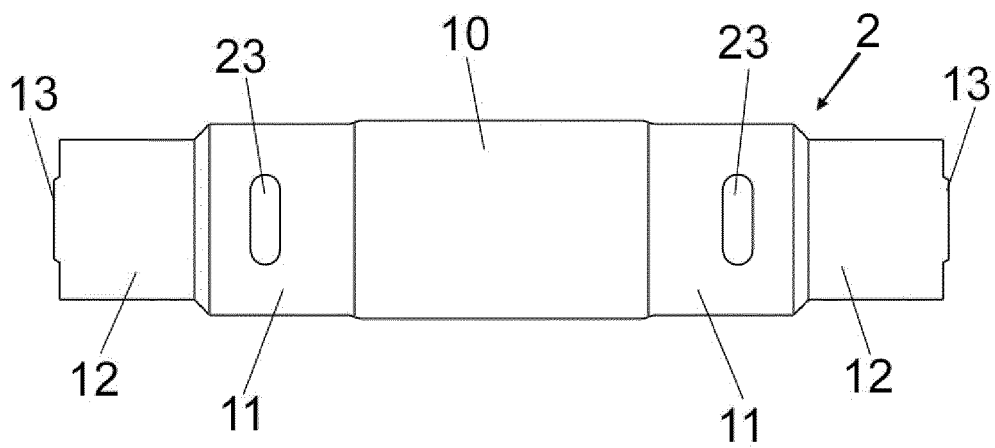


FIG. 2

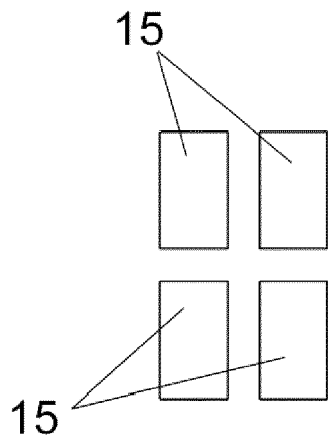


FIG. 3

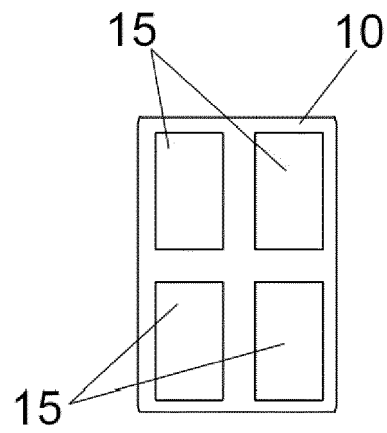


FIG. 4

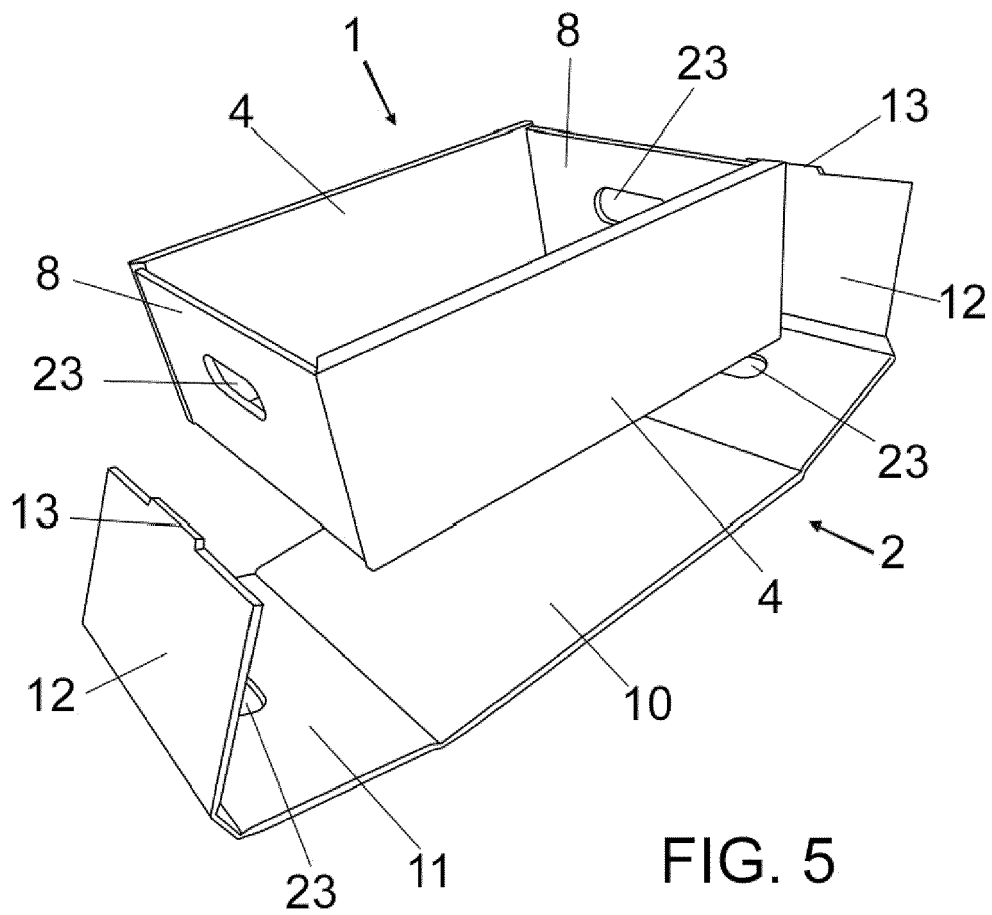


FIG. 5

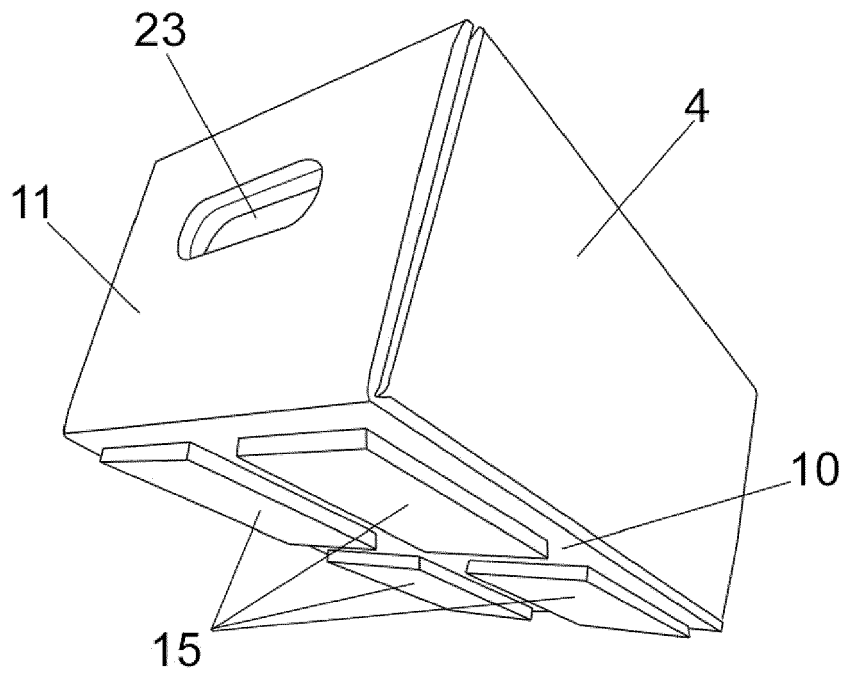


FIG. 6

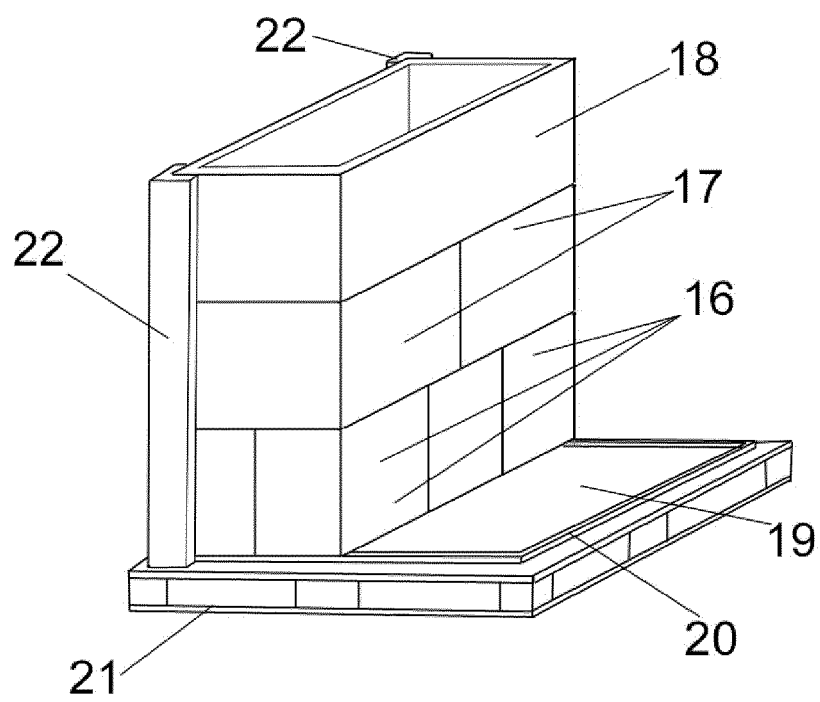


FIG. 7

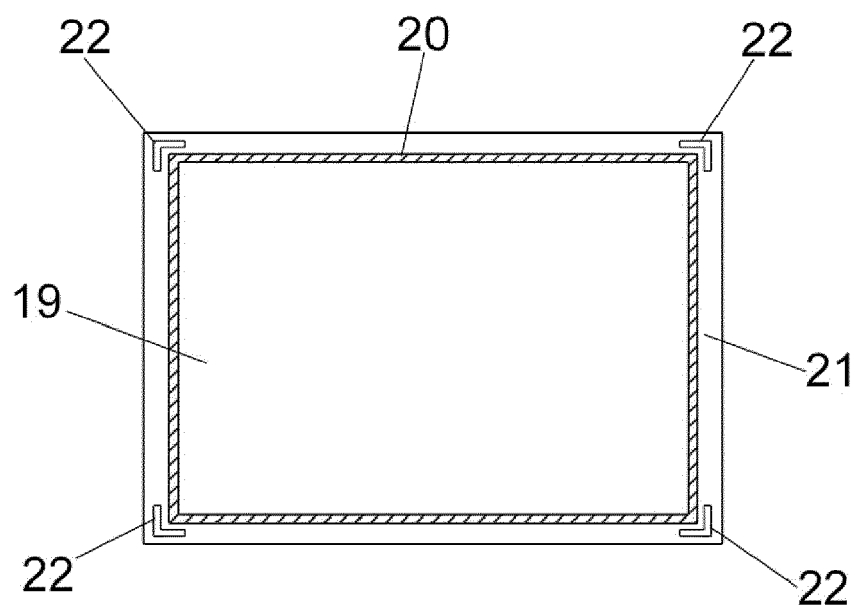


FIG. 8



EUROPEAN SEARCH REPORT

 Application Number
 EP 18 21 1209

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	US 4 103 819 A (MUISE HERBERT D) 1 August 1978 (1978-08-01) * abstract; figures 1-8 * * column 1, last paragraph - column 3, paragraph 1 *	1-4	INV. B65D5/00 B65D71/00 B65D5/22 B65D5/32
Y	ES 1 068 688 U (HINOJOSA RAFAEL SA [ES]) 16 November 2008 (2008-11-16) * claim 1; figures 1,2,4 *	1-4	
A	DE 201 06 893 U1 (BAUR ERWIN [DE]) 29 November 2001 (2001-11-29) * abstract; claims 1-3; figures 1-3 *	1,2	
A	US 4 834 242 A (SELACK DONALD A [US] ET AL) 30 May 1989 (1989-05-30) * column 4, line 16 - line 37; figure 1 *	2,3	
A	AT 7 745 U1 (KELLY GES M B H [AT]) 25 August 2005 (2005-08-25) * abstract; figure 1 *	2,3	
A	CA 639 448 A (IND CONTAINERS LTD) 3 April 1962 (1962-04-03) * figures 1-3,10,11 *	1,4	TECHNICAL FIELDS SEARCHED (IPC) B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 26 March 2019	Examiner Segerer, Heiko
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			

EPO FORM 1503 03.82 (P04C01)

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

EP 18 21 1209

5

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

26-03-2019

10

15

20

25

30

35

40

45

50

55

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4103819 A	01-08-1978	NONE	
ES 1068688 U	16-11-2008	NONE	
DE 20106893 U1	29-11-2001	NONE	
US 4834242 A	30-05-1989	CA 1324622 C	23-11-1993
		JP H0655619 B2	27-07-1994
		JP H01254542 A	11-10-1989
		US 4834242 A	30-05-1989
AT 7745 U1	25-08-2005	AT 7745 U1	25-08-2005
		DE 202005021429 U1	27-12-2007
		EP 1732827 A1	20-12-2006
		WO 2005097625 A1	20-10-2005
CA 639448 A	03-04-1962	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82