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(54) **PALLET FOR CONTAINING AND TRANSPORTING OBJECTS**

(57) The present invention relates to a novel pallet design to hold and transport products from the point of manufacture to the point of sale.

The advantage of this pallet design is that it provides the necessary means for coupling at each corner, a vertical profile which in turn is attached by an upper frame, because of which there is no need to change the product from the pallet in the trajectory from the factory to the point of sale, since the fixing of vertical profiles to the pallet together with the upper frame provide the product with the security and necessary firmness for the transportation of the same.

One of the most important pieces of the present invention are the corner lugs, which are disposed in each of the corners of the pallet, and an angular cut which works together with a fastening sleeve coupled to the corner lug so as to form a hollow space of the required size to receive vertical profiles and keep them firm and strong during the whole trajectory of the product.

There are also other lugs in a preferred embodiment of the invention which are disposed in a cross shape and their function along with the corner lugs is to support the weight of the product and provide firmness to the structure of the pallet.

One of the advantages of the lugs is that in an embodiment of the invention they may be manufactured from recycled materials such as used tires.

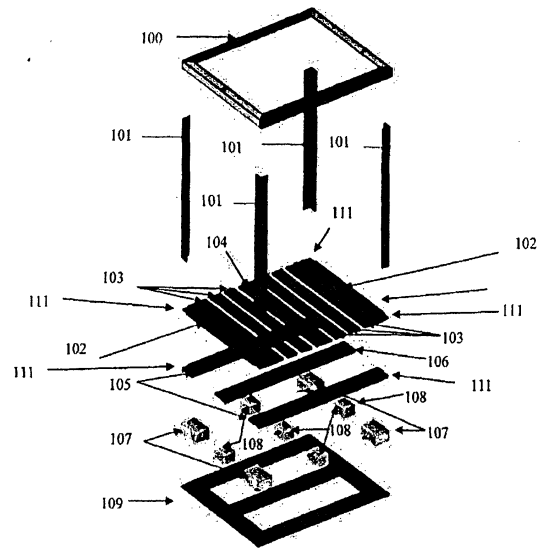


Fig. 1

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Description**FIELD OF THE INVENTION**

[0001] The present invention relates to a novel design of pallets to hold and transport objects.

[0002] It is an object of the present invention to provide a pallet to which may be easily adapted a frame with the functionality to hold and transport products from the factory to the point of sale of the product.

[0003] Another object of the present invention is to provide a pallet with means for reception of vertical profiles in each one of its corners in order to form a frame.

[0004] Yet another object of the invention is to provide a rectangular corner lug which has angular cuts in one of its corners to hold a vertical profile.

[0005] Yet another object of the present invention is to provide a rectangular corner lug with such versatility that it can be made of various materials including recycled wastes such as car tire wastes.

BACKGROUND OF THE INVENTION

[0006] There are in the state of the art, numerous pallets and items for freight packing and transportation; however there is not one that is used for both packaging and transportation wherein the load is contained.

[0007] Application number PA/a/2005/011459 by Luis Felipe Rego Garcia de Alba, inventor of the pallet of the present invention, describes and claims a package structure for the containment, transportation, exhibition and sale of large volumes of product at points of sale, intended for the final consumer. More specifically, it refers to a three-dimensional cube frame conformed by four angled poles separated each one from the others, which are attached by a few angular cross members. However, this frame was not focused on pallets, it lacked some innovative elements which allowed the advance of the art, and now it has a new and extremely strong pallet that besides saving money, allows using the same pallet from the point of manufacture to the point of sale inclusive.

SUMMARY OF THE INVENTION

[0008] The invention relates to a novel pallet design to hold and transport various products from the point of manufacture to the point of sale, which confers various competitive advantages with respect to the pallets already known in the market, e.g. material savings through the innovative pallet design since only one pallet is used from the factory to the point of sale.

[0009] Similarly, it prevents having to move products transported on the pallet, since they are transported on the same pallet, and are exhibited at the point of sale.

[0010] Pallet design is more stable because by using a frame and profiles to hold products, the result is a pallet that confines the products, is more stiff and stable while avoiding having to move products to a second pallet and

then packing them into various types of boxes or packages.

[0011] A very important part of designing the pallet of the invention is the rectangular corner lug which can be manufactured from various materials such as wood, cardboard, recycled material from used tires among many others, which gives to the pallet an additional advantage, since it helps the environment by re-using waste materials.

BRIEF DESCRIPTION OF THE FIGURES**[0012]**

Figure 1 is an exploded view of the pallet and the frame to hold and transport products.

Figures 2A, 2B, 2C, 2D, and 2E relate to perspective views of the rectangular corner lug.

Figure 3 is a perspective view of the pallet and frame to hold and transport products.

DETAILED DESCRIPTION OF THE INVENTION

[0013] Figure 1 illustrates an exploded view of the pallet including a horizontal upper frame 100 attached in its corners to four vertical profiles 101; an upper base 112 that includes support elements 104, 103 and 102 with angular cuts 111 at its corners; a plurality of support elements 106 and 105 with angular cuts 105 to provide stiffness and support to the pallet; a plurality of lugs of different features 108 and 107 joined to a fastening sleeve 301 and a lower base 109 wherein rests the whole structure and provides the space where the lift fingers are inserted.

[0014] The upper frame 100 of the invention, based on the PA/a/2005/011459 application of the same applicant, has as an object, to conform a structure which allows the attachment profiles 101 with the structure 100 in order to conform a cube within which the objects to be transported are disposed.

[0015] The upper base 112 comprises a plurality of support elements, all of them disposed in the same sense, which can be made from different materials and in different sizes, but the most important thing is that they provide stiffness and the necessary strength to withstand the weight that will be placed on it.

[0016] The angular cuts 111 of the support elements are arranged in such a way that allows the insertion of the profiles 101 therein, without excessive play or allowing the profiles 101 to be too tight so as to prevent breakage; in a preferred embodiment cuts are disposed at a right angle on the outside of the corners.

[0017] The lugs consist of a sleeve 301 and a plate 107, are disposed in two versions which are the corner lugs 107 and the central lugs 108. In a preferred embodiment, the corner lugs are disposed in the corners of the pallet, and receive the profiles 101 while the central lugs 108 in a preferred embodiment of the invention are dis-

posed to form a cross, and the support elements 105 and 106 are resting on the same. However, the arrangements of the various lugs can change as may be desired depending on the weight and materials to be loaded, the preferred embodiment being the above mentioned.

[0018] In a preferred embodiment, the pallet rests on a series of five lugs 108 arranged in a cross shape and four rectangular corner lugs 107 disposed in each of the corners of the pallet; the corner lugs in turn have angular cuts 111 on each of the external corners of the pallet.

[0019] In an embodiment of the invention, Figure 2A illustrates a rectangular corner lug 107 made from a material that can be selected from the group of wood, sheet-rock, or used tire wastes. Structurally, it comprises a first end wall 204 and a second end wall 205. In addition, Figure 2E includes a partial cut 208 in one of its corners which forms a first inner wall 202, a second inner wall 203 and two first vertical contact surfaces 206.

[0020] The cut down walls 202 and 203 of the corner piece 107 are seen in Figure 2E which is a top view of the corner or rectangular lug 107.

[0021] In a preferred embodiment, the fastening sleeve is metallic, comprises a first inner fastening wall, a second inner fastening wall and two sleeve contact rims or edges 304 that allow the lug to be fixed with the sleeve.

[0022] The rectangular corner lug 107 is assembled with the fastening sleeve 301 as may be seen in Figure 2A; this assembly is achieved through the insertion of the sleeve contact edges 304 with the vertical contact surfaces 206; the assembly generates a hollow space 501 where the profiles 101 are disposed.

[0023] The hollow space 501 works jointly with the angular cuts 111 for receiving and storing the vertical profiles 101, achieving therewith the assembly of the part.

Claims

1. A pallet to hold and transport objects including a horizontal upper frame attached at its corners to four vertical profiles, an upper base that includes support elements with angular cuts at the corners, a plurality of support elements with angular cuts to provide stiffness and support to the pallet, a plurality of lugs of different features, which are attached with a fastening sleeve and a lower base wherein rests the whole structure and which provides the space where the lift fingers are inserted.
2. The pallet according to claim 1, wherein the upper frame has as object to shape a structure to attach the profiles with the structure in order to conform a cube within of which the objects to be transported are disposed.
3. The pallet according to claim 1, wherein the upper base comprises a plurality of support elements, all of them disposed in the same sense.
4. The pallet according to claim 1, wherein the upper base provides stiffness and the necessary strength to withstand the weight that will be placed on it.
5. The pallet according to claim 1, wherein the angular cuts of the support elements are disposed in such a way that allows the fitted insertion of the profiles in the same with such a play that the profiles are not excessive adjusted so as to prevent possible breakage.
6. The pallet according to claim 1, wherein the cuts are disposed at a right angle on the outside of the corners.
7. The pallet according to claim 1, wherein the lugs consist of a sleeve and a plate, and are disposed in two versions which are the corner lugs and the central lugs.
8. The pallet according to claim 1, wherein the lugs are disposed in the corners of the pallet so as to receive the profiles.
9. The pallet according to claim 1, wherein the central lugs are disposed forming a cross and the support elements rest in the same.
10. The pallet according to claim 1, wherein the lugs are disposed as may be desired depending on the weight and materials to be loaded.
11. The pallet according to claim 1, wherein the corner or rectangular lug can be made of a material consisting of wood, sheetrock, or used tire wastes.
12. The pallet according to claim 1, wherein the lugs are made of a material consisting of used tire wastes.
13. The pallet according to claim 1, wherein the lugs structurally comprise a first end wall, and a second end wall, a pair of opposing holes being one mirror image of the other, disposed at the opposite ends of the plate in the lug.
14. The pallet according to claim 1, wherein the fastening sleeve comprises a first inner fastening wall, a second inner fastening wall and two sleeve contact rims or edges which allow the lug to be fixed with the sleeve.
15. The pallet according to claim 1, wherein the rectangular corner lug is assembled with the fastening sleeve by inserting the contact edges of the sleeve with the vertical contact surfaces; the assembly produces a hollow space wherein the profiles are disposed.

16. The pallet according to claim 1, wherein the hollow space works jointly with the angular cuts so as to receive and store the vertical profiles, achieving therewith the assembly of the part.

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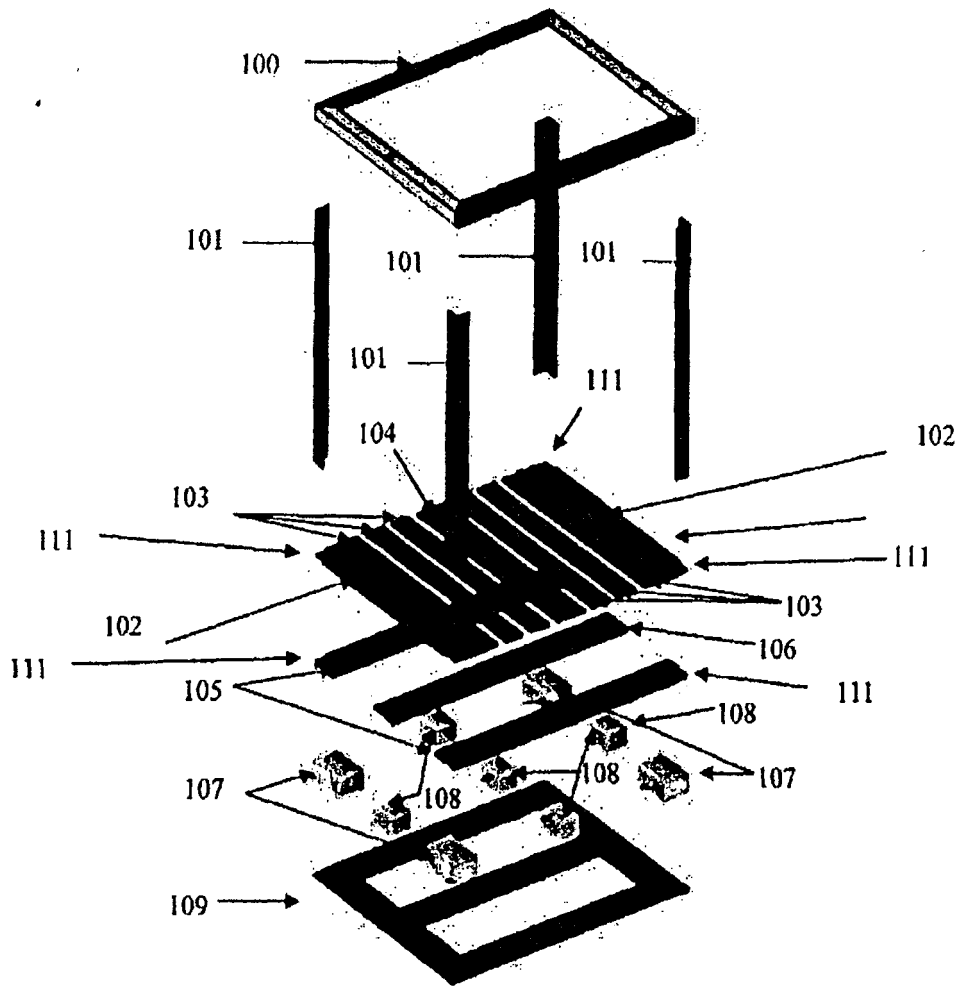
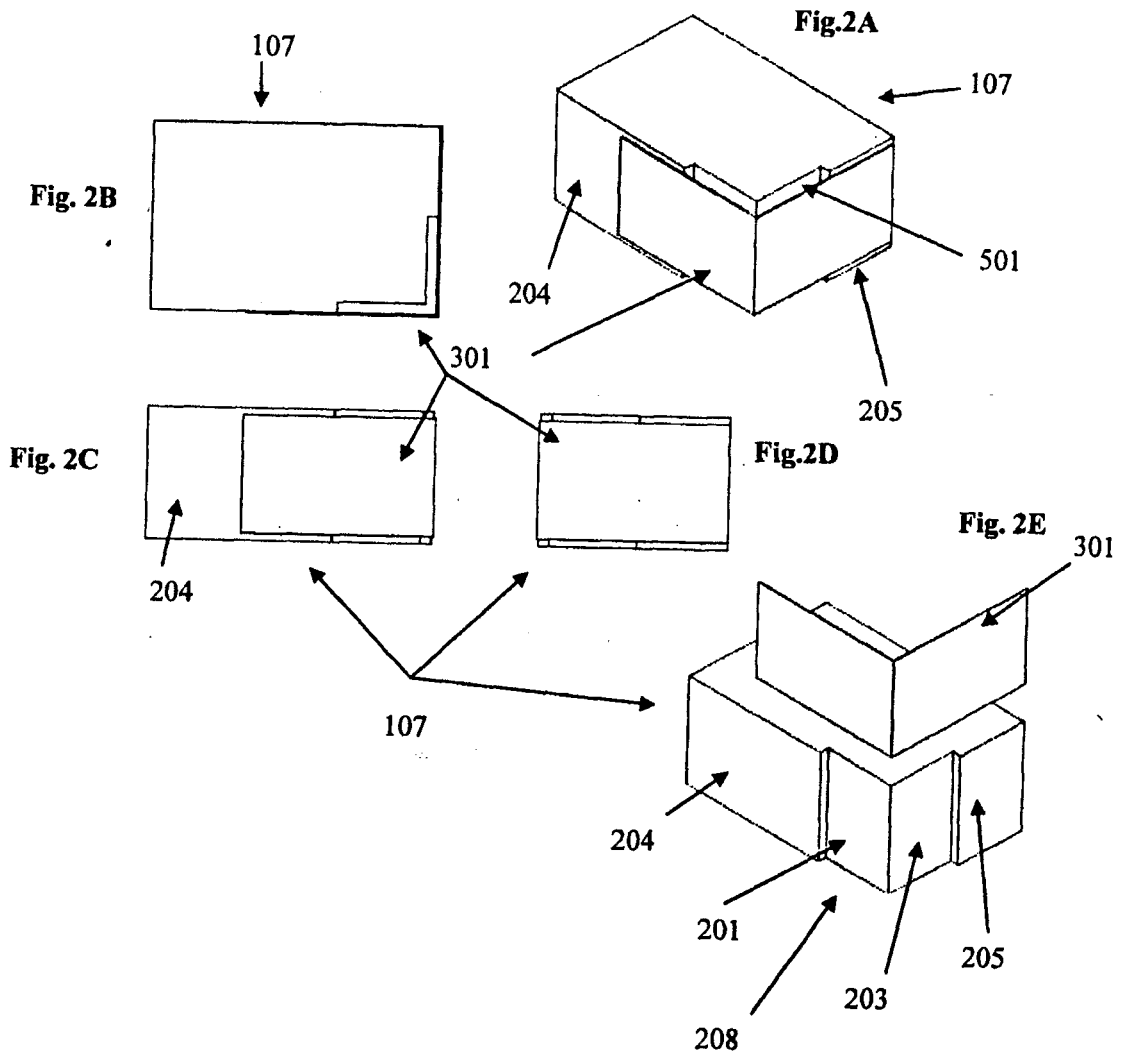


Fig. 1



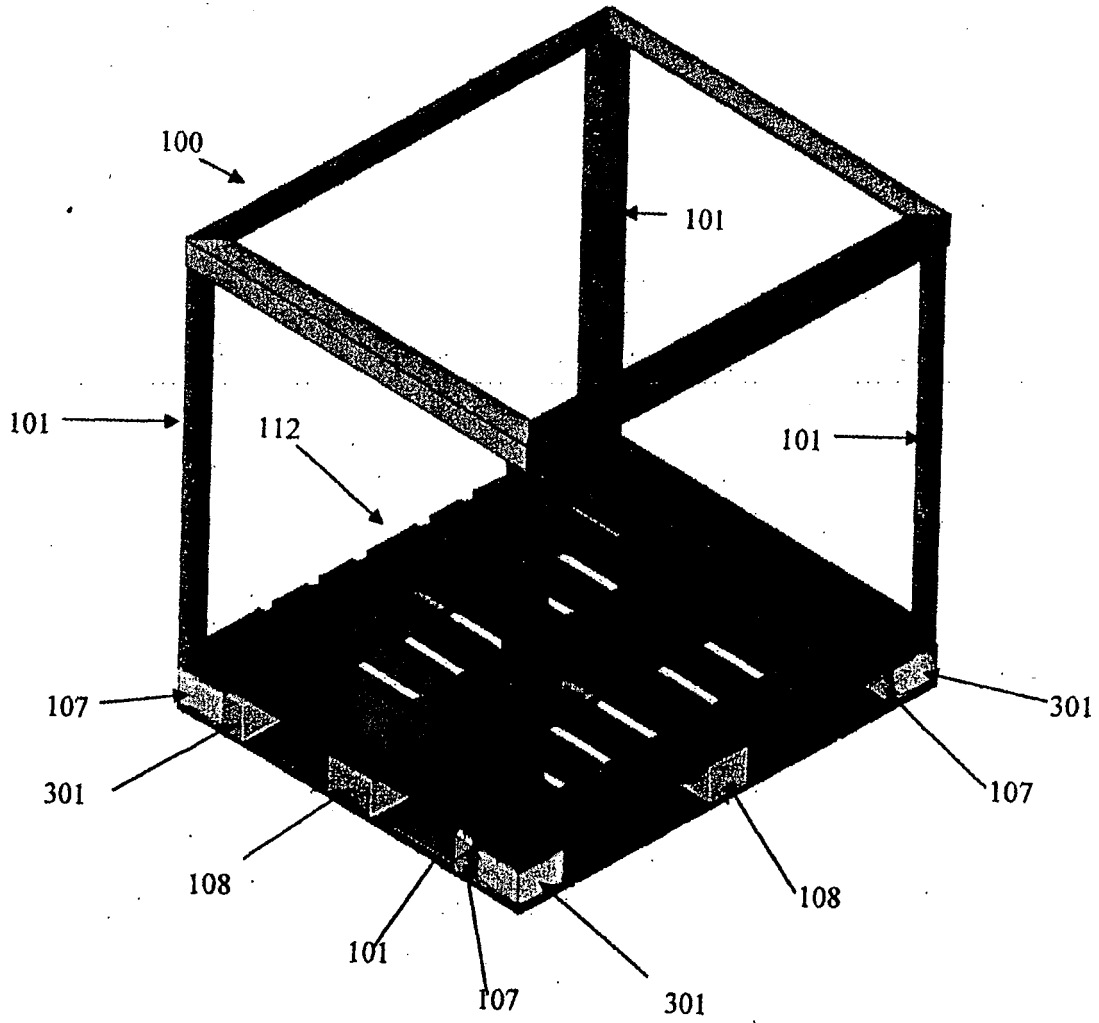


Fig. 3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ MX 2009/000088

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) 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) INVENES,EPODOC,WPI		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2582286 A1 (LEBALCH HERVE) 28.11.1986, page 4, line 5 - page 5, line 23; figures.	1-8,10,11, 13-16
Y		9,12
Y	WO 0230768 A2 (ROUSSEAU ET AL.) 18.04.2002, page 6, lines 17-23; claim 13; figures 1,2.	9,12
A	US 2775360 A (SALEM BROSIUS INC) 25.12.1956, column 1, line 69 - column 2, line 38; figures.	1-16
A	US 4779751 A (MUNROE) 25.10.1988, column 8, line 16 - column 9, line 45; figures 1,11,13,20.	1-16
A	US 5154297 A (ALDON PATTERN INC) 13.10.1992, column 2, line 18 - column 3, line 11; figures 1,2.	1,14-16
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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.		
"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)	"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
"O" document referring to an oral disclosure use, exhibition, or other means	"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
"P" document published prior to the international filing date but later than the priority date claimed	"&"	document member of the same patent family
Date of the actual completion of the international search 19.November.2009 (19.11.2009)	Date of mailing of the international search report (26.11.2009)	
Name and mailing address of the ISA/ O.E.P.M. Paseo de la Castellana, 75 28071 Madrid, España. Facsimile No. 34 91 3495304	Authorized officer F. J. Riesco Ruiz Telephone No. +34 91 349 68 69	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/ MX 2009/000088

Patent document cited in the search report	Publication date	Patent family member(s)	Publication date
FR 2582286 A B	28.11.1986	NONE	-----
WO 0230768 A	18.04.2002	AU 9408001 A	22.04.2002 22.04.2002 22.04.2002
US 2775360 A	25.12.1956	NONE	-----
US 4779751 A	25.10.1988	NONE	-----
US 5154297 A	13.10.1992	NONE	-----

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CLASSIFICATION OF SUBJECT MATTER

B65D 19/06 (2006.01)
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