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(54) **Pallet holding device**

(57) The invention discloses a pallet holding device, designed to be fixed at a determined number of different positions of the plate constituting the support base of the pallet on which the goods to be transported by the latter are placed, the device comprising two elements or separate and independent parts susceptible to mutual coupling by means of threading or clipping, a first part (1) of

which is shaped in the form of a stopper and has a circular head (2) from which a threaded or clip-configured rod (3) orthogonally projects, and a second part (4) of which consists of a cylindrical body, one base of which has an axial hole (5) internally configured for retaining the bolt (3) of the first part, this second part further constituting the element of separation of the pallet base with respect to the ground or other support surface.

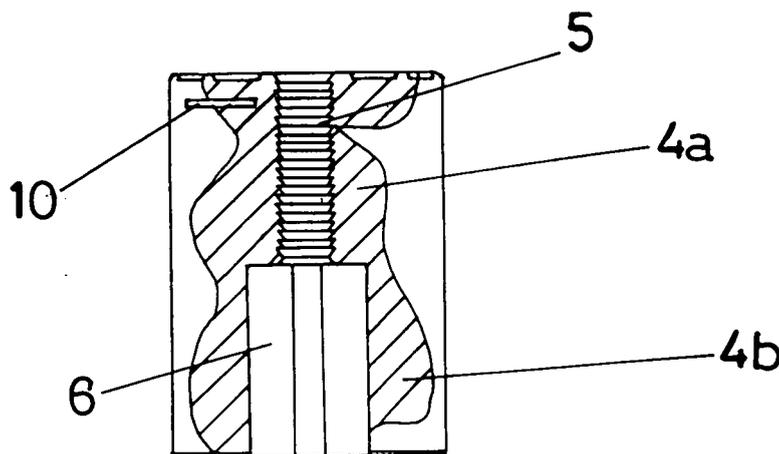


FIG.2a

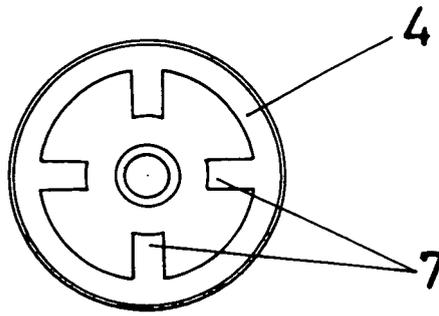


FIG. 2b

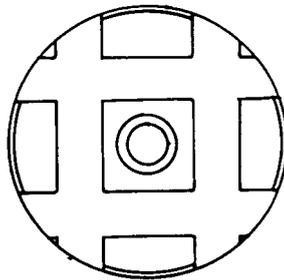


FIG. 2c

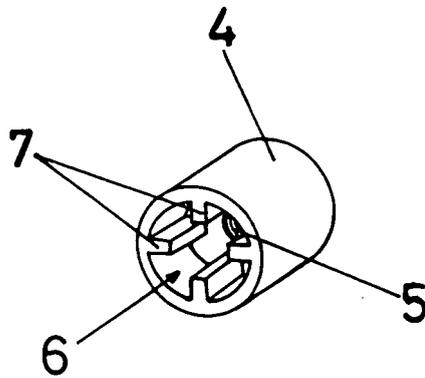


FIG. 2d

Description

Object of the Invention

[0001] The present invention refers to a pallet holding device, which provides essential novelty features and significant advantages with respect to the means known and used for the same purposes in the current state of the art.

[0002] More specifically, the invention proposes the development of a device which, being of an extremely simple conception, allows its adaptation to a flat support plate, whether wooden, of corrugated cardboard or of any other material, by means of a simple, practical and quick threading or clipping operation. To this end, the device comprises two separate elements, preferably manufactured with a plastic susceptible to jet molding, designed to allow their mutual coupling, one element of which has been configured in the form of a stopper provided with a bolt or threaded screw (or, where applicable, in the form of a clip), and the other element has been configured in the form of a body serving as a base, and has been configured in a cylindrical shape, with an axial internal hole extended to a predetermined length (or, where applicable, with a clipping configuration, as convenient), and with the formation of internal ribs on the rest of the height of the hollow interior of this element, also having at least one lateral incision for guiding the strap which potentially may be used for holding goods on the support base.

[0003] The field of application of the invention is comprised within the sector for the manufacture of jet moulded plastic parts, and especially, of parts for use in pallet manufacturing.

Background and Summary of the Invention

[0004] The growing use made of pallets with a view to holding goods of a very different class has been generally known by all for many years. Regardless of any consideration relative to measurements and design, the usual pallets are normally manufactured with wood, although more recently other materials, such as plastic or even corrugated cardboard, are also used.

[0005] In any case, the manufacture of the current pallets is usually laborious and therefore expensive, and furthermore, they occupy a space which comes to be quite considerable in those locations where this type of supporting elements is more greatly used.

[0006] Taking the previous approach into consideration, the present invention has set out to provide, as a main objective, a solution which proves truly efficient for an advantageous simplification of the manufacture and handling of this type of supports. Basically, the invention has carried out the development of a pallet holding device, conceived for being applied to a flat support plate constituting the pallet surface itself, and which can consist of a plastic, wooden or corrugated cardboard plate,

or of any other material, such that the recommended device can be applied to said support plate in different predetermined locations, thereby constituting means of support and separation of the support plate with respect to the ground or other support surface. As has been summarily indicated in the foregoing, the device of the invention consists of two independent, separate elements or parts, preferably manufactured by means of jet moulding with a plastic material prepared for giving said parts the desired features of structural resistance, durability and handling. Of these parts, one of them has been configured in the form of a stopper, and has a preferably circular head of considerable diameter, from which a bolt orthogonally projects which can be threaded or configured in the form of a clip, as convenient; the other part consists of a base and support element which has been generally developed advantageously in a cylindrical shape (without the chosen configuration implying any limitation, since the outer shape of the base element has no influence whatsoever on the behaviour and the use of the assembly), the height of which determines the separation between the flat support plate and the ground or other support surface, the body of the base part having an axial hole extending to a portion of the height of the cylinder, and the part being internally hollow throughout the rest of the height, with the formation of reinforcement partitions at diametrically opposite positions (for example, four partitions angularly separated by 90°). The axial hole of this part can be internally threaded or can be configured in the form of a clip, as it complementarily corresponds with the embodiment chosen for the bolt of the stopper part.

Brief Description of the Drawings

[0007] These and other features and advantages of the invention will be more shown more clearly in the following detailed description following a preferred embodiment, given only as an illustrative and non-limiting example, with reference to the attached drawings, in which:

Figures 1a to 1d show side elevation, cross-sectional and perspective views of both sides, respectively, of a stopper part constructed according to the invention;

Figures 2a to 2d show side elevation (with a partial section), bottom plan, top plan and perspective views, respectively, of the base part provided for by the assembly of the invention, and

Figure 3 is a schematic illustration, in perspective view, of a pallet constructed with the help of the device of the invention.

Description of the Preferred Embodiment of the Invention

[0008] As indicated in the foregoing, the detailed description of the preferred embodiment of the invention will be carried out with the help of the attached drawings, throughout which the same reference numbers are used to identify same or similar parts. In this sense, with reference firstly to the representations appearing in Figures 1a to 1d, the general configuration which has been foreseen for the preferred embodiment of the stopper element implicated in the assembly of the device of the invention can be seen. This stopper element, generally indicated with reference number 1, has a head (2) which is generally of a circular design, of sufficient thickness, from one of the flat sides of which a bolt or threaded rod 3, in the manner of a screw and of a predetermined length, orthogonally projects. For its part, the diameter of the circular head 2 will be of sufficient dimensions so as to allow a convenient handling (manual or of another type) during the pallet assembly operation.

[0009] Figures 2a to 2d show the second part comprised by the assembly of the invention. Said second part is preferably, as stated, of a generally cylindrical shape, and constitutes the element for support or resting the pallet on the support surface (the ground or any other). This support part has been generally indicated in the drawings with reference number 4, and is divided, in height, into two portions 4a and 4b, of which a first portion 4a, which in operative position of the part (assembled pallet) will occupy an upper position, has an axial hole 5 internally threaded in correspondence with the thread of the bolt 3 of the first part or stopper 1, whereas the second portion 4b of this part, which in operative position will occupy a lower position, has an internal hollow part for lightening the part, towards which walls or longitudinal ribs 7 project, which are angularly equidistant for the internal reinforcement of the latter, and which in the chosen embodiment four walls 7 successively separated between each other by 90° angles, have been chosen, however this detail should not be interpreted as limiting, given that the number of these ribs can be variable, as the separation between them is likewise variable.

[0010] Finally, a graphic representation of a pallet susceptible to be assembled with the device of the invention along with a flat plate of an appropriate material such as wood, plastic, corrugated cardboard, or similar, has been depicted in Figure 3. The flat plate is identified in the drawing with reference number 8, being of a generally rectangular design and of dimensions adapted to the standard dimensions for this type of support elements. In predetermined positions preferably distributed along the major sides of the flat plate 8, the carrying out of through holes 9 of appropriate diameters has been foreseen, preferably countersunk holes so as to adapt to the shape of each one of the stopper elements 1 and to level with the circular head 2 of the latter when each one of said stopper elements is made to pass through a corre-

sponding hole 9 from one of the sides of the plate 8, for its fixing to a respective cylindrical part 4 located on the other side of said plate 8. In this way, the mentioned plate 8 of the pallet thus constructed provides, when it is in operative position, the support base for holding goods on its upper side, whereas it remains separate from the support plane (the ground or any other) at a distance equivalent to the height of the support parts 4.

[0011] As will be understood, the height of said support parts 4 will be chosen such that it is enough for a convenient and efficient handling of the assembly, whether with fork lift trucks or with any other traditional means.

[0012] On the other hand, the representation of the Figures shows an embodiment wherein each stopper element 1 has a threaded rod 3 in the manner of a screw, and the support part 4 shows a portion provided with an axial hole 5, likewise threaded so as to receive and mesh with the mentioned rod 3. This embodiment, despite being the, preferred one for the device of the invention, can be modified and replaced by a constructive form in which the threaded rod 3 and the hole 5 constitute quick attachment clipping elements. With this, as an additional advantage, a smaller pallet assembly time will be obtained when it is to be used for any transport or storage function.

In any case, both configurations allow their disassembly if necessary.

[0013] The support part 4 also has a further use constituting an important detail with a view to the fixing of the goods on the support plate 8 of the pallet. Said use consists in the provision of an incision or cut 10 affecting one portion of the side surface of the cylindrical body constituting each one of these parts, and which extends parallelly to the upper perimetral edge (according to the operative position) of the body of the part 4, near said upper edge, i.e. near the end of the body 4 intended for occupying an adjacent position to the corresponding side of said pallet plate 8, as can be seen with greater detail in Figure 2a of the drawings. This grooving is wide enough to allow the housing of a marginal portion of the strapping elements usually used to hold the goods down onto the pallet plate 8, thereby ensuring the maintenance of said strapping elements in operative position, and therefore a more secure handling of loaded pallets.

[0014] It is not considered necessary to further extend the content of this description in order for a person skilled in the art may understand its scope and the advantages derived from the invention, as well as to develop and to put into practice the object thereof.

[0015] Nevertheless, it must be understood that the invention has been described according to a preferred embodiment thereof, thus it can be subject to modifications without this implying any alteration of the basis of said invention, said modifications being able to affect, especially, the shape, size and/or manufacturing materials of the assembly or of its parts.

Claims

1. A pallet holding device, for its coupling, in a predetermined number, in previously established positions on the support bases or plates for holding goods constituting the pallet, for the support and separation of said support bases with respect to the receiving or support surface of the assembly, **characterised in that** it is composed of two parts (1, 4) susceptible to mutual coupling and retention by means of threading or clipping, of which a first part (1) consists of a stopper element formed by a circular head (2) of predetermined diameter from which a bolt or rod (3) orthogonally projects, threaded or clip-configured, susceptible to passing through the mentioned support base or plate (8) for holding the goods from a first side thereof through the holes (9) carried out to this end, and a second part (4) intended for being located on the opposite side of said base or plate (8) and to serve as a support element, is constituted in the form of a preferably cylindrical body, provided with an axial hole (5) internally threaded or clip-configured complementarily with the bolt (3) of the first part which it receives and houses, this hole (5) extending to a predetermined length of the height of said second part, whereas the rest of the body of the part has an internal hollow space (6) with longitudinal partitions (7) ribbed in diametrically opposite positions.
2. A device according to claim 1, **characterised in that** said second part (4) has a lateral incision (10) near the end adjacent to the support base or plate to which it is attached, intended for receiving a strapping element or the like.

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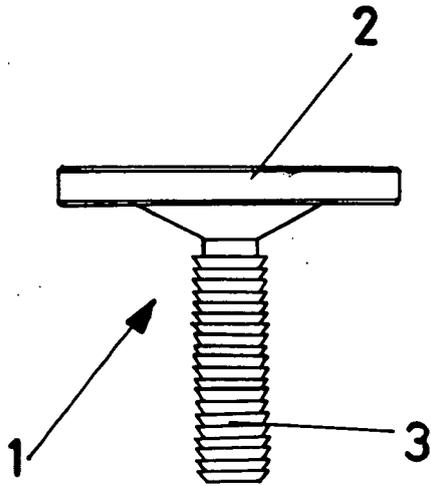


FIG.1a

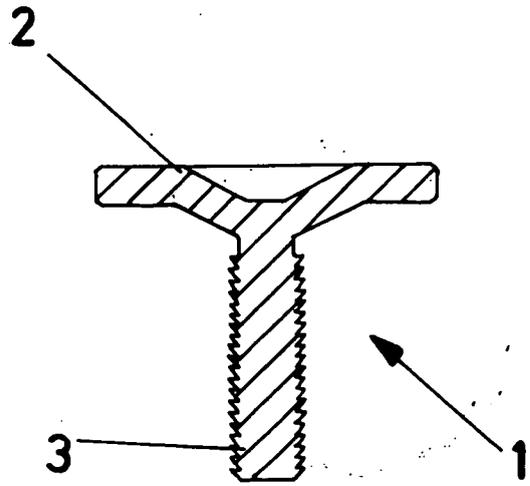


FIG.1b

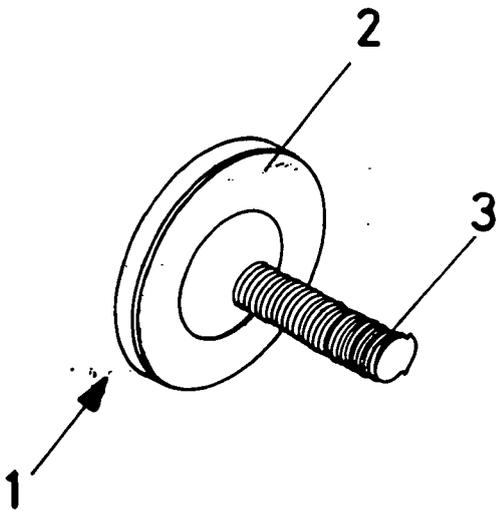


FIG.1c

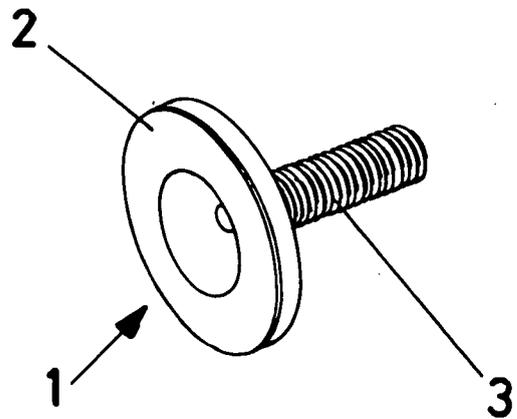


FIG.1d

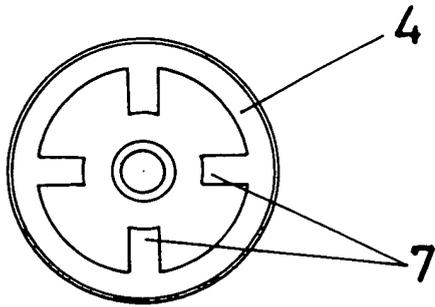


FIG. 2b

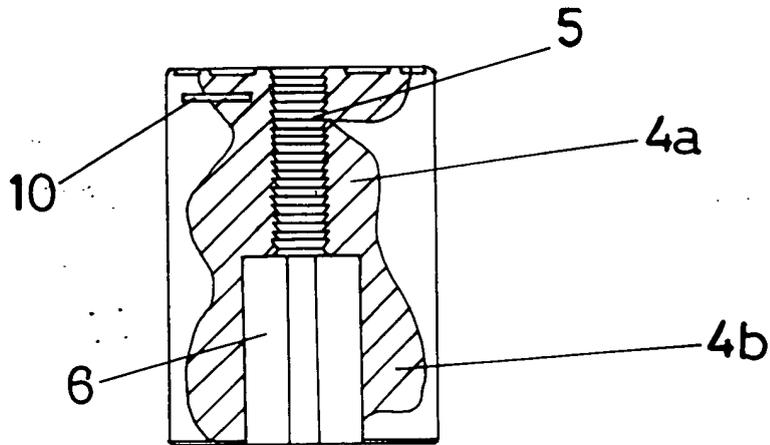


FIG. 2a

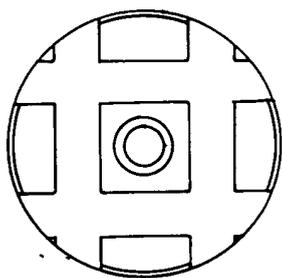


FIG. 2c

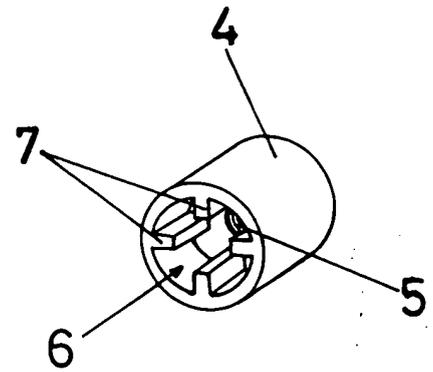


FIG. 2d

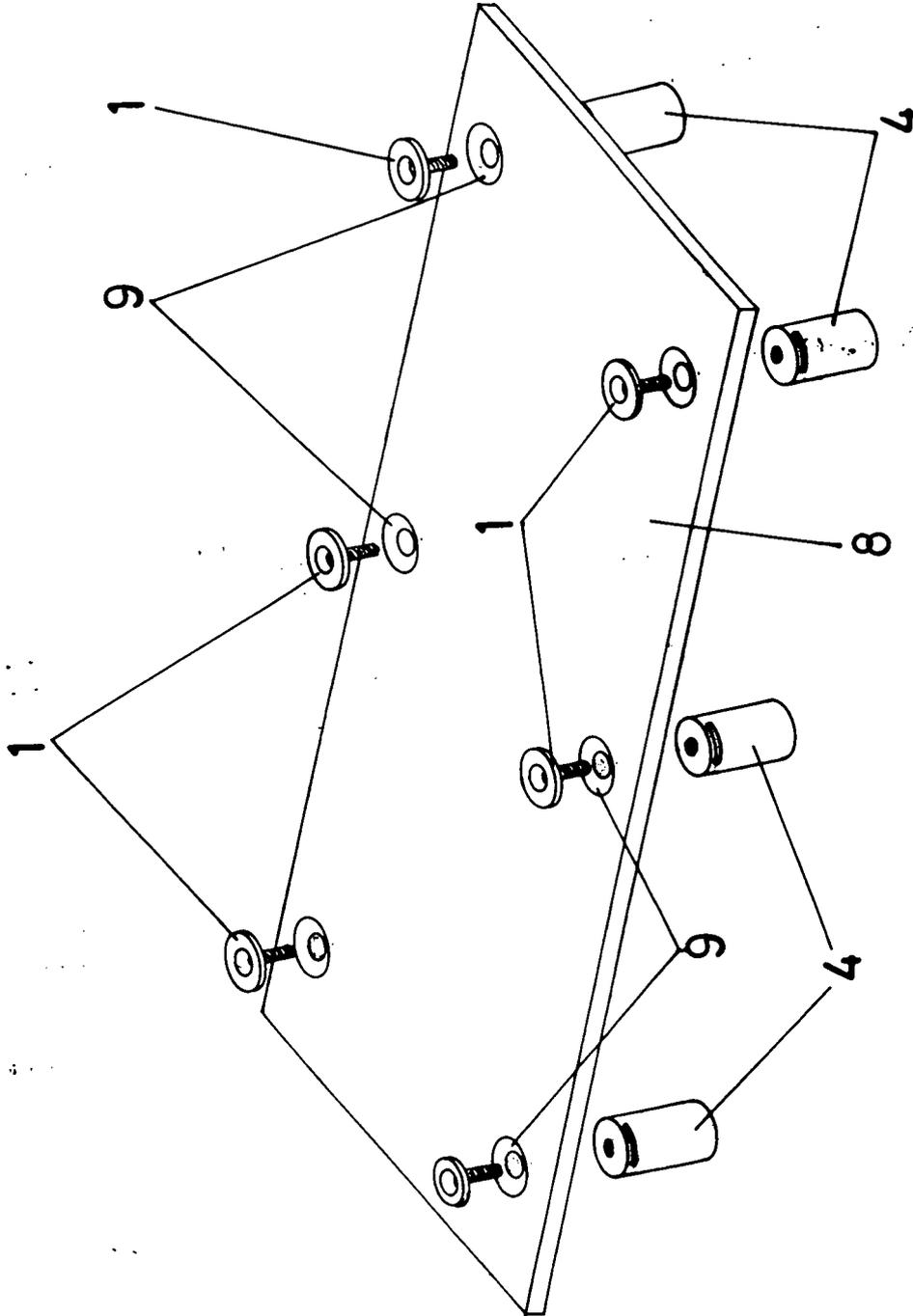


FIG. 3



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 4 128 253 A (POWERS RICHARD J) 5 December 1978 (1978-12-05)	1	B65D19/00
Y	* column 2, line 42 - column 5, line 5; figures 1-5 *	2	B65D19/40 B65D71/04

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X	US 3 610 172 A (WHARTON THOMAS P) 5 October 1971 (1971-10-05) * column 1, line 56 - column 2, line 59; figures 1-5 *	1	

			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B65D
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 19 April 2004	Examiner Derrien, Y
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.**

EP 04 38 0035

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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