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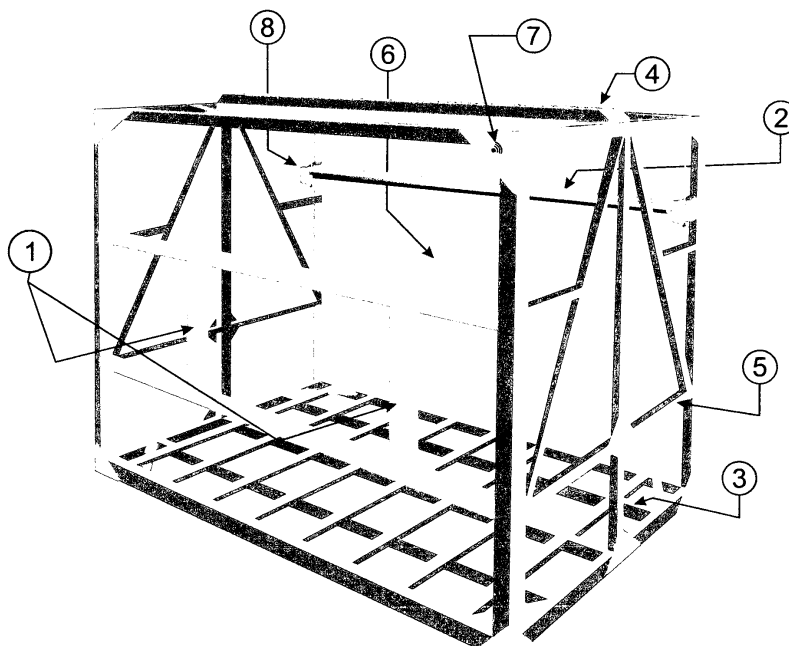
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(54) **Structure in inox for preservation of packed gas bottles**

(57) This invention relates to a stainless structure for packaging gas bottles, or other ones in normalized squared, rectangular or trapezoidal tubes. The innovative concept that is represented in the drawing, with a single access for load and unloading bottles from the inside (6), with not removable mobile door (2) who vertically moves on integrated guides and is represented in locked position (8), having on the opposite side a fixed

front (1), on the bottom a platform for ordered bottles settlement (3), on the top the encased and orientation guides (4), the fixed tops in the side ones (5), a CHIP/RFID (7) for supply of data to computerized management, with the use of stainless steel, for being an excellent driver of static electricity, elevated rates of security are got, and not to use any treatment of the surface in this maintenance, it allows bigger longevity, reducing the environmental damage.

Fig. 1



## Description

**[0001]** Actual process of possible use of the existing containers, made through manual intervention, for one or more operators in the accomplishment of the discharge process and load of bottles, in terminals of gas wadding lines (gas liquefied oil or others) installed or to install.

**[0002]** The process is considered of raised risk, with the handling of bottles with weight until approximately 120 kg, the inherent share, provokes serious injuries in the operators in the human condition, placing in danger its physical integrity, and consequently production damages. Besides they are, used and they are called "cross-bars", they are removable, inside to lock the bottles of the structure, being frequent its accidental acquittal, followed from fall, during the handling and transportation, with the corresponding danger to the security of people and goods.

**[0003]** The materials currently applied are ferrous, and submitted the treatments of surfaces, that are not efficient, the corrosion process results in environment damages.

**[0004]** In the sequence of the evaluation of the state of the current technique, in the context of analysis of risk in the process of the use of the container, it allows the development of an innovative container, that consists of a structure in inox for preservation of gas bottles packed, without intervention of human being during the process of preservation of the bottles, in safe conditions, with introduction of new technique of movement of the doors of access of the bottles, as well as the resource to implementation of chip for supplying of information and tracing, allowing the control and info-management, in the scope of the logistic one, of security, of the environment and quality.

**[0005]** The present invention is assigned by; structure inox for preservation of packed gas bottles, which includes some profiles of pipe with quadrangular geometry, to rectangular and trapezoidal, essentially tied to each other by welds of the same type of inox. They can be put into motion in set of two containers, during the process of storage and in the road transport.

## Description of the figures:

**[0006]** The concept in accordance with the present invention, is characterized for being a mechanical equipment, that includes a structure in normalized inox pipe of profile, quadrangular, rectangular and trapezoidal, for preservation of packed gas bottles, and to be used in terminals of filling lines, with discharge and automatized or manual load, storage and transport.

**[0007]** The concept in accordance with the present invention, is described in detail, without invention limiting character and as an example, by means of one of its forms of preferred, represented accomplishment in the attached drawings, in which:

- Fig.1 is a complete perspective representation, formed for described elements to follow, that they compose the above structure integrally appointed; (1), (2), (3), (4), (5), (6), (7) and (8). Thus allowing, through construction welded with same type of material, it has as (1) position exterior side, being fixed part of the structure of the container, (2) not removable door in material of composite with geometry of profile in "T", with insert metallic tips, with a puncture in circumference, allowing the vertical movement heave guided by handle multifilament cable with spring tensor or another one in each extremity with the supports (8) of adjustment, basement (3) the inferior fixed part of the container of commanded vertical preservation of the packed gas bottles, (4) position of guidance of the above containers being fixed in the superior part of the structure of the container by fixing for overlapping in lot, (5) tops or laterals constituted by two opposing fixed parts in the laterals of the structure of the container, (6) interior side of access of the above gas bottles for their movement of discharge and load, (7) position of placement of chip/RFID (radio frequency) for retraction of information data and sequenced info-management, (8) fixed supports including handles multifilament cables in the structure of the said container with the function of guide of adjustment of the above represented not removable door (2) in the position of closed.

- Fig.2, is a complete perspective representation, seen of the interior side, represented and described opposing side to in fig.1 of the said container, being (6) position of the access for load movement and discharge of the said bottles, with the represented not removable door (2) in the position of closed.

- Fig.3 is a partial, described perspective representation in previous fig.2, with the not removable door (2) in opened position of, thus allowing to the movement of the load and discharge of the above bottles, being now represented in more detail the element (8), holding through the multifilament cable with tensor of springs, that crosses the tips of the said not removable door (2) guiding it and allowing its movement of opening and closing.

- Fig.4, is a complete, similar perspective representation to the represented one in fig.1, but presenting a new removable, alternative element to the fixed element (1) of the structure, with the signals of reference (9) (10) e (11), being the element (11) one fixed door equally in inox and removable manually, represented in the closed position of by means of the rabbit "type to rectangular" (9) and of the rabbit "type U" (10) fixed in the structure, being kept all the other elements represented in the previous figures.

- Fig.5, is a complete, similar perspective representation to the represented one in fig.4, but representing removable the fixed door (11) opened, istud est removed of the structure of the container, thus providing one forms different of access of the bottles to the container, which is, they can enter on the other side and leave for the other.
- Fig.6, is a complete, perspective representation equal to the represented one in fig.4, but seen from the opposing side, that is, of the side of the access (6) and the represented not removable door (2) in the position of closed doors.
- Fig.7, is a complete, similar perspective representation to the represented one in fig.2, but presenting a new element of alternative position (12) for vertical movement of the not removable door (2) in material of compósito with geometry of profile in "T", with inserted metallic tips, a puncture in circumference, by means of gutter (12) in the fixed structure of the container, sliding through a multifilament cable with tensor of spring or other, fixed in each extremity, represented in the position of closed door.
- Fig.8, is a complete, similar perspective representation to the represented one in fig.7, but presenting drawing of detail extended of the new element of alternative position (12) for movement of the not removable door (2), represented in the position of open door.

## Claims

1. The present invention is **characterized** because of being a stainless steel structure, for packaging and transport of bottles of packaged gas "LPG" (Liquefied petroleum gas), represented in fig.1, with welds on the same material, with profiles applied in brought back to normal tube of geometrical different forms (square, rectangular or trapezoidal), reinforced in the superior and inferior corners for four set squares of 90° one in plate, tied between you for weld, it is prepared for the packaging storage and transport of gas bottles "LPG" or different, having an exterior fixed part (1) of container structure, a not removable door (2) in composite material in the geometrical form in "T", with a metal ferrule driven in each extremity, with a hole of circumference, which it allows the vertical dislocation through a multiseize cable in steel treated with tensor of springs fixed between supports (8), in the position of open or shut, what allows the movement of loading and unload of the stated bottles in the access (6) in terminals of filling for automated or manual process. It has a CHIP/RFID (Radio Frequency) that makes possible the gathering of information of data and traceability to the computerized

treatment, in terminals of filling and or in Intermediate Deposits of distribution.

2. This invention is **characterized** for of being a stainless steel structure, for packaging and transport of bottles of packaged gas, in accordance with the claim 1, 4, 5, 6 and 7, represented mainly in fig.2, because of being a movable door not removable (2) in the inner side of the structure, with agreement in the fastening automated or manual, for access and movement of the state bottles.
3. This invention is **characterized** for of being a stainless steel structure, for packaging and transport of bottles of packaged gas, in accordance with the claim 1, 4, 5, 6 and 7, represented mainly in fig.7 with the shut door, and, in fig.8, with the open door, because of having the movable not removable door (2) put inside the pillars of fixed structure of the container, oriented through slippery guides, in alternative to the fixed support.
4. This invention is **characterized** for of being a stainless steel structure, for packaging and transport of bottles of packaged gas, in accordance with the claim 1, 2, 3, 5, 6 and 7, represented mainly in fig.4, when it was closed, and in fig.5 opened, since it are a removable door of placing orientated in fixed supports of socket (9) and (10) being an alternative to the exterior fixed part (1), of the structure of the container.
5. This invention is **characterized** for of being a stainless steel structure, for packaging and transport of bottles of packaged gas, in accordance with the claim 1, 2, 3, 4, 6 and 7, represented mainly in fig.1, fig.2, fig.3, fig.4, fig.5, fig.6, fig.7 and fig.8, may have no CHIP/RFID (Radio Frequency) that makes possible the gathering of data of information for computerized treatment, in terminals of filling and or in Intermediate Deposits of distribution.
6. This invention is **characterized** for of being a stainless steel structure, for packaging and transport of bottles of packaged gas, in accordance with the claim 1, 2, 3, 4, 5 and 7, represented mainly in fig.1, fig.2, fig.3, fig.4, fig.5, fig.6, fig.7 and fig.8, will be able to be built also by other ferroalone materials and subject to treatment of his surfaces, namely several types of paints, galvanoplastian or other finishes.
7. This invention is **characterized** for of being a stainless steel structure, for packaging and transport of bottles of packaged gas, in accordance with the claim 1, 2, 3, 4, 5 and 6, represented mainly in fig.1, fig.2, fig.3, fig.7 and fig.8, will be able to be built also with a second movable door not removable (2) put

in the front side, allowing so that the bottles enter on a side and go out on the opposite side.

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Fig. 1

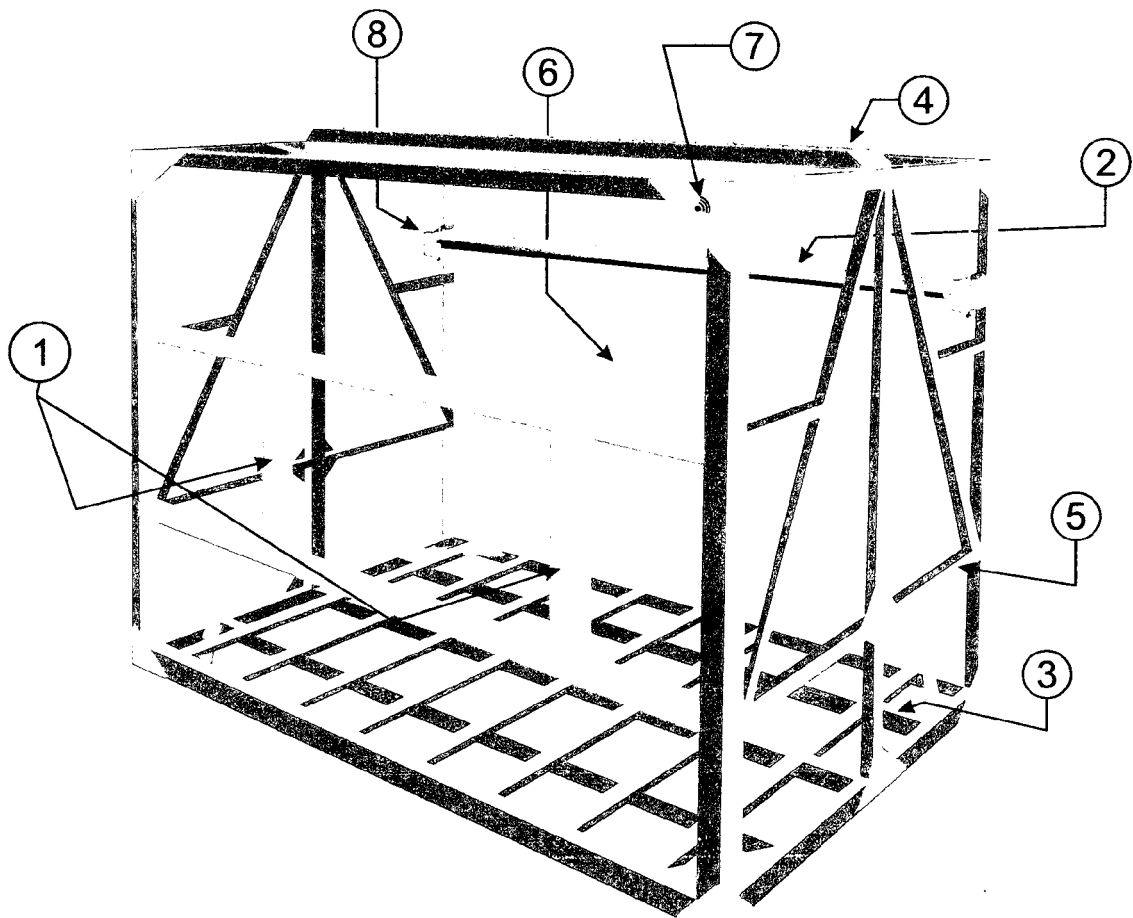


Fig. 2

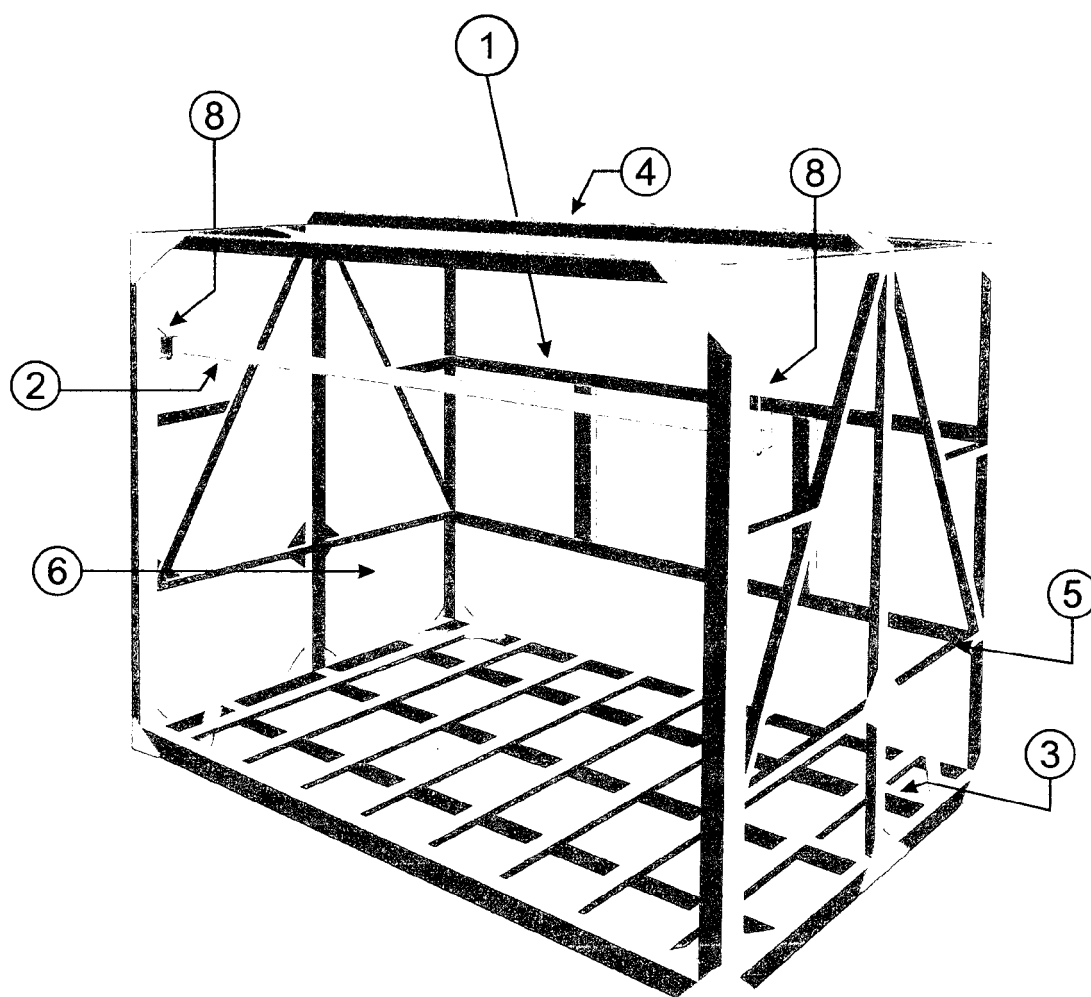


Fig. 3

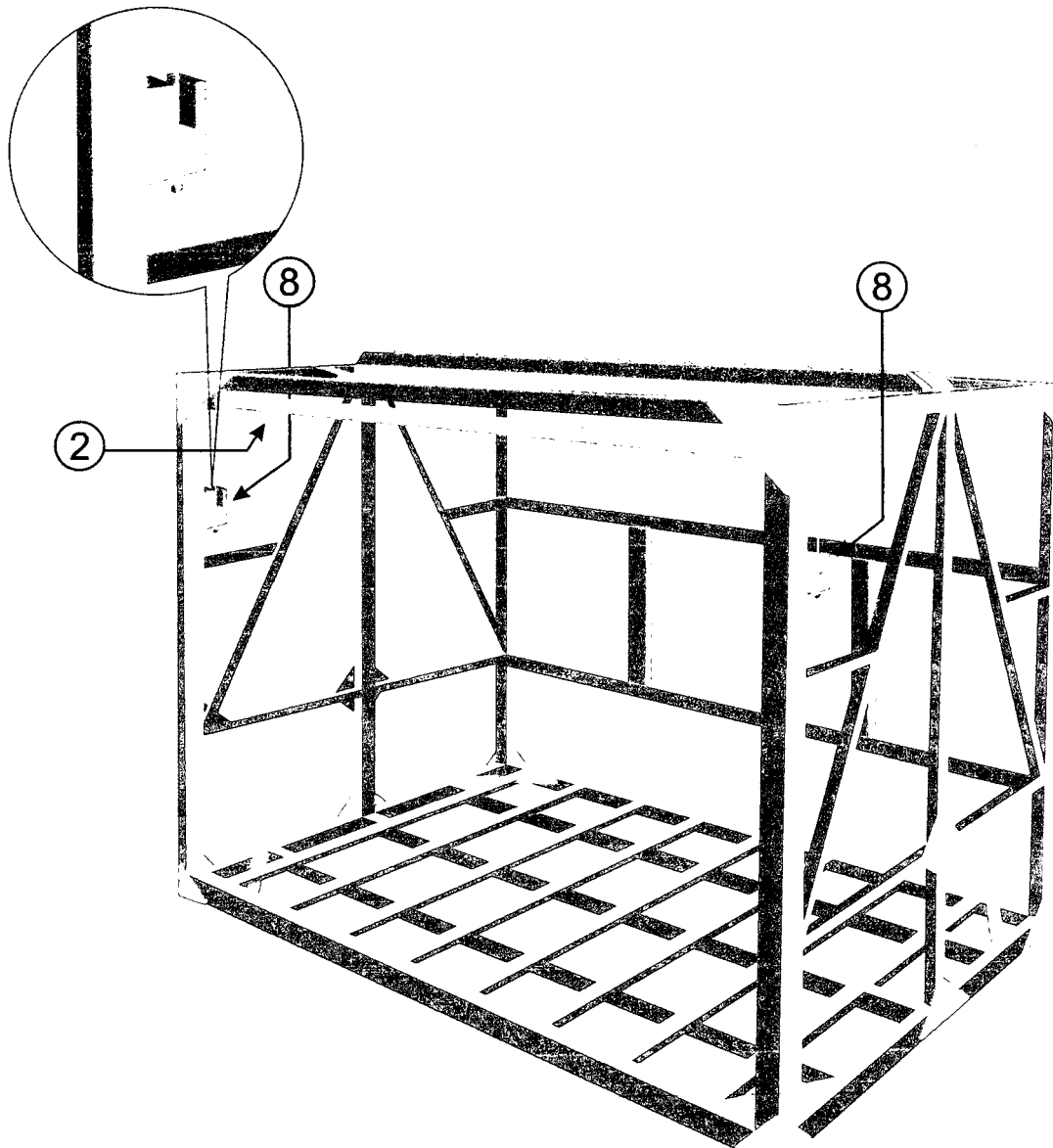


Fig. 4

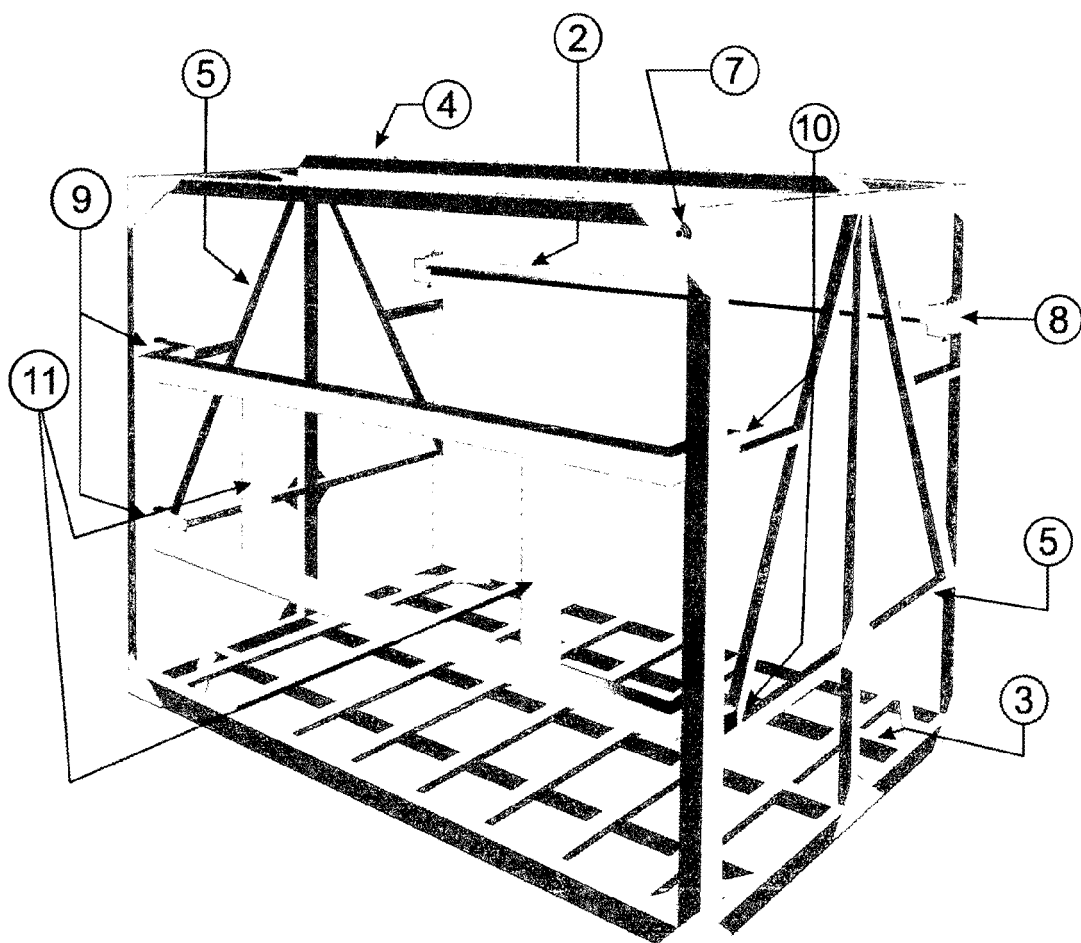




Fig. 5

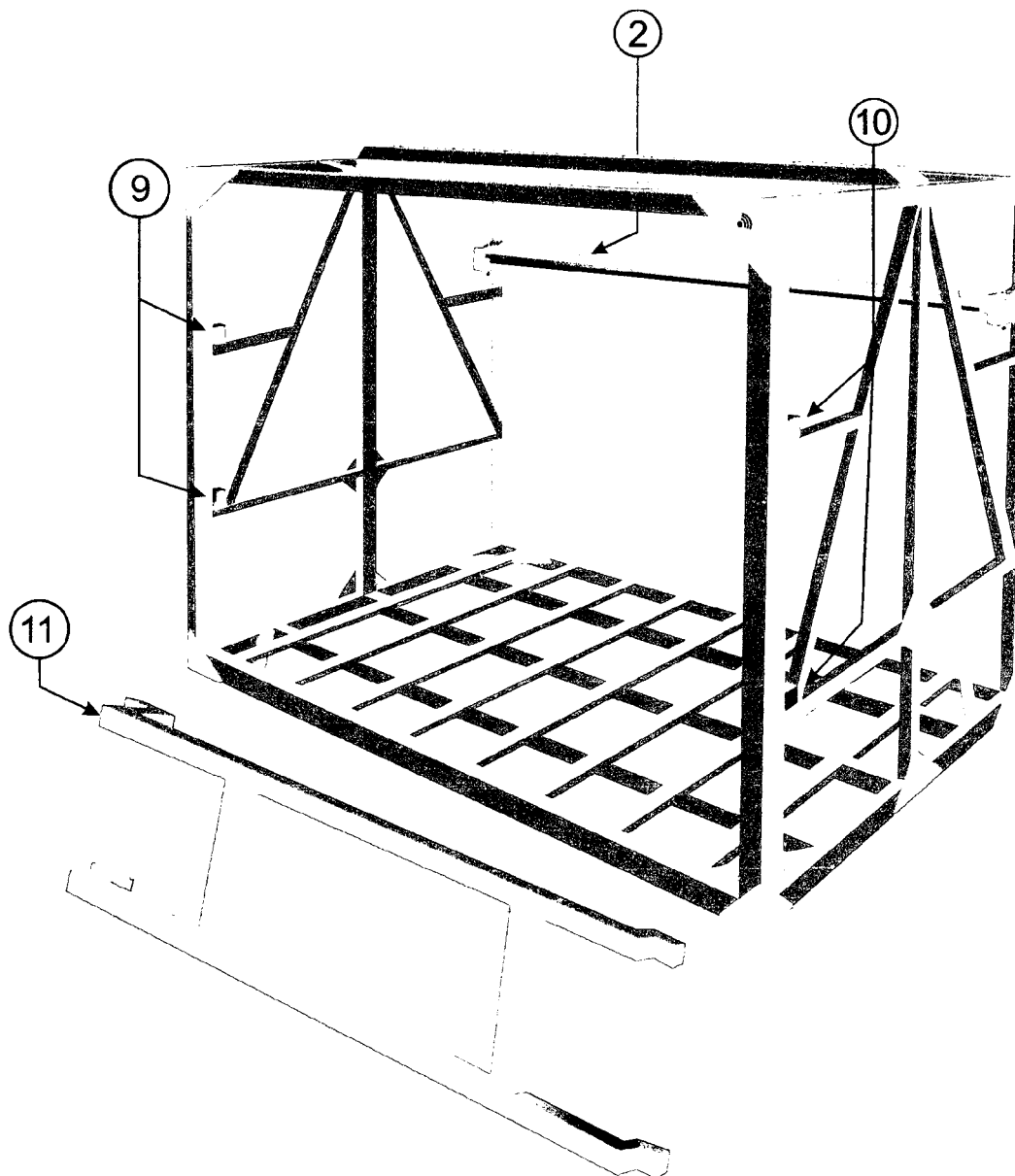


Fig. 6

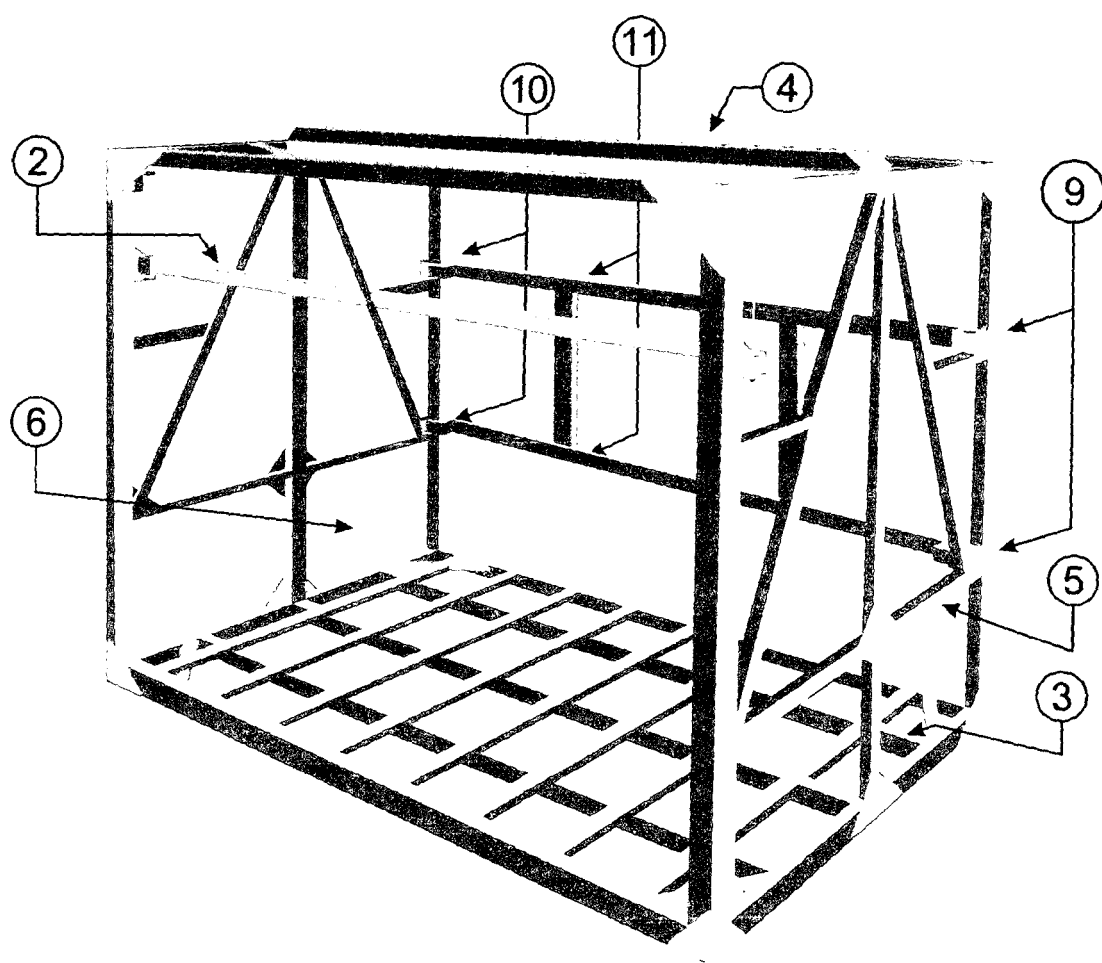


Fig. 7

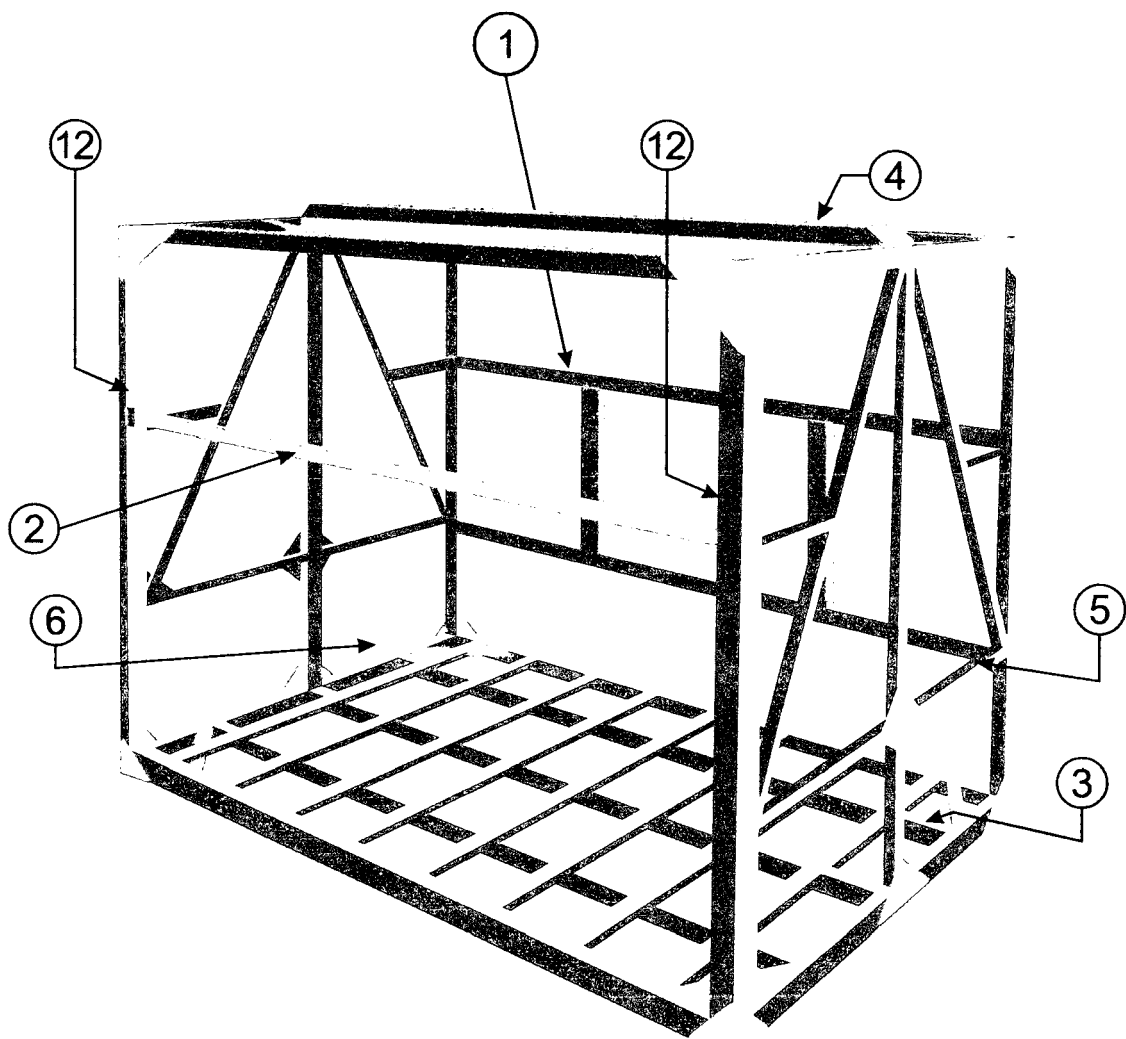
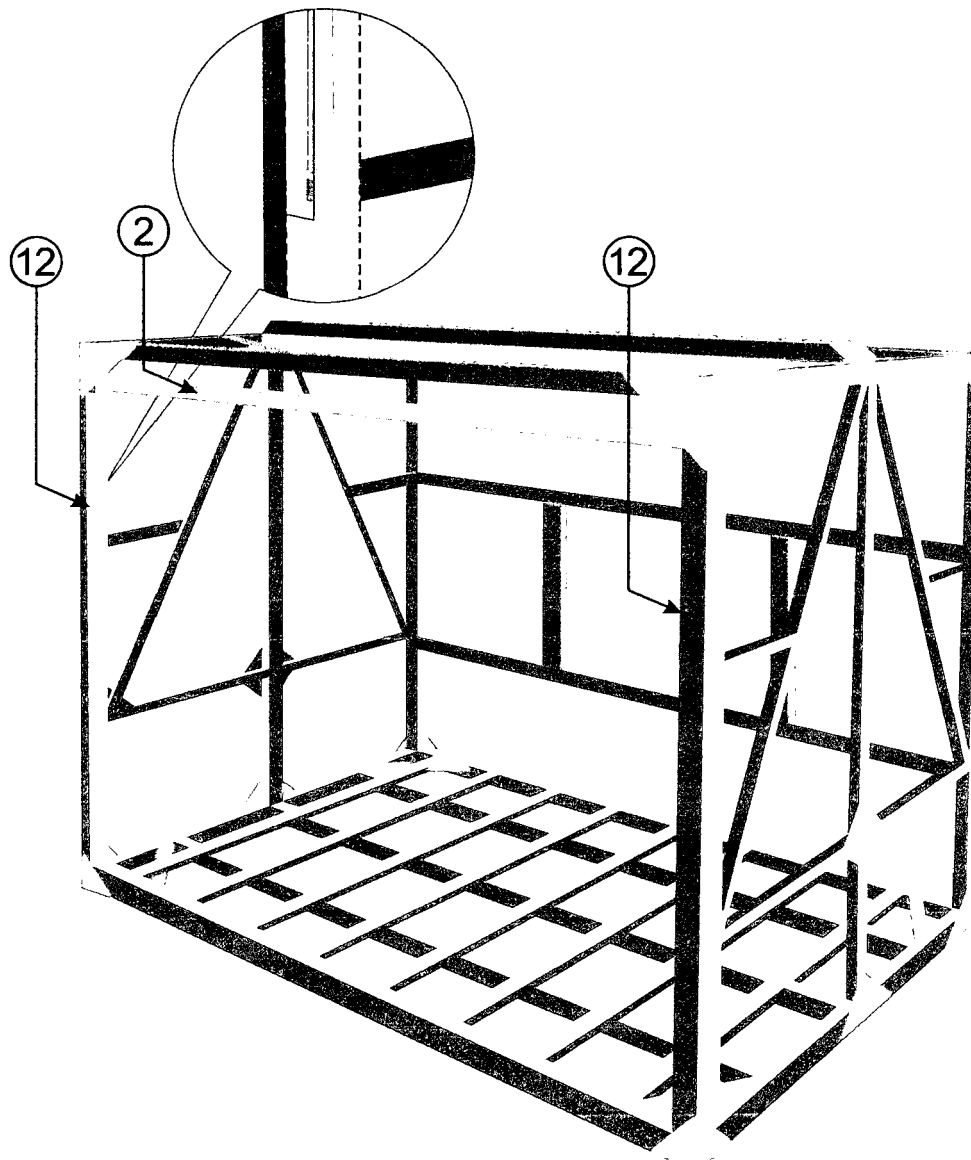


Fig. 8





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Application Number  
EP 08 39 8004

| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | BE 767 073 A1 (KONINKL NL MASCHF V H E H BEGE) 1 October 1971 (1971-10-01)<br>* page 3, last paragraph - page 6, last paragraph; figures 1-5 * | 1-7                              | INV.<br>B65D19/10                       |
| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | US 2005/107092 A1 (CHARYCH HAL [US] ET AL) 19 May 2005 (2005-05-19)<br>* paragraph [0014]; figures 1-5 *                                       | 1-7                              |                                         |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DE 82 29 199 U1 (SAUERSTOFFWERK WESTFALEN AG [DE]) 16 December 1982 (1982-12-16)<br>* page 7, line 26 - page 9, line 4; figures 1-3 *          | 1-7                              |                                         |
| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                |                                  | TECHNICAL FIELDS SEARCHED (IPC)         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                |                                  | B65D                                    |
| Place of search                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                | Date of completion of the search | Examiner                                |
| Munich                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                | 12 November 2008                 | Derrien, Yannick                        |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone<br/> Y : particularly relevant if combined with another document of the same category<br/> A : technological background<br/> O : non-written disclosure<br/> P : intermediate document</p> <p>T : theory or principle underlying the invention<br/> E : earlier patent document, but published on, or after the filing date<br/> D : document cited in the application<br/> L : document cited for other reasons<br/> &amp; : member of the same patent family, corresponding document</p> |                                                                                                                                                |                                  |                                         |

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
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12-11-2008

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