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(54) **OPEN CONTAINER WITH SWING LID**

(57) Open container with swing lid, comprising a rectangular base platform (2); posts (3) at the corners of the base platform (2) with corresponding corner pieces (4); a pair of stiffening struts (5) on the shorter sides of the base platform (2) arranged between the base platform (2) and the posts (3) at the corners of the shorter sides;

a strut (6) between the pair of posts (3) on one of the longer sides of the base platform (2) and close to the base platform (2); a swing lid (7) structure, with a hollow semi-cylindrical configuration, hinged to the strut (6); and at least one hydraulic cylinder (8) to operate the swing lid (7) structure.

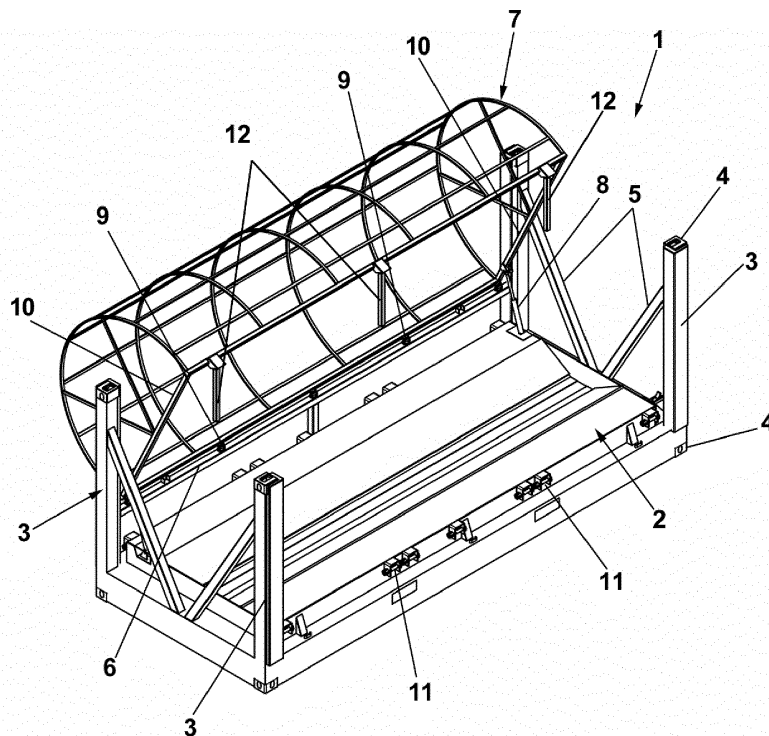


FIG.3

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Description**OBJECT OF THE INVENTION**

[0001] This invention refers to an open container with swing lid, of the type of containers constituted by a body defined by a base platform and corresponding posts at the corners, the essential object of which is, on the one hand to facilitate the loading and unloading of the merchandise when the lid is in the open position, and on the other hand to protect the merchandise placed on the base platform when it is in the closed position.

FIELD OF APPLICATION

[0002] This specification describes an open container with swing lid, for application in the transport of merchandise, in particular coils, by sea, rail, land and air.

BACKGROUND OF THE INVENTION

[0003] As is known in the market, widely different types of containers are used, and as such their measurements and characteristics are usually defined by the type of cargo to be transported.

[0004] Thus, one type of platform container is the type called "flat rack" which, in turn, can have fixed front panels, no front panels, or foldable front panels, leaving the roof and sides open to allow loading, either through the roof or the sides. Thus, starting from these considerations, there are numerous containers formed of a base platform and the four posts at its corners, with the corresponding positioning corner pieces and anchoring. One such container is described in patent document ES 2 257 896, which describes a mobile cargo container/chest with the respective corner pieces at its corners for positioning and anchoring, with open sides and roof, in such a way that the two front walls of the mobile container/chest can rotate in relation to the lower part and each of them is activated by at least one cylinder; these act as support, assembly, fixing and tensing elements for a canvas which covers the roof, between the two fronts, and is arranged between both sides allowing, when empty, with the front walls flat against the platform, the transport of up to seven units of mobile containers/chests.

[0005] Patent document with publication number ES 2 300 167 B1 describes a mobile cargo container/chest which has corner pieces at its corners for positioning and anchoring, and which has open sides and roof, so that on the upper part of the two front walls, which are hinged in relation to their lower side, a tarpaulin is fixed which, in turn, is fixed to the inner face of the front walls under the rim of the upper corner pieces; a hollow is left on the inner face of the two front walls for the positioning and anchoring of a tarpaulin for closing, leaving the upper corner pieces free for stacking.

[0006] Finally, we might consider patent document with publication number ES 2 317 726 B1 under the same

heading as this report, like the other two documents, which describes an open container, constituted by a base platform with finished corner pieces for handling and anchoring, in such a way that the open container has, in a centred position in relation to its transversal axis and on both sides, a pair of attached pieces; the first piece is finished off in a corner piece for handling, while the second piece is finished off with anchoring "twist-locks" in such a way that the handling corner pieces and the moving anchoring "twist-locks" are 20 feet apart, and the end pieces, which are 40 feet apart, there are fixed anchoring "twist-locks".

DESCRIPTION OF THE INVENTION

[0007] This report describes an open container with swing lid, which comprises:

- a rectangular base platform;
- posts at the corners of the base platform, with each post comprising, in turn, a corner piece;
- a pair of stiffening struts on the shorter sides of the base platform arranged between the base platform and the posts at the corners of the shorter sides;
- a strut between the pair of posts on one of the longer sides of the base platform and close to the base platform;
- a lid structure, with a hollow semi-cylindrical configuration, hinged to the strut and,
- at least one hydraulic cylinder to operate the lid structure.

[0008] In this way, with the swing lid structure in its open position, one of the longer sides and the roof of the container will remain free, facilitating the handling of the merchandise through the side or through the roof.

[0009] The side of the lid structure opposite the side hinged to the strut comprises, at least, one freely rotating attached leg so that, in a preferred embodiment, it will have three legs and will allow the lid structure to remain stable in the horizontal position.

[0010] Meanwhile, the swing lid structure is closed on its side surface and its two bases, so that the closing of the lattice structure which forms it can be defined, for example, by a metal strip structure or by a tarpaulin.

[0011] In a preferred embodiment of the invention, the swing lid structure is operated by a pair of hydraulic cylinders arranged between the base platform and the shorter sides of the bases of the lid structure.

[0012] To complement the description being made below, and to make it easier to better understand the characteristics of the invention, this descriptive specification is accompanied by a set of drawings in which, for illustrative and not restrictive purposes, the most characteristic details of the invention are represented.

BRIEF DESCRIPTION OF THE FIGURES

[0013]

Figure 1. Shows a perspective view of the open container which is the object of the invention, in which can be seen the stiffening struts arranged on the shorter sides of the base platform between the latter and the posts at its corners, and the lid structure on its side hinged to the strut arranged between one of the pairs of posts of one of the longer sides of the base platform.

Figure 2. Shows a perspective view of the open container which is the object of the invention, in which can be seen the stiffening struts arranged on the shorter sides of the base platform between the latter and the posts at its corners, and the lid structure on the side opposite the one hinged to the strut, which presents three freely rotating legs attached to it and one of the cylinders which operates it.

Figure 3. Shows a perspective view of the open container with the lid structure in an intermediate open position, in which one of the operating cylinders can be seen, together with the three freely rotating legs attached to the side opposite the hinged one on the lid structure.

DESCRIPTION OF A PREFERRED EMBODIMENT

[0014] In light of the abovementioned figures and according to the numbering adopted, we can see how the open container 1 with swing lid is based on a conventional open container configured from a base platform 2 with a general rectangular configuration and posts 3 at the corners of the base platform 2 with corresponding corner pieces 4 for their positioning and anchoring.

[0015] From said configuration, the open container 1 comprises a pair of stiffening struts 5 on the shorter sides of the base platform 2 arranged between the latter and the posts 3 at the corresponding corners, and a strut 6 between the pair of posts 3 of one of the longer sides of the base platform 2, to which the swing lid structure 7 is hinged; said swing lid structure 7 has a lattice semi-cylindrical general configuration operated by at least one hydraulic cylinder 8.

[0016] In a preferred embodiment of the invention, the swing lid structure 7 hinged by means of hinges 9 to the strut 6 is operated by a pair of hydraulic cylinders 8 mounted between the base platform 2 and the sides 10 of the base of the swing lid structure 7.

[0017] Meanwhile, the swing lid 7 structure is closed on its side surface and on its two bases, for example, by a strip metal assembly or by a tarpaulin, in order to protect the products to be transported.

[0018] In this way, when the swing lid structure 7 is in its open position, one of the sides of the open container 1 remains open, as does the roof, thereby facilitating loading through both a side and the roof; when the swing

lid structure 7 is closed, the products or merchandise to be transported are protected.

[0019] Given that the open container 1 is preferably to be used for the transport of coils, and the base platform 1 has the corresponding "cradle" for positioning the coils, both the long sides of said base platform incorporate the corresponding anchor points for the fastening slings for the coils.

[0020] In reference to the figures, figure 1 shows how the swing lid structure 7 is attached in rotating fashion to the strut 6 by means of the hinges 9, and said lid 7 structure is operated by the pair of cylinders 8 assembled between the base platform 2 and the shorter sides 10 of the swing lid structure 7, which has a general hollow semi-cylindrical form.

[0021] The swing lid structure 7 has a lattice configuration and it will be closed by means of a metal strip assembly or a tarpaulin which will protect the merchandise.

[0022] In figure 2 of the designs, it can be seen how the side opposite that of the hinged joint of the lid structure 7 to the strut 6 has legs 12, attached to it with free rotation and which, in the closed position, allows it to remain in a perfectly horizontal position.

[0023] Similarly, and as can be seen in figure 3 of the designs, this embodiment allows them, when said lid structure 7 swings, to rotate freely and hang without protruding from the side outline of the open container 1, thus avoiding possible accidents.

Claims

1. Open container with swing lid which comprises:

- a rectangular base platform (2);
- posts (3) at the corners of the base platform (2) with corresponding corner pieces (4);

characterised in that it further comprises:

- a pair of stiffening struts (5) on the shorter sides of the base platform (2) arranged between the base platform (2) and the posts (3) at the corners of the shorter sides;
- a strut (6) between the pair of posts (3) on one of the longer sides of the base platform (2) and close to the base platform (2);
- a swing lid structure (7), with a hollow semi-cylindrical configuration, hinged to the strut (6); and,
- at least one hydraulic cylinder (8) to operate the swing lid structure (7).

2. Open container with swing lid, according to claim 1, **characterised in that** the side of the swing lid structure (7) opposite the side hinged to the strut (6) comprises at least one attached freely-rotating leg (12).

- 3. Open container with swing lid, according to claim 1, **characterised in that** the swing lid structure (7) with a general semi-cylindrical shape on its side surface, and on its two bases, is closed using a tarpaulin. 5
- 4. Open container with swing lid, according to claim 1, **characterised in that** the swing lid structure (7) with a general semi-cylindrical shape on its side surface, and on its two bases, is closed using a metal strip assembly. 10
- 5. Open container with swing lid, according to claim 1, **characterised in that** the swing lid structure (7) hinged to the strut (6) is operated by a pair of hydraulic cylinders (8) arranged between the base platform (2) and the sides of the swing lid structure (7). 15

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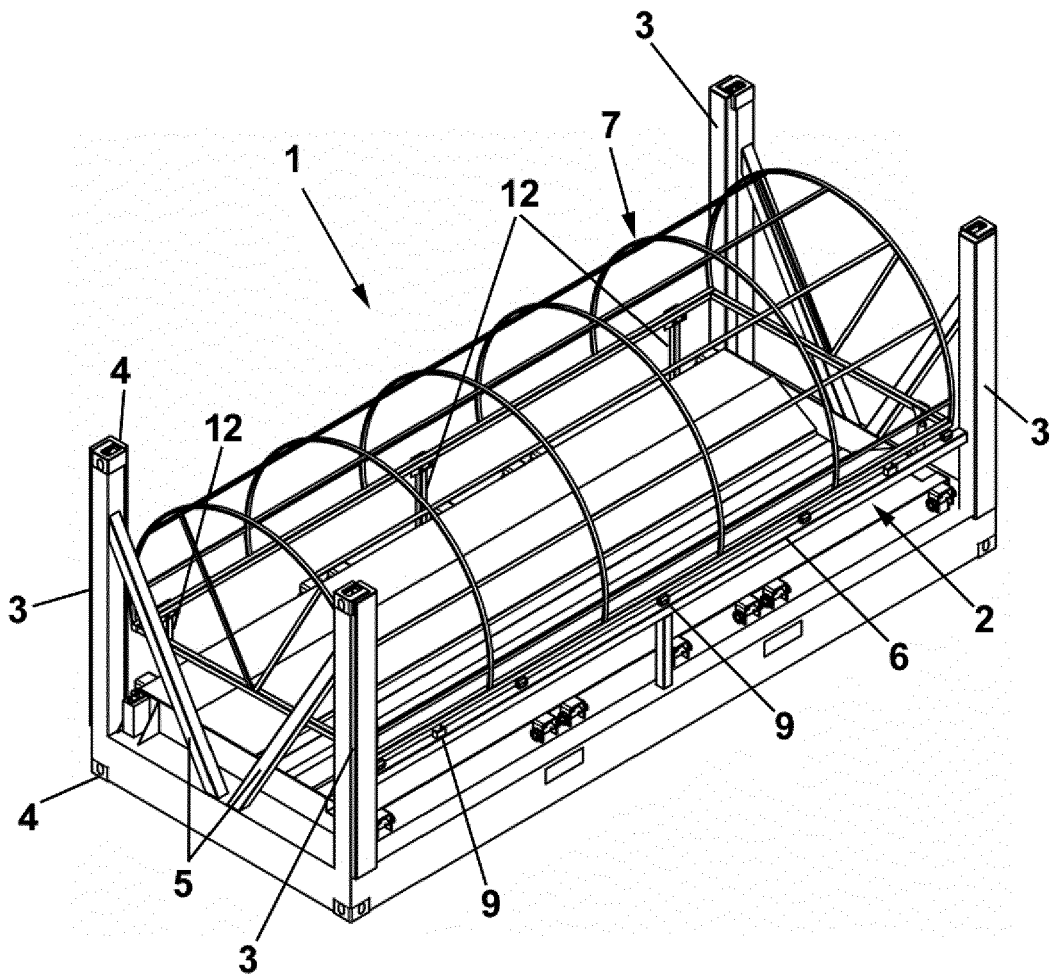


FIG.1

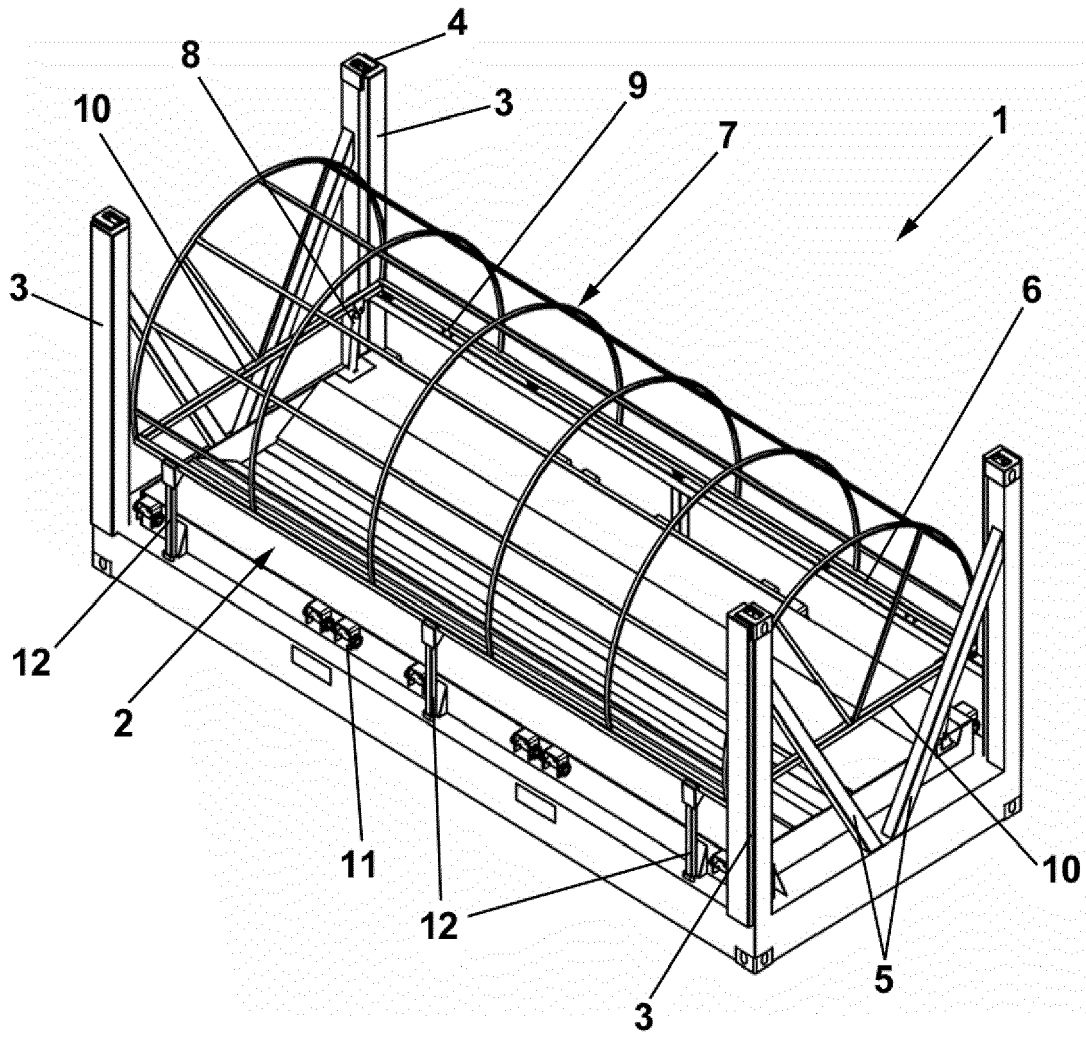


FIG.2

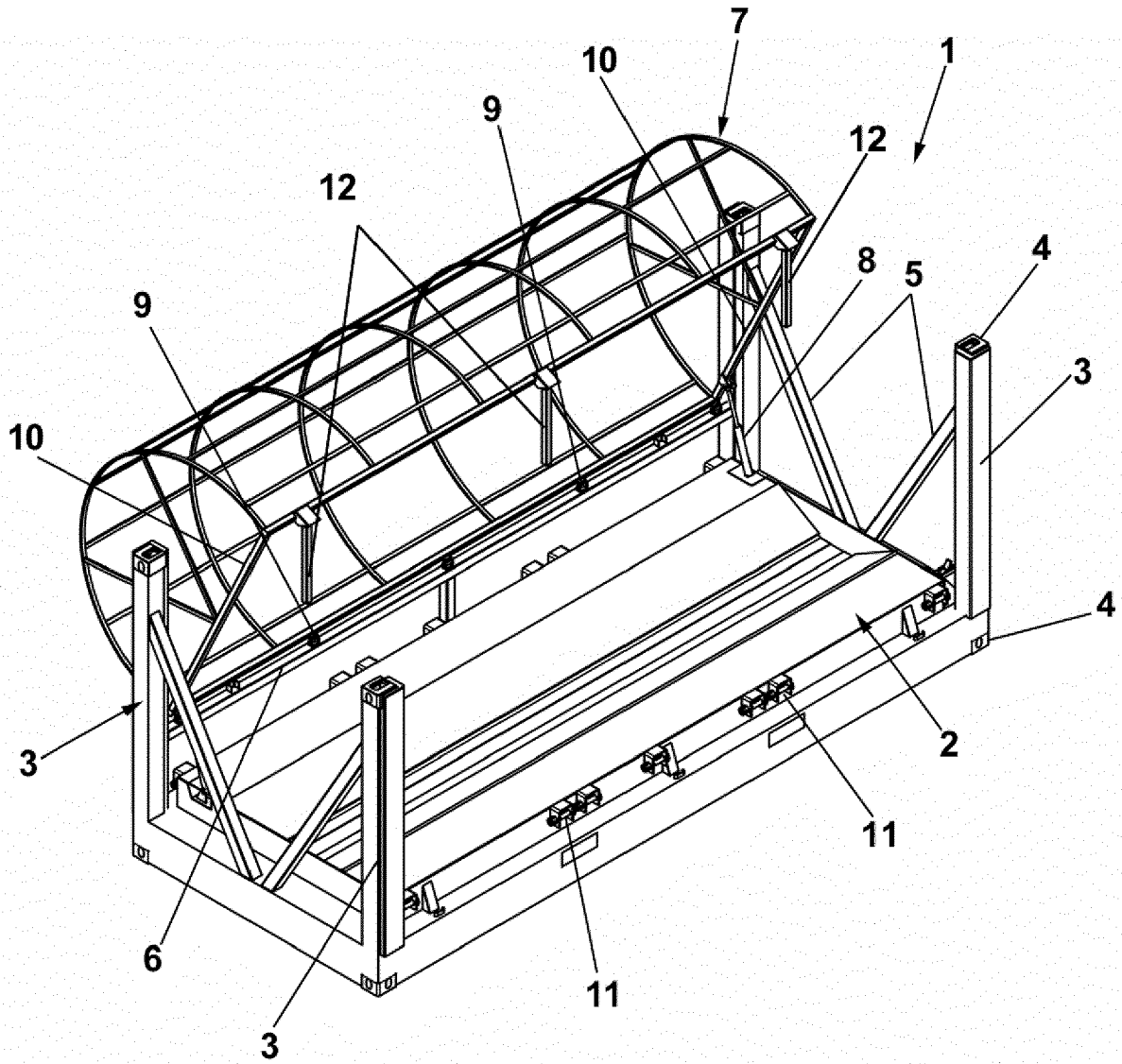


FIG.3



EUROPEAN SEARCH REPORT

Application Number
EP 17 15 2129

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| The present search report has been drawn up for all claims | | | |
| Place of search Munich | | Date of completion of the search 25 July 2017 | Examiner Piolat, Olivier |
| 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 (P04/C01)

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

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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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