(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 247 515 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
16.05.2012 Bulletin 2012/20

(21) Application number: **09715755.6**

(22) Date of filing: **24.02.2009**

(51) Int Cl.:
B65D 88/52 *(2006.01)* ***B65D 8/12*** *(2006.01)*
B65D 85/48 *(2006.01)*

(86) International application number:
PCT/EP2009/052161

(87) International publication number:
WO 2009/106521 (03.09.2009 Gazette 2009/36)

(54) **CONTAINER**

BEHÄLTER

CONTENEUR

(84) Designated Contracting States:
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 SE SI SK TR

(30) Priority: **25.02.2008 EP 08101943**

(43) Date of publication of application:
10.11.2010 Bulletin 2010/45

(73) Proprietor: **AGC Glass Europe**
1170 Bruxelles (Watermael-Boitsfort) (BE)

(72) Inventor: **MASSA, Gilles**
B-6040 Jumet (BE)

(74) Representative: **Verbrugge, Vivien François Emeric et al**
AGC Flat Glass Europe SA
Intellectual Property Department
R&D Centre
Rue de l'Aurore, 2
6040 Jumet (BE)

(56) References cited:
DE-U1- 9 012 097
FR-A- 1 331 060
GB-A- 2 295 381
GB-A- 2 376 014

EP 2 247 515 B1

Description

[0001] The invention relates in general to a platform-type container. In particular, it relates to a platform-type container that is adjustable during the stages of loading objects, transporting said objects and of returning and/or storing said empty container. Furthermore, the invention relates to a method of loading such a container and to the use thereof.

[0002] Platform-type containers, commonly referred to as flat containers, are often fitted for heavy freight loads that require them to be loaded via the top or through the sides of the container.

[0003] Existing containers of whatever type are of standard size and their production is subject to international standards. Their shape, external dimensions, the maximum mass that they can carry and the handling grips are precisely defined in order to render the container as multimodal as possible while providing maximum volume. It has to be able to go everywhere, be transportable equally by road, train or ship. Therefore, it must be integrated into the loading gauges for road, rail or sea. In particular, two standard container lengths have been defined: 20 feet (6.06 m) and 40 feet (12.19 m).

[0004] Unfortunately, standardised flat containers including platform-type containers are not suited to the transport of certain objects of a size that only slightly exceeds the internal dimensions of said containers. Thus, for example, if one considers the transport of glass sheets of large dimensions, most frequently 6 m x 3.21 m, the standard 20 feet (6.06 m) container is not suitable because its minimum internal length, a measurement commonly specified for all types of container, is less than 5.8 m. Thus, even if its external length is more than 6 m, glass sheets cannot be loaded into the container, either via the top or through one of its sides. The standard 40 feet (12.19 m) container is much too large for the transport of such glass sheets.

[0005] The prior art shows that there exist platform-type containers that are referred to as "foldable", or in other words that can be folded when they are empty. These foldable containers then have an economical advantage since, when folded, they have a minimum volume for their return and/or storage. Moreover, they are mostly stackable once folded. For example, document DE 901209741 discloses a container according to the preamble of claim 1.

[0006] The object of the present invention aims to benefit from the economical advantage of the already known foldable container while avoiding the above-mentioned disadvantages of standardisation of this type of container for the transport of objects of a size that only slightly exceeds the internal dimensions of said container. On this basis, the present invention provides a container that has several configurations that allow it to be adjustable

(i) for loading objects of a size that slightly exceeds the minimum internal length of said container,

(ii) for transport because of its shape and/or dimensions and its handling grips that are identical to those of standard containers, (iii) for return and/or economical storage of the empty container.

[0007] Therefore, the container according to the present invention differs from containers known in the art on the basis that it enables a particular configuration to be adopted for loading objects of a size that exceeds the internal dimensions of said container in its configuration adapted to the transport of said objects.

[0008] According to a first aspect, the present invention provides a container as described in claim 1.

[0009] According to a second aspect, the invention provides a method for loading flat glass sheet as described in claim 9.

[0010] According to a third aspect, the present invention also relates to the use of a container according to the invention for the transport of flat glass sheets as described in claim 11.

[0011] Particular embodiments of the invention are described in dependent claims.

[0012] Other features of the container according to the present invention will be outlined in the following description with reference to the attached drawings (not to scale), in which

Figure 1 is a view in vertical section of the longest side of the container in so-called transport configuration.

Figure 2 is a view in vertical section of the shortest side of the container in so-called transport configuration.

Figure 3 is a similar view to Figure 1 with the container in a configuration adapted to loading an object with a length greater than the minimum internal length of said container when it is in a configuration adapted to transport.

Figure 4 is a view similar to Figure 1 with the container folded up.

[0013] According to the invention, the container is a platform-type container. With reference to Figures 1 and 2, the container is formed from

(i) a dimensionally stable rectangular base intended to receive the objects to be transported, referred to as loading platform (1), which is itself formed from a rigid and dimensionally stable frame (2) enclosing a floor (3)fixed to said floor (2),

(ii) 4 articulated angle posts (5), each at one of the corners of the platform (1), and

(iii) 2 opposing rigid rectangular partitions (6) fixing the 4 angle posts (5) in pairs in the width of the platform (1) in order to form two side walls.

[0014] According to the invention, the loading platform (1) is formed from a rectangular frame (2) enclosing a

floor (3). This frame according to the invention comprises two beams that form the two longest sides of the frame and two rectangular panels, each forming one of the two smallest sides of the frame. The two rectangular panels according to the invention preferably have a thickness of a minimum of 4 mm and 8 mm at maximum. The two rectangular panels according to the invention are preferably made of steel.

[0015] According to the invention, the angle posts (5) are cuboidal and articulated thanks to the fixture of their base to a linkage system (4) pivoting in a plane parallel to the longest sides of the frame (2). The linkage systems (4) are respectively arranged at each of the 4 corners of the frame (2) and are fixed thereto. The angle posts (5) are fixed in pairs in the width of the platform by a rigid rectangular partition (6). According to the invention, no partition connects the angle posts on the side faces located on the longest sides of the container. Because of this, each of the partitions forming a side wall cause the two linkage systems (4) to which it is fixed to pivot in identical manner.

[0016] According to the invention, the height of the angle posts (5) must be less than half the length of the loading platform (1).

[0017] The container according to the invention can be characterised by opening angles. Opening angle is understood to mean the angle defined by any of the two side walls with the floor (3). The container according to the invention is thus characterised by two opening angles.

[0018] The container of the invention has traditional locking means for the two opening angles that, independently of one another, can only have two values equal to 0° and 90° respectively. The term traditional locking means relates to the locking of a foldable container that is already well known in the transport sector.

[0019] According to the invention, the container also has additional locking means for at least one of the two opening angles at a value greater than 90° and at maximum equal to 180°. The opening angle preferably reaches a value equal to 120° at maximum.

[0020] According to the invention, the two opening angles of the container can be locked at an identical or different angle value by means of the additional locking means.

[0021] The traditional locking means according to the invention that enable locking of the opening angles at a value of 0° or 90° can be different from or identical to the additional means that enable locking of the opening angle at a value greater than 90°. The traditional locking means are preferably identical to the additional locking means.

[0022] The pivoting linkage systems (4) according to the invention that are arranged at each of the 4 corners of the frame (2) and are fixed thereto can be of several types. For example, as illustrated in the figures, a linkage system according to the invention can be formed:

(i) from a first rectangular and rigid panel secured to the outside face of one of the longest sides of the frame (2) and to the outside face of one of the angle posts (5),
(ii) from a second rectangular and rigid panel secured parallel to the first plane member on the inside face of the same longest side of the frame (2) and to the inside face of the same angle post (5), and
(iii) from an articulation means (8) integral to said system (4), wherein this articulation means (8) can be formed, for example, by a pivoting axis passing through the angle post in parallel to the partition (6) and fixed to each panel, or from two rivets, which are secured to each of the panels and on which said angle post is mounted to pivot.

[0023] In a particular embodiment of the invention, the locking means form part of the pivoting linkage systems (4). In this embodiment, the locking means are preferably of the rotary lock type, also commonly called twist lock, currently used in the handling and stowage of standard containers on the means of transport.

[0024] The container according to the invention can adopt a plurality of configurations depending on the values of the opening angles locked by the locking means of said container. In particular, the container according to the invention can be locked in at least 6 configurations:

a) when the two opening angles are equal to 90°,
b) when the two opening angles are equal to 0°,
c) when one opening angle is equal to 90° and the other is equal to 0°,
d) when one opening angle is greater than 90° and the other is equal to 90°,
e) when one opening angle is greater than 90° and the other is equal to 0°,
f) when the two opening angles are greater than 90°.

[0025] According to an embodiment of the invention, some of these configurations are specially adapted to the different steps necessary for the transport of objects by container, i.e.

a) loading of the objects into the container,
b) transport therein,
c) return and/or storage of the empty container.

[0026] According to the invention, when the two opening angles are equal to 90°, the container is in a configuration referred to as "open transport configuration". This configuration shown schematically in Figure 1 effectively gives the container a standard cuboidal form adapted to the transport of said container.

[0027] According to the invention, when at least one opening angle is greater than 90° and the other opening angle is equal to or greater than 90°, the container is in a configuration referred to as "open loading configuration". This configuration shown in Figure 3 in fact allows an object, whose largest dimension is slightly larger than

the minimum internal length and smaller than the maximum internal length of the container in the open transport configuration, to pass into the interior of the container.

[0028] Minimum internal length is understood to mean the shortest distance between the two upper corner elements located on the same longest side of said container in the open transport configuration. Maximum internal length is understood to mean the distance between the two opposing rectangular partitions (6) of said container in the open transport configuration.

[0029] The container according to the invention can also be used to transport objects having dimensions that are smaller than the minimum internal dimensions of said container. In this case, the open loading configuration is not used and the objects are loaded into the container via the top or at one of its longest sides when it is in the open transport configuration.

[0030] According to an embodiment of the invention, the open loading configuration is obtained when only one opening angle is greater than 90°.

[0031] According to another embodiment of the invention, the open loading configuration is obtained when both opening angles are greater than 90°. In this latter embodiment, the opening angles can be identical or different.

[0032] According to the invention, when the two opening angles are equal to 0°, the container is folded up or is in a configuration referred to as "closed (transport) configuration". This configuration shown schematically in Figure 4 occupies a minimum volume and allows return and/or economical storage of the empty container.

[0033] The pivoting linkage systems (4) according to the invention allow the container to change from one locked configuration to another. In particular, it can change from an open loading configuration to an open transport configuration once loaded. When it is emptied of its load, it can be locked in closed configuration for its return or storage, then positioned once again in one open locked configuration or the other for a subsequent use.

[0034] The rectangular rigid partitions (6) of the container according to the invention preferably have a thickness of a minimum of 4 mm and 8 mm at maximum. The rectangular rigid partitions are preferably made of steel.

[0035] The rectangular rigid partitions (6) according to the invention preferably have a maximum height equal to the height of the angle posts (5).

[0036] The container according to the present invention has a maximum number of 8 corner elements (7), also commonly referred to as corner fittings, fixed to each of the 4 corners of the frame (2) and at the end of each of the 4 angle posts (5) opposite their base. These corner fittings (7) enable handling and stowage of the container when it is locked in the open transport configuration.

[0037] The corner fittings (7) according to the invention are standardised, i.e. are identical to those of standard containers. Their dimensions and their horizontal and vertical spacing are defined most precisely by standard ISO 668, since they are not only used for handling by specialised trucks, but also, and above all, for stowing containers on the decks of ships, on lorries or rail wagons.

[0038] Moreover, according to a particular embodiment of the invention, the container can be stacked in the open transport configuration. Its external height must therefore be adapted to the size of the object to be transported, or in other words it must be at least slightly more than the height of said object.

[0039] In addition, according to the invention, the height from the base of an angle post (5) to the top of the corner fitting secured to said angle post (5) must be less than half the length of the loading platform (1) in order to permit the closed configuration, or in other words to permit an opening angle equal to 0° to be obtained.

[0040] According to a further embodiment of the invention, the container has the height of a standard container when it is in the open transport configuration.

[0041] According to an additional second embodiment of the invention, when it is in the open transport configuration, the container has a height that is greater than the height of a standard container, but equal to or less than half the length of the platform (1).

[0042] According to an additional embodiment of the invention, the container has a height that is less than the height of a standard container when it is in the open transport configuration.

[0043] The angle posts (5) according to the invention can each have a handling grip (9). These handling grips (9) are preferably located on the upwardly directed face of each of the angle posts when the two opening angles are equal to 0°. These handling grips thus allow the container to be gripped by the top when it is locked in the closed configuration.

[0044] According to the invention, when it is locked in the closed configuration, the container occupies a volume that is at least four-times smaller than the volume of the same container when locked in the open transport configuration. This embodiment of the invention enables return and/or economical storage of the empty container, as already mentioned above.

[0045] Moreover, when locked in the closed configuration, the container according to the invention can be stacked for transport and/or storage.

[0046] According to an embodiment of the invention, the container has hooking means for a tarpaulin for protection of its load. According to this embodiment, these hooking means for the tarpaulin correspond to (a) a bar secured transversely to the upper end of each of the two rectangular partitions (6) and/or (b) four bars respectively secured to each of the angle posts (5) and/or (c) at least two bars respectively secured along each of the longest sides of the frame (2).

[0047] According to an embodiment of the invention, the platform (1) of the container has the length and the width of that of a standard container. When it is in the open transport configuration, the container according to the invention thus provides an arrangement that benefits from the advantages of standardisation for transport by

virtue of its dimensions, its cuboidal shape and its handling grips that are identical to those of the known standard containers.

[0048] In addition, in this latter embodiment of the invention, the floor (3) of the loading platform (1) of the container can have structures (10) that enable said container to be transported on a cellular-type container ship. This is one of the most commonly used types of ship for container transport by sea.

[0049] The container preferably has a minimum internal length that is less than or equal to 6 metres in the open transport configuration. In particular, a standard 20 feet container in fact has a minimum internal length of 5.70 m although it has a maximum internal length of more than 6 m.

[0050] In an embodiment of the invention, when the container in the open transport configuration has the length of a standard 20 feet container, the fact that at least one opening angle is locked at a value greater than 90° (open loading configuration) allows the minimum internal length of said container to be increased beyond 5.70 m. In particular, when the container in the open transport configuration has the length of a standard 20 feet container (external length: 6.06 m, minimum internal length: 5.70 m), the open loading configuration allows a minimum internal length of more than 6.02 metres to be obtained.

[0051] The present invention also provides a method for loading objects into a container according to the invention.

[0052] The objects loaded using the method according to the invention have a larger dimension or a length that is slightly greater than the minimum internal length of the container in the open transport configuration.

[0053] The objects loaded using the method according to the invention are preferably elongated in shape.

[0054] In particular, the loading method according to the invention comprises the following consecutive steps:

(i) locking one of the opening angles of the container at a value greater than 90° using the additional locking means;
(ii) locking the other opening angle at 90° using the traditional locking means or at a value greater than 90° using the additional locking means;
(iii) inserting said objects via the top of the container;
(iv) placing the objects on the loading platform and possibly securing them;
(v) locking the container at two opening angles equal to 90° using the traditional locking means.

[0055] The insertion and placement of elongated objects in the container is preferably conducted so that the length of said objects is parallel to the length of the platform (1). In particular, this arrangement is necessary when the length of the objects is larger than the width of the container.

[0056] The insertion of the objects into the container is conducted via the top of the container. The insertion of the objects into the container is preferably conducted vertically via the top. The insertion can also be conducted simultaneously sideways and via the top.

[0057] Using the method of the invention, once the consecutive steps (i) to (v) have been performed, the loaded container can be handled, stowed, stacked and stored. It can also be covered by a tarpaulin to protect its load.

[0058] According to an embodiment of the invention, when the container has a minimum internal length of less than 6 metres and a maximum internal length of more than 6 metres in the open transport configuration, the method allows elongated objects with a length of less than or equal to 6 metres to be loaded into the container.

[0059] In particular, the method allows flat glass sheets with a length of less than or equal to 6 metres to be loaded.

[0060] In another embodiment of the invention, the tarpaulin possibly used to protect the load of the container can be housed in the space left between the floor (3) and the side walls when the container is in the closed configuration. The tarpaulin can thus be easily brought to the starting point of the loaded container.

[0061] The invention also relates to the use of a container according to the invention for the transport of flat glass sheets with a length of less than or equal to 6 m.

[0062] The use of the container according to the invention also provides for the use of a trestle for transporting flat glass sheets. The trestle is the support commonly used for the transport of flat glass sheets in general. For transporting flat glass sheets of larger dimension (3.21 m x 6 m), the trestle is preferably made of metal.

[0063] In particular, the invention provides for the use of a standard trestle that is modified. A first modification of the standard trestle relates to it being rendered dismountable so that it can be housed in the space left between the floor (3) and the side walls when the container is in the closed configuration. The trestle can thus be easily brought to the starting point of the container and then re-assembled so that it can be reused for a subsequent load. The tarpaulin possibly used to protect the load of the container during transport can be housed there at the same time as the trestle. A second modification of the standard trestle provided by the invention relates to the distance between the internal feet of said trestle being increased 5 to 10% without increasing the total length of the trestle. The thus modified trestle can then be placed, and possibly secured, directly on the floor (3) avoiding the structures (10) that enable the transport of the container in a cellular type ship with cell guides. This modification enables the increase in height of the container according to the invention, in relation to the standard height, necessary for stacking said container containing flat glass sheets of large dimensions to be reduced.

Claims

1. Container comprising

   (i) a loading platform (1) formed from a rigid rectangular and dimensionally stable frame (2) enclosing a floor (3) and fixed to said floor (3),
   (ii) 4 linkage systems (4) pivoting in a plane parallel to the longest sides of the frame (2) respectively arranged at each of the 4 corners of the frame (2) and fixedl thereto,
   (iii) 4 articulated angle posts (5) respectively fixed to each of the linkage systems (4) at their base.
   (iv) 2 opposing rigid rectangular partitions (6) fixing the 4 angle posts (5) in pairs in the width of the platform (1) in order to form two side walls, wherein each of the walls causes the two linkage systems (4) to which it is fixed to pivot in identical manner,
   (v) traditional locking means for the two opening angles defined by each of the side walls with the floor (3) at 2 values independent of one another equal to 0° and 90°,
   characterised in that it is fitted with additional locking means for at least one of the two opening angles at a value greater than 90° and at maximum equal to 180°.

2. Container according to claim 1, **characterised in that** it comprises a standardised corner fitting (7) at each of the 4 corners of the frame (2) and at the end of each of the 4 angle posts (5) opposite their base.

3. Container according to one of the preceding claims, **characterised in that** the angle posts (5) each have a handling grip (9).

4. Container according to one of the preceding claims, **characterised in that** it has hooking means for a tarpaulin.

5. Container according to one of the preceding claims, **characterised in that** its platform (1) has the length and width of that of a standard container with a length of 20 feet or 40 feet.

6. Container according to claim 5, **characterised in that** the platform (1) has structures (10) that allow said container to be transported on a cellular-type container ship.

7. Container according to one of the preceding claims, **characterised in that** the two opening angles are equal to 90°, and that it has the height of a standard container with a length of 20 feet or 40 feet.

8. Container according to claims 1 to 6, **characterised in that** the two opening angles are equal to 90°, and that it has a height greater than the height of a standard container with a length of 20 feet or 40 feet.

9. Method for loading objects into a container according to one of claims 1 to 8, **characterised in that** the length of said objects is slightly greater than the minimum internal length of the container, and that it comprises the following consecutive steps:

   (i) locking one of the opening angles of the container at a value greater than 90° using the additional locking means;
   (ii) locking the other opening angle at 90° using the traditional locking means or at a value greater than 90° using the additional locking means;
   (iii) inserting said objects via the top of the container;
   (iv) placing the objects on the loading platform and possibly securing them;
   (v) locking the container at two opening angles equal to 90° using the locking means.

10. Method according to claim 9, **characterised in that** the objects are flat glass sheets with a length of less than or equal to 6 metres.

11. Use of a container according to one of claims 1 to 8 for the transport of flat glass sheets with a length of less than or equal to 6 metres.

Patentansprüche

1. Behälter, der umfasst:

   (i) eine Ladeplattform (1), die aus einem starren rechteckigen und dimensionsstabilen Rahmen (2), der einen Boden (3) umschließt und an dem Boden (3) befestigt ist, ausgebildet ist,
   (ii) 4 Verbindungssysteme, die jeweils in einer Ebene parallel zu den längsten Seiten des Rahmens (2) an jeder der 4 Ecken des Rahmens (2) angeordnet und daran befestigt sind,
   (iii) 4 gelenkige Eckpfosten (5), die jeweils an jedem der Verbindungssysteme (4) an deren Basis befestigt sind,
   (iv) 2 gegenüberliegenden starre rechteckige Trennwände (6), welche die 4 Eckpfosten (5) in Paaren in der Breite der Plattform (1) befestigen, um zwei Seitenwände zu bilden, wobei jede der Wände bewirkt, dass die zwei Verbindungssysteme (4), an denen sie befestigt ist, in identischer Weise schwenken,
   (v) herkömmliche Arretiermittel für die zwei Öffnungswinkel, die durch jede der Seitenwände mit dem Boden (3) bei 2 voneinander unabhängigen Werten gleich 0° und 90° definiert werden,

dadurch gekennzeichnet, dass er mit zusätzlichen Arretiermitteln für wenigstens einen der zwei Öffnungswinkel bei einem Wert größer als 90° und bei einem Maximum gleich 180° ausgestattet ist.

2. Behälter nach Anspruch 1, **dadurch gekennzeichnet, dass** er einen normierten Eckbeschlag (1) an jeder der 4 Ecken des Rahmens (2) und an dem Ende jedes der 4 Eckpfosten (5) entgegengesetzt zu ihrer Basis umfasst.

3. Behälter nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Eckposten (5) jeweils einen Handhabungsgriff (9) haben.

4. Behälter nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** er Verhakungsmittel für eine Abdeckplane hat.

5. Behälter nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** seine Plattform (1) die Länge und Breite eines Normbehälters mit einer Länge von 20 Fuß oder 40 Fuß hat.

6. Behälter nach Anspruch 5, **dadurch gekennzeichnet, dass** die Plattform (1) Strukturen (10) hat, die zulassen, dass der Behälter auf einem Zellencontainerschiff transportiert wird.

7. Behälter nach einem der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die zwei Öffnungswinkel gleich 90° sind und dass er die Höhe eines Normcontainers mit einer Länge von 20 Fuß oder 40 Fuß hat.

8. Behälter nach einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** die zwei Öffnungswinkel gleich 90° sind und dass er eine höhere Höhe als die Höhe eines Normcontainers mit einer Länge von 20 Fuß oder 40 Fuß hat.

9. Verfahren zum Laden von Objekten in einen Behälter nach einem der Ansprüche 1 bis 8, **dadurch gekennzeichnet, dass** die Länge der Objekte ein wenig größer als die minimale Innenlänge des Behälters ist und dass es die folgenden aufeinanderfolgenden Schritte umfasst:

(i) Arretieren eines der Öffnungswinkel des Behälters bei einem Wert größer 90° unter Verwendung der zusätzlichen Arretiermittel;
(ii) Arretieren des anderen Öffnungswinkels bei 90° unter Verwendung der herkömmlichen Arretiermittel oder bei einem Wert größer 90° unter Verwendung der herkömmlichen Arretiermittel;
(iii) Einsetzen der Objekte über die Oberseite des Behälters;
(iv) Anordnen der Objekte auf der Ladeplattform und möglicherweise Sichern von ihnen;
(v) Arretieren des Behälters bei den zwei Öffnungswinkeln gleich 90° unter Verwendung der Arretiermittel.

10. Verfahren nach Anspruch 9, **dadurch gekennzeichnet, dass** die Objekte Flachglasscheiben mit einer Länge kleiner oder gleich 6 Metern sind.

11. Verwendung eines Behälters nach einem der Ansprüche 1 bis 8 für den Transport von Flachglasscheiben mit einer Länge kleiner oder gleich 6 Metern.

Revendications

1. Conteneur comprenant

(i) une plateforme de chargement (1) formée à partir d'un cadre rectangulaire rigide et dimensionnellement stable (2) entourant un plancher (3) et fixé audit plancher (3),
(ii) 4 systèmes de liaison (4) pivotant dans un plan parallèle aux côtés les plus longs du cadre (2), disposés respectivement à chacun des 4 coins du cadre (2) et fixés à ce dernier,
(iii) 4 montants d'angle articulés (5) respectivement fixés à chacun des systèmes de liaison (4) au niveau de leur base,
(iv) 2 cloisons rectangulaires rigides opposées (6) fixant les 4 montants d'angle (5) par paires dans le sens de la largeur de la plateforme (1) afin de former deux parois latérales, chacune des parois amenant les deux systèmes de liaison (4) auxquels elle est fixée à pivoter de manière identique,
(v) des moyens traditionnels de verrouillage des deux angles d'ouverture définis par chacune des parois latérales par rapport au plancher (3) à 2 valeurs indépendantes l'une de l'autre égales à 0° et 90°,
caractérisé en ce qu'il est équipé de moyens de verrouillage supplémentaires d'au moins l'un des deux angles d'ouvertures à une valeur supérieure à 90° et égale au plus à 180°.

2. Conteneur selon la revendication 1, **caractérisé en ce qu'**il comprend une pièce de coin standardisée (7) à chacun des 4 coins du cadre (2) et à l'extrémité de chacun des 4 montants d'angle (5) à l'opposé de leur base.

3. Conteneur selon l'une quelconque des revendications précédentes, **caractérisé en ce que** les montants d'angle (5) ont chacun une poignée de manutention (9).

4. Conteneur selon l'une quelconque des revendications précédentes, **caractérisé en ce qu'**il possède des moyens d'accrochage pour une bâche.

5. Conteneur selon l'une quelconque des revendications précédentes, **caractérisé en ce que** sa plateforme (1) possède une longueur et une largeur égales à celles d'un conteneur standard possédant une longueur de 20 pieds ou 40 pieds.

6. Conteneur selon la revendication 5, **caractérisé en ce que** la plateforme (1) possède des structures (10) qui permettent audit conteneur d'être transporté sur un navire porte-conteneurs de type cellulaire.

7. Conteneur selon l'une quelconque des revendications précédentes, **caractérisé en ce que** les deux angles d'ouverture sont égaux à 90°, et **en ce qu'**il présente la hauteur d'un conteneur standard possédant une longueur de 20 pieds ou 40 pieds.

8. Conteneur selon les revendications 1 à 6, **caractérisé en ce que** les deux angles d'ouverture sont égaux à 90°, et **en ce qu'**il possède une hauteur supérieure à la hauteur d'un conteneur standard possédant une longueur de 20 pieds ou 40 pieds.

9. Procédé de chargement d'objets à l'intérieur d'un conteneur selon l'une quelconque des revendications 1 à 8, **caractérisé en ce que** la longueur desdits objets est légèrement supérieure à la longueur intérieure minimale du conteneur, et **en ce qu'**il comprend les étapes consécutives suivantes :

   (i) verrouillage de l'un des angles d'ouverture du conteneur à une valeur supérieure à 90° en utilisant les moyens de verrouillage supplémentaires ;
   (ii) verrouillage de l'autre angle d'ouverture à 90° en utilisant les moyens traditionnels de verrouillage, ou à une valeur supérieure à 90° en utilisant les moyens de verrouillage supplémentaires ;
   (iii) insertion desdits objets par le haut du conteneur ;
   (iv) placement des objets sur la plateforme de chargement et éventuellement fixation de ces derniers ;
   (v) verrouillage du conteneur à deux angles d'ouverture égaux à 90° en utilisant les moyens de verrouillage.

10. Procédé selon la revendication 9, **caractérisé en ce que** les objets sont des plaques de verre plates dont la longueur est inférieure ou égale à 6 mètres.

11. Utilisation d'un conteneur selon l'une quelconque des revendications 1 à 8 pour le transport de plaques de verre plates possédant une longueur inférieure ou égale à 6 mètres.

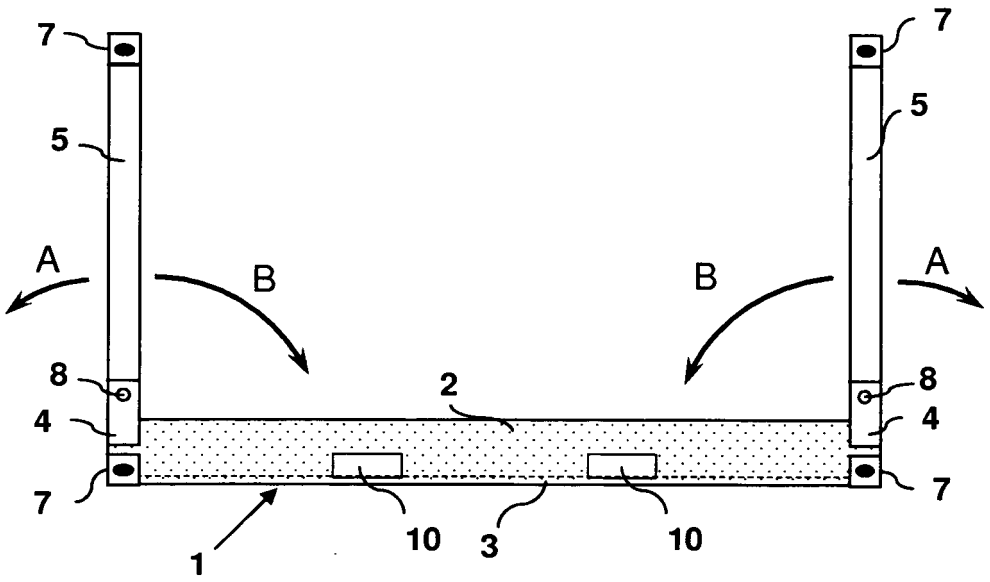

FIG.1

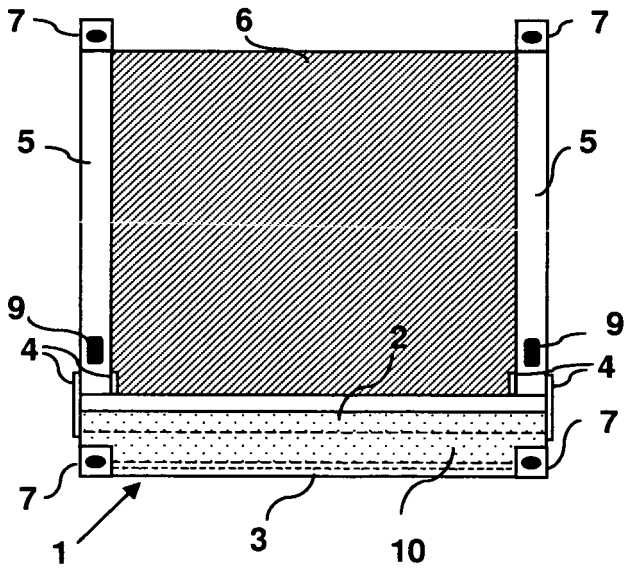

FIG.2

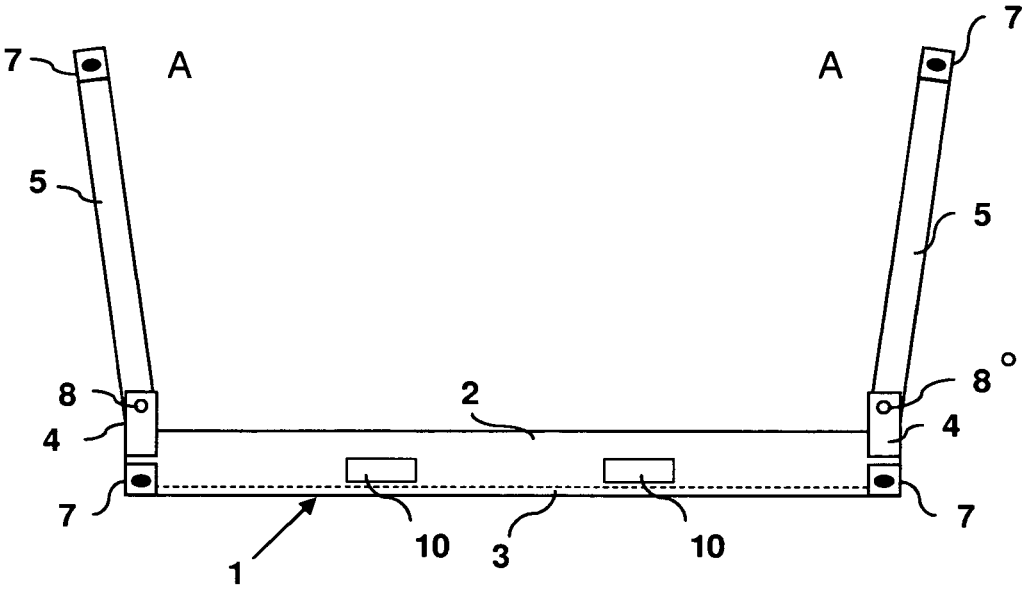

FIG.3

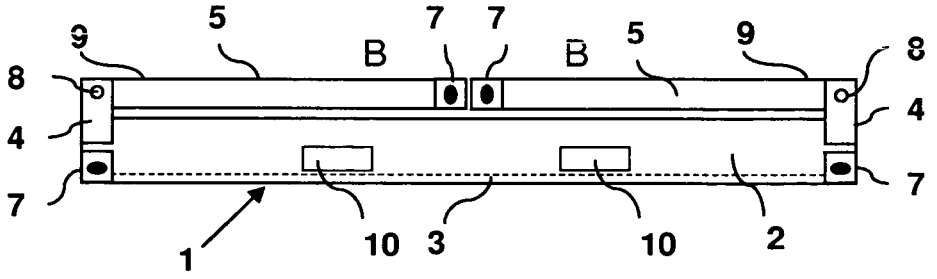

FIG.4

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- DE 901209741 **[0005]**