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(54) Title: RAILWAY TRANSPORT MEANS

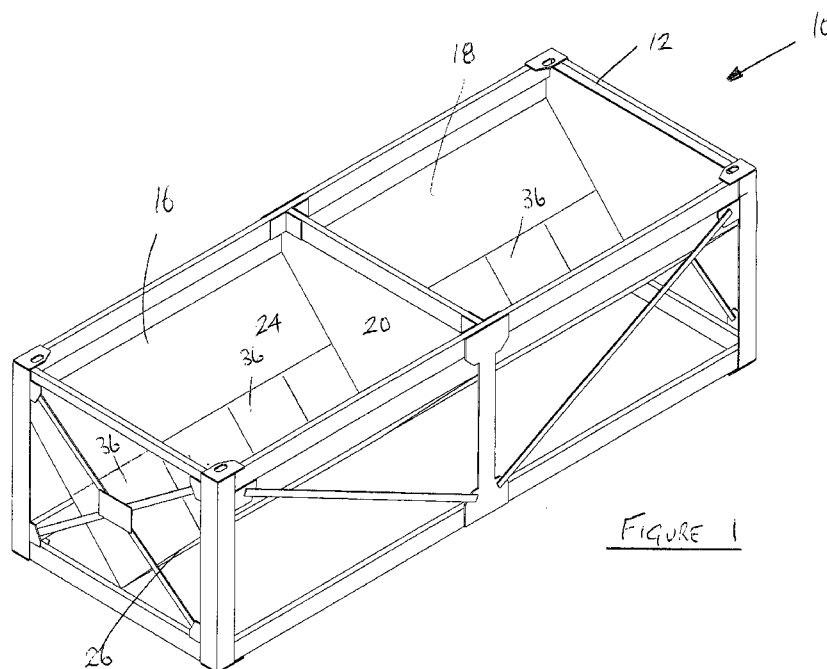


FIGURE 1

(57) Abstract: A skip (16,18) in a suitable frame (12) is used to transport bulk goods, such as mineral ores, coal and the like on a flat bed railway or road truck, which may otherwise have to be moved without a load on a return journey. The skip (16,18) has one or more trap doors (36) hinged to one of its sloping sides (24,26) the door (36) being held in a locking mechanism during transport, the locking mechanism being releasable at the destination for the doors (36) to open by gravity. Once the load has been discharged the doors (36) may be re-closed and locked by hand or by foot.



RAILWAY TRANSPORT MEANS**TECHNICAL OF THE INVENTION**

The invention relates to railway transport means for bulk freight.

For the purpose of this specification a skip may be defined as a large open topped container for builders' refuse and the like, typically including at least one inwardly sloping side wall.

BACKGROUND ART

Transport of bulk goods such as coal, scrap metal or the like by rail is usually done in specialized rail carts which essentially comprise an open container, usually rectangular in shape, which is mounted on a chassis. The cart includes wheels and connection means to trailing or leading carts or locomotives.

Many inventions have been proposed for different embodiments of this basic design.

An example of one of these embodiments is described in Chinese utility model number CN201172520 (The Heilongjiang Institute of Technology). This registration described a general open-top container for railways, vehicles, ships and planes which essentially comprises an open-topped shipping container with conventional 20 or 40ft dimensions.

A similar invention is described in DE20317967 (Bittner GMBH & Co KG Behaelter). In this invention, a container for mounting on a truck has a rectangular shape and an open top. The container includes a double layer construction and pressed vertical ribs on the outer layer. The ribs are trapezoidal in shape.

In CA2036019 (Plasser Bahnbaumasch Franz) a specialized freight car is described which comprises a carrier frame and a box which is mounted on the frame. The car further includes various bulk material conveyor arrangements to assist with the loading and unloading of material.

The disadvantage of the above inventions is however that they are not compatible with conventional flat-bed railway cars. In many cases transport authorities have many of these flat-bed cars which are not in operation due to the fact that there is an oversupply.

It is an object of this invention to provide an alternative to the above containers for use with conventional flat-bed rail cars.

DISCLOSURE OF THE INVENTION

According to the invention a container is adapted to be mounted on a flat-bed truck or railway car; the container comprising an outer frame and a bin; the bin being open-topped and comprising at least one compartment for receiving bulk material; the bin including at least one inwardly sloping opposing wall/s; the container including at least one door at or near the base of the bin.

The door may comprise a hinged door, but it will be appreciated that a sliding door/s may also be used.

In the preferred form the doors are manually operable by release of a locking lever, for example.

In the preferred form of the invention the bin is mounted within the frame and comprises a skip.

The bin may be rectangular in shape at the top thereof. In this form the longitudinal side walls slope inward from a point close to the top thereof.

The frame may include sockets for receiving locking members to secure it to the bed of the truck or car. These sockets may be similar to those used to secure conventional containers to flat bed trucks and the like, colloquially named twist-locks.

The frame and/or container may further include formations to receive a forklift or crane connector for ease of handling.

The container may therefore be adapted to be unloaded or transported to a desired site before the material is discharged.

The outer frame and shape of the bin may ensure that the container has a lower centre of gravity as compared to normal containers. This may ensure that the container is more stable than most other similar arrangements.

BRIEF DESCRIPTION OF THE DRAWINGS

An embodiment of the invention is described below with reference to the accompanying drawing in which:

Figure 1 is an isometric view of a bulk material carrying container for flat bed trucks or rail cars according to the invention;

Figure 2 is a top view of the container;

Figure 3 is a side view of the container;

and

Figure 4 is a front view of the container.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

In the drawings a container 10 for carrying bulk material (not shown) comprises a frame 12 and a bin portion 14.

The bin may be divided into two compartments 16 and 18, separated by a wall 20 and including a support member 22 for engaging the frame.

The side walls 24 and 26 of the bin may slope inwardly from a point 28 close to the lip 30 thereof. In this form, one wall slopes at a more acute angle than the other as indicated in Figure 4 but it will be appreciated that the walls may be at the same angle.

In the embodiment shown a flat base 32 is located slightly off-center due to the differently sloping side walls but it will be apparent that the walls, particularly if they are of equal angles may meet at a point which may be centrally located having regard to the frame bottom.

One or two doors 36 and 38 are located near the base of the bin for easy loading or unloading. The doors may be manually operable and may be hinged.

Referring to the attached photograph the single hinged door 40 is associated with a lever 41 that releases the door for discharge of the contents of the skip. The door may be returned to the closed position by means of a kick by the operator's foot.

The frame also includes sockets 42 in the base 44 thereof for securing the container to a flat surface such as that found on a flat-bed truck or a similar railway car (not shown).

These sockets may also be used to receive fork lifts or crane attachments for lifting or tipping the entire container according to the circumstances.

In use the container is secured to a flat deck railway car. Bulk material is loaded in the normal manner by means of a conveyer or the like. Once the material reaches its desired location it is unloaded by releasing the lever for the door to be opened to unload it.

CLAIMS

1. A combination of a flat bed truck and a container adapted to be mounted thereon on characterized in that
the container comprises a frame attachable to the bed and adapted to receive a bin;
the bin being open-topped and comprising at least one compartment for receiving bulk material;
the bin including at least one inwardly sloping opposing wall/s
each wall including at least one door at or near the base of the bin.
2. The combination according to claim 2 characterized in that the door is a hinged door.
3. The combination according to claim 2 characterized in that the doors are manually operable by release of a locking lever.
4. The combination according to any of the above claims characterized in that the bin is mounted within the frame.
5. The combination according to claim 4 characterized in that the bin comprises a skip.
6. The combination according to any of the above claims characterized in that bin is rectangular in shape at the top thereof.
7. The combination according to any of the above claims characterized in that the frame includes sockets for receiving locking members to secure it to the bed of the truck or car.
8. The combination according to claim 7 characterized in that the sockets are similar to those used to secure conventional containers to flat bed trucks and the like, colloquially named twist-locks.

9. The combination according to any of the above claims characterized in that the frame and/or container and/or bed includes formations to receive a forklift or crane connector.

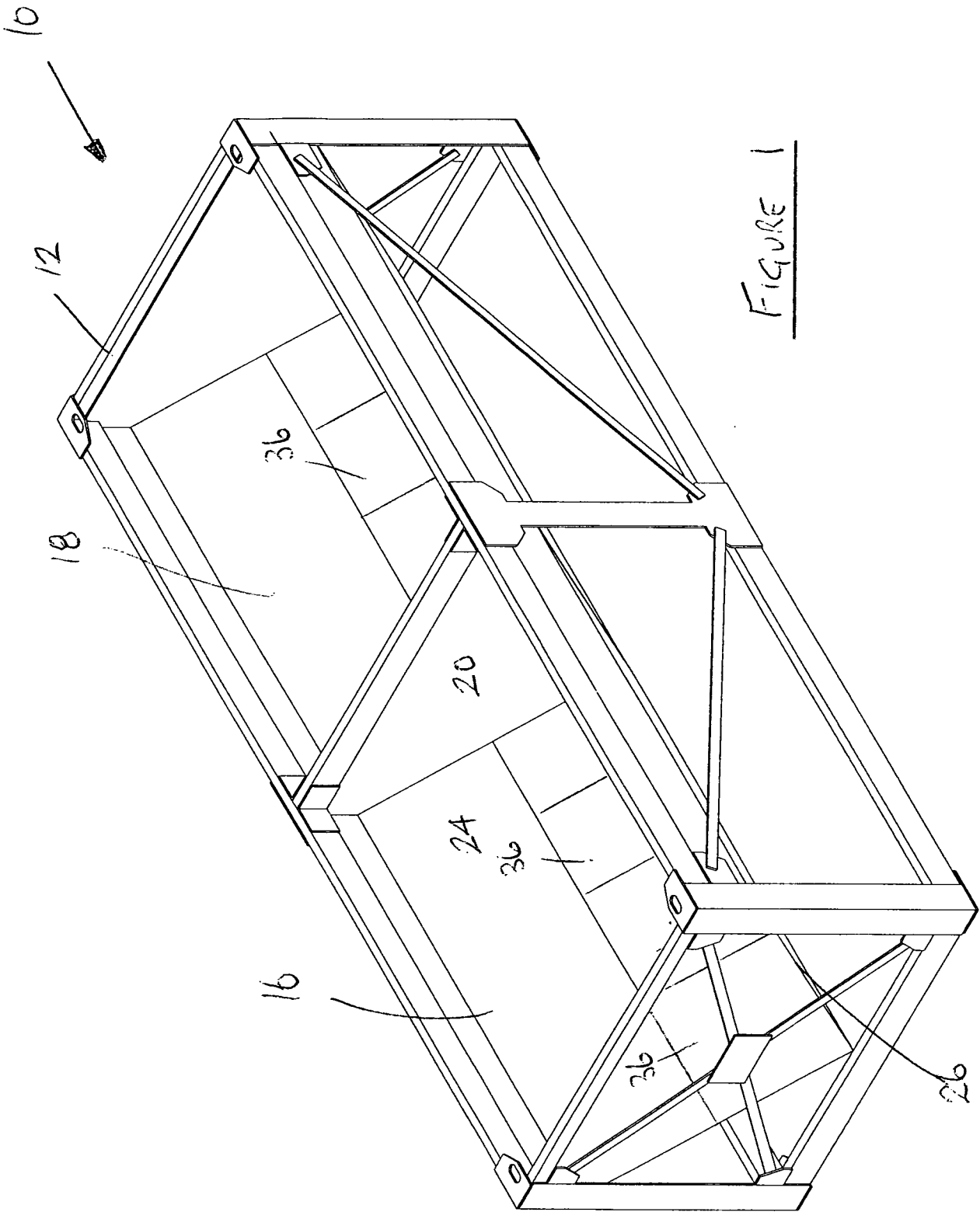


FIGURE 1

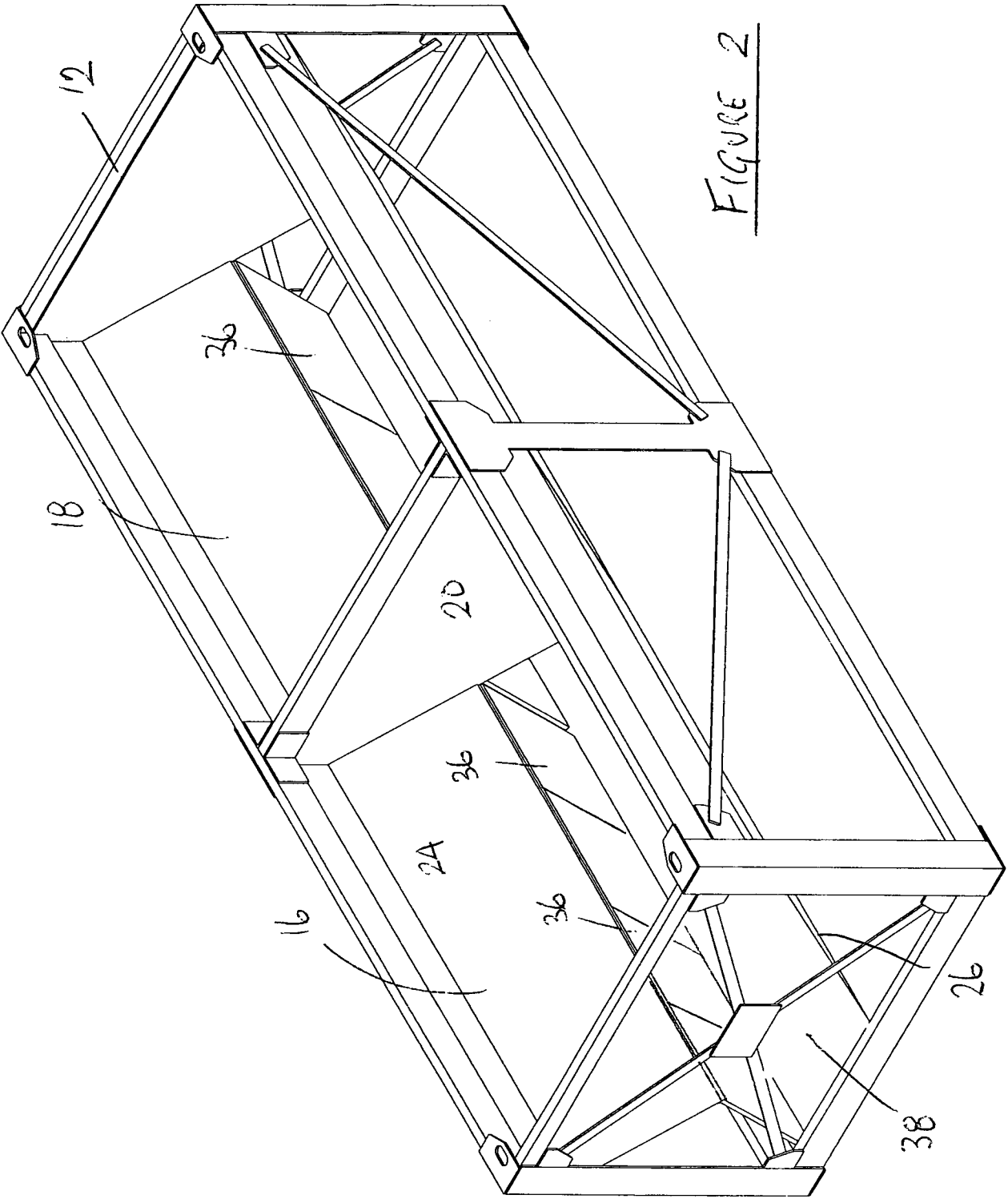
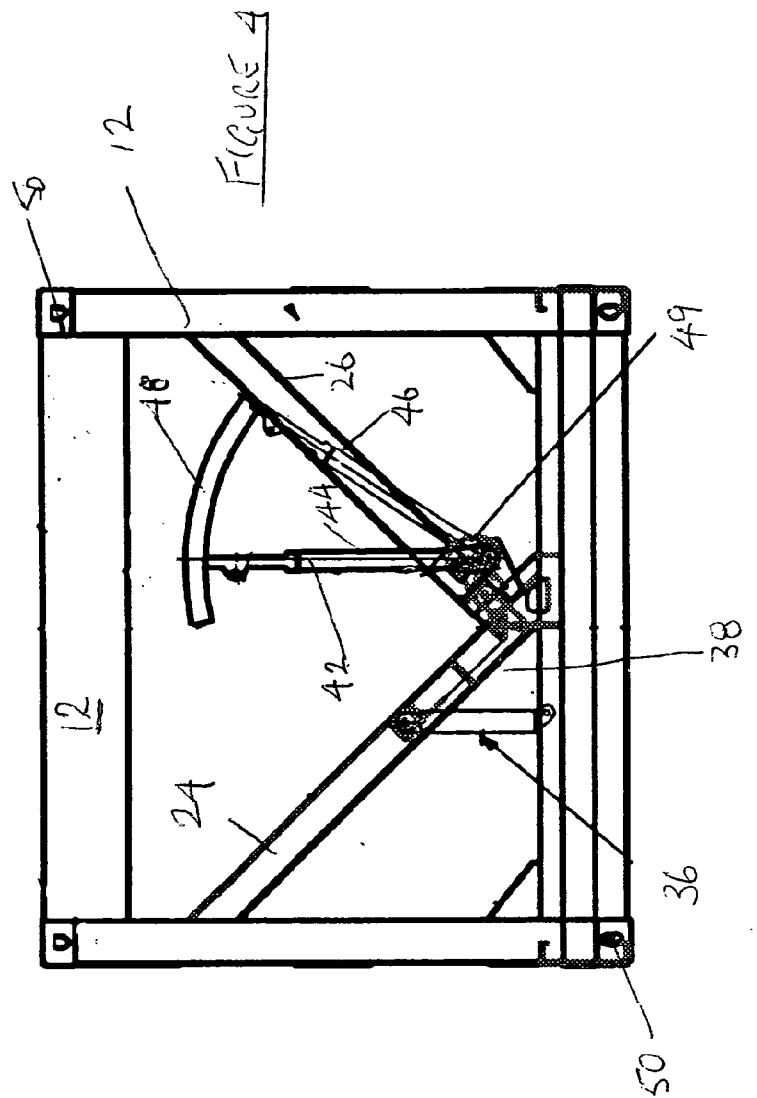
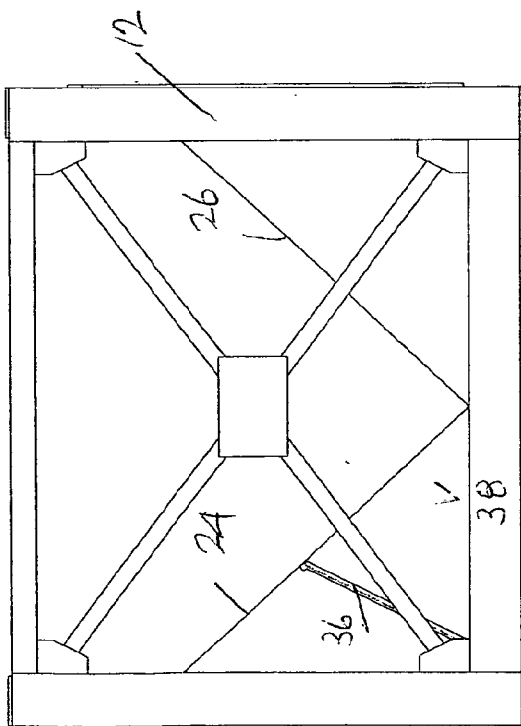
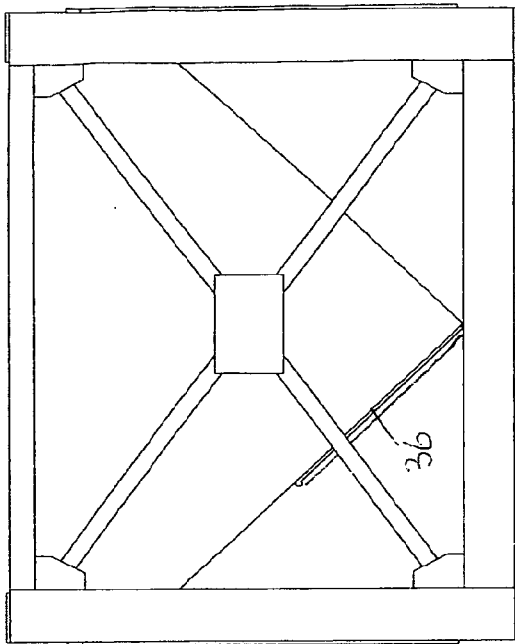


FIGURE 2



INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER IPC: B65D88/12 (2006.01); B65D88/26 (2006.01) According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) B65D Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2558807 A1 (DALBY YVES) 02 August 1985 (02.08.1985) Fig. 1-11, abstract	1, 4-6
Y		2-3, 9
X	EP 1757539 A2 (MWB INDUSTRIE-TECHNIK GMBH & CO) 28 February 2007 (28.02.2007) Fig. 1-5, 13, 15-18, abstract, paragraph 29-30	1-2, 4, 6-8
Y	DE 4437614 A1 (JULIA KOHLENAUFBEREITUNG GMBH) 25 April 1996 (25.04.1996) Fig. 1-3, abstract, column 5, line 29 - column 6, line 64	2-3
A		1
Y	EP 0949161 A1 (RAILTRANS SA) 13 October 1999 (13.10.1999) Fig. 1-11, abstract, paragraph 25-27	9
☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
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Information on patent family members

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