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(56) Documents Cited
GB 2199809 A GB 2089768 A GB 1535501 A
GB 1383258 A GB 0883912 A WO 86/02056 A1
US 3938660 A US 3854619 A

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UK CL (Edition O) B8P PE2C PE2G PE2X PK7
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(54) Cargo container

(57) A cargo container includes a floor structure (10) and peripheral side walls (12) where the floor structure (10) has two longitudinal load-carrying beams (32), two side load-carrying beams and a plurality of transverse load-carrying beams (34). The upper faces of the two longitudinal load-carrying beams (32) are either flush with, or raised above the remainder of the floor structure (10).

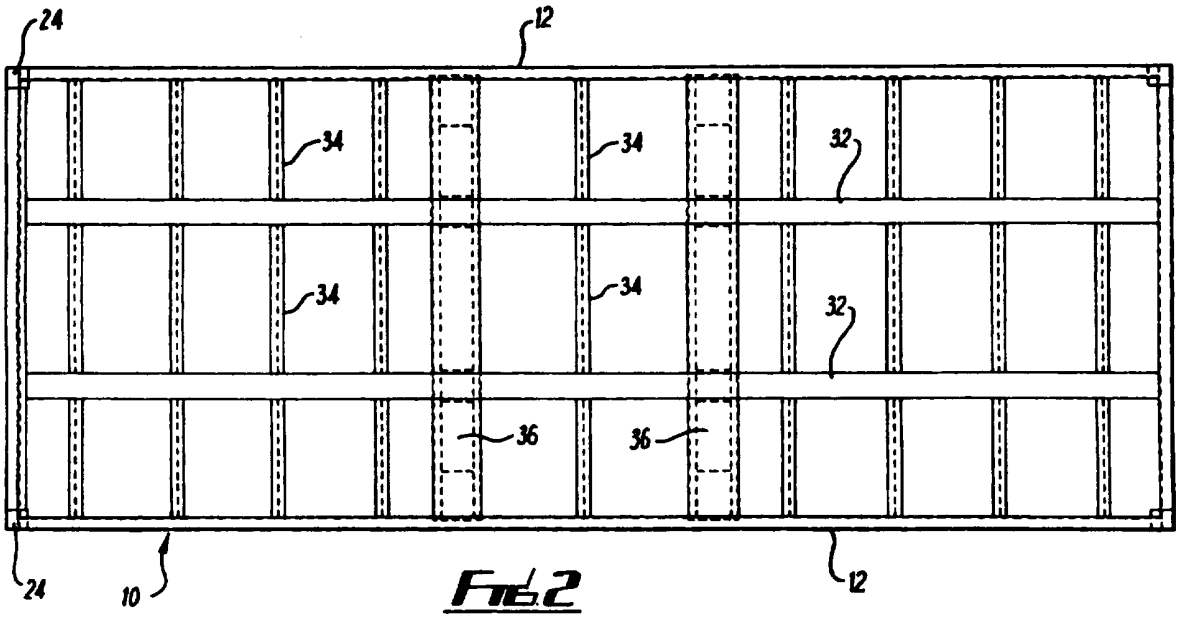

Fig 2

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

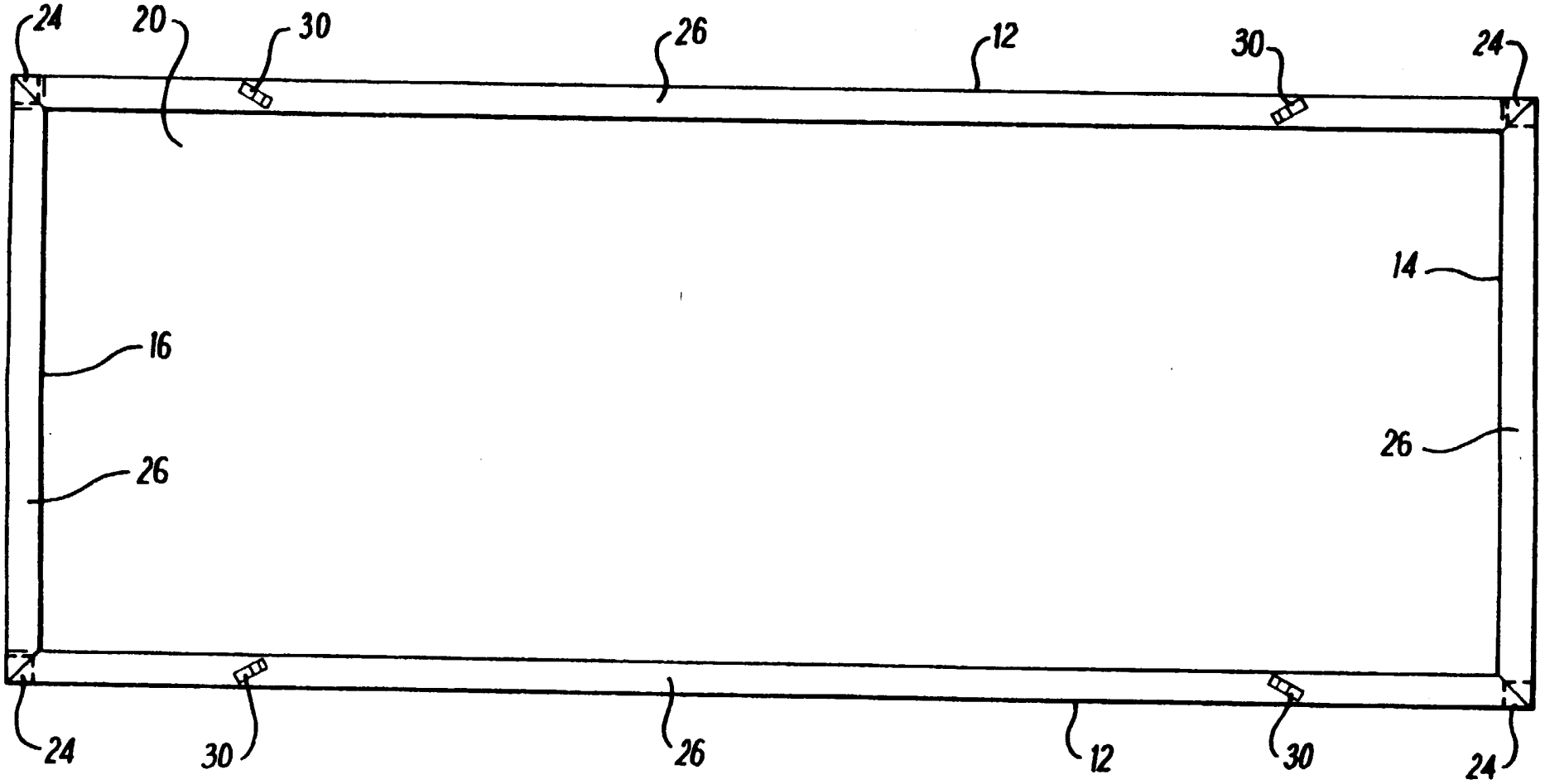

FIG. 1

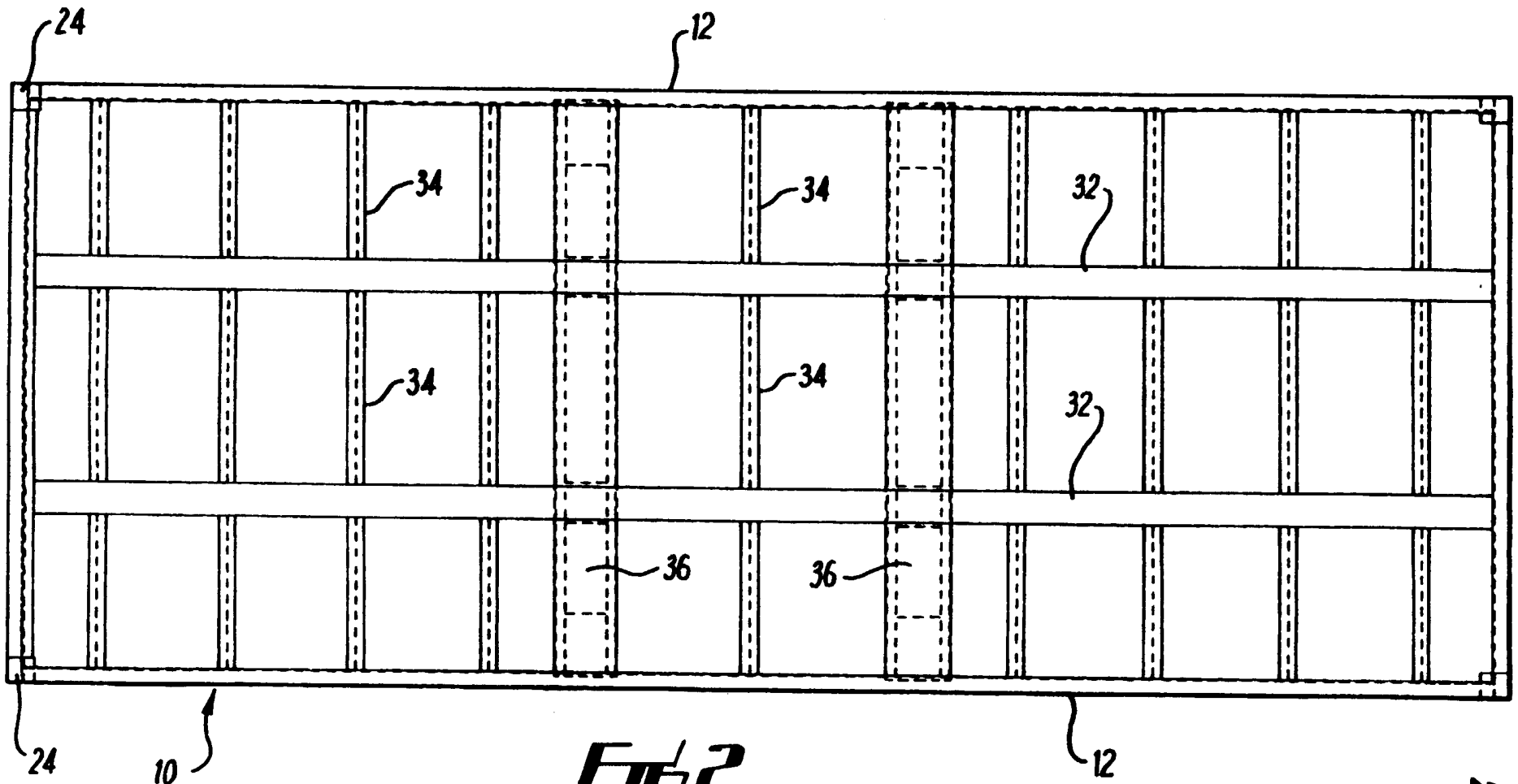

FIG. 2

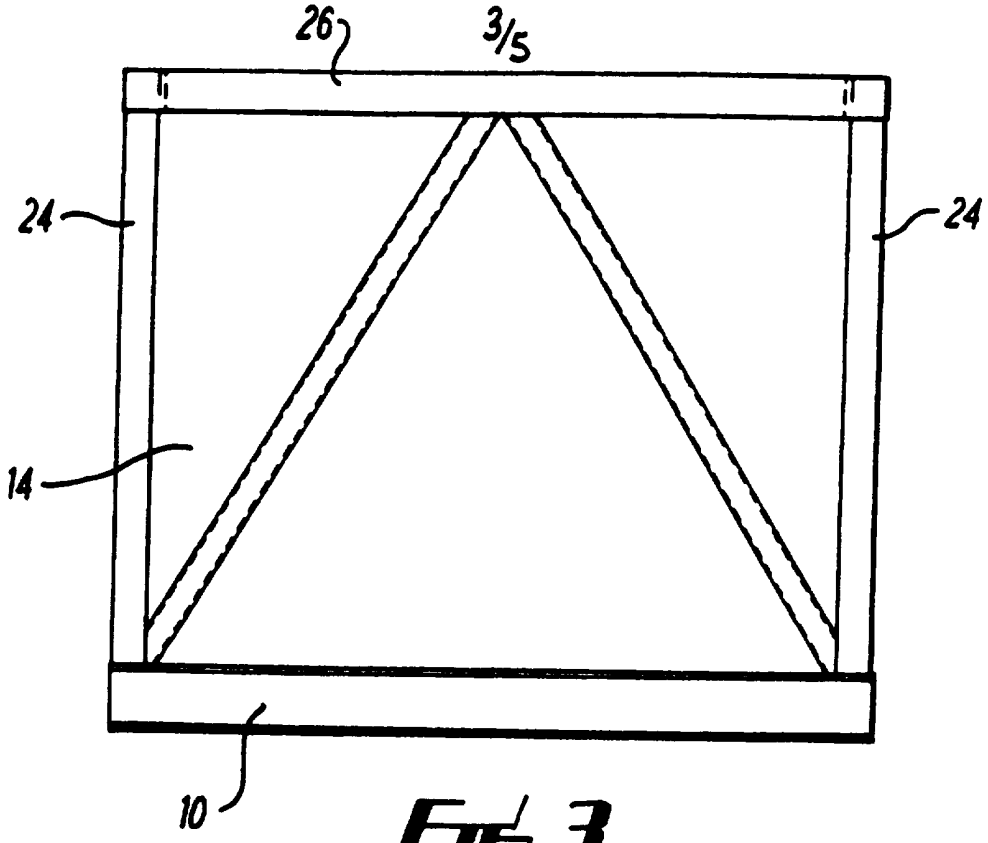

FIG. 3

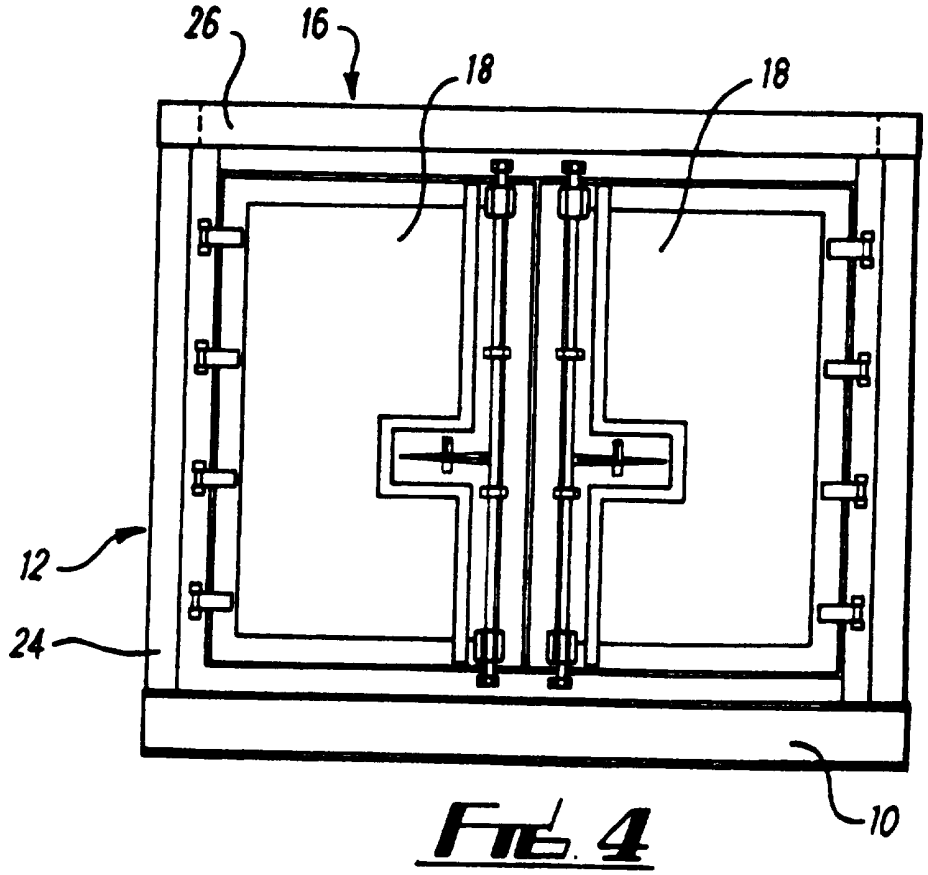

FIG. 4

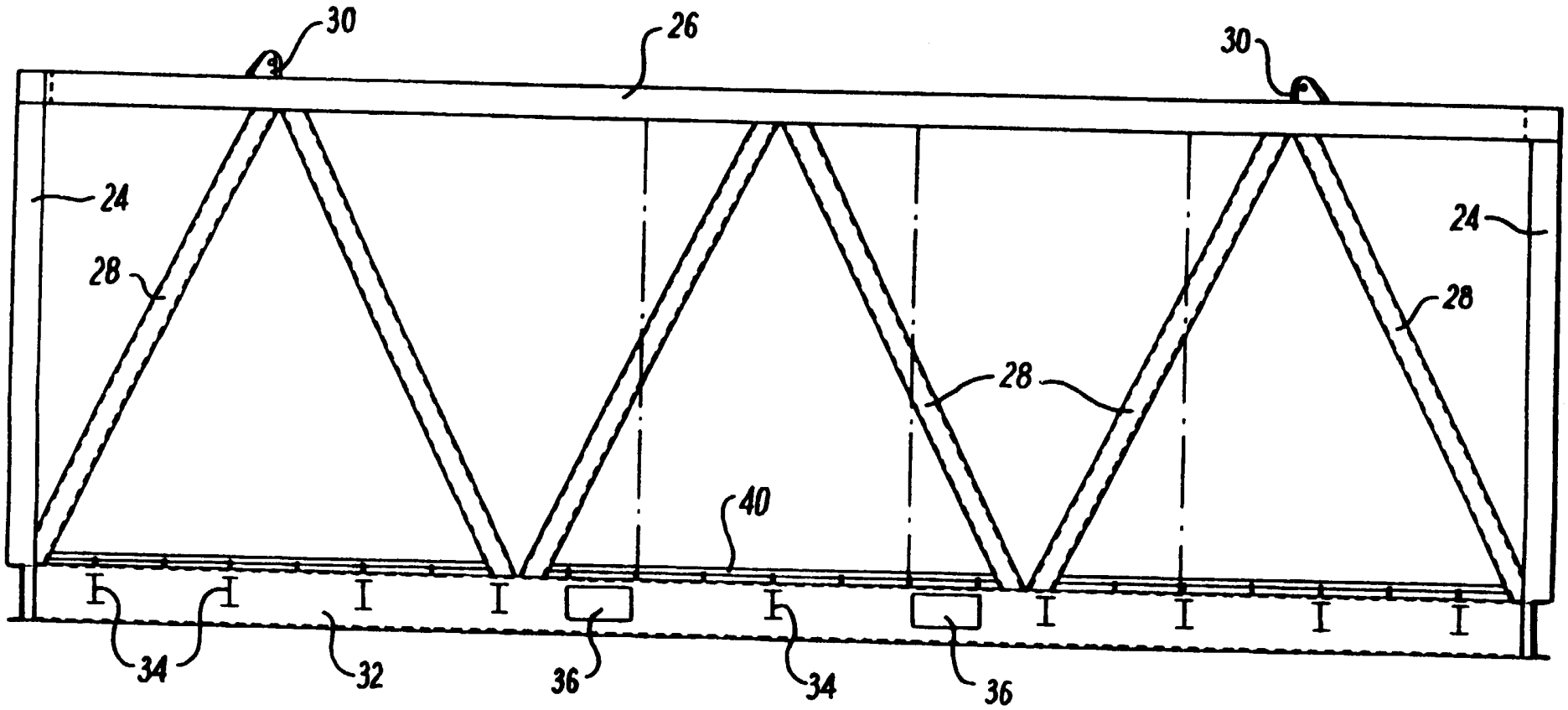

FIG. 5

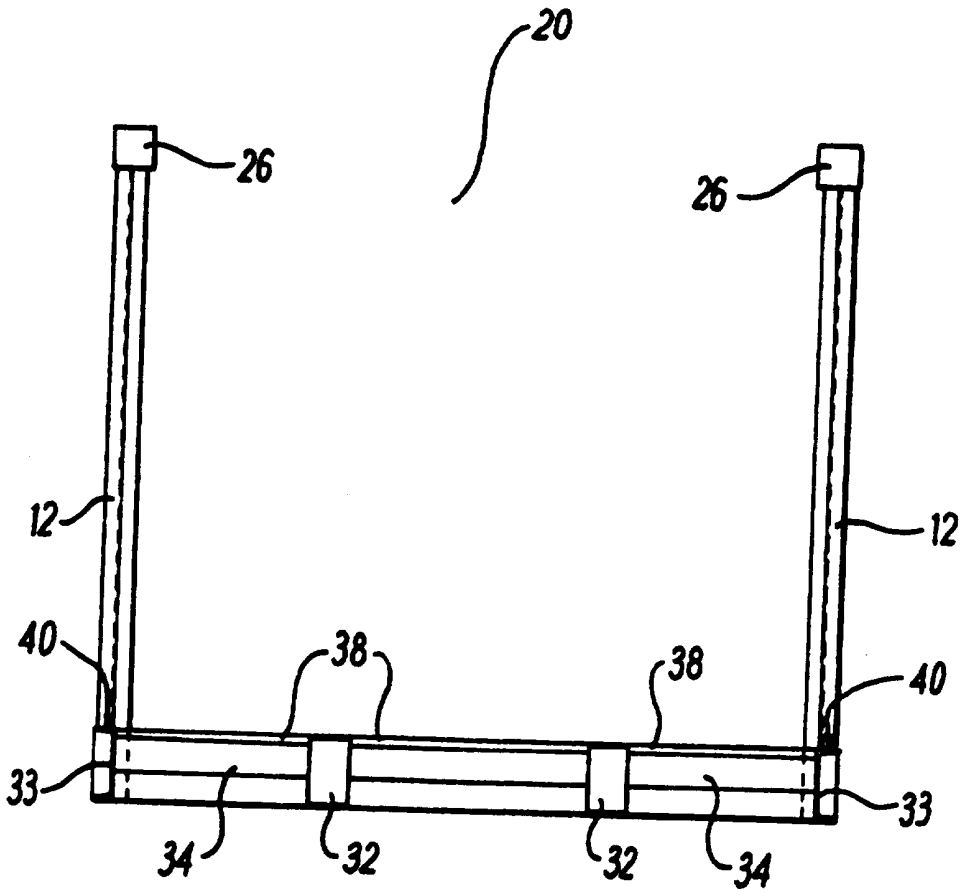

FIG. 6

"Cargo Container"

This invention relates to boxlike containers for the carriage of cargo.

One field of use of such containers is in shipping supplies to offshore oil rigs. In this application, it is common for a single item of heavy equipment, for example a valve assembly or a large pump, to be shipped in a container as the single item in it. This contrasts with the more common use of cargo containers where a relatively large number of items, each in its own packaging, is spread across the floor of the container.

When shipping a single large and heavy item in a container, there are a number of problems. One is that standard containers are not provided with heavy lashing points internally and it is necessary to improvise some means of securing the object in position. It is not uncommon for large steel objects to be secured in position in a container by being welded to the floor or to the side panelling; this obviously has undesirable consequences for subsequent use of the container. Another difficulty is that

standard containers have floors consisting of panels sitting on structural beams; the user has no means of knowing the position of the beams and it is common for large point loads to be imposed on the floor panels intermediate the beams with consequent distortion and instability of the load.

According to the present invention there is provided a cargo container comprising a floor structure and peripheral side walls, the floor structure comprising a plurality of load-carrying beams which have top faces flush with or raised above the remainder of the floor structure.

Typically, the container is of rectangular box shape.

Preferably, there are two load-carrying longitudinal beams extending the length of the container and equispaced across its width; and preferably also load-carrying cross beams interconnecting the sides of the container and the longitudinal beams. Typically, there are also load-carrying side beams along the sides of the container.

The cross beams are preferably positioned with their top faces below those of the longitudinal beams.

Floor panels may be positioned over the cross beams, to be below or flush with the longitudinal beams.

The floor panels may be apertured, for example being in the form of gratings.

In a particularly preferred form of the invention, lashing means are provided within the container.

Preferably, the lashing means are in the form of a rod extending along each side of the container closely spaced from the floor structure.

The container may be open or closed at the top.

Doors may be provided in one or more of the walls.

The container preferably has at least its width dimension conforming to the maximum permitted by a given set of road transport regulations, and more preferably, the container conforms with BS 7072.

An embodiment of the invention will now be described, by way of example, with reference to the drawings, in which:

Fig 1 is a plan view of a container in accordance with one embodiment of the present invention;
Fig 2 is an underneath plan view of the container;
Fig 3 is a front elevation of the container;
Fig 4 is a rear elevation of the container;
Fig 5 is a longitudinal section;
and
Fig 6 is a transverse section.

The container in this embodiment is an open topped container comprising a base 10, side walls 12, a front wall 14, a rear face generally designated at 16 and including hinged doors 18, and an open top 20. The walls are built on a framework of corner posts 24 and top rails 26 which are braced from the base 10 by struts 28. The top rails 26 are provided with lifting eyes 30.

The base 10 comprises side beams 33, longitudinal beams 32 and transverse beams 34. Provision for lifting by

forklift truck is provided by transverse rectangular channels 36.

As best seen in Fig 6, the transverse beams 34 are located with their upper faces set below the upper faces of the longitudinal beams 32. An inner floor is provided to the container in the form of floor panels 38 which are set flush with the longitudinal beams 32 and welded in place. The floor panels 38 may be apertured, for example being in the form of pre-formed grating.

The container is also provided with cargo lashing means in the form of rails 40 secured along either side adjacent to the floor. To deal with the loads involved, the rails 40 may suitably be 25.4mm round bar supported by 25 x 10mm flat bar at 300mm centres.

The example shown in the drawings has overall dimensions of 2.8m wide by 2.8m high by 6.8m long. These dimensions differ from the dimensions of a standard ISO container and the width and length are chosen to maximise the container volume while complying with United Kingdom Road Traffic Regulations regarding the maximum dimensions which can be used without qualifying as an abnormal load. The container may be tested to be in compliance with BS7072.

The foregoing embodiment is constructed from welded mild steel but other materials may be used. This example is in the form of an open topped basket and will normally be loaded by crane through the top. The end doors are provided principally for personnel access, but it may be convenient to load some categories of goods through the doors. In the case of an open topped basket, the provision of a grating floor

has the benefit, when the container is used at sea, that any water entering the container immediately drains.

The structure of the floor of the container is such that the weight of the load will necessarily be carried by the floor beams and the danger inherent in carrying heavy loads only on floor panelling are avoided.

The container could equally take the form of an open basket without end doors, or of a closed top container with end or side doors.

To accommodate abnormally large loads, a larger container can be used, where the larger container is within the scope of the present invention.

Other modifications may be made within the scope of the present invention.

CLAIMS

1. A cargo container comprising a floor structure and peripheral side walls, the floor structure comprising a plurality of load-carrying beams which have top faces flush with or raised above the remainder of the floor structure.

2. A cargo container according to claim 1, wherein there are two load-carrying longitudinal beams extending the length of the container and equispaced across its width.

3. A cargo container according to claim 2, wherein the container includes two load-carrying side beams extending along opposite side walls and substantially parallel to the longitudinal beams.

4. A cargo container according to either claim 2 or claim 3, wherein there are load-carrying cross beams interconnecting the side walls of the container and the longitudinal beams.

5. A cargo container according to claim 4, wherein the cross beams are positioned with their top faces below the top faces of the longitudinal beams.

6. A cargo container according to either claim 4 or claim 5, wherein floor panels are positioned over the cross beams, to be below or flush with the upper edge of the longitudinal beams.

7. A cargo container according to claim 6, wherein the floor panels are apertured.

8. A cargo container according to any of the

preceding claims, wherein lashing means are provided within the container.

9. A cargo container according to claim 8, wherein the lashing means are in the form of a rod extending along each side of the container closely spaced from the floor structure.

10. A cargo container substantially as hereinbefore described with reference to the accompanying drawings.

The Patent Office

8

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Claims searched: 1 to 10

Examiner: Mike Henderson
Date of search: 13 March 1996

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): B8P (PE2C, PE2G, PE2X, PK7)

Int Cl (Ed.6): B65D-088/12 B65D-088/14

Other: ONLINE:WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X	GB 2199809 A	(TELEDYNE INDUSTRIES INC) (Whole specification relevant)	1,2 and 8
X	GB 2089768 A	(FAIREY ENGINEERING LTD) (Whole specification relevant)	1
X	GB 1535501	(MOTOREN-UND-TUBINEN-UNION FRIEDRICHSHAFEN GMBH) (Whole specification relevant)	1 to 6
X	GB 1383258	(LIBBEY-OWENS-FORD CO) (Whole specification relevant)	1 to 3,7 and 8
X	GB 883912	(MORTON'S (COVENTRY) LTD) (Whole specification relevant)	1 and 3 to 5
X	WO 86/02056 A1	(GERLACH) (Fig 1 particularly relevant)	1 and 2
X	US 3938660	(MOEHRING) (Whole specification relevant)	1 to 3,7 and 8
X	US 3854619	(GAUDY) (Whole specification relevant)	1,4 and 7

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
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