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(56) Documents Cited
GB 2223742 A **EP 0192585 A1** **WO 89/06211 A1**
US 4747736 A **US 3909089 A** **US 3907148 A**

(58) Field of Search
UK CL (Edition L) **B8P PE2J PK7**
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(54) Off-shore container

(57) An off-shore container has a shelf 8 extending, in use, within the container to span substantially the entire floor area of the container and spaced above the floor substantially plane-parallel thereto. Attachment means are provided on the internal faces of the side walls of the container so that a conventional full-sized cargo net may be fastened across the front face of the cargo within the container, in addition to attachment means for a partial height cargo net which extends, in use, across the front face of the cargo between the roof and the shelf.

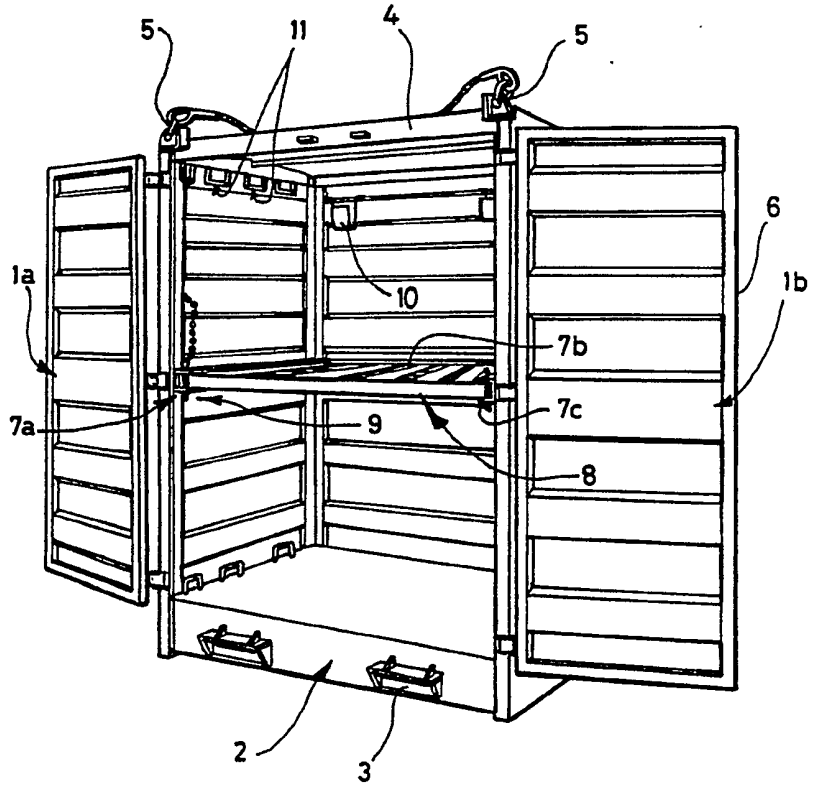

Fig. 1

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

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

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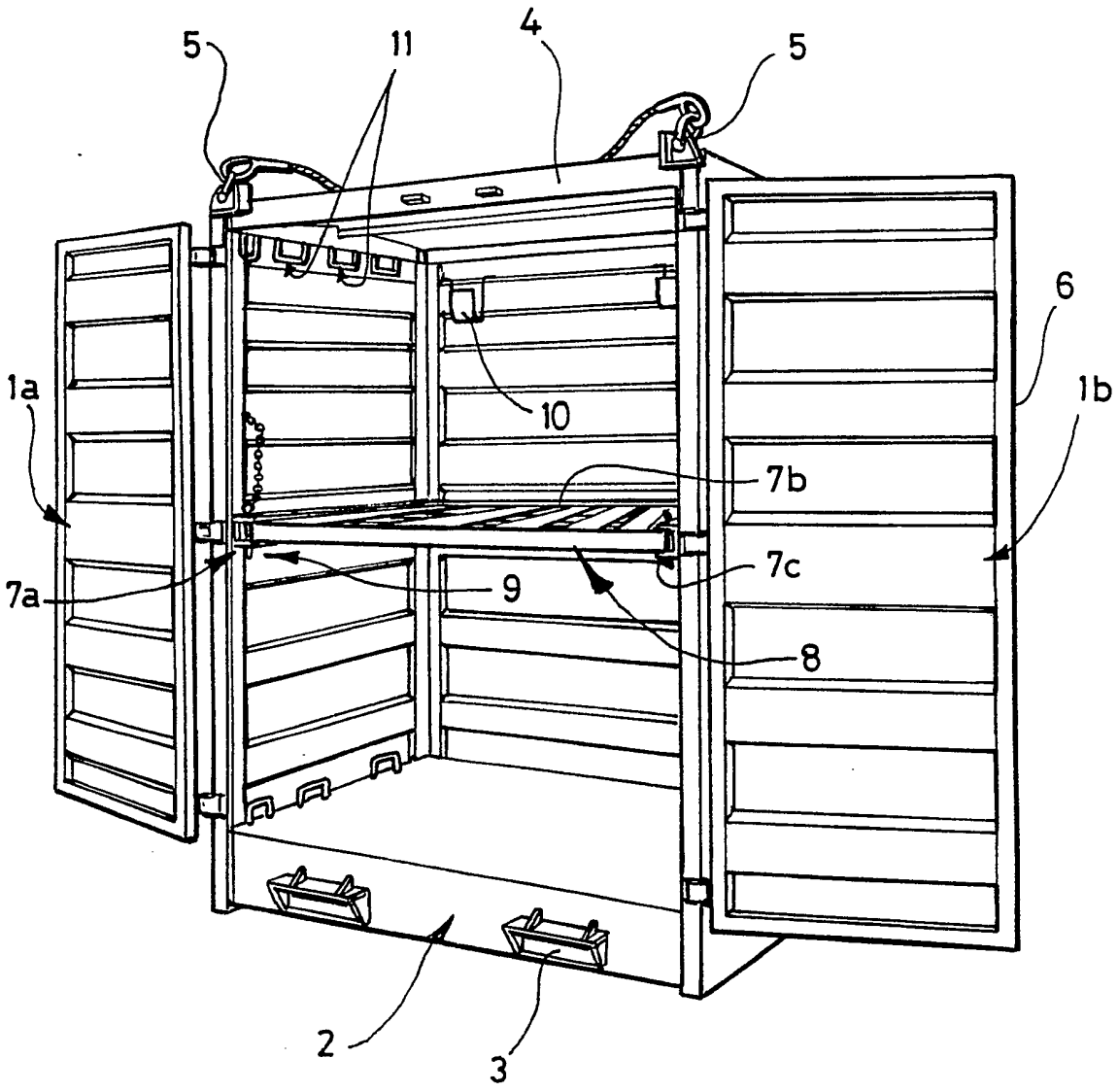

Fig. 1

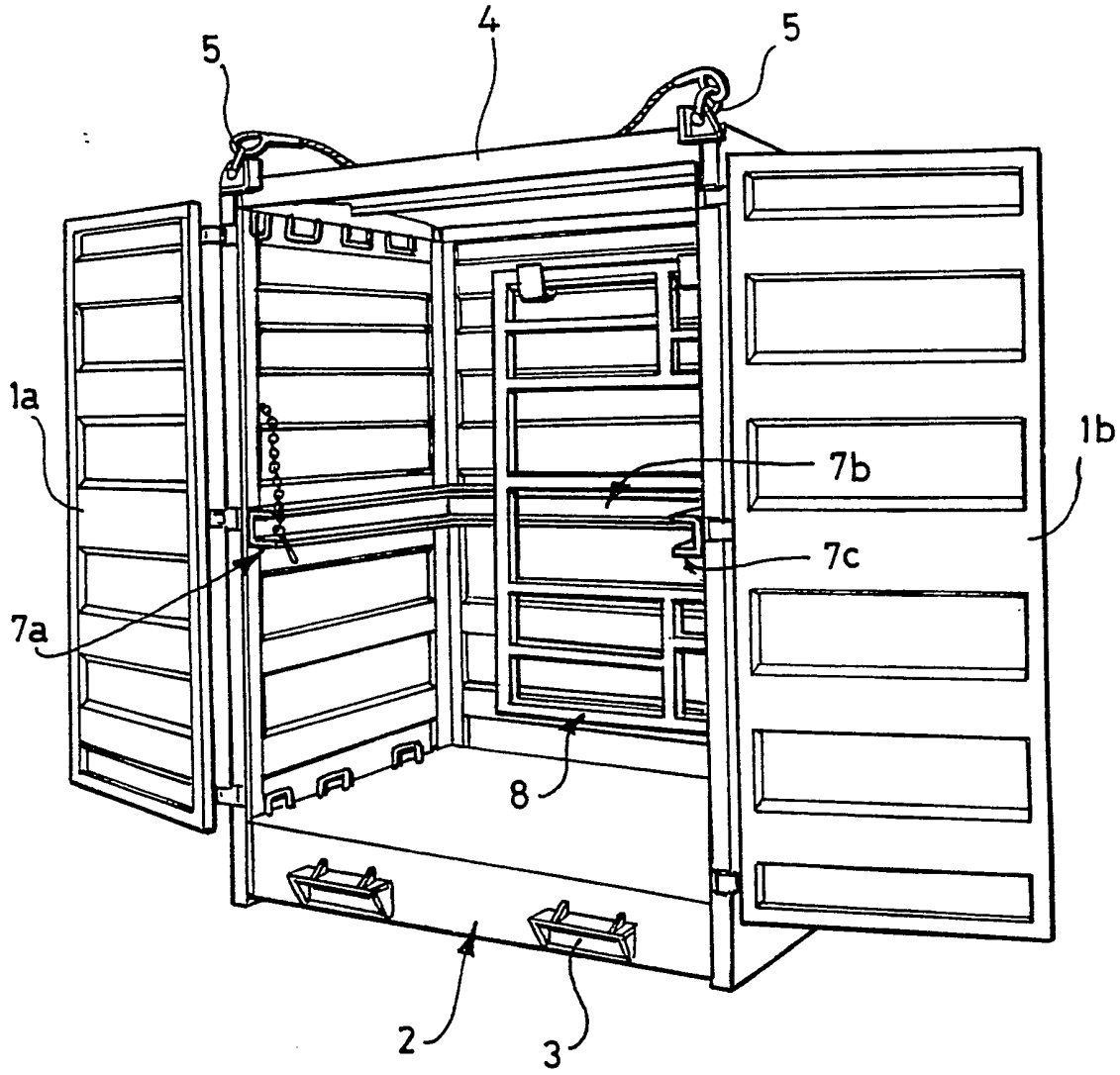

Fig. 2

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OFF-SHORE CONTAINER

Field of the Invention

The present invention relates to an improved off-shore container. An off-shore container is a specialised type of container having a base, a roof and respective side walls and incorporating fixtures by which the container can be lifted and manoeuvered with its roof uppermost for shipment of the container and transfer of the container to or from an off-shore installation such as an oil or gas rig.

Background to the Invention

Supply of equipment, chemicals and other necessary provisions to maritime oil and gas rigs involves operational constraints and hazards beyond those normally incurred in shipping of goods by sea. In addition to being robust and highly water-tight, off-shore containers must be adapted to facilitate their handling in transfer to or from a ship at sea where wind and sea swell and limited space and handling facilities hamper the procedure. Vigorous national and international safety standards, regulations or codes of practice have been implemented to minimise the risks to those handling the containers at sea. Such standards include, for example, BS7072 and BS5750 which dictate criteria for the construction of off-shore containers such as, for example, the nature of lifting fixtures provided on the containers, and also dictate how the containers may be used.

The safety constraints applying to off-shore containers give rise to a number of operational problems, one of which is that the capacity of the containers is generally grossly under-utilised. A contributory factor to this problem is the prohibition on stacking of goods within an off-shore container to reduce the risks of destabilising the container and reduce the handling hazards in loading and unloading of the goods from the container off-shore.

It is a general objective of the present invention to provide an improved off-shore container which enables maximisation of use of the containers capacity without compromising safety.

Summary of the Invention

According to the present invention there is provided an off-shore container which is characterised by the provision of a shelf extending, in use, within the container to span substantially the entire floor area of the container and spaced above the floor substantially plane-parallel thereto.

Preferably the shelf is spaced above the floor by a distance of between one third and two thirds of the internal height of the container and, more preferably, substantially one half of the internal height of the container.

To particular advantage, the shelf is suitably arranged to be removably mountable within the container and, more preferably, also stowable at the rear of the container's interior.

Preferably the de-mountable shelf is mounted within the container by sliding opposing peripheral edges of the shelf into co-operative engagement with corresponding respective slotted brackets provided on the opposing side walls of the container.

Suitably the shelf is formed of a grid of bars.

Preferably the shelf is provided with handle means whereby the shelf may be effectively gripped for mounting, removal or stowage.

Suitably locking means are provided to secure the shelf in place when in use. Such locking means may comprise a latch mechanism wherein the latch is normally biased toward a locking position and must be held in a retracted state to allow the shelf to removed.

In a particularly important development of the invention there is provided attachment means on the internal faces of the side walls of the container so that a conventional full-sized cargo net may be fastened across the front face of the cargo within the container, in addition to attachment means for a partial-height cargo net which extends, in use, across the front face of the cargo between the roof and the shelf.

In accordance with a second aspect of the present invention there is provided an off-shore container having a shelf of the invention and combined, in use, with a full-height cargo net and a partial height cargo net.

According to a third aspect of the present invention there is provided a method of securing a load within an off-shore container which comprises providing a container of the first aspect of the present invention, loading cargo onto the floor and shelf of the container; providing a full height cargo net and a partial height cargo net adapted to cover that portion of the container between the roof and the shelf; and stretching the partial height cargo net over the front of the cargo and fastening that net in place, and stretching the full height cargo net over the front of the cargo and fastening that net in place also.

Suitably the partial-height cargo net is slidably mounted to the container roof such that it may be extended and retracted across the front of the cargo, in use.

Brief Description of the Drawings

The present invention will now be more particularly described, by way of example, and with reference to the accompanying drawings, wherein:

Figure 1 is a front perspective view of the preferred embodiment of the off-shore container, illustrating the shelf installed; and

Figure 2 a front perspective view similar to Figure 1 and illustrating the shelf in stowed state.

Description of the Preferred Embodiment

Figures 1 and 2 illustrate an off-shore mini container of conventional type but modified in accordance with the present invention. The container is formed as an all-steel rectangular box of approximately 1.5 meters by 1.8 metres sq and 2.5 meters high. The interior of the container is accessed via a double door 1a, 1b which forms an entire front side of the container when closed. The base 2, or floor, of the container is provided with sockets 3 for the forks of a fork-lift truck. The roof 4 of the container is provided with four lifting eyes 5, one at each corner for lifting the container from above via a lifting sling. The walls of the container form a "compression frame" to withstand the lifting stresses.

The periphery of each respective portion 1a, 1b of the double door is surrounded by a seal 6 which, when the door is closed and locked in position seals the container against ingress of sea water.

Mid-way between the floor 2 and roof 4 of the container is provided a bracket 7a-c of "U"-shaped cross-section forming a channel extending transversely across each of the three side walls of the container in a continous manner.

The bracket 7a-c provides a mounting for a demountable shelf 8. The shelf 8 which comprises a grid of steel rectangular cross-sectioned bars robust enough to support loads of the order of 0.5 tonnes to 1 tonne in weight is of an area substantially equal to the floor area of the container but sufficiently smaller so that the shelf 8 may be mounted in the container with the opposing lateral edges of the shelf forming a sliding fit within the channel of the respective opposing portions 7a, 7c of the bracket.

Once installed, the shelf 8 is held in position by locking pins 9 held on chains, as illustrated, or, more suitably, held by sprung latch mechanisms which avoid the risk of the shelf being inadvertently left unlocked in position.

When the shelf 8 is not required it may be withdrawn following removal of the locking pins 9, tilted and lifted onto hooks 10 provided at the rear of the interior of the container. One or more chains or locking pins may be used to then secure the stowed shelf 8 to prevent it from swinging.

Especially where the cargo comprises drums of chemicals for use at the oil or gas rig, the drums are usually transported bound to pallets and occupy less than half the height of a mini container of conventional dimensions. This represents considerable wastage of space. It is desirable to store more than one pallet load of such drums in a conventionally-sized off-shore mini container. This may be done with the shelf 8 in place by successively advancing two pallet loads into the container, by fork-lift truck, one load to be placed upon the floor and the other on the shelf. Subsequent unloading of the container is equally straight forward. The procedure being quick and simple.

In order to secure the loads in position, a conventional full height cargo net is strapped into place over the front of the cargo in a conventional manner. However, due to inherent greater instability of the load supported upon the shelf, it is highly advisable to make further provisions for securing this upper load. To this end, the applicants have devised an arrangement whereby a further cargo net, of substantially only half the height of the main net, is installed by strapping to loops 11 on the side walls and tightened across the front of the upper load prior to installing the main cargo net thereover.

As illustrated in Figure 3, the half-length cargo net is semi-permanently mounted to the interior of the roof of the container by a curtain rail-like arrangement such that it may be drawn to one side when not required but will not be mislaid by those loading the container.

Although described above with respect to one preferred embodiment, numerous alternative embodiments of the present invention are conceivable. For example, the shelf may be fixed. More than one shelf might be provided where the cargo to be carried is of a height less than one third of the internal height of the container. In such a case a range of lengths of partial height cargo nets may be appropriate to comprehensibly secure the loads.

CLAIMS

1. An off-shore container which is characterised by the provision of a shelf extending, in use, within the container to span substantially the entire floor area of the container and spaced above the floor substantially plane-parallel thereto.

2. An off-shore container as claimed in Claim 1, wherein the shelf is spaced above the floor by a distance of between $^1/_3$ and $^2/_3$ of the internal height of the container.

3. An off-shore container as claimed in Claim 2, wherein the shelf is spaced above the floor by a distance of substantially ½ of the internal height of the container.

4. An off-shore container as claimed in any preceding Claim, wherein the shelf is arranged to be removably mountable within the container.

5. An off-shore container as claimed in Claim 4, wherein the shelf is also stowable at the rear of the container's interior.

6. An off-shore container as claimed in Claim 4 or Claim 5, wherein the de-mountable shelf is mounted within the container by sliding opposing peripheral edges of the shelf into co-operative engagement with corresponding respective slotted brackets provided on the opposing side walls of the container.

7. An off-shore container as claimed in any preceding Claim, wherein the shelf is formed of a grid of bars.

8. An off-shore container as claimed in any of Claims 4-6, wherein the shelf is provided with handle means whereby the shelf may be effectively gripped for mounting, removal or stowage.

9. An off-shore container as claimed in any of Claims 4, 5, 6 and 8,

wherein locking means are provided to secure the shelf in place when in use.

10. An off-shore container as claimed in Claim 9 wherein the locking means comprise a latch mechanism wherein the latch is normally biased toward a locking position and must be held in a retracted state to allow the shelf to be removed.

11. An off-shore container as claimed in any preceding Claim, wherein attachment means are provided on the internal faces of the side walls of the container so that a conventional full-sized cargo net may be fastened across the front face of the cargo within the container, in addition to attachment means for a partial height cargo net which extends, in use, across the front face of the cargo between the roof and the shelf.

12. An off-shore container as claimed in Claim 1 in combination with a full height cargo net and a partial height cargo net fastened, in use, across the front face of the cargo within the container.

13. A method of securing a load within an off-shore container which comprises providing a container as claimed in any of Claims 1-10, loading the cargo onto the floor and shelf of the container; providing a full height cargo net and a partial height cargo net adapted to cover that portion of the container between the roof and shelf; and stretching the partial height cargo net over the front of the cargo and fastening that net in place; and stretching the full height cargo net over the front of the cargo and fastening that net in place also.

14. An off-shore container as claimed in Claim 11 or Claim 12, wherein the partial height cargo net is slidably mounted to the container roof such that it may be extended and retracted across the front of the cargo, in use.

Patents Act 1977
Examiner's report to the Comptroller under Section 17 (The Search Report)

Application number

GB 9214288.4

Relevant Technical fields

(i) UK Cl (Edition L) B8P (PE2J, PK7)

(ii) Int Cl (Edition 5) B65D 88/12; 90/00

Search Examiner

MIKE HENDERSON

Databases (see over)

(i) UK Patent Office

(ii) ONLINE DATABASE: WPI

Date of Search

28 JULY 1993

Documents considered relevant following a search in respect of claims 1-14

Category (see over)	Identity of document and relevant passages		Relevant to claim(s)
X	GB 2223742 A	(INSTONE AIR LINE LTD) - whole specification relevant	1-7
X	EP 0192585 A1	(ETABLISSEMENTS RABVEL) - see particularly page 7, lines 4-8	1-4
X	WO 89/06211 A1	(JAAKKO POYRY OY) - whole specification relevant	1-4
X	US 4747736	(KRIEPS) - whole specification relevant	1-4
X	US 3909089	(SPRINGER) - whole specification relevant	1-4
X	US 3907148	(MELLER ET AL) - whole specification relevant	1-4

		to claim(s)

Categories of documents

X: Document indicating lack of novelty or of inventive step.

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A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

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