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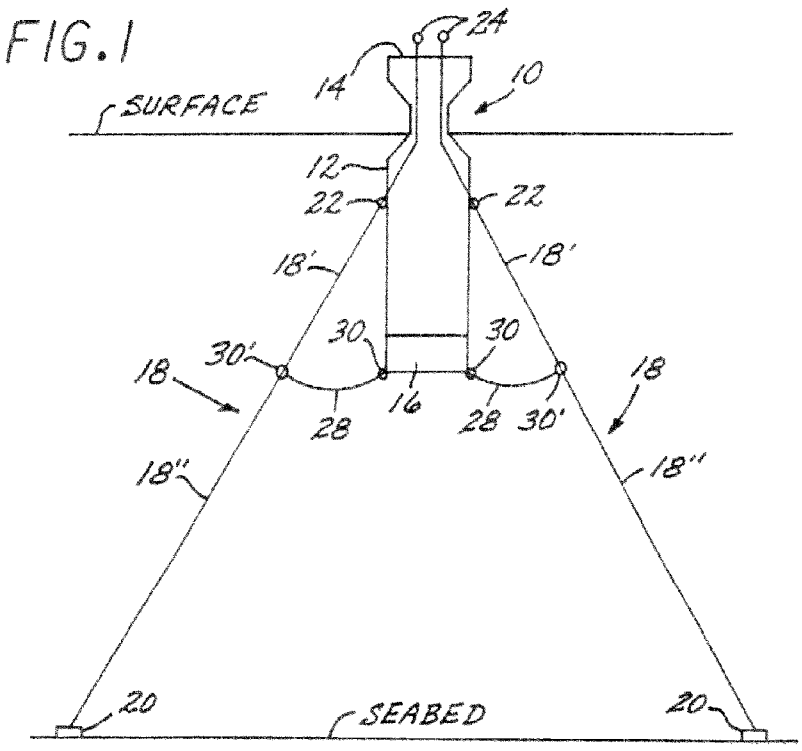
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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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[Continued on next page]

(54) Title: SPAR WITH DETACHABLE HULL STRUCTURE



(57) Abstract: A spar-type offshore platform (10) includes a buoyant upper hull structure (12,42) having a lower end to which is detachably connected a buoyant lower module (16,46). A plurality of mooring line assemblies (18,58) is connected to the lower module, the total weight of the mooring line assemblies being sufficient to sink the lower module. A method of separating the upper hull structure from the lower module includes disconnecting the lower module from the lower end of the upper hull structure, and then allowing the weight of the mooring line assemblies to sink the lower module.

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ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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19 November 2009

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/088042

A. CLASSIFICATION OF SUBJECT MATTER
INV. B63B21/50 B63B35/44

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)
B63B B62B

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 practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 831 023 A (SINGLE BUOY MOORINGS [CH]) 25 March 1998 (1998-03-25) abstract column 1, lines 1-10,33-37 column 2, lines 1-4,31-55 column 3, lines 27-44 column 4, lines 10-13,25-28 figure 1	1,4, 7-10,13, 14
X	US 2003/031517 A1 (WETCH STEPHEN B [US]) 13 February 2003 (2003-02-13) abstract paragraphs [0008], [0019], [0021], [0027], [0034] claim 36 figure 1	1,4,7,8, 10

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[X] Further documents are listed in the continuation of Box C.

[X] 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 document 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

Date of the actual completion of the international search	Date of mailing of the international search report
29 September 2009	06/10/2009

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Weber, Ingo

INTERNATIONAL SEARCH REPORT

International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 7 197 999 B2 (MURRAY JOHN [US]) 3 April 2007 (2007-04-03) cited in the application abstract column 1, lines 19-30 column 2, lines 15-32 column 5, line 63 - column 6, line 12	1
A	figure 1	11

X	WO 2007/108705 A (FRAMO ENG AS [NO]; INGEBRIGTSEN ATLE [NO]; SEIM LARS [NO]; ERSTAD JOST) 27 September 2007 (2007-09-27) page 2, lines 17-19 page 4, lines 29-31	1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/088042

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.

2. ☒ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search reportcovers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-12

   Floating platform with an upper hull structure connected to a buoyant lower module, the upper hull structure being moored to the seabed by main mooring lines, the buoyant lower module being connected to the main mooring lines by transverse anchor lines; method of disconnecting upper hull structure from buoyant lower module utilising transverse anchor lines.

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2. claims: 13,14

   Method of disconnecting an upper hull structure of a floating platform from a buoyant lower module without utilising transverse anchor lines.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2008/088042

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		CA 2216047 A1	20-03-1998
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