

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
19 June 2008 (19.06.2008)

PCT

(10) International Publication Number
WO 2008/073178 A3

(51) International Patent Classification:
G01V 1/00 (2006.01)

(21) International Application Number:
PCT/US2007/020522

(22) International Filing Date:
21 September 2007 (21.09.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/826,616 22 September 2006 (22.09.2006) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, 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, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

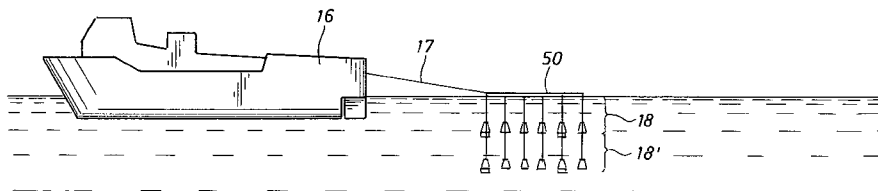
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
7 August 2008

(54) Title: SEISMIC ARRAY WITH SPACED SOURCES HAVING VARIABLE PRESSURE



(57) Abstract: An over/under seismic source system includes a first umbilical to a first gun array at a first depth and a second umbilical at a different air pressure to a second gun array at a second, lower depth. The air pressure to the second, lower gun array is tuned so that the periods of the gun bubbles from the higher and lower gun arrays match in order to improve wavefield separation in subsequent data processing.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/20522

A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - G01V 1/00 (2008.04) USPC - 367/14 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) IPC(8): G01V 1/00 (2008.04) USPC: 367/14		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched IPC(8): G01V 1/00 (2008.04) (text search) USPC: 367/14, 18, 20 (text search)		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWEST(USPT,PGPB,EPAB,JPAB); Internet search via Google Web and Google Scholar search engines. Search terms: seismic marine hydrophone sensor receiver reciever airgun air gun tow cable hose array depth deep vessel ship tow vertical horizontal anchor mooring weight towed array sea ocean subsea seabed control synchronize		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 4,721,180 A (HAUGHLAND et al.) 26 January 1988 (26.01.1988) col. 1 ln. 38 to col. 6 ln. 12, Fig. 1-3	1-8 and 12 ----- 9-11
Y	US 4,970,697 A (EARLEY et al.) 13 November 1990 (13.11.1990) col. 1 ln. 13 to col. 3 ln. 56, Fig 1, 3	9-11
A	US 4,323,989 A (HUCKABEE et al.) 06 April 1982 (06.04.1982)	1-12
A	US 6,115,325 A (CHIEN et al.) 05 September 2000 (05.09.2000)	1-12
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"P" document published prior to the international filing date but later than the priority date claimed		
Date of the actual completion of the international search 31 May 2008 (31.05.2008)	Date of mailing of the international search report <h2 style="text-align: center; margin: 0;">05 JUN 2008</h2>	
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: <p style="text-align: right;">Lee W. Young</p> PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774	