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Declarations under Rule 4.17:

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

[Continued on next page]

(54) Title: INTEGRATED MULTI-BEAM ACOUSTIC DOPPLER DISCHARGE MEASUREMENT SYSTEM

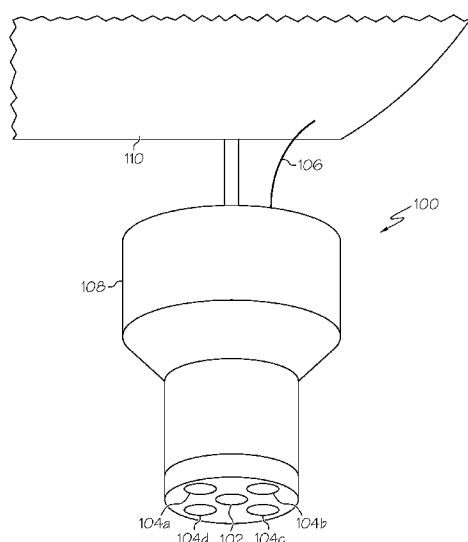


FIG. 1

(57) Abstract: A system and method for measuring the flow of water in cross-section of a body of water is presented. The system and method comprises a housing having a first transducer and a plurality of second transducers, wherein the first transducer produces an acoustic signal for determining the depth of the body of water, and the second transducers each produce an acoustic signal for determining the velocity of a volume of water by measuring the Doppler frequency shift in the returned echo.



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- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))* (88) **Date of publication of the international search report:** 7 April 2016

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - G01F 1/66 (2010.01) USPC - 73/861.27 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 - G01F 1/66 (2010.01) USPC - 73/861.27 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC - 702/48, 50, 54; 73/861.23, 25-27 Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWEST (PubWEST (DB=PGPB,USPT,USOC,EPAB,JPAB), Google Scholar Search Terms - Doppler, sonar, transducers, frequency, depth, velocity profile, discharge, river, flood plane, echo, ADCP		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,983,208 B2 (METCALF et al.) 03 January 2006 (03.01.2006) entire document, especially col 2, ln 14-67, col 3, ln 4-40; Fig 2	1-41
Y	OBERG, 'What's new in Hydroacoustics?' United States Geological Survey Training Presentation [online], September 2008. [retrieved on 2010-01-28], Retrieved from the Internet: <URL: http://www.hydroacoustics.usgs.gov/training/webinars/What'sNewHA.ppt>, entire document	1-24, 36-41
Y	US 2008/0289433 A1 (LOHRMANN et al.) 27 November 2008 (27.11.2008) para [0060] - [0063]	25-41
Y	US 2008/0156577 A1 (DIETZ et al.) 03 July 2008 (03.07.2008) para [0061]	4
Y	US 2008/0239869 A1 (LOHRMANN et al.) 02 October 2008 (02.10.2008) para [0043], [0060]	5-6, 10, 32-33
Y	US 5,122,990 A (DIENES et al.) 16 June 1992 (16.06.1992) col 4, ln 28-68; Fig 1	7-16, 21
Y	SIMPSON, "Discharge Measurements Using a Broad-Band Acoustic Doppler Current Profiler," United States Geological Survey, OPEN-FILE REPORT 01-1[online], 2001, [retrieved on 2010-01-28], Retrieved from the Internet: <URL: http://pubs.usgs.gov/of/2001/ofr0101/text.pdf>, entire document	17, 26-28
Y	BONNET, "Floodplain hydrology in an Amazon floodplain lake," Journal of Hydrology, No. 349[online], 30 January 2008, [retrieved on 2010-01-28], Retrieved from the Internet: <URL: http://www.lmtg.obs-mip.fr/user/MAURICE/publi/2008_Bonnetetal_FloodplainhydCuruai_JofHyd.pdf>, p 18-30	23-24, 38
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/>		
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Date of the actual completion of the international search 29 January 2010 (29.01.2010)		Date of mailing of the international search report 09 MAR 2010
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: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

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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.
Y	US 7,267,013 B2 (MAIER et al.) 11 September 2007 (11.09.2007) col 4, ln 41-67	29
Y	US 6,820,008 B1 (van SMIRREN et al.) 16 November 2004 (16.11.2004) col 5, ln 22-38	15, 35
Y	US 6,453,256 B1 (GORDON et al.) 17 September 2002 (17.09.2002) col 10, ln 48-64	9, 33
Y	US 5,208,785 A (BRUMLEY et al.) 04 May 1993 (04.05.1993) col 9, ln 23-38; Fig 3, 4c	14
A	US RE35,535 E (BRUMLEY et al.) 17 June 1997 (17.06.1997)	1-41