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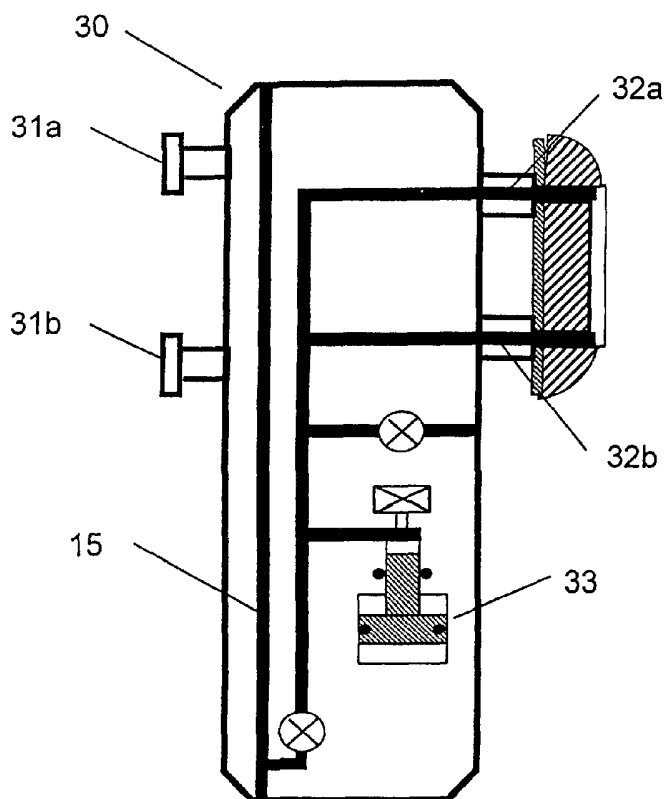
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[Continued on next page]

(54) Title: FORMATION TESTING AND SAMPLING APPARATUS AND METHODS



(57) Abstract: Systems and methods for downhole formation testing. The invention is based on the use of one or more elongated sealing pads (34) capable of sealing off and collecting or injecting fluids from elongated portions along the surface of a borehole. The modified probe pads (34) of a device (30) made in accordance with the invention increase the flow area by collecting fluids from an extended portion along the surface of a borehole, which is likely to straddle one or more layers in laminated or fractured formations.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : E21B 49/10, 49/00 US CL : 166/264, 100; 175/50, 58; 73/152.26, 152.24 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) U.S. : 166/264, 100, 250.17; 175/50, 58, 40, 59; 73/152.26, 152.24, 152.23, 152.25 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 practicable, search terms used) EAST: fluid sampling, borehole, formation, elongate, rectangular, sealing pad		
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 3,577,782 A (AITKEN) 04 May 1971 (04.05.1971), see Figures 2, 3, 14, and 15; column 4, lines 50-75, column 8, lines 69-71, and column 9, lines 1-4. Figures 2, 3, 14, and 15.	1-3, 5, 8, 14, 15, 17-23, 41, 43, 46, 49, 51, 52, 56, 59, and 60 ----- 6, 7, 11, 12, 24, 40, 42, 44, 45, 50, 53, 55, 57, 58, and 61
X --- Y	US 3,452,592 A (VOETTER) 01 July 1969 (01.07.1969), see Figures 1-4, column 3, lines 7-45, column 6, lines 8-28, and column 7. See Figures 1-4.	1-3, 5, 8, 13-15, 17-23, 41, 43, 46, 47, 51, 52, and 55 ----- 6, 7, 11, 12, 24, 32, 42, 44, 45, 50, and 53
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"O"	document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
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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. (703) 305-3230		Authorized officer David Bagnell <i>[Signature]</i> Telephone No. 703-308-1113

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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 --- Y	US 4,339,948 A (HALLMARK) 20 July 1982 (20.07.1982), see Figures 1-3, columns 2-4, and claim 1. See Figures 1-3 and claim 1.	1-5, 13-18, 20-23, 25-27, 34-39, 62, and 63 ----- 12, 24, 28-33, 40, 42, 53, and 64
Y	US 6,301,959 B1 (HRAMETZ et al) 16 October 2001 (16.10.2001), see Figs. 4-5C and column 6, lines 13-15.	6, 7, and 45
Y	US 4,951,749 A (CARROLL) 28 August 1990 (28.08.1990), see Figures 2-3 and column 9, lines 38-50.	12 and 44
Y	US 4,936,139 A (ZIMMERMAN et al) 26 June 1990 (26.06.1990), see column 6, lines 2-7.	24 and 55
Y	US 6,173,793 B1 (THOMPSON et al) 16 January 2001 (16.01.2001), see Figures 3C-3E, and 9B, and claims 13-15.	28, 29, 33, and 61