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[Continued on next page]

(54) Title: A RESONANCE METHOD FOR MEASURING THE ELECTROACOUSTIC CONSTANT AND PERMEABILITY OF ROCK FORMATIONS

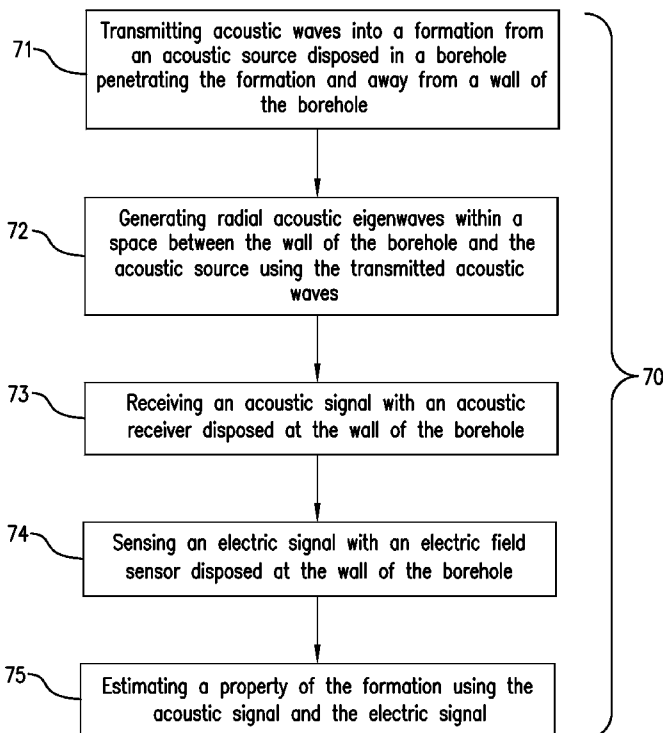


FIG. 7

(57) Abstract: Disclosed is a method for estimating a property of an earth formation penetrated by a borehole. The method includes: transmitting acoustic waves into the formation from an acoustic source disposed in the borehole and away from a wall of the borehole; generating radial acoustic eigenwaves within a space between the wall of the borehole and the acoustic source using the transmitted acoustic waves; receiving an acoustic signal with an acoustic receiver disposed at the wall of the borehole; sensing an electric field signal with an electric field sensor disposed at the wall of the borehole; and estimating the property using the received acoustic signal and the sensed electric field signal.

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

— *as to the applicant's entitlement to claim the priority of
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— *as to applicant's entitlement to apply for and be granted
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A. CLASSIFICATION OF SUBJECT MATTER*G01V 11/00(2006.01)i, G01V 1/40(2006.01)i, G01V 3/18(2006.01)i, E21B 47/00(2006.01)i*

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)

G01V 11/00; G01V 1/30; E21B 49/00; G01V 1/40; G01V 1/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: electroacoustic, permeability, borehole

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 04904942 A (THOMPSON; ARTHUR H.) 27 February 1990 See abstract and claim 1.	1-14
A	US 2009-0180350 A1 (DOROVSKY VITALY N. et al.) 16 July 2009 See abstract, paragraphs 10-12, 21, 27, 30, 34, and claims 8-13, 19-20	1-14
A	US 7813219 B2 (DUBINSKY VLADIMIR et al.) 12 October 2010 See abstract and claim 1.	1-14
A	US 05841280 A (YU; GANG et al.) 24 November 1998 See abstract and claim 1.	1-14

 Further documents are listed in the continuation of Box C. 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

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"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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