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

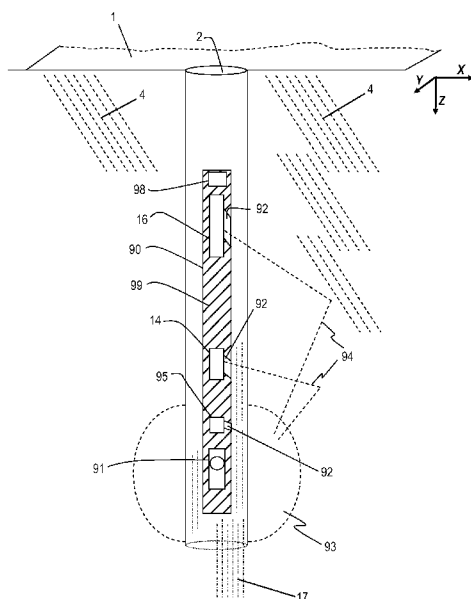
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(54) **Title:** SOURCE COMPENSATED FORMATION DENSITY MEASUREMENT METHOD BY USING A PULSED NEUTRON GENERATOR

FIG. 9



(57) **Abstract:** A downhole instrument for estimating density of sub-surface materials includes: a neutron source, a source monitoring detector, a near detector and a far detector. Each of the detectors may be coupled to an electronics unit adapted for receiving a detection signal from each of the detectors and compensating the detection signal for at least one of the near detector and the far detector according to the detection signal of the source monitoring detector. A method for estimating density is provided.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/037977**A. CLASSIFICATION OF SUBJECT MATTER***G01V 5/10(2006.01)i, G01V 5/04(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 5/10; E21B 47/04; E21B 47/00; G06F 19/00; E21B 49/00

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: downhole, neutron, detector, compensate

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002-0170348 A1 (BRADLEY A. ROSCOE et al.) 21 November 2002 See paragraphs 22, 23, 28, 38, 42 and figures 1, 6.	1-20
A	US 2005-0067160 A1 (LARRY A. JACOBSON) 31 March 2005 See abstract; paragraphs 25-30 and figure 1.	1-20
A	WO 2008-070103 A2 (NRC ENTERPRISES, LLC) 12 June 2008 See abstract; paragraphs 25-30; claim 1 and figure 1.	1-20
A	US 2002-0046836 A1 (CHARLES ALEXANDER PEREIRA et al.) 25 April 2002 See abstract; claims 1, 18 and figures 3-5.	1-20

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

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