

(21) Application No: 0412773.4
(22) Date of Filing: 04.12.2002
(30) Priority Data:
(31) 10004650 (32) 04.12.2001 (33) US
(86) International Application Data:
PCT/US2002/038517 En 04.12.2002
(87) International Publication Data:
WO2003/048814 En 12.06.2003

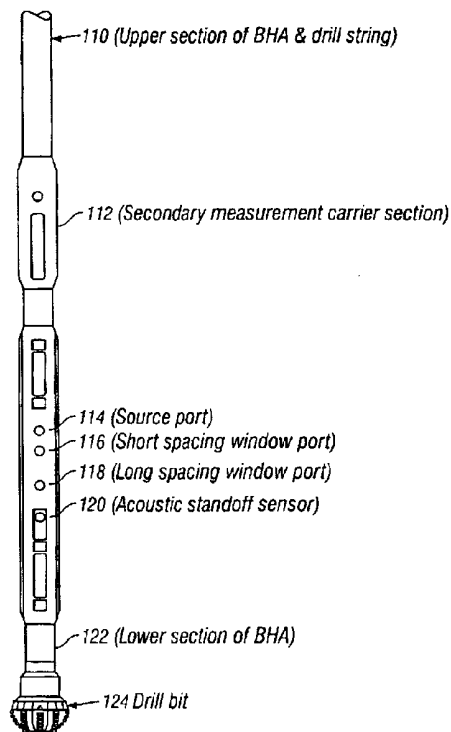
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(51) INT CL⁷:
G01V 5/12
(52) UK CL (Edition W):
G1A AA11 AA4 ABAX ACL ADB AG13 AG16 AG8 AR2
AT22 AT3
(56) Documents Cited by ISA:
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(58) Field of Search by ISA:
INT CL⁷ G01V
Other: Online: EPO-Internal, WPI Data, INSPEC, JAPIO

(54) Abstract Title: **Method and apparatus for determining oriented density measurements including stand-off corrections**

(57) A logging-while-drilling sensor includes a gamma ray source (114) and at least two NaI detectors (116, 118) spaced apart from the source for determining measurements indicative of the formation density. A magnetometer on the drill collar measures the relative azimuth of the NaI detectors. An acoustic caliper is used for making standoff measurements of the NaI detectors. Measurements made by the detectors are partitioned into spatial bins defined by standoff and azimuth. Within each azimuthal sector, the density measurements are compensated for standoff to provide a single density measurement for the sector. The azimuthal sectors are combined in such a way as to provide a compensated azimuthal geosteering density. The method of the invention may also be used with neutron porosity logging devices.



GB 2402480 A continuation

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