



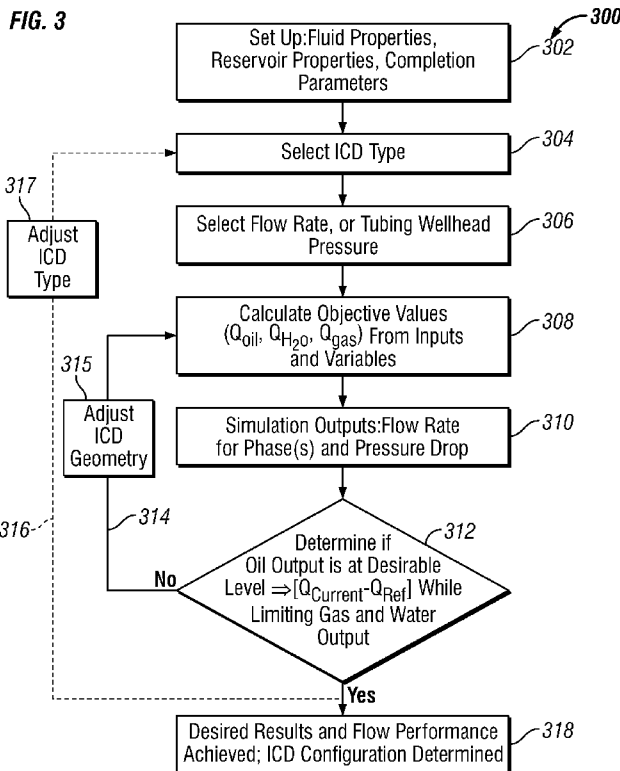
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- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
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[Continued on next page]

(54) **Title:** A METHOD OF PROVIDING FLOW CONTROL DEVICES FOR A PRODUCTION WELLBORE



(57) **Abstract:** A method of providing a production string for a wellbore formed in a formation is disclosed. The method, in one embodiment may include: defining a performance criterion for flow of a fluid from a formation into a wellbore; performing a simulation using a processor, a simulation program, a parameter of the fluid, a parameter of the formation and a parameter of the wellbore to determine a first flow characteristic of the flow of the fluid from the formation into the wellbore corresponding to an initial set of flow control devices arranged in the wellbore; performing one or more additional simulations using the processor, the simulation program and the parameters of formation, fluid and wellbore to determine a new flow characteristic of the flow of the fluid from the formation into the wellbore for a new set of flow control devices until a new determined characteristic of the flow of the fluid from the formation into the wellbore meets the performance criterion; and storing results of simulation results relating to the flow control devices in a suitable storage medium.

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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).

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- *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))*

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/033248**A. CLASSIFICATION OF SUBJECT MATTER****E21B 49/08(2006.01)i, E21B 47/008(2012.01)i, E21B 47/007(2012.01)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)

E21B 49/08; E21B 43/12; E21B 47/00; G06G 7/48; G01V 3/00; G06G 7/50

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: flow control, parameter, performance, simulation, processor, wellbore, formation, characteristic

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2011-0079387 A1 (RUSSELL, RONNIE D. et al.) 07 April 2011 See abstract, paragraphs 0003, 0006, 0009, 0013, 0028, 0029, 0033, 0034, 0037	1-9,11-21
A	, 0045, 0050, 0053, 0056, claims 1, 12 and figure 1.	10,22,23
A	US 2002-0049575 A1 (JALALI, YOUNES et al.) 25 April 2002 See abstract, paragraphs 0020, 0021, 0023, 0027, 0048, claim 1 and figure 3.	1-23
A	US 2002-0177955 A1 (JALALI, YOUNES et al.) 28 November 2002 See paragraphs 0035, 0036, 0041, 0044, 0045, 0088, 0106 and claims 1, 20.	1-23
A	US 2009-0095487 A1 (XU, YANG et al.) 16 April 2009 See abstract, paragraph 0021, claims 1, 12, 15 and figure 1.	1-23

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

* Special categories of cited documents:

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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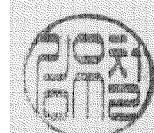
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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