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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))*

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(54) **Title**: A METHOD OF TRAINING NEURAL NETWORK MODELS AND USING SAME FOR DRILLING WELLBORES

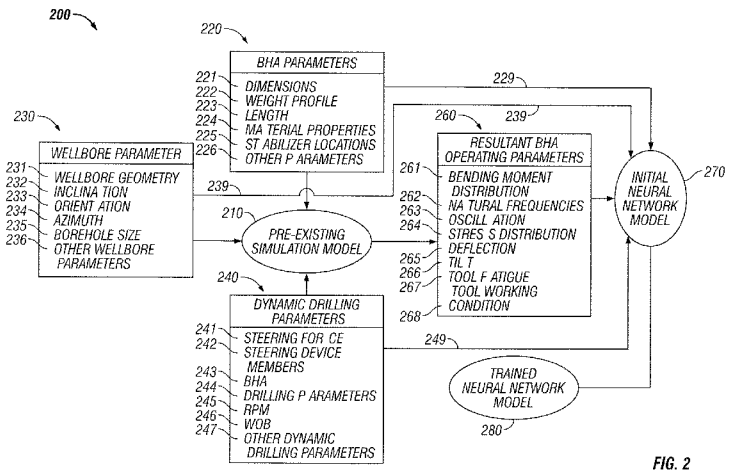

FIG. 2

(57) **Abstract**: A method of creating and using a neural network model (180) for wellbore operations is disclosed. The method, in one aspect, may include defining a plurality of a wellbore parameter (230); calculating a plurality of output values of a tool operating parameter (260) using the plurality of values of the wellbore parameter (230) as input to a preexisting model (210); and obtaining a neural network model (270) by using the plurality of values of the wellbore parameter (230) and the calculated plurality of output values of the tool operating parameter (260). The neural network (270) may be utilized for any suitable wellbore operation, including in conjunction with a drilling assembly (190) for drilling a wellbore.

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A. CLASSIFICATION OF SUBJECT MATTER
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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

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 practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2007/185696 A1 (MORAN DAVID P [US] ET AL) 9 August 2007 (2007-08-09) paragraphs [0056], [0057], [0070], [0106], [0145] - [0154]	1-23
X	US 6 424 919 B1 (MORAN DAVID P [US] ET AL) 23 July 2002 (2002-07-23) column 11, line 41 - column 13, line 13	1-23
A	US 2007/168056 A1 (SHAYEGI SARA [US] ET AL SHAYEGI SARA [US] ET AL) 19 July 2007 (2007-07-19) paragraphs [0076], [0077]	1-23

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA/	Authorized officer
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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