

Title (en)

METHODS AND APPARATUS TO DETERMINE PRODUCTION OF DOWNHOLE PUMPS

Title (de)

VERFAHREN UND VORRICHTUNG ZUR BESTIMMUNG DER ERZEUGUNG DER BOHRLOCHPUMPEN

Title (fr)

PROCÉDÉS ET APPAREIL DE DÉTERMINATION DE LA PRODUCTION DE POMPES DE FOND DE TROU

Publication

EP 3314087 A1 20180502 (EN)

Application

EP 16738945 A 20160629

Priority

- US 201514753335 A 20150629
- US 2016039939 W 20160629

Abstract (en)

[origin: WO2017004110A1] Methods and apparatus to determine production of a downhole pump are described herein. An example method includes measuring a first amount of liquid produced from a well by a pump during a first stroke of the pump, computing a first pump card based on the first stroke, determining a first area of the first pump card and determining a leakage proportionality constant of the pump based on the first amount of liquid produced and the first area. The example method also includes computing a second pump card based on a second stroke of the pump, determining a second area of the second pump card and determining a second amount of liquid produced by the pump during the second stroke based on the leakage proportionality constant and the second area.

IPC 8 full level

E21B 43/12 (2006.01); **E21B 47/00** (2012.01)

CPC (source: CN EP RU US)

E21B 43/127 (2013.01 - CN EP RU US); **E21B 47/009** (2020.05 - EP); **F04B 51/00** (2013.01 - CN RU); **G16Z 99/00** (2019.02 - CN RU)

Cited by

CN109899057A

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2017004110 A1 20170105; AR 105175 A1 20170913; BR 112017028098 A2 20180828; BR 112017028098 B1 20221004;
CA 2990440 A1 20170105; CN 106326630 A 20170111; CN 106326630 B 20220118; CN 206757617 U 20171215; EP 3314087 A1 20180502;
EP 3314087 B1 20190807; JP 2018519446 A 20180719; JP 6875053 B2 20210519; MX 2017017007 A 20180430; RU 2018101976 A 20190730;
RU 2018101976 A3 20191224; RU 2726697 C2 20200715; SA 517390595 B1 20230104

DOCDB simple family (application)

US 2016039939 W 20160629; AR P160101952 A 20160628; BR 112017028098 A 20160629; CA 2990440 A 20160629;
CN 201610471564 A 20160624; CN 201620639428 U 20160624; EP 16738945 A 20160629; JP 2017568268 A 20160629;
MX 2017017007 A 20160629; RU 2018101976 A 20160629; SA 517390595 A 20171224