

Title (en)  
VARIABLE FLOW RESISTANCE FOR USE WITH A SUBTERRANEAN WELL

Title (de)  
VARIABLER STRÖMUNGSWIDERSTAND ZUR VERWENDUNG BEI EINER UNTERIRDISCHEN BOHRUNG

Title (fr)  
SYSTÈME DE RÉSISTANCE VARIABLE À L'ÉCOULEMENT À METTRE EN OEUVRE DANS UN Puits SOUTERRAIN

Publication  
**EP 3375975 A1 20180919 (EN)**

Application  
**EP 18169405 A 20111107**

Priority  
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• US 2011059530 W 20111107

Abstract (en)  
A variable flow resistance system for use with a subterranean well can include a structure 90 which displaces in response to a flow of a fluid composition, whereby a resistance to the flow of the fluid composition changes in response to a change in a ratio of desired to undesired fluid in the fluid composition. Another system can include a structure 90 which rotates in response to flow of a fluid composition, and a fluid switch which deflects the fluid composition relative to at least two flow paths. A method of variably resisting flow in a subterranean well can include a structure displacing in response to a flow of a fluid composition, and a resistance to the flow of the fluid composition changing in response to a ratio of desired to undesired fluid in the fluid composition changing. Swellable materials and airfoils may be used in variable flow resistance systems.

IPC 8 full level  
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Citation (applicant)  
• US 79211710 A 20100602  
• US 3385367 A 19680528 - PAUL KOLLSMAN  
• US 7059415 B2 20060613 - BOSMA MARTIN GERARD RENE [NL], et al  
• US 2004020662 A1 20040205 - FREYER JAN [NO]  
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Citation (search report)  
• [E] EP 2697473 B1 20180207 - HALLIBURTON ENERGY SERVICES INC [US]  
• [E] EP 2392771 A2 20111207 - HALLIBURTON ENERGY SERV INC [US]  
• [A] WO 2010087719 A1 20100805 - STATOIL ASA [NO], et al  
• [A] EP 2383430 A2 20111102 - HALLIBURTON ENERGY SERV INC [US]

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**WO 2013070181 A1 20130516**; AU 2011380934 A1 20140327; AU 2016203869 A1 20160630; AU 2016203869 B2 20180531; AU 2018202886 A1 20180517; AU 2018202886 B2 20191212; AU 2018222999 A1 20180920; AU 2018222999 B2 20200116; AU 2018223000 A1 20180920; AU 2018223000 B2 20200319; BR 112014010881 A2 20170418; BR 112014010881 B1 20210209; BR 112014010881 B8 20210330; CA 2851559 A1 20130516; CA 2851559 C 20170620; CA 2966002 A1 20130516; CA 2966002 C 20180911; CA 3012944 A1 20130516; CA 3012944 C 20200721; CN 103917741 A 20140709; CN 103917741 B 20171215; CO 6940395 A2 20140509; EP 2776660 A1 20140917; EP 2776660 A4 20160106; EP 2776660 B1 20180502; EP 3375975 A1 20180919; EP 3375975 B1 20200729; IN 3064DEN2014 A 20150515; MX 2014005512 A 20140605; MX 347694 B 20170509; MX 360719 B 20181114; MY 167754 A 20180924; NO 2776660 T3 20180929; RU 2014121076 A 20151220; RU 2594409 C2 20160820; SG 11201400693W A 20140428

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**US 2011059530 W 20111107**; AU 2011380934 A 20111107; AU 2016203869 A 20160609; AU 2018202886 A 20180426; AU 2018222999 A 20180830; AU 2018223000 A 20180830; BR 112014010881 A 20111107; CA 2851559 A 20111107; CA 2966002 A 20111107; CA 3012944 A 20111107; CN 201180074695 A 20111107; CO 14080606 A 20140414; EP 11875323 A 20111107; EP 18169405 A 20111107; IN 3064DEN2014 A 20140417; MX 2014005512 A 20111107; MX 2017006003 A 20111107; MY PI2014000668 A 20111107; NO 11875323 A 20111107; RU 2014121076 A 20111107; SG 11201400693W A 20111107