

1) Family number: 14963058 (US6189629B)

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Title: Lateral jet drilling system
Priority: CA19982246040 19980828

Family:	Publication number	Publication date	Application number	Application date
	CA2246040 AA	20000228	CA19982246040	19980828
	US6189629 BA	20010220	US19980153089	19980914

Probable Assignee: HINES NURSERIES INC
Assignee(s):(std): GOLDEYE CANADA INC ; LOREE DWIGHT N ; MCLEOD RODERICK D
Assignee(s): HINES NURSERIES INC
Inventor(s):(std): LOREE DWIGHT N ; MCLEOD RODERICK D
Agent(s): THOMPSON LAMBERT LLP
International class
(IPC 8-9): E21B43/10 E21B43/114 E21B7/06 E21B7/08 E21B7/18 (Advanced/Invention);
E21B43/02 E21B7/04 E21B7/18 (Core/Invention)
International class
(IPC 1-7): E21B43/114 E21B7/08 E21B7/18
CPC: E21B7/061 E21B7/18 E21B43/103
European class: E21B43/10F E21B7/06B E21B7/18
US class: 175/321 175/67 175/79

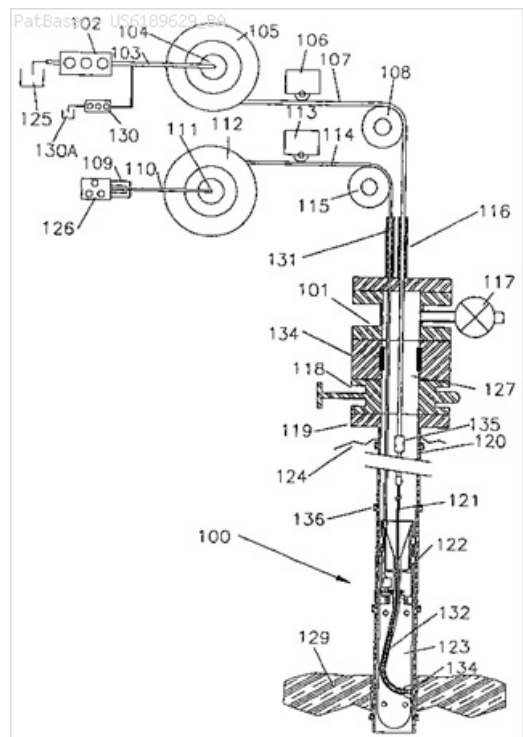
[Classification Explorer](#)

Cited documents: USRE33660 E, USRE29021 E, US5853056 A, US5515923 A, US5513713 A, US5499679 A, US5439066 A, US5413184 A, US5392858 A, US5373906 A, US5318121 A, US5265687 A, US5249628 A, US5230386 A, US5183111 A, US5165491 A, US5148880 A, US5148877 A, US5113953 A, US5090496 A, US4974672 A, US4890681 A, US4854400 A, US4850440 A, US4848486 A, US4836611 A, US4832552 A, US4832143 A, US4763734 A, US4739843 A, US4693327 A, US4640362 A, US4631136 A, US4601353 A, US4589499 A, US4533182 A, US4527639 A, US4526242 A, US4445574 A, US4402551 A, US4397360 A, US4368786 A, US4365676 A, US4317492 A, US4185705 A, US4168752 A, US4134453 A, US4050529 A, US4007797 A, US3958649 A, US3873156 A, US3853185 A, US3840079 A, US3838736 A, US3670831 A, US3536151 A, US3262508 A, US3191697 A, US3145776 A, US3130786 A, US2838117 A, US2796129 A, US2758653 A, US2707616 A, US2608384 A, US2345816 A, US2271005 A, US2258001 A, US2251916 A, US2065436 A, US2018285 A, US1733311 A, US1485615 A, US1367042 A, CA2141111 AA, CA2131195 AA, CA2090306 AA,

Forward Citations: WO17078537, WO11041887, WO10017139, WO10017139, WO08157185, WO08157185, WO08061071, WO06053248, US9850714, US9567820, US9567809, US9528323, US9410376, US9371693, US8590637, US8528644, US8201643, US7909118, US7699107, US7677316, US7584794, US7546876, US7527092, US7422059, US7401665, US7373994, US6971457, US6964303, US6889781, US6668948, US2016333640, US2015267475, US2014299324, US2014000967, US2013062125, US2012067647, US2011155469, US2011147088, US2010243266, US2010224367, US2009218143, US2008277118, US2008264630, US2008235375, US2008179061, US2008000694, US2007175636, US2007151766, US2007151731, US2007107902, US2006076162, US2006042835, US2005103528, US2004007391, US2002162689, US10125580, US10094172, GB2545069, GB2463423, EA11622, EA011622, CN106703720, CN104832092, CN103437703, CN103437703, CN101892833, AU2012220352,

Abstract:

In the field of drilling lateral channels from the cased bore of an oil well, a system is presented whereby a number of lateral channels can be drilled through the casing and out a distance into the formation with no requirement to move or raise the lateral drilling apparatus to the surface for each lateral channel drilled. The direction of the drilled lateral channel can be selected by the system operator at the well head. The system will allow the drilling of lateral channels with the well under pressure. A configuration is shown which will allow the installation of a flexible perforated liner in the channel, which flexible perforated liner will prevent the material around the channel from collapsing.



2) Family number: 11160238 (US5812068A)

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Title: DRILLING SYSTEM WITH DOWNHOLE APPARATUS FOR DETERMINING PARAMETERS OF INTEREST AND FOR ADJUSTING DRILLING DIRECTION IN RESPONSE THERETO

Priority: US19940354276 19941212 US19950371882 19950112 CA19952165017 19951212
US19950570838 19951212 US19980156767 19980918 US20000494955 20000201

Family:

Publication number	Publication date	Application number	Application date
CA2165017 AA	19960613	CA19952165017	19951212
CA2165017 C	20060711	CA19952165017	19951212
EP0718641 A2	19960626	EP19950119573	19951212
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EP0718641 B1	20030813	EP19950119573	19951212
NO318120 B1	20050207	NO19950005008	19951211
NO955008 A	19960613	NO19950005008	19951211
NO955008 A0	19951211	NO19950005008	19951211
US5812068 A	19980922	US19950570838	19951212
US6272434 BA	20010807	US20000494955	20000201

Probable Assignee: BAKER HUGHES INC

Assignee(s):(std): BAKER HUGHES INC

Assignee(s): BEIMGRABEN HERBERT W ; DEADY RONALD J ; HUBNER BERNARD G ; MEYER WALLACE HAROLD JR ; THOMPSON LARRY W ; MINETTE DANIEL C ; WISLER MACMILLAN M ; LEGGETT JAMES V III

Inventor(s):(std): BEIMGRABEN HERBERT W ; DEADY RONALD ; HUBNER BERNARD G ; LEGGETT III JAMES V ; MEYER WALLACE H ; MINETTE DANIEL ; WISLER MACMILLAN M ; WISLER MACMILLAN H ; THOMPSON LARRY W ; MINETTE DANIEL C ; MEYER WALLACE HAROLD JR ; MEYER JR WALLACE HAROLD ; MEYER JR WALLACE H ; LEGGETT JAMES V III ; DEADY RONALD J ; LEGGETT

Inventor(s): LEGGETT JAMES V

Agent(s): GOWLING LAFLEUR HENDERSON LLP

Designated states: FR GB NL

International class (IPC 8-9): E21B44/00 E21B47/022 E21B47/12 E21B47/26 E21B7/04 E21B7/06 G01V11/00 (Advanced/Invention); G01V11/00 (Advanced/Non-invention); E21B (Core/Invention); E21B (Subclass/Invention)

International class (IPC 1-7): E21B E21B44/00 E21B47/00 E21B47/022 E21B47/06 E21B47/12 E21B7/04 E21B7/06 G01V11/00 G01V3/00 G01V3/38

CPC: E21B7/068 E21B44/005 E21B47/022 E21B47/124 G01V11/00

European class: E21B44/00B E21B47/022 E21B47/12S E21B7/06M G01V11/00

US class: 175/40 175/45 340/853.1 340/855.5 340/855.6 340/856.3 340/893.1 702/11 702/9 73/152.02 73/152.03 73/152.05 73/152.46

[Classification Explorer](#)

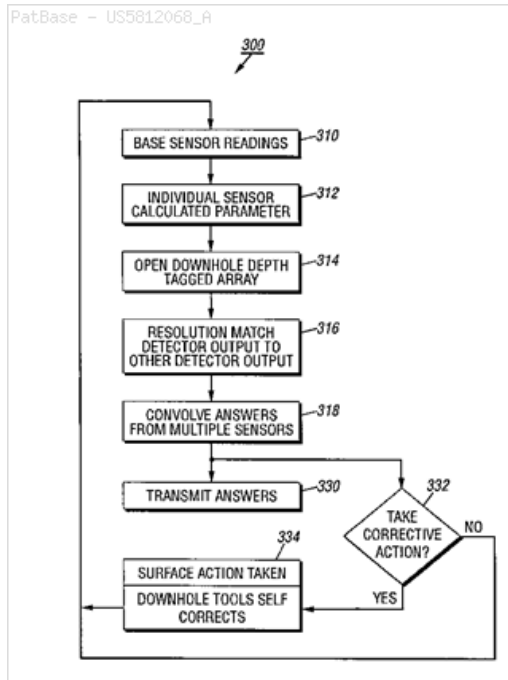
Cited documents: WO9312318 A1, US5581024 A, US5473158 A, US5349528 A, US5332048 A, US5317111 A, US5282133 A, US5250806 A, US5230837 A, US5163521 A, US5064006 A, US5055837 A, US4873522 A, US4833914 A, US4791797 A, US4785300 A, US4774694 A, US4715022 A, US4709234 A, US4663628 A, US4468665 A, US4403290 A, US4310887 A, US4215427 A, US3886495 A, US3721960 A, US3720912 A, US3638484 A, US3590228 A, US3302457 A, US3209323 A,

Forward Citations: WO9817894, WO9817894, WO17142937, WO17078949, WO17041078, WO16187279, WO16183149, WO16053330, WO16043723, WO15020748, WO14179832, WO14160741, WO14098840, WO14062194, WO14022614, WO13181143, WO13019223, WO12174295, WO12036689, WO11049828, WO11049828, WO10093626, WO10005905, WO10005905, WO09077715, WO09077715, WO08101333, WO08034028,

WO07080080, WO07019319, WO06086417, WO05091888, WO05091888, WO04070425, WO04059122, WO03102369, WO02079601, WO0134935, WO0104453, WO0075695, WO0036273, USRE38567, US9989661, US9977146, US9967153, US9958562, US9951602, US9938785, US9933544, US9903974, US9890633, US9863232, US9850714, US9790769, US9784100, US9715035, US9702240, US9696198, US9677337, US9664028, US9644477, US9631446, US9624768, US9593567, US9587478, US9534451, US9534446, US9514388, US9500762, US9494030, US9493990, US9488006, US9441477, US9441476, US9429676, US9404356, US9399909, US9388680, US9388635, US9347308, US9334723, US9316100, US9297205, US9273517, US9260943, US9250354, US9238960, US9228433, US9163497, US9157310, US9157309, US9134448, US9128693, US9085958, US9063062, US9062524, US9057258, US9057248, US9022140, US9019798, US9006645, US8996396, US8984946, US8967244, US8960326, US8954304, US8905139, US8899322, US8875806, US8857538, US8851203, US8844649, US8831886, US8827006, US8818729, US8794353, US8788210, US8781744, 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Abstract:

The present invention provides a measurement-while-drilling (MWD) system having a downhole computer and multiple downhole sensors. Relatively large amounts of basic or "raw" data are measured by downhole sensors, and these data are processed within a downhole computer to be reduced to parameters of interest, which may be utilized to control the drilling operation by downhole devices, stored downhole, telemetered to the surface, or both. The measurements may be correlated downhole with stored reference data thereby providing additional information pertaining to the drilling operation. Downhole depth correlation between downhole measured parameters may be made by utilizing surface determined or downhole determined borehole depth.



3) Family number: 54110663 (US2013272898A)

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Title: INSTRUMENTING HIGH RELIABILITY ELECTRIC SUBMERSIBLE PUMPS

Priority: US20120625651P 20120417 US20130863322 20130415

Family:	Publication number	Publication date	Application number	Application date
	BR102013009326 A2	20150623	BR20131009326	20130417
	GB201306940 A0	20130529	GB20130006940	20130417
	GB2502880 A1	20131211	GB20130006940	20130417
	NO20130517 A	20131018	NO20130000517	20130416
	US2013272898 AA	20131017	US20130863322	20130415

Probable Assignee: SCHLUMBERGER TECHNOLOGY CORP

Assignee(s):(std): PRAD RES AND DEV LTD ; SCHLUMBERGER HOLDINGS ; SCHLUMBERGER TECHNOLOGY CORP ; SCHLUMBERGER TECHNOLOGY BV

Assignee(s): SCHLUMBERGER HOLDINGS LTD ; SCHLUMBERGER HOLDINGS LIMITED ; PRAD RESEARCH AND DEVELOPMENT LTD

Inventor(s):(std): FONNELAND JOSTEIN ENGESETH ; KELVIN NEO CHEE TIONG ; NEO KELVIN CHEE TIONG ; NYAYADHISH VARUN VINAYKUMAR ; SHI MIN ; TOH KOK ONN ; LOH YI SIN

Inventor(s): MIN SHI ; NEO CHEE TIONG KELVIN ; VARUN VINAYKUMAR NYAYADHISH ; YI SIN LOH ; KOK ONN TOH ; JOSTEIN ENGESETH FONNELAND ; KELVIN CHEE TIONG NEO

International class (IPC 8-9): E21B43/12 E21B43/16 E21B47/00 F04B47/00 F04D13/10 F04D15/00 (Advanced/Invention)

CPC: F04D15/00 F04D13/10 F04D15/0088 E21B43/128 E21B47/0007

US class: 417/44.1

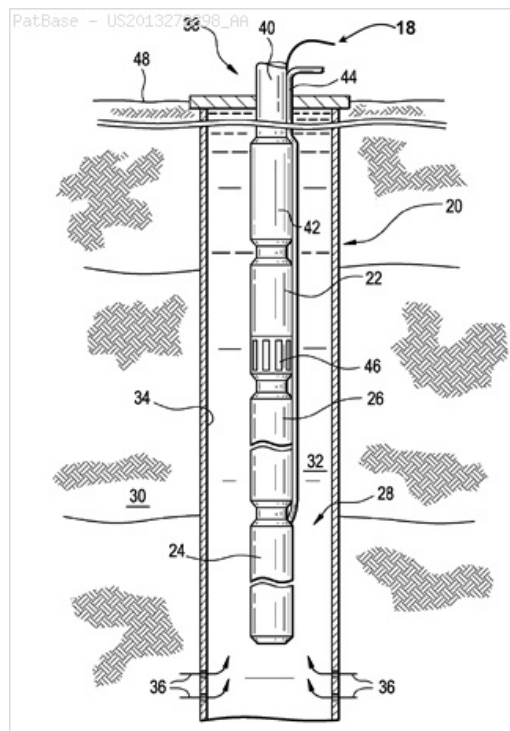
[Classification Explorer](#)

Cited documents: US6583975 BB, US6312226 BA, US6260615 BA, US6167965 BA, US6092598 A, US5696348 A, US2005152789 AA, US2005019180 AA,

Forward Citations: WO18004577, WO17155778, WO16196425, WO16178683, WO16041990, WO16036342, WO15179775, WO15167612, WO15164071, WO15065930, US9988887, US9850714, US9745846, US9714568, US9702243, US9689529, US9671250, US9631955, US9631725, US9587657, US9528368, US9441633, US2017170598, US2016025945, US2015323130, US2015052989, US2014099211, US10024645, US10001613, NO338790, GB2545330, GB2534707, GB2533523, GB2515263, GB2515263, EP3194788, CN104763414, AU2014309299,

Abstract:

Instrumentation for high reliability electric submersible pumps (ESPs) is provided. Comprehensive sensors placed throughout ESP components enable monitoring, analysis, and intervention to improve performance of ESP components and provide high reliability and long life for components. Example ESP sensors used to protectively monitor an ESP string may include electrical current leakage detectors, temperature sensors at the pothead, fiber optics used as distributed temperature sensors in the motor stator and windings of the motor, water cut sensors to determine quality of hydrocarbon being produced, tachometer and torque sensors to detect the speed of rotating shafts of the motors and pumps, temperature and vibration sensors for rotor bearings and thrust members, and wye-point imbalance detectors for balancing electrical loads on the three phases in a wye system. Interpretation and control modules analyze the sensor input and apply actions that improve performance and lengthen lifespan of components.



4) Family number: 28093699 (US2001032721A)

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Title: METHOD FOR BOOSTING THE OUTPUT VOLTAGE OF A VARIABLE FREQUENCY DRIVE

Priority: US19950002895P 19950830 GB19980004366 19960829 WO1996US13504 19960829
US19990029732 19990208 US20000566841 20000505 US20000203792P 20000512
US20000204818P 20000517 US20000617305 20000717 WO2001US14323 20010503
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Family:	Publication number	Publication date	Application number	Application date
	AU2001257514 AA	20011120	AU20010257514	20010503
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	CA2230691 AA	19980227	CA19962230691	19960829
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	CA2353164 AA	20020117	CA20012353164	20010716
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	WO0189068 A3	20020314	WO2001US15249	20010511

Probable Assignee: BAKER HUGHES INC

Assignee(s):(std): RIDER JERALD R ; JOHNSON MICHAEL H ; TUBEL PAUL S ; WATKINS LARRY A ; TURICK DANIEL J ; KNOX DICK L ; BAKER HUGHES INC ; BEARDEN JOHN L ; BESSER GORDON L ; DONOVAN JOSEPH F ; HARRELL JOHN W ; HENRY J V

Assignee(s): HENRY JV ; HENRY J ; TUBEL PAULO S ; TOOMEY DAN D ; KNOX DICK LEE ; RIDER JERALD ; LAYTON JAMES E ; LEUTHEN JOHN M

Inventor(s):(std): KNOX DICK LEE ; LAYTON JAMES E ; LEUTHEN JOHN M ; WATKINS LARRY A ; TURICK DANIEL J ; TUBEL PAULO S ; TUBEL PAUL S ; TOOMEY DAN D ; RIDER JERALD R ; RIDER JERALD ; JOHNSON MICHAEL H ; BESSER GORDON LEE ; BESSER GORDON L ; BEARDEN JOHN LEE ; BEARDEN JOHN L ; TUBEL PAULO ; LAYTON JAMES EDWARD ; KNOX DICK L ; HENRY JV ; HENRY J V ; HARRELL JOHN W ; DONOVAN JOSEPH F

Inventor(s): DICK L KNOX ; DANIEL J TURICK ; DAN D TOOMEY ; HENRY J ; GORDON LEE BESSER ; GORDON L BESSER ; JOSEPH F DONOVAN ; LARRY A WATKINS ; PAUL S TUBEL ; MICHAEL H JOHNSON ; LAYTON JAMES ; JOHN W HARRELL ; JOHN LEE BEARDEN ; JERALD R RIDER ; J V HENRY ; DICK LEE KNOX ; JOHN M LEUTHEN ; JERALD RIDER ; JAMES E LAYTON ; PAULO TUBEL

Agent(s): SIM AND MCBURNEY; FINCK DIETER; DOCKET CLERK DM/BAKER; DOCKET CLERK DM BAKER; BRACEWELL AND GIULIANI LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

International class (IPC 8-9): E21B43/12 E21B43/38 E21B44/00 E21B47/00 E21B47/01 E21B47/12 F04B47/00 F04B47/06 F04B49/00 F04B49/06 F04D13/08 F04D13/10 F04D15/00 F04D9/00 G01V3/02 H02M7/5387 H02P27/06 H04B3/54 (Advanced/Invention); E21B43/12 E21B43/34 E21B47/00 F04B47/00 F04D13/06 F04D15/00 F04D9/00 H02M7/5387 (Core/Invention)

International class (IPC 1-7): E21B43/00 E21B47/00 E21B47/12 F04B47/00 F04B47/06 F04B49/00 F04B49/06 F04D13/08 G01V3/00 G08C19/12 H02M5/06 H02M7/5387 H04B3/54 H04H1/11 H04M11/04

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European class: E21B43/12B E21B43/12B10 E21B43/38B E21B44/00 E21B47/00 E21B47/01 E21B47/01P E21B47/12 F04B47/06 F04D13/10 F04D15/00C F04D15/00G F04D15/00L F04D9/00B2 H04B3/54 R04B201/0802 R04B201/1207 R04B203/0205 R04B203/0208 R04B205/01 R04B207/041 R04B207/042 T04B203/54P14 T04B203/54S14 T04B203/54S2 T04B203/54S8

US class: 166/105 166/105.5 166/105S 166/106 166/250.15 166/265 166/302 166/53 166/65.1 166/65.100P 166/68 166/68S 318/459 318/500 340/12.33 340/12.37 340/310.01 340/310.02 340/310.12 340/310.16 340/538.11 340/854.5 340/854.6 340/854.9 340/854.900P 340/855.8 363/74 417/14 417/18

[Classification Explorer](#)

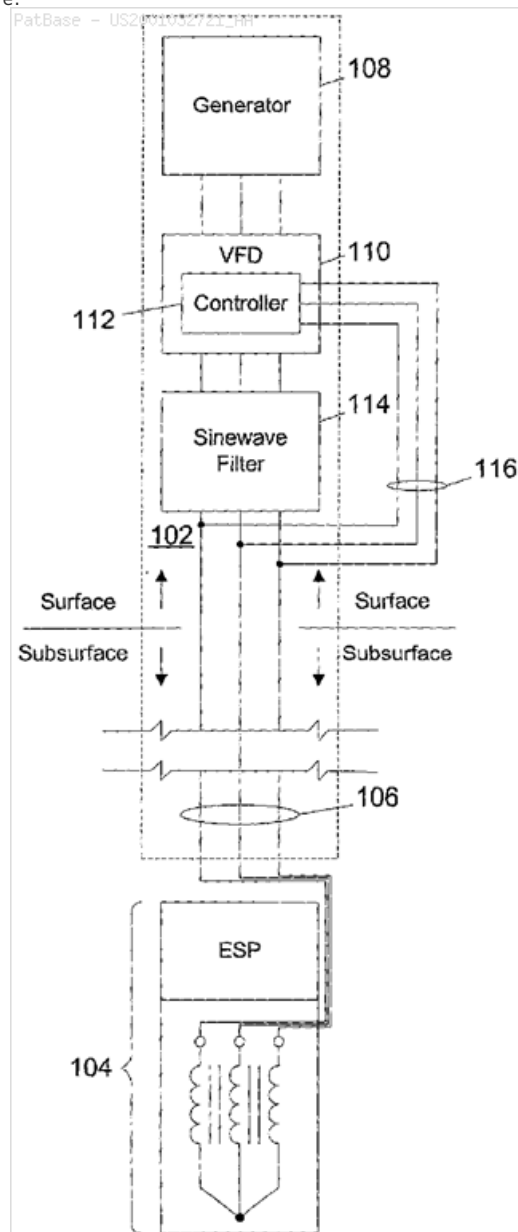
Cited documents: WO9806187 A1, WO9623368 A1, WO0186831 A1, US6798338 BA, US6167965 BA, US6167965 B1, US6154488 A, US6151480 A, US6135732 A, US5999094 A, US5945923 A, US5930131 A, US5909098 A, US5900179 A, US5868201 A, US5844397 A, US5823262 A, US5605193 A, US5539375 A, US5515038 A, US5444184 A, US5318409 A, US5314016 A, US5293937 A, US5208738 A, US5201848 A, US4928771 A, US4876539 A, US4862342 A, US4833584 A, US4718824 A, US4652855 A, US4574342 A, US4541041 A, US4475209 A, US4413313 A, US4370098 A, US4196469 A, US4188619 A, US4157535 A, US4138715 A, US3950676 A, US3929399 A, US2957159 A, GB2352321 A1, GB2352180 A1, GB2352150 A1, GB2302892 A1, GB2280577 A1, GB2057058 A1, EP0413514 A2,

Forward Citations: WO18075037, WO18034939, WO18005899, WO17161126, WO17044414, WO17023320, WO17014734, WO16205100, WO16175759, WO16167738, WO16160458, WO16123159, WO16064840, WO16040335, WO16019010, WO15200176, WO15179723, WO15175737, WO15127410, WO15116405, WO15054472, WO15041655, WO15015304, WO13132234, WO13132233, WO13132232, WO13132231, WO13122560, WO13117981, WO12021774, WO12021774, WO11088983, WO11042096, WO10062574, WO09129240, WO09085611, WO09085611, WO09032899, WO09032899, WO09012218, WO09012218, WO09003099, WO08152376, WO08132641, WO08132641, WO08116538, WO08102170, WO08046473, WO07140134, WO06127939, WO06127939, WO06127939, WO06119215, WO06119215, WO06102456, WO06019352, WO06003359, WO05121507, WO05089399, WO05089399, WO05081169, WO04113676, WO04113676, WO02086318, WO02086318, USRE43363, US9998300, US9988887, US9985690, US9976412, US9957783, US9951810, US9951609, US99448485, US9945979, US9935453, US9932806, US9903373, US9899838, US9879527, US9872293, US9869174, US9850753, US9850714, US9840907, US9829001, US9828850, US9816519, US9810241, US9808831, US9725996, US9711041, US9689529, US9683438, US9680666, US9631725, US9631465, US9605679, US9564268, US9547104, US9488748, US9476425, US9475021, US9475020, US9455850, US9388813, US9388812, US9366114, US9359875, US9347311, US9322264, US9260960, US9231790, US9212544, US9206684, US9143362, US9140110, US9133832, US9127534, US9121270, US9121257, US9115567, US9112815, US9109609, US9103344, US9103193, US9086504, US9083598, US9074463, US9051936, US9027849, US9027640, US8997852, US8996740, US8960309, US8949076, US8848810, US8816830, US8784068, US8760089, US8727737, US8720554, US8704654, US8696327, US8674634, US8672641, US8664903, US8633623, US8622124, US8604740, US8602754, US8581741, US8575936, US8571798, US8544542, US8505627, US8480376, US8472551, US8446292, US8443887, US8421614, US8401806, US8400093, US8390471, US8353677, US8344904, US8334666, US8327941, US8320393, US8291979, US8287245, US8286703, US8267171, US8261834, US8256508, US8246251, US8237585, US8225872, US8196657, US8186968, US8143906, US8141646, US8138622, US8130084, US8087457, US8083405, US8082217, US8066077, US8051912, US8049506, US8042612, US8037936, US8028753, US8015995, US8006757, US7982633, US7953575, US7913769, US7913498, US7870374, US7863907, US7836950, US7828059, US7828058, US7814976, US7810993, US7798215, US7747388, US7740064, US7740024, US7673680, US7658227, US7643945, US7624800, US7624795, US7610117, US7575413, US7431093, US7409997, US7406398, US7377312, US7353875, US7342371, US7325606, US7308383, US7301474, US7275592, US7248178, US7245992, US7240739, US7219541, US7218997, US7208855, US7161456, US7152680, US7111675, US7069985, US7066248, US7061932, US7040391, US7028543, US6995677, US6973375, US6962204, US6945330, US6911752, US6798338, US6709241, US6700762, US6659174, US6595295, US6591697, US6585041, US6568475, US6564874, US6487903, US6481500, US6468058, US6354145, US2017370205, US2017363088, US2017146015, US2017051608, US2016319657, US2016215769, US2016181884, US2016154142, US2016130920, US2016076550, US2016040517, US2016010641, US2016006481, US2015323130, US2015211526, US2015176397, US2015159474, US2015122296, US2015109138, US2015095100, US2015086152, US2015078917, US2015003961, US2014341752, US2014246204, US2014219056, US2014134013, US2014131037, US2014102713, US2013321164, US2013294931, US2013278183, US2013277065, US2013272898, US2013204546, US2013199775, US2013156605, US2013142678, US2013076151, US2013043985, US2012230852, US2012125608, US2012121224, US2012037354, US2012026003, US2012020808, US2011254484, US2011210645, US2011199037, US2011176933, US2011147000, US2011133582, US2011129368, US2011128003, US2011079388, US2011050145, US2011027110, US2010329894, US2010322785, US2010314103, US2010247335,

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Abstract:

A sine wave filter including an inductor for each phase (three inductors) and three delta- or Y-connected capacitors is employed within a borehole power system, coupled within a three phase power system at the surface between the output of a variable frequency drive and a three phase power cable transmitting power to a borehole location, and boosts the output voltage of the drive. The sine wave filter is designed to have a resonant frequency higher than the maximum operational frequency of the drive, and a Q such that, at the maximum operational frequency of the drive, the filter provides a voltage gain equal to the ratio of the desired voltage to the drive's maximum output power at the maximum operational frequency. The sine wave filter also smooths the voltage waveform of a pulse width modulated variable frequency drive.



Title: SYSTEMS AND METHODS FOR REAL-TIME EVALUATION OF COILED TUBING MATRIX ACIDIZING
Priority: US20130088966 20131125 WO2014US64495 20141107 US20150925659 20151028
WO2016US57252 20161016

Family:	Publication number	Publication date	Application number	Application date
	BR112016011852 A2	20170808	BR20161111852	20141107
	CA2929656 AA	20160504	CA20142929656	20141107
	EP3074593 A1	20161005	EP20140863485	20141107
	EP3074593 A4	20170719	EP20140863485	20141107
	GB201808460 A0	20180711	GB20180008460	20161016
	GB2561475 A1	20181017	GB20180008460	20161016
	IN201617014867 A	20160831	IN201617014867	20160428
	NO20160744 A	20160504	NO20160000744	20160504
	RU2016125300 A	20180109	RU20160125300	20141107
	RU2663981 C1	20180814	RU20160125300	20141107
	US2015144331 AA	20150528	US20130088966	20131125
	US2016047230 AA	20160218	US20150925659	20151028
	US9631474 BB	20170425	US20130088966	20131125
	US9631478 BB	20170425	US20150925659	20151028
	WO15077046 A1	20150528	WO2014US64495	20141107
	WO17074722 A1	20170504	WO2016US57252	20161016

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Assignee(s):(std): BAKER HUGHES ; BAKER HUGHES A GE CO LLC ; BAKER HUGHES INC

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Inventor(s): THOMAS J WATKINS ; TREVOR A STURGEON ; GUPTA DV SATYANARAYANA

Agent(s): SIM AND MCBURNEY; MARKS AND CLERK; LAMBACHER MICHAEL; EVROMARKPAT; SHAWN; HUNTER SHAWN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8-9): C09K8/72 C09K8/80 E21B4/18 E21B41/00 E21B43/16 E21B43/25 E21B43/26 E21B43/267 E21B43/27 E21B43/28 E21B47/00 E21B47/01 E21B47/06 E21B47/07 E21B47/10 E21B47/12 (Advanced/Invention); E21B43/26 (Advanced/Non-invention)

CPC: C09K8/80 C09K8/72 E21B47/06 E21B47/00 E21B43/26 E21B47/01 E21B47/065 E21B41/0078 E21B43/25 E21B43/28 E21B47/1005

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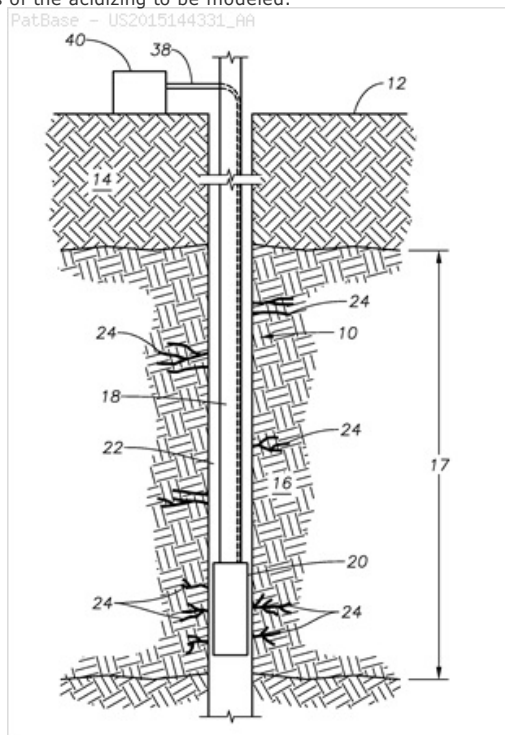
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Forward Citations: WO18022045, WO18013126, WO17074722, US9850714, US2016333640, GB2561475,

Abstract:

A matrix acidizing monitoring system wherein a sensor array is operably associated with a matrix acidizing bottom hole assembly and contains first and second sets of sensors that detect a matrix acidizing operational parameter at different times at one or more particular locations along the wellbore. This allows the effectiveness of the acidizing to be modeled.



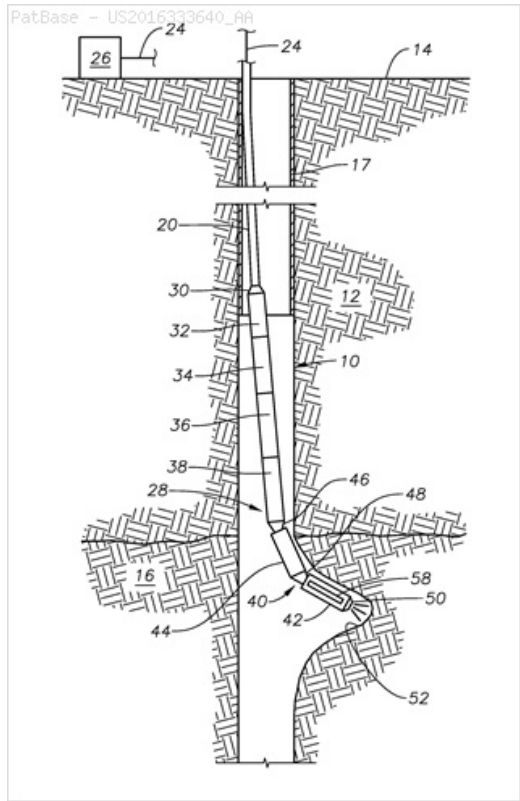
Title: REAL TIME STEERABLE ACID TUNNELING SYSTEM
Priority: US20150710926 20150513 WO2016US31778 20160511
Family:

Publication number	Publication date	Application number	Application date
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BR112017024197 A2	20180717	BR20171124197	20160511
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ID201805989 A	20180608	ID2017P0008468	20160511
IN201717041534 A	20180126	IN201717041534	20171120
MX2017014268 A1	20180420	MX20170014268	20160511
NO20171867 A	20171122	NO20170001867	20171122
US2016333640 AA	20161117	US20150710926	20150513
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WO16183149 A1	20161117	WO2016US31778	20160511

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Inventor(s):(std): LIVESCU SILVIU ; SILVIU LIVESCU ; THOMAS J WATKINS ; WATKINS J THOMAS ; WATKINS THOMAS J
Inventor(s): THOMAS WATKINS J ; WATKINS J
Agent(s): PATENT ATTORNEY SERVICES; FPA PATENT ATTORNEYS PTY LTD; SIM AND MCBURNEY; MARKS AND CLERK; CAROLINA MERCEDES DAZA MONTALVO; LAMBACHER MICHAEL; DR TOETI HERATY N ROOSSENSO; SHAWN; HUNTER SHAWN
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
International class (IPC 8-9): E21B17/20 E21B43/28 E21B47/00 E21B47/024 E21B47/06 E21B47/07 E21B47/12 E21B7/06 E21B7/08 E21B7/18 (Advanced/Invention); E21B23/00 E21B47/12 (Advanced/Non-invention)
CPC: E21B7/18 E21B7/06 E21B47/024 E21B17/20 E21B43/28 E21B47/12 E21B47/00 E21B47/06 E21B47/065 E21B7/065 E21B23/004
US class: 175/45
[Classification Explorer](#)
Cited documents: US8651837 BB, US8471551 BB, US8430649 BB, US8322444 BB, US8205672 BB, US8061426 BB, US7828058 BB, US7665975 BB, US7624800 BB, US7104331 BB, US6527067 BA, US6470978 BB, US6422822 BA, US6272434 BA, US6213205 BA, US6189629 BA, US6167965 BA, US6167965 B1, US4930586 A, US4790394 A, US4787465 A, US4714118 A, US4462765 A, US2015144331 AA, US2013272898 AA, US2012312156 AA, US2012138301 AA, US2012061079 AA, US2009218143 AA, US2009114449 AA, US2008271925 AA, US2008257548 AA, US2006231258 AA, US2006157240 AA, US2003234106 AA, US2002023781 AA, US2002011357 AA, CN103003520 A,

Abstract:

An acid tunneling system for forming lateral tunnels from a central wellbore. The acid tunneling system includes an acid tunneling tool having an acid injection nozzle which can be steered and oriented in response to downhole parameters that are detected and sent to surface in real time.



7) Family number: 30130857 (US2003127232A)

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Title: OPTICAL POSITION SENSING FOR WELL CONTROL TOOLS
Priority: US20010332478P 20011114 US20020289714 20021107 WO2002US36080 20021108
Family:

Publication number	Publication date	Application number	Application date
AU2002352612 AA	20030526	AU20020352612	20021108
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BRPI0214105 A	20040928	BR2002PI14105	20021108
BRPI0214105 B1	20120207	BR2002PI14105	20021108
CA2466761 AA	20040511	CA20022466761	20021108
CA2466761 C	20080129	CA20022466761	20021108
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GB2399114 A1	20040908	GB20040010633	20021108
GB2399114 B2	20050928	GB20040010633	20021108
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NO336228 B1	20150622	NO20040002442	20040611
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WO03042498 A1	20030522	WO2002US36080	20021108

Probable Assignee: BAKER HUGHES INC
Assignee(s):(std): BAKER HUGHES INC ; BAKER HUGHES INC
Assignee(s): BUSSEAR TERRY R ; CARMODY MICHAEL A ; HOPMANN DON A ; JENNINGS STEVEN L ; NORRIS MICHAEL W ; ZISK EDWARD J JR
Inventor(s):(std): BUSSEAR TERRY R ; CARMODY MICHAEL A ; HOPMANN DON A ; JENNINGS STEVEN L ; ZISK EDWARD J JR ; ZISK EDWARD J JR ; ZISK JR EDWARD J ; NORRIS MICHAEL W ; NORRIS MICHAEL ; JENNINGS STEVE L
Inventor(s): EDWARD J ZISK JR ; EDWARD J ; DON A HOPMANN ; MICHAEL W NORRIS ; MICHAEL A CARMODY ; STEVEN L JENNINGS ; TERRY R BUSSEAR ; ZISK ; JR EDWARD J
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Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW
International class (IPC 8-9): E21B34/06 E21B34/12 E21B34/14 E21B43/12 E21B47/09 E21B47/12 G01V8/24 (Advanced/Invention)
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CPC: E21B34/14 E21B43/12 E21B47/09 E21B47/123
European class: E21B34/14 E21B43/12 E21B47/09 E21B47/12M2
US class: 166/373 166/66 166/66.6 250/227.16 340/853.8 340/854.7

[Classification Explorer](#)

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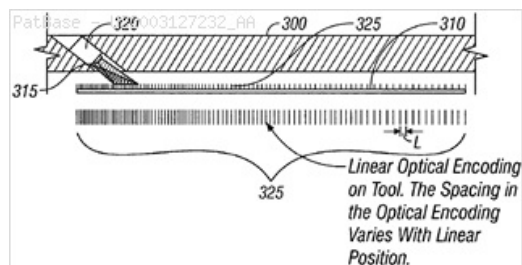
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Abstract:

An apparatus and methods are disclosed for using optical sensors to determine the position of a movable flow control element in a well control tool. A housing has a movable element disposed within such that the element movement controls the flow through the tool. An optical sensing system senses the movement of the element. Optical sensors are employed that use Bragg grating reflections, time domain reflectometry, and line scanning techniques to determine the element position. A surface or downhole processor is used to interpret the sensor signals.



8) Family number: 41659942 (US2008236821A)

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Title: MONITORING AND AUTOMATIC CONTROL OF OPERATING PARAMETERS FOR A DOWNHOLE OIL/WATER SEPARATION SYSTEM
Priority: US20070691877 20070327 GB20080001717 20080131 GB20090014527 20080131
CN200810086260 20080324

Family:	Publication number	Publication date	Application number	Application date
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	US2008236821 AA	20081002	US20070691877	20070327
	US7828058 BB	20101109	US20070691877	20070327

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Inventor(s):(std): FIELDER LANCE ; FIELDER LANCE I ; FILDER LEHNS ; LANCE FIELDER

Inventor(s): LANCE I FIELDER

Agent(s): SCHLUMBERGER RESERVOIR COMPLETIONS

International class (IPC 8-9): E21B34/08 E21B34/12 E21B43/00 E21B43/12 E21B43/34 E21B43/38 (Advanced/Invention); E21B34/00 E21B43/00 E21B43/12 E21B43/34 (Core/Invention)

CPC: E21B43/385 E21B43/128 E21B43/12 E21B43/121 E21B43/38

European class: E21B43/12 E21B43/12B E21B43/12B10 E21B43/38 E21B43/38B

US class: 166/105 166/250.15 166/265

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Abstract:

A method for operating a downhole oil water separator and electric submersible pump includes measuring fluid pressure proximate one of the pump intake, separator intake and a bottom of a wellbore. At least one of flow rate and pressure is measured at the separator water outlet. Pump and a water outlet restriction are controlled to maintain an optimum fluid pumping rate and an optimum injection rate of separated water. A flow control system includes a controllable valve disposed in a water outlet of the separator. At least one of a pressure sensor and a flowmeter is operatively coupled to the water outlet. A controller is in signal communication with the at least one of a pressure sensor and flowmeter and in operative communication with the valve. The controller operates the valve to maintain at a selected pressure and/or a selected flow rate through the water outlet.

