

Search history

Search pn=WO/2016/057645 (Results 1)

1:

Search [SP]: 1. a method, implemented by a computerized control, of drilling a wellbore with a drilling system having a choke, the method comprising: obtaining, with the computerized control, a measured value of a parameter in the drilling system controlling, with the computerized control, the parameter in the drilling system using the choke obtaining, with the computerized control, indications of an error between a set point of the parameter and the measured value of the parameter in the drilling system, a flow coefficient character of the choke, and a current position of the choke determining, with the computerized control, a position adjustment for the choke based on the indications of the error, the flow coefficient character, and the current position and adjusting, with the computerized control, the parameter in the drilling system using the choke by applying the position adjustment to the choke. 2. the method of claim 1, wherein obtaining, with the computerized control, the measured value of the parameter in the drilling system comprises receiving, at the computerized control, the measured value from at least one measurement device in the drilling system. 3. the method claim 1, wherein controlling the parameter in the drilling system using the choke comprises controlling a surface back pressure in the wellbore using the choke. 4. the method claim 1, wherein controlling the parameter in the drilling system using the choke comprises controlling a flow rate of drilling fluid out of the wellbore using the choke. 5. the method of claim 1, wherein controlling the parameter in the drilling system using the choke comprises controlling a pressure using the choke during a drillpipe connection while drilling with the drilling system. 6. the method of claim 1, wherein controlling the parameter in the drilling system using the choke comprises controlling a pressure using the choke during a loss detected while drilling with the drilling system. 7. the method of claim 1, wherein controlling the parameter in the drilling system using the choke comprises controlling a flow using the choke during a kick detected while drilling with the drilling system. 8. the method of claim 1, wherein obtaining the indication of the error comprises applying a gain to the error. 9. the method of claim 8, wherein applying the gain to the error comprises determining the gain by a magnitude of the error. 10. the method of claim 9, wherein determining the gain by the magnitude of the error comprises multiplying the gain by an error-based factor inversely proportional to the magnitude of the error. 11. the method of claim 1, wherein determining the position adjustment for the choke comprises determining a new relative position for the choke by adding the position adjustment to the indication of the current position of the choke. 12. the method of claim 1, wherein obtaining the indications of the flow coefficient character of the choke and the current position of the choke comprises obtaining a flow coefficient for the choke at the current position from stored information of the flow coefficient character. 13. the method of claim 12, wherein obtaining the flow coefficient for the choke at the current position comprises interpolating the flow coefficient from the stored information. 14. the method of claim 12, wherein determining the position adjustment for the choke based on the indications of the error, the flow coefficient character of the choke, and the current position of the choke comprises scaling the error by the flow coefficient for the choke at the current position. 15. the method of claim 1, wherein obtaining, with the computerized control, the indication of the flow coefficient character of the choke comprises storing the indication of the flow coefficient character of the choke in relation to positions of the choke. 16. the method of claim 15, wherein determining, with the computerized control, the position adjustment for the choke based on the indications of the error, the flow coefficient character, and the current position comprises: interpolating a correction factor based on the stored flow coefficient character of the choke in relation to the current position of the choke and applying the correction factor to the error. 17. the method of claim 16, adjusting, with the computerized control, the parameter in the drilling system using the choke comprises: determining a new relative position for the choke by applying the position adjustment for the choke to the current position of the choke and applying the new relative position to the choke. 18. the method of claim 1, wherein determining the position adjustment for the choke based on the indications of the error, the flow coefficient character of the choke, and the current position of the choke comprises scaling a value of the error by a proportional gain. 19. a method, implemented by a computerized control, of drilling a wellbore with a drilling system having a choke, the method comprising: drilling a wellbore with the drilling system by controlling, with the computerized control, a parameter in the drilling system using the choke measuring a value of the parameter using at least one measurement device in the drilling system calculating, with the computerized control, an error value between a set point of the parameter and the measured value of the parameter interpolating, with the computerized control, a correction factor based on a flow coefficient character of the choke and a current position of the choke determining, with the computerized control, a position adjustment for the choke by applying the correction factor to the error determining, with the computerized control, a new relative position for the choke by applying the position adjustment for the choke to the current position of the choke and adjusting, with the computerized control, the parameter in the drilling system using the choke by applying the new relative position to the choke. 20. a computerized control of a choke used in a drilling system for drilling a wellbore, the control comprising: storage storing a flow coefficient character of the choke in relation to positions of the choke and a programmable control device operatively coupled to the storage and to the choke, the programmable control device being operable to: obtain a measured value of a parameter in the drilling system control the parameter in the drilling system using the choke obtain indications of an error between a set point of the parameter and the measured value of the parameter in the drilling system, the flow coefficient character of the choke, and a current position of the choke determine a position adjustment for the choke based on the indications of the error, the flow coefficient character of the choke, and the current position of the choke and apply the position adjustment to the choke to adjust the parameter in the drilling system. (Results 9)

Search 2 and choke (Results 7)

3:

Title: SYSTEM FOR CONTROLLING THE OPERATING PRESSURES WITHIN A SUBTERRANEAN BOREHOLE

Abstract: A system for controlling the operating pressures within a subterranean borehole. The borehole includes a tubular member, a sealing member for sealing an annulus between the tubular member and the borehole, a pump for pumping fluidic materials into the tubular member, and an automatic **choke** for controllably releasing pressurized fluidic materials out of the annulus. The system monitors the operating pressure within the tubular member and compares the actual operating pressure with a desired operating pressure. The difference between the actual and desired operating pressure is then processed to control the operation of the automatic **choke** to thereby controllably bleed pressurized fluidic materials out of the annulus thereby creating back pressure within the borehole.

Classifications:

International (IPC 8-9): E21B21/08 E21B34/08 E21B47/18 E21B7/00 (Advanced/Invention);

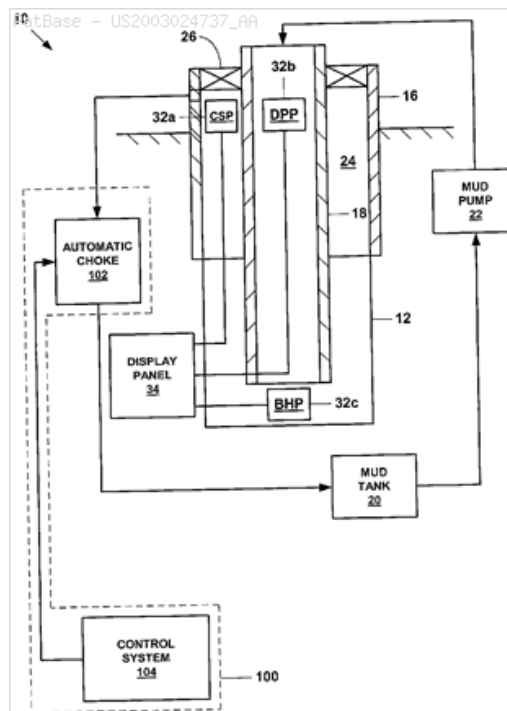
E21B21/00 E21B34/00 E21B47/12 (Core/Invention)

International (IPC 1-7): E21B21/08 E21B34/08 E21B44/00 E21B47/06 E21B47/18 E21B7/00

CPC: E21B21/08

European: E21B21/08

US: 166/250.01 166/250.07 166/250.15 166/374 166/66 175/25 175/48 73/152.22 73/152.46



Family:

Publication number	Publication date	Application number	Application date
AT391223 E	20080415	AT20020761136T	20020722
BRPI0211874 A	20040921	BR2002PI11874	20020722
BRPI0211874 B1	20180313	BR2002PI11874	20020722
CA2455698 AA	20040126	CA20022455698	20020722
CA2455698 C	20101026	CA20022455698	20020722
DE60225923 D1	20080515	DE20026025923	20020722
DE60225923 T2	20090416	DE20026025923T	20020722
DK1421253 T3	20080728	DK20020761136T	20020722
EA005470 B1	20050224	EA20040000240	20020722
EA200400240 A1	20040826	EA20040000240	20020722
EP1421253 A1	20040526	EP20020761136	20020722
EP1421253 A4	20050420	EP20020761136	20020722
EP1421253 B1	20080402	EP20020761136	20020722
ES2302834 T3	20080801	ES20020761136T	20020722
MXPA04000883 A1	20040603	MX2004PA00883	20020722
NO20040509 A	20040329	NO20040000509	20040129
NO326093 B1	20080922	NO20040000509	20040129
PT1421253 T	20080616	PT20020761136T	20020722
SA1668 B1	20070120	SA20020230422	20021105
US2003024737 AA	20030206	US20010918929	20010731
US6575244 BB	20030610	US20010918929	20010731
WO03012243 A1	20030213	WO2002US23068	20020722

Priority:

US20010918929 20010731 WO2002US23068 20020722

Probable Assignee: M I LLC

Assignee(s): (std): M I LLC ; MI LLC ; SUTER ROGER ; BURKHARD ALAN ; CHANG LINGO ; MILLC

Assignee(s): M I L L C ; VOITH SULZER PAPIERMASCHINEN GMBH

Inventor(s): (std): ALAN BURKHARD ; BURKHARD ALAN ; CHANG LINGO ; SUTER ROGER ; ROGER SUTER ; LINGO CHANG

Agent(s): FINLAYSON AND SINGLEHURST; JORIO PAOLO ET AL

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 LI 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

Abstract: A method for controlling formation pressure during drilling includes pumping a drilling fluid through a drill string in a borehole, out a drill bit at the end of the drill string into an annular space. The drilling fluid is discharged from the annular space proximate the Earth's surface. At least one of a flow rate of the drilling fluid into the borehole and a fluid flow rate out of the annular space is measured. Pressure of the fluid in the annular space proximate the Earth's surface and pressure of the fluid proximate the bottom of the borehole are measured. Pressure of the fluid proximate the bottom of the borehole is estimated using the measured flow rate, annular space pressure and density of the drilling fluid. A warning signal is generated if difference between the estimated pressure and measured pressure exceeds a selected threshold.

175/45S 175/48 175/72



Priority:

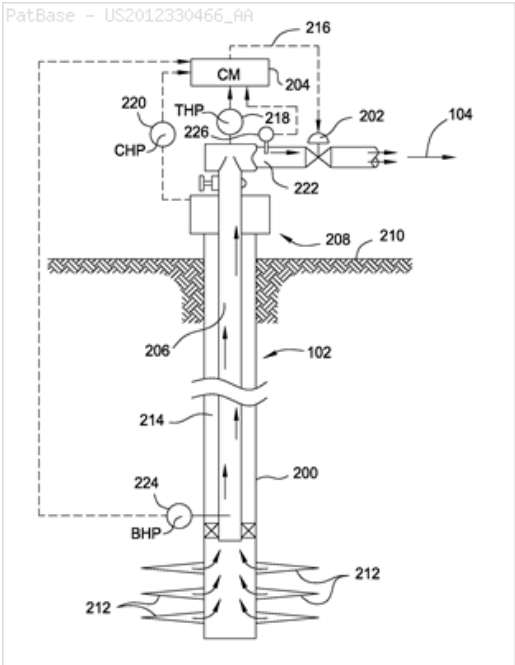
Probable Assignee: SMITH INT INC

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM 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 IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG UZ VC VN ZA ZM ZW

Title: OPERATIONAL LOGIC FOR PRESSURE CONTROL OF A WELLHEAD

Abstract: Methods and apparatus are provided for controlling production from a well by monitoring a parameter at a wellhead and adjusting a **choke** in an effort to maintain a desired parameter (e.g., a tubing head pressure (THP), bottom home pressure (BHP), a flow rate, or water cut (WC)). For some embodiments, a time window may be used for calculating a running average of parameter samples, and a proportional-integral-derivative (PID) control loop may be utilized to determine the difference between the running average and a parameter setpoint and to output a signal based on the difference to adjust the **choke** opening accordingly. In this manner, control of production from an individual well may be more accurate and reliable. Furthermore, for multiple wells coupled to a gathering center, maintaining a constant parameter for each of the multiple wells may enable stable operation of a gathering system and desired hydrocarbon production from each of the wells.

Classifications:
International (IPC 8-9): E21B33/035 E21B34/16 E21B43/12
G05D7/06 (Advanced/Invention)
CPC: E21B34/02
US: 700/282



Family:

Publication number	Publication date	Application number	Application date
CA2781261 AA	20121227	CA20122781261	20120627
CA2781261 C	20160405	CA20122781261	20120627
GB201211358 A0	20120808	GB20120011358	20120626
GB2492466 A1	20130102	GB20120011358	20120626
US2012330466 AA	20121227	US20110169859	20110627

Priority:

US20110169859 20110627 CA20122781261 20120627

Probable Assignee: WEATHERFORD TECHNOLOGY HOLDINGS LLC

Assignee(s): (std): RODGER GEORGE JOEL ; WEATHERFORD LAMB

Assignee(s): WEATHERFORD LAMB INC ; WEATHERFORD TECHNOLOGY HOLDINGS LLC

Inventor(s): (std): RODGER GEORGE JOEL ; RODGERS GEORGE JOEL

Inventor(s): GEORGE JOEL RODGERS

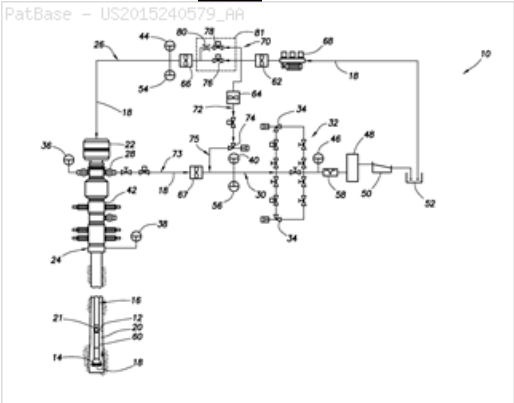
Agent(s): DEETH WILLIAMS WALL LLP

Title: PRESSURE CONTROL IN DRILLING OPERATIONS WITH **CHOKE** POSITION DETERMINED BY CV CURVE

Abstract: A method of controlling pressure in a wellbore can include determining a desired position for a **choke**, the determining being based on a Cv curve for the **choke**, and adjusting the **choke** to the desired position, thereby producing a desired backpressure. A wellbore drilling system can include a **choke** which variably restricts flow of fluid from the wellbore, and a control system which compares actual and desired wellbore pressures and, in response to a difference between the actual and desired wellbore pressures, adjusts the **choke** to a predetermined position which corresponds to a desired Cv of the **choke**. A method of controlling pressure in a wellbore can include comparing an actual wellbore pressure to a desired wellbore pressure and, in response to a difference between the actual and desired wellbore pressures, adjusting a **choke** to a predetermined position corresponding to a desired Cv of the **choke**.

Classifications:

International (IPC 8-9): E21B21/08 E21B21/10 E21B34/02 E21B47/06 (Advanced/Invention)
CPC: E21B34/02 E21B21/10 E21B47/06 E21B21/08
US: 166/250.01 166/373 166/53



Family:

Publication number	Publication date	Application number	Application date
AU2012384529 AA	20140109	AU20120384529	20120702
AU2012384529 BB	20160428	AU20120384529	20120702
BR112014032979 A2	20170627	BR20141132979	20120702
CA2877697 AA	20141222	CA20122877697	20120702
EP2852732 A1	20150401	EP20120880350	20120702
EP2852732 A4	20160608	EP20120880350	20120702
MX2014015368 A1	20150706	MX20140015368	20120702
RU2015102990 A	20160820	RU20150102990	20120702
US2015240579 AA	20150827	US20120412631	20120702
WO14007797 A1	20140109	WO2012US45234	20120702

Priority:

US20120412631 20120702 WO2012US45234 20120702

Probable Assignee: HALLIBURTON CO

Assignee(s): (std): BUTLER CODY N ; DAVIS NANCY S ; HALLIBURTON CO ; HALLIBURTON ENERGY SERV INC ; HALLIBURTON ENERGY SERVICES INC ; LOVORN JAMES R

Inventor(s): (std): BUTLER CODY N ; CODY N BUTLER ; DAVIS NANCY S ; JAMES R LOVORN ; LOVORN JAMES R ; NANCY S DAVIS

Agent(s): PIZZEYS; PHILLIPS ORMONDE FITZPATRICK; PARLEE MCLAWS LLP; HOFFMANN EITLE; SMITH MARLIN R

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ 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 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 PE PG PH PL PT QA RO RS RU RW 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

Title: **CHOKE** CONTROL TUNED BY FLOW COEFFICIENT FOR CONTROLLED PRESSURE DRILLING

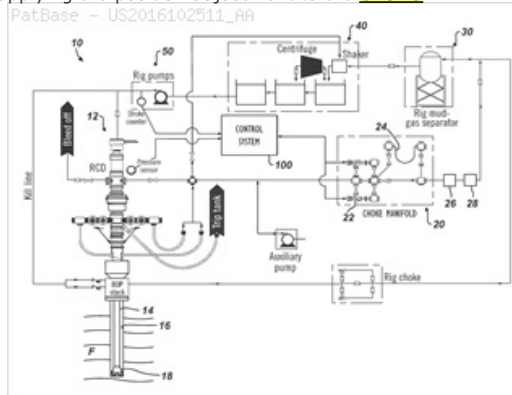
Abstract: A computerized control is used in controlling a **choke** when drilling a wellbore with a drilling system. The computerized control obtains a measured value of a parameter in the drilling system and controls the parameter in the drilling system using the **choke**. The computerized control obtains indications of an error between a set point of the parameter and the measured value of the parameter in the drilling system, a flow coefficient character of the **choke**, and a current position of the **choke**. Based on these indications, the computerized control then determines a position adjustment for the **choke** and adjusting the parameter in the drilling system by applying the position adjustment to the **choke**.

Classifications:

International (IPC 8-9): E21B21/08 E21B44/00 E21B7/00
G05B19/042 (Advanced/Invention)

CPC: E21B7/00 G05B19/042 G05B2219/23399 E21B21/08

US: 175/25 700/282



Family:

Publication number	Publication date	Application number	Application date
AU2015328157 AA	20160414	AU20150328157	20151007
AU2015328157 BB	20180215	AU20150328157	20151007
CA2963668 AA	20170404	CA20152963668	20151007
CO20170004643 A2	20170920	CO20170004643	20170508
EA201790792 A1	20170929	EA20170090792	20151007
GB201705947 A0	20170531	GB20170005947	20151007
GB2546665 A1	20170726	GB20170005947	20151007
ID201713841 A	20171229	ID2017P0002326	20151007
IN201737012051 A	20171110	IN201737012051	20170403
MX2017004367 A1	20171004	MX20170004367	20151007
NO20170649 A	20170419	NO20170000649	20170419
SG11201702890R A1	20170530	SG20171102890	20151007
US2016102511 AA	20160414	US20150876260	20151006
WO16057645 A1	20160414	WO2015US54452	20151007

Priority:

US20140061527P 20141008 US20150876260 20151006 WO2015US54452 20151007

Probable Assignee: WEATHERFORD TECHNOLOGY HOLDINGS LLC

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Inventor(s): JOSE BRANA D

Agent(s): SPRUSON AND FERGUSON; RIDOUT AND MAYBEE LLP; CAROLINA MERCEDES DAZA MONTALVO;
ANNISA AM BADAR SH LLM; MCDERMOTT SEAN P

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 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

Title: AUTOMATIC **CHOKE** OPTIMIZATION AND SELECTION FOR MANAGED PRESSURE DRILLING

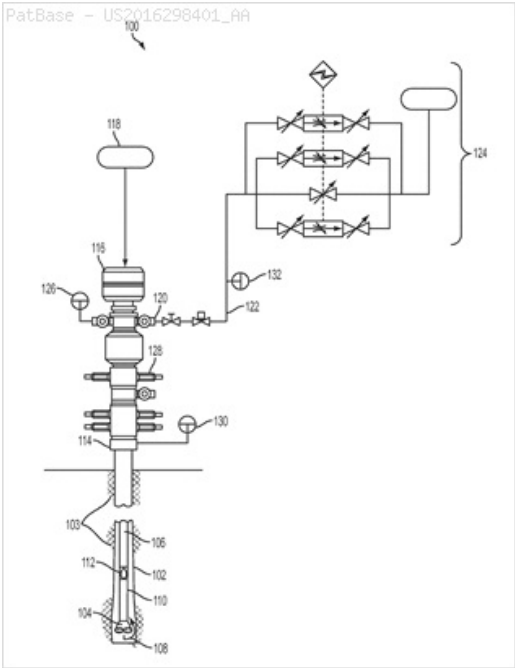
Abstract: A **choke** valve assembly, system, and method can be used with a drill string in a wellbore to aid in controlling the bottom hole pressure during drilling of the wellbore. The **choke** valve assembly can have a primary **choke** and one or more supplemental **chokes**, where these **choke** valves each have a controllable range relative to the flow and pressure of drilling fluid passing through the assembly. A control unit can automatically actuate the primary **choke** and one or more supplemental **chokes** in order to both maintain the **choke** valves within their controllable ranges and concurrently maintain a consistent boom hole pressure in the connected wellbore.

Classifications:

International (IPC 8-9): E21B21/08 E21B21/10 E21B34/02
E21B44/00 G05B19/05 (Advanced/Invention)

CPC: E21B34/02 E21B44/00 E21B21/106 G05B19/05
G05B2219/13095 E21B21/08

US: 175/25



Family:

Publication number	Publication date	Application number	Application date
AR102141 AA	20170208	AR2015P103158	20150930
US2016298401 AA	20161013	US20140781967	20141212
US9988866 BB	20180605	US20140781967	20141212
WO16093859 A1	20160616	WO2014US70014	20141212

Priority:

US20140781967 20141212 WO2014US70014 20141212

Probable Assignee: HALLIBURTON CO

Assignee(s): (std): HALLIBURTON CO ; HALLIBURTON ENERGY SERVICES INC

Inventor(s): (std): CHARLES M POOL ; COTTEN NANCY SUZAN ; POOL CHARLES MICHAEL ; MILLER ERIC ; NANCY S DAVIS ; ERIC MILLER

Agent(s): KILPATRICK TOWNSEND AND STOCKTON LLP; RUSSELL DEAN W ET AL

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 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

CPC: E21B21/08 E21B43/12