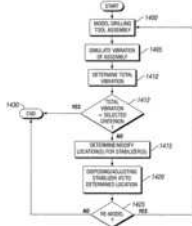
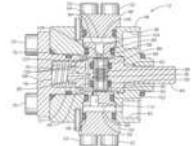
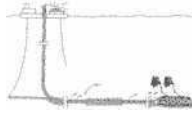
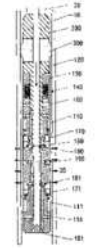
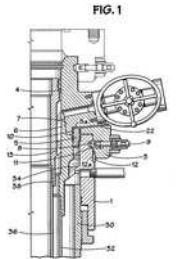
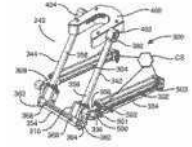
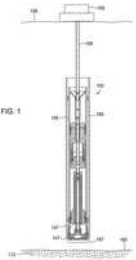
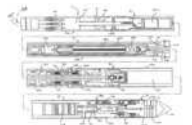
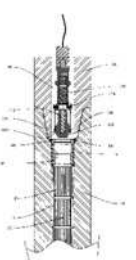
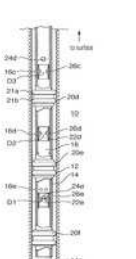
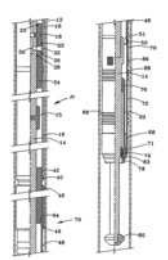
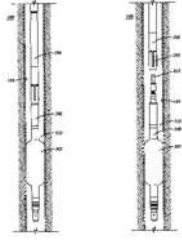
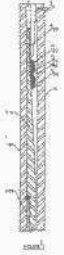
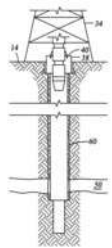
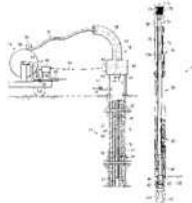
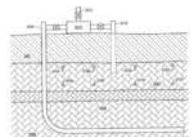
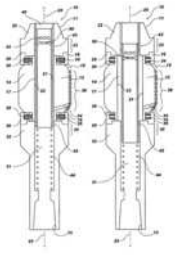
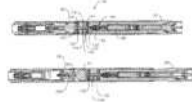
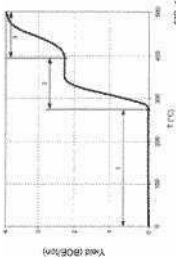
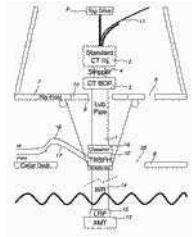
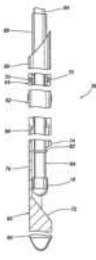
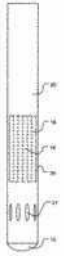
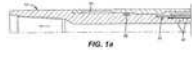


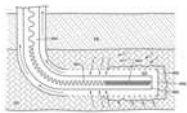
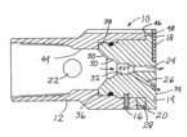
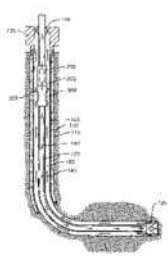
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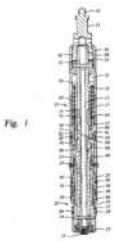
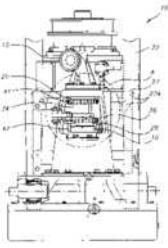
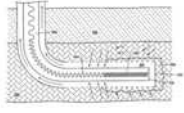
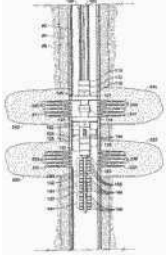
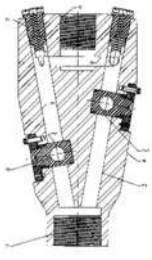
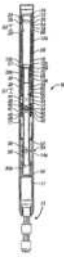
#	Title	Publication number	1st app. date	Applicant/Assignee	
1.	Methods for modeling, displaying, designing, and optimizing fixed cutter bits	US20050015229	2004-07-09	SMITH INTERNATIONAL*	100 %
In one aspect, the invention provides a method for modeling the performance of a fixed cutter bit drilling an earth formation. In one embodiment, the method includes selecting a drill bit and an earth formation to be represented as drilled, simulating the bit drilling the earth formation, displaying the simulating, and adjusting at least one parameter affecting the performance. The method of design is used to make a fixed cutter drill bit. In another embodiment the method includes numerically rotating the bit, calculating bit interaction with the earth formation during the rotating, and determining the forces on the cutters during the rotation based on the calculated interaction with earth formation and empirical data. 					
2.	Pressure compensated shear seal solenoid valve	NO20050024	2004-01-14	COOPER CAMERON* ONESUBSEA*	76 %
A pressure compensated shear seal solenoid valve for use in subsea control systems is disclosed utilizing an arcuate cross section fluid passageway to improve flow rates, ease of serviceability and reduce size. 					
3.	Control system communication and lock open tool and method for locking open a safety valve and communicating with surface	CA2636887	2004-10-25	BAKER HUGHES*	75 %
Disclosed herein is a communication and lock open device which includes a lock open portion including a latch configured to engage a shifting profile on a closure member of a safety valve. Further included is a communication portion configured to rotationally align a cutter with a non-annular hydraulic bore in the safety valve and axially cut into the hydraulic bore with the cutter. Also disclosed is a method for replacing the function of a safety valve while employing an original control line including running a communication and lock open tool in a wellbore, locating the tool in a tubing retrievable safety valve and shearing a thread in the valve to render moveable a closure member of the tubing retrievable safety valve. The method including shifting the closure member to lock the member in an open position, orienting a cutter and establishing fluid communication with a bore of the valve. 					
4.	Methods and apparatus for a subsea tie back	US20030056954	2002-09-23	HALLIBURTON ENERGY SERVICES*	75 %
A flow assurance system includes an inner pipe (70) disposed within an outer pipe (50) to assure flow through the outer pipe (50). During installation and relative axial movement with the outer pipe (50), the inner pipe (70) is nearly neutrally buoyant or fully neutrally buoyant in the fluids of the outer pipe (50) and may extend partially or completely through the outer pipe (50). The inner pipe (70) may be anchored at one end within the outer pipe (50). The inner pipe (70) is preferably composite coiled tubing that is installed using a propulsion system. The system may allow fluids to flow through the inner pipe (70) and commingle with the fluids in the outer pipe (50) or may flow fluids through the inner pipe (70) to the exterior of the outer pipe (50). Hot fluids may pass through the inner pipe (70) to maintain the temperature of the fluids flowing through the outer pipe (50) and chemicals may flow through the inner pipe (70) to condition the fluids in the outer pipe (50). Tools may be attached to the end of the inner pipe (70) for conducting flow assurance operations within the outer pipe (50). 					
5.	Release tool for coiled tubing	CA2392277	2002-06-28	BJ SERVICES*	75 %
A bottom hole assembly for use with fracturing or fracing a wellbore using coiled tubing is described having a first packing element and a second packing element on a mandrel. The bottom hole assembly may be run into the wellbore such that the packing elements straddle the zone to be fraced. Also described is a timing mechanism to prevent the closing of dump ports before the bottom hole assembly may be flushed of the sand. A release tool is described that allows an operator to apply combination of force for a given amount of time to the coiled tubing to dislodge a bottom hole assembly without completely releasing the bottom hole assembly. Also disclosed is a collar locator capable of being utilized in a fracing process. Methods of using the above-described components are also disclosed. 					
6.	Clamping well casings	WO200235257	2001-10-25	PLEUX OCEAN SYSTEMS PLEXUS HOLDINGS* PLEXUS OCEAN SYSTEMS	74 %
A clamp for clamping two concentric tubes 30 and 32, typically two concentric tubes in an oil or gas well. The clamp has two axially movable tapered components 8 which can be pulled over one another in an axial direction to provide a contraction of internal diameter, which grips the smaller diameter tube 32. In one embodiment, a spacer 12 is fitted to allow the tapered components 8 to be held apart until the tubes 30 and 32 have been correctly positioned. The spacer 12 is then removed, and the tapered components 8 are drawn together to effect the clamping. 					
7.	Elevator for use in handling pipe and method for handling pipe	US20060113087	2005-07-07	LUCAS BRIAN RONALD VARCO*	74 %
An elevator for use in wellbore operations, the elevator comprising a first body member (331) having front and back ends and a second body member (332) having front and back ends, which together form a throat for receiving a pipe, a first release apparatus (392) for releasably connecting together the front ends, and a second release 10 apparatus (342) for releasably connecting together the back ends characterised in that, the elevator further comprises actuation apparatus (362, 381) for selectively operating a chosen one of the first release apparatus (392) or the second release apparatus (342). 					

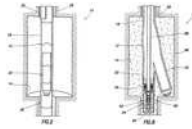
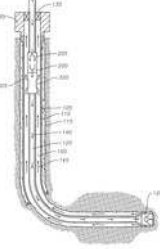
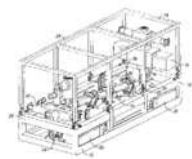
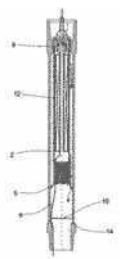
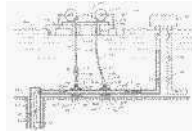
8.	Apparatus and methods for drilling a wellbore using casing	CA2965252	2004-02-02	WEATHERFORD LAMB WEATHERFORD TECHNOLOGY HOLDINGS*	73 %
Apparatus and methods for drilling with casing. In an embodiment, methods and apparatus for deflecting casing using a diverter apparatus are disclosed. In another embodiment, the apparatus comprises a motor operating system disposed in a motor system housing, a shaft operatively connected to the motor operating system, the shaft having a passageway, and a divert assembly disposed to direct fluid flow selectively to the motor operating system and the passageway in the shaft. In another aspect, methods and apparatus for directionally drilling a casing into the formation are disclosed. Methods and apparatus for measuring the trajectory of a wellbore while directionally drilling a casing into the formation are also described.					
					
9.	Tubular cutting tool	GB0106149	2001-03-13	SONDEX*	73 %
A tubular cutting tool includes two or more sets of electrically actuated retractable anchoring legs (52,54) mounted at longitudinally spaced apart locations and an electrically driven rotary cutting head (14) with a retractable cutting blade (14). The anchoring legs can be arranged such that they are capable of compensating for variations in the internal radii of the tubular to be cut, thereby ensuring that the cutting tool is clamped rigidly in position.					
					
10.	Drilling fluid screen and method	US6598685	2002-02-14	MASHBURN BENNY DONALD	73 %
An apparatus for filtering a drilling fluid comprises a cylindrical flange member (40) having a first (56a-56b) and second passage (60a-60b) and a cylindrical sleeve (3) having an internal fishing neck (16). An attachment pin (58,62) attaches the flange member to the cylindrical sleeve. A screen member (2) attached to the cylindrical sleeve. The first and second passages are disposed offcentered so that four boreholes are created. The attachment pin cooperates with a groove (56,60) formed on the sleeve's outer diameter surface. A pulling tool (90) contains a plurality of dog members (122) disposed about a mandrel, and a spring (116) that urges the dog members into engagement with a protuberance on the mandrel. A shear pin (146) attaches the dog members to the mandrel and wherein the shear pin is disposed within a slot (114) so that the dog members can move axially relative to the mandrel.					
					
11.	Method and apparatus for wellbore fluid treatment	CA2412072	2002-11-19	HALLIBURTON ENERGY SERVICES PACKERS PLUS*	73 %
A fluid treatment method includes positioning a tubing string in a non-vertical borehole section, and applying a sliding-sleeve-actuating fluid pressure within the tubing string's inner bore such that a first sliding sleeve moves from a position in which a first port is covered to another position in which the first port is exposed to the inner bore. The method further includes pumping fluid through the first port. The method also includes conveying first and second fluid conveyed sealing devices through the inner bore such that the first and second fluid conveyed sealing device seal against the seats of second and third sliding sleeves, respectively, thereby moving the second and third sliding sleeves to open port positions exposing second and third ports, respectively. The method also includes pumping fluid through the second and third ports to treat first and second portions of the formation, respectively.					
					
12.	Tubular expansion fluid production assembly and method	US20040194972	2004-04-23	TIW*	73 %
An expansion-set fluid production assembly transfers well fluids from a casing string 12 to a production tubing string 112. A tubular anchor 72 and tubular expander 70 may be positioned downhole on a running tool at a desired depth along the casing string 12. An actuator assembly 10 may forcibly move the tubular expander 70 into the tubular anchor 72, expanding the tubular anchor 72 to seal and secure the tubular anchor 72 against the casing string 12. The running tool actuator assembly 10 may be removed, leaving the expanded tubular anchor 72 and tubular expander 70 downhole. A seal nipple 122 may be sealed with the tubular expander 70 and to the production tubing string 112. Fluids may then be recovered from the wellbore through the casing string 12, through the fluid production assembly, and into the production tubing string 112.					
					
13.	System for forming a window and drilling a sidetrack wellbore	US20020170713	2002-02-20	HARDING RICHARD PATRICK WEATHERFORD LAMB WEATHERFORD TECHNOLOGY HOLDINGS*	73 %
The present invention discloses and claims a system for forming an opening, or window, in a downhole tubular for the subsequent formation of a lateral wellbore. In the system of the present invention, an apparatus is run into the parent wellbore which includes at least a tubular having a drill bit, a diverter such as a whipstock releasably connected to the drill bit, an anchoring device such as a packer, and a milling device. This apparatus allows for the milling of a window in the parent wellbore, and the drilling of a lateral wellbore through that window, in a single trip.					
					

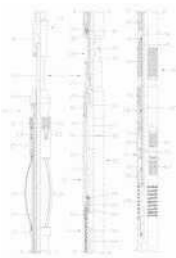
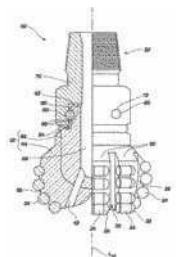
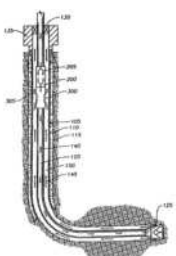
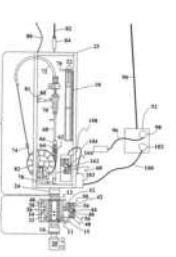
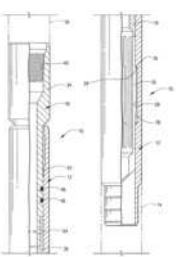
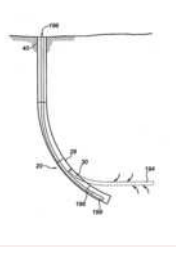
14.	Running tool and wellbore component assembly	WO02077409	2001-03-27	HARDING RICHARD PATRICK WEATHERFORD LAMB WEATHERFORD TECHNOLOGY HOLDINGS*	73 %
The invention provides a running tool for a wellbore component. In one aspect, the tool includes a body having a longitudinal bore (215) therethrough with connection means (107) at an upper end for connection to a tubular run-in string and a selective attachment assembly (205) for a wellbore component therebelow. A flow directing member (210) is disposed in the bore and is movable between a first and second position. At a predetermined flow rate through the member, the member moves to the second position and directs fluid towards the selective attachment assembly, thereby causing the running tool to become disengaged from the wellbore component after the wellbore component has been actuated and fixed in the wellbore.					
					
15.	Liner hanger, running tool and method	WO02097234	2002-05-15	DRIL QUIP*	73 %
A tool for use in a subterranean well to seal with a generally cylindrical interior surface of a tubular or another downhole tool, the tool comprising: a conveyance tubular for positioning the tool at a selected location below the surface of the well; an annular seal assembly disposed about the conveyance tubular, the seal assembly having a reduced diameter run-in position and an expanded sealing position; a wedge ring having a substantially conical outer surface configured to radially expand the annular seal assembly upon axial movement of the annular seal assembly relative to the wedge ring such that the seal assembly is expanded from its run-in position to its expanded sealing position wherein the seal assembly is in sealing engagement with the generally cylindrical interior surface; and the annular seal assembly including a metal framework having a radially inward annular base and a plurality of metal ribs each extending radially outward from the base, the metal framework including an upper downwardly angled primary seal metal rib for sealing pressure below the seal assembly, a lower upwardly angled primary seal metal rib for sealing pressure above the seal assembly, a primary elastomeric seal in a cavity radially outward from the base and axially between the upper primary seal metal rib and the lower primary seal metal rib, an upper downwardly angled secondary seal metal rib spaced axially above the upper primary seal metal rib, and a lower upwardly angled secondary seal metal rib spaced axially below the lower primary seal metal rib.					
					
16.	Rotationally locked wear sleeve for through-tubing drilling and completion	US20050161214	2005-01-18	BAKER HUGHES*	72 %
A protective sleeve can be inserted through tubing and latched in a manner that resists rotation. At the conclusion of the through tubing operation that involves rotational movement, the sleeve is withdrawn on the string that previously extended through it.					
					
17.	Method and apparatus for a monodiameter wellbore, monodiameter casing, monobore, and/or monowell	WO03042489	2002-11-13	HALLIBURTON ENERGY SERVICES*	72 %
An assembly and methods for constructing a monowell (12) having a monodiameter casing (70) disposed in a monodiameter wellbore (10) having a diametric efficiency with a monobore production system within the casing. The assembly for constructing the monowell (12) includes a bottomhole assembly (210) with an overgauge hole drilling member (212), a directional steering assembly (214), and a MWD tool (218 and 222); chemical casing (236) located in the wellbore (10); expandable casing (70) in the wellbore (10); and a sealing composition located between the expandable casing (70) and the wellbore (10). The method for drilling the well (12) involves drilling an initial portion of the wellbore (10), applying a catalyst to the borehole wall; back reaming as the drilling assembly (212) is raised to the initial borehole portion; applying a set up material to the borehole wall; forming chemical casing (236) by reacting the set up and catalyst material; repeating the steps for other portions of the wellbore (10); installing a string of casing.					
					
18.	Locating joints in coiled tubing operations	NO20024854	2001-10-12	HALLIBURTON ENERGY SERVICES*	72 %
An apparatus for locating joints in coiled tubing operations, and for use during reverse circulating and fracturing operations, has a central passageway (72) for fluids, a collar locator module (76), a one-way valve (82) coupled to the central passageway to allow for the flow of fluids in one direction but not the other, a port (83) coupled to the central passageway to allow fluids to exit when the one-way valve is functioning, a movable cover module (84) to cover the port to build up pressure in the central passageway, and a flow diverting module (85) for permanently diverting the flow of fluids from the port to the central passageway.					
					
19.	Method and apparatus for wellbore separation of hydrocarbons from contaminants with reusable membrane units containing retrievable membrane elements	WO020214647	2001-08-14	CHEVRON*	72 %
A retrievable separation system (10) for separating hydrocarbons from contaminants is positioned inside a production tubing or casing (54) in the wellbore of a well and can be easily retrieved by a retrieval tool without the removal of the entire production string. The retrievable separation system includes one or more membrane units (20 or 110) and shear-out subs (30) which are retrievable with a grasping portion of a retrieval tool. The membrane unit (20) may include reusable hardware (112,114,116, and 118) to house a replaceable membrane (130). New membranes (130) may be used to replace spent membranes with the membrane unit (20) being reinstalled in a wellbore for further separation of hydrocarbons from contaminants.					
					
20.	In situ recovery from a relatively permeable formation containing heavy hydrocarbons	WO02085821	2002-04-24	SHELL SHELL CANADA* SHELL INTERNATIONALE RESEARCH*	72 %
A method for treating a relatively permeable formation containing heavy hydrocarbons in situ may include providing heat from a first set of heat sources (6700) to a first section (8600) of the formation. The heat provided to the first section (8600) may pyrolyze at least some hydrocarbons in the first section (8600). Heat may also be provided from a second set of heat sources (6700) to a second section (8602) of the formation. The heat provided to the second section (8600) may mobilize at least some hydrocarbons in the second section (8602). A portion of the hydrocarbons from the second section (8602) may be induced to flow into the first section (8600). A mixture of hydrocarbons may be produced from the formation. The produced mixture may include at least some pyrolyzed hydrocarbons.					
					

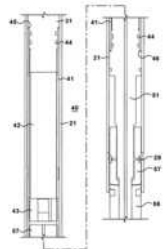
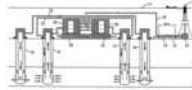
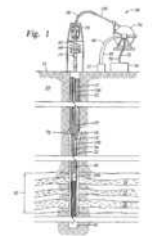
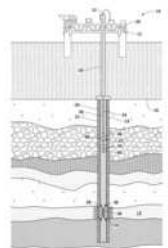
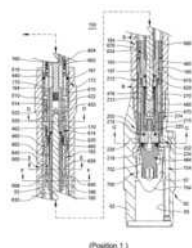
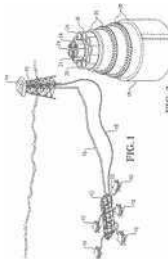
21.	Expandable apparatus and related methods	GB0317397	2003-07-22	BAKER HUGHES*	72 %	
An expandable reamer apparatus and methods for reaming a borehole, wherein a laterally movable blade carried by a tubular body may be selectively positioned at an inward position and an expanded position. The laterally movable blade, held inwardly by blade-biasing elements, may be forced outwardly by drilling fluid selectively allowed to communicate therewith by way of an actuation sleeve disposed within the tubular body. Alternatively, a separation element may transmit force or pressure from the drilling fluid to the movable blade. Further, a chamber in communication with the movable blade may be pressurized by way of a downhole turbine or pump. A ridged seal wiper, compensator, movable bearing pad, fixed bearing pad preceding the movable blade, or adjustable spacer element to alter expanded blade position may be included within the expandable reamer. In addition, a drilling fluid pressure response indicating an operational characteristic of the expandable reamer may be generated.						
22.	Downhole assembly releasable connection	US20030102132	2001-11-30	HALLIBURTON ENERGY SERVICES*	72 %	
A disconnect assembly (10) connecting two portions of a downhole assembly having a downhole apparatus attached to a coiled tubing string (30). The disconnect assembly includes a first housing (90) connected to one portion of the downhole assembly and a second housing (92) connected to another portion of the downhole assembly. The housings are releasably connected by a release assembly (130). The release assembly (130) is coupled to a drive train (140) on a motor (138) by a connection transferring rotational motion into translational motion. The release assembly (130) includes locking members (132) having a connected position engaging both housings and a released position wherein the housings can be separated. The motor (138) is connected to the surface by conductors (76, 78) extending through the coiled tubing (30) whereby the motor (138) may be actuated from the surface to move the release assembly (130) between the connected and disconnected positions.						
23.	In situ recovery from a relatively low permeability formation containing heavy hydrocarbons	WO02086029	2002-04-24	SHELL*	72 %	
A method for treating a relatively low permeability formation (222) containing heavy hydrocarbons in situ may include providing heat from one or more heat sources (2604, 2608) to a portion of the formation (222). The heat may be allowed to transfer from the heat sources (2604, 2608) to a selected section of the formation (222). The transferred heat may pyrolyze at least some hydrocarbons within the selected section. A mixture of hydrocarbons may be produced from the selected section. In some embodiments, the permeability of a portion of the formation (222) may be increased relative to an initial permeability of the portion.						
24.	System and method for rigging up well workover equipment	WO2005100737	2005-04-18	AIBEL VETCO GRAY SCANDINAVIA*	72 %	
A gas and oil recovery system comprising a vessel, platform or rig, with a rig floor (7), a riser (14) comprising a pipe that extends from the vessel, platform or rig to a x-mas tree on top of a well head and via which a wire or coiled tubing (11) is fed down into a well, said riser (14) being movable through an opening (9) in the rig floor (7), and a surface flow head (12) connected to the riser (14) on one hand and to a wire line or coiled tubing equipment (1, 2, 3, 4) on the other hand. The surface flow head (12) is arranged to be run through the opening (12) in the rig floor (7).						
25.	Method of forming a sealed wellbore intersection	BRPI0301460	2002-05-02	HALLIBURTON ENERGY SERVICES*	72 %	
An expanding wellbore junction system, apparatus and methods are provided for forming a sealed wellbore intersection in a subterranean well. In one described method, an expandable wellbore junction is expanded within an under-reamed cavity in a wellbore. Intersecting tubular legs of the wellbore junction are then drifted using a drifting apparatus. A deflection device may be used to direct a drift of the drifting apparatus into a selected one of the wellbore junction legs.						
26.	Casing shoes and methods of reverse-circulation cementing of casing	US20060042798	2004-08-30	HALLIBURTON ENERGY SERVICES* WAIN CHRISTOPHER PAUL	72 %	
A method having the following steps: running a circulation valve comprising a reactive material into the well bore on the casing; reverse-circulating an activator material in the well bore until the activator material contacts the reactive material of the circulation valve; reconfiguring the circulation valve by contact of the activator material with the reactive material; and reverse-circulating a cement composition in the well bore until the reconfigured circulation valve decreases flow of the cement composition. A circulation valve for cementing casing in a well bore, the valve having: a valve housing connected to the casing and comprising a reactive material; a plurality of holes in the housing, wherein the plurality of holes allow fluid communication between an inner diameter of the housing and an exterior of the housing, wherein the reactive material is expandable to close the plurality of holes.						
27.	Release mechanism for downhole tool	GB201018223	2005-12-21	BAKER HUGHES*	72 %	
A release mechanism for a downhole tool is actuated by radial movement of a locking ring member 14. The locking member provides as much as full circumferential support in the locked position and once released can be prevented from re-gripping the previously connected elements. Mating profiles 18 and 20 allow grip between the components. The locking ring 14 is made of segments held against an upper body 10 by bands springs. The mechanism for radial movement for release comprises a sleeve 32 that expands. Shear pins or collets are not used to hold the components together in the preferred embodiment. Internal pressure fluctuations before initiating the release sequence will not cause unwanted release. The mechanism is applicable to a variety of downhole tools and is illustrated in the context of a hydraulic release.						

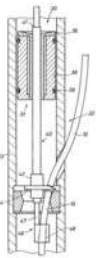
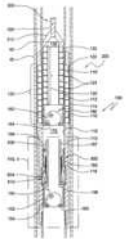
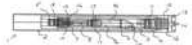
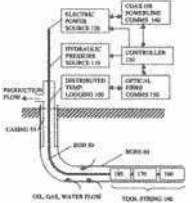
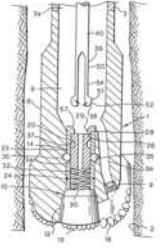
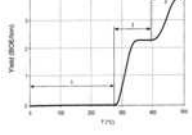
28.	In situ recovery from a oil shale formation	WO02086018	2002-04-24	SHELL* SHELL CANADA SHELL INTERNATIONALE RESEARCH	71 %
An oil shale formation may be treated using an in situ thermal process. Heat may be provided to a formation from a heat source (8692) in the formation. Hydrocarbons within the formation may be pyrolyzed. Hydrocarbons, hydrogen and/or other formation fluids may be produced from the formation. In some embodiments, the formation may include a relatively impermeable portion (8691) and/or a relatively permeable portion (8690).					
					
29.	Apparatus and methods for drilling a wellbore using casing	US20040245020	2004-02-02	WEATHERFORD TECHNOLOGY HOLDINGS*	71 %
Apparatus and methods for drilling with casing. In an embodiment, methods and apparatus for deflecting casing using a diverter apparatus are disclosed. In another embodiment, the apparatus comprises a motor operating system disposed in a motor system housing, a shaft operatively connected to the motor operating system, the shaft having a passageway, and a divert assembly disposed to direct fluid flow selectively to the motor operating system and the passageway in the shaft. In another aspect, methods and apparatus for directionally drilling a casing into the formation are disclosed. Methods and apparatus for measuring the trajectory of a wellbore while directionally drilling a casing into the formation are also described.					
					
30.	Releasable mill	WO2005019594	2004-08-11	BAKER HUGHES*	71 %
A mill assembly (10) having a milling head (14) which is releasable from the mill body (12), such as by shearing a shear pin (16). The release mechanism can be released by dropping a pumpable plug (22) through the work string to block fluid flow through the releasable milling head, or by increasing fluid flow through a constriction in the releasable milling head to increase the back pressure above the milling head. A check valve in the milling head can prevent uphole flow through the work string in the event of a pressure excursion. A fishing neck can be attached to the milling head.					
					
31.	Release mechanism for downhole tool	US20060131011	2004-12-22	BAKER HUGHES*	71 %
A release mechanism for a downhole tool is actuated by radial movement of a locking member. The locking member (64) provided as much as full circumferential support in the locked position and once released can be prevented from re-gripping the previously connected elements. Illustrative examples of the mechanism for radial movement for release comprise sleeves that expand and radially oriented pistons (78). Shear pins or collets are not used to hold the components together in the preferred embodiment. Internal pressure fluctuations before initiating the release sequence will not cause unwanted release. The mechanism is applicable to a variety of downhole tools and is illustrated in the context of a hydraulic release.					
					
32.	Wellbore recovery operation	GB0124221	2001-10-09	SMITH INTERNATIONAL*	71 %
The present invention relates to methods and equipment for recovering use of a wellbore in circumstances where the well bore has become blocked by downhole equipment. The invention provides a method comprising the steps of separating, at a release joint, a portion of equipment from a jammed portion (6) of equipment; running the separated portion of equipment uphole out of the wellbore (100); running a deflector assembly (60) downhole into the wellbore (100); and deflecting a milling tool (64) from the wellbore into surrounding formation. The method is characterised by restricting relative movement between the deflector assembly (60) and the wellbore (100) by engaging, prior to deflecting the milling tool (64), the deflector assembly (60) with said jammed portion (6) of equipment.					
					
33.	Apparatus and method to reduce fluid pressure in a wellbore	US20030146001	2002-05-28	WEATHERFORD LAMB WEATHERFORD TECHNOLOGY HOLDINGS*	71 %
The present invention generally provides apparatus and methods for reducing the pressure of a circulating fluid in a wellbore. In one aspect of the invention an ECD (equivalent circulation density) reduction tool provides a means for drilling extended reach deep (ERD) wells with heavyweight drilling fluids by minimizing the effect of friction head on bottomhole pressure so that circulating density of the fluid is close to its actual density. With an ECD reduction tool located in the upper section of the well, the friction head is substantially reduced, which substantially reduces chances of fracturing a formation.					
					
34.	Wireline retrievable safety valve with radial cutting device	US20020153139	2001-04-19	HALLIBURTON ENERGY SERVICES*	71 %
A communication tool (100) for communicating hydraulic fluid through a tubing retrievable safety valve (50) is disclosed. The tool (100) has a first section (102) and a second section (132) that are initially coupled together. A set of axial locating keys (112) is operably attached to the first section (102) and is engagably positionable within a profile (62). A radial cutting device (148) is radially extendable through a window (152) of the second section (132). A circumferential locating key (140) is operably attached to the second section (132) and is engagably positionable within a pocket (66) of the safety valve (50) when the first and second sections (102, 132) are decoupled, thereby circumferentially aligning the radial cutting device (148) with the non annular hydraulic chamber (60).					
					

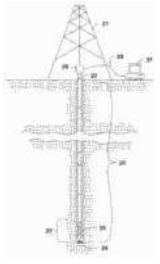
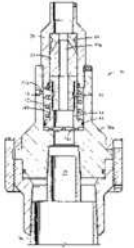
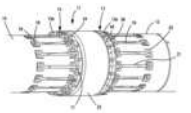
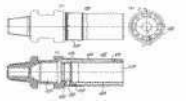
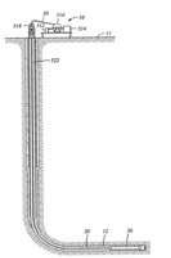
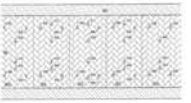
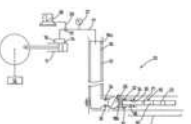
35.	Locking apparatus with packoff capability	US20040055757	2003-08-06	BAKER HUGHES*	71 %
A well tool locking apparatus compatible with high temperature, high pressure well conditions comprises a packing ring mandrel that carries a sliding locking dog cage. The locking dogs are expanded radially into a tubing nipple channel by the axial translation of a ramped step on the mandrel surface. Chevron ring packing seals are positioned between the locking dog cage and an abutment shoulder around the mandrel. Translation of the mandrel against the locking dog cage engages the tool locking dogs and expands the chevron ring seal against the inside bore surface of the tubing nipple. The locked and sealed position is held by buttress threads on the mandrel engaged with a body lock ring					
					
36.	Washpipe assembly	WO03018951	2002-08-27	VARCO* VARPO I P	71 %
A drilling system and a method of using a drilling system that has a first rotatable tubular connector, a second non-rotatable tubular connector and a washpipe assembly (34) having at least one dynamic seal and defining a fluid conduit having at one end a first mating connector and at another end a second mating connector designed to interconnect with the first and second tubular connectors. A controllable torque driver (32) is arranged to mechanically engage the washpipe assembly such that fluid connections are made between the first mating connector and the first tubular connector, and the second mating connector and the second tubular connector.					
					
37.	In situ thermal processing of a hydrocarbon containing formation	WO030186041	2002-10-24	SHELL* SHELL CANADA SHELL INTERNATIONALE RESEARCH SHELL OIL	71 %
An in situ process for treating a hydrocarbon containing formation is provided. The process may include providing heat from one or more heaters to at least a portion of the formation. The heat may be allowed to transfer from the one or more heaters to a part of the formation such that heat from the one or more heat sources pyrolyzes at least some hydrocarbons within the part. Hydrocarbons may be produced from the formation.					
					
38.	Method and apparatus for stimulation of multiple formation intervals	DZ3378	2001-01-30	EXXONMOBIL UPSTREAM RESEARCH*	71 %
The invention provides an apparatus and method for perforating and treating multiple intervals of one or more subterranean formations (86) intersected by a wellbore by deploying a bottom-hole assembly having a perforating device (134) and at least one sealing mechanism (120) within said wellbore. The perforating device (134) is used to perforate the first interval to be treated. Then the bottom-hole assembly is positioned within the wellbore such that the sealing mechanism (120), when actuated, establishes a hydraulic seal in the wellbore to positively force fluid to enter the perforations (230, 231) corresponding to the first interval to be treated. A treating fluid is then pumped down the wellbore and into the perforations (230, 231) created in the perforated interval. The sealing mechanism (120) is released, and the steps are then repeated for as many intervals as desired, without removing the bottom hole assembly from said wellbore.					
					
39.	Slip assembly for hanging an elongate member within a wellbore	US6575238	2001-08-31	DRIL QUIP*	71 %
A slip assembly carried about a liner for lowering into a wellbore includes a C-ring having an inner conical surface contracted about a matching outer surface of the liner and held in contracted position by disposal of its end closely within a recess in the member. When its end is raised from the recess, the c-ring expands to cause its teeth to engage with the wellbore, whereby the liner may be lowered to further expand the c-ring to cause its teeth to dig into the wellbore to suspend the liner therefrom.					
					
40.	Hydraulically releaseable inflation tool for permanent bridge plug	US20050133217	2003-12-23	POLICY RESEARCH & DEVELOPMENT PRAD SCHLUMBERGER SCHLUMBERGER OVERSEAS SCHLUMBERGER SERVICES SCHLUMBERGER SERVICES PETROLIERS SCHLUMBERGER SURENCO SCHLUMBERGER TECHNOLOGIES*	71 %
Various embodiments of an improved downhole disconnect tool are provided, some of which may include a first housing releasably connected to a second housing, a first piston releasably connected to the first housing, and a second piston releasably connected to the second housing. Various fluid communication ports and ball seats may be provided in various combinations in the first and second pistons and in the second housing to enable remote control of the tool by circulating one or more balls into engagement with one or more of the ball seats to disconnect the first housing from the second housing, and thereby disconnect any structures connected to the first and second housings, respectively. Other features and aspects of the invention are also provided.					
					

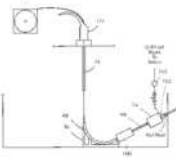
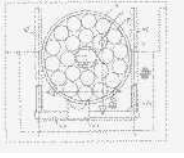
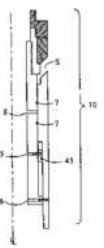
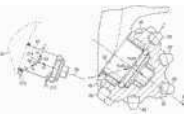
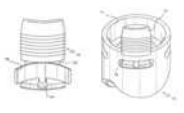
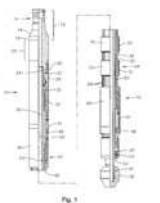
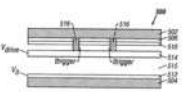
41.	Expanding wellbore junction	GB0525288	2003-04-28	HALLIBURTON ENERGY SERVICES*	71 %
An expandable wellbore junction system, comprising: a wellbore junction assembly 32 including an expandable wellbore junction 12 having multiple intersecting tubular legs, an orienting latch profile 54 attached to the wellbore junction and drifting apparatus. The drifting apparatus comprises an outwardly extending gripping structure 50 an extension device 44 and a deflection device (60 fig 7), releasably attached to the drifting apparatus.					
					
42.	Method for completing a well using increased fluid temperature	US20050045337	2004-08-04	WEATHERFORD LAMB WEATHERFORD TECHNOLOGY HOLDINGS*	71 %
Methods for forming a portion of a wellbore are provided. The well is drilled from a first selected depth to a second selected depth to form a bore through a surrounding earth formation. A fluid heating apparatus is disposed within the bore on a working string. Fluid is then heated by moving the fluid through the fluid heating apparatus in the wellbore. The process of circulating fluid adjacent the earth formation serves to also heat the surrounding formation so as to increase the fracture gradient. The fluid heating process may be conducted during a drilling procedure. Alternatively, the fluid heating process may be conducted in connection with a liner hanging and cementing process. A fluid flow restrictor is provided along a run-in assembly that serves to warm the fluids as they are circulated. The warm fluids provide convective heat to the surrounding earth formation, thereby reducing the formation's fracture gradient.					
					
43.	Apparatus for removing debris in a wellbore	GB0507408	2005-04-13	WANJAY*	71 %
Apparatus for removing debris from a wellbore is disclosed. The apparatus has a conduit for insertion into the wellbore, a device such as a pump for generating a pressure difference in the wellbore, and a seal such as a packer defining a sealed area (typically an annulus) within the wellbore. The pump is arranged to create a pressure differential between the inner bore of the conduit and the sealed area, so that debris and other particulate matter located in the sealed area as a result of the perforation process is drawn into the conduit for removal from the wellbore. The device can be anchored to fix the position of the conduit and the sealed area with respect to the wellbore.					
					
44.	Jacking frame for coiled tubing operations	US20030221822	2002-07-09	SCHLUMBERGER* SCHLUMBERGER SERVICES PETROLIERS* SCHLUMBERGER TECHNOLOGIES* SOFITECH*	71 %
A modular system for performing work on a rig or platform comprises a jacking frame for movement perpendicular to the wellbore and for supporting coiled tubing loads.					
					
45.	Telemetry system	GB0311717	2003-05-21	HEAD PHILIP	71 %
A pipe installation system, the pipe string being composed of pipe sections which are added and removed to increase and decrease the length of the drillpipe, and a length of cable is disposed within the drillpipe string and attached thereto by anchoring means. The anchoring means are deployable with the cable means and may be provided by a magnetic attraction or suction or the like between the anchoring means and the wall of the pipe, and means of removal of the cable and the anchoring means.					
					
46.	Vessel for well intervention	BRPI0402753	2003-07-11	WEATHERFORD LAMB WEATHERFORD TECHNOLOGY HOLDINGS*	71 %
In one aspect, a method and apparatus for intervening in an offshore pipeline while diverting fluid flow to a storage site is provided, so that production through the offshore pipeline may continue while conducting a pipeline intervention operation. An offshore vessel may be used to divert and store fluid flow while intervening in the pipeline. In another aspect, a method and apparatus for drilling a subsea wellbore with an offshore vessel is provided. The method and apparatus involve drilling the wellbore and casing the wellbore with continuous casing lowered from the offshore vessel. <IMAGE>					
					
47.	Deep-set subsurface safety valve assembly	US20030047317	2001-09-07	HALLIBURTON ENERGY SERVICES*	71 %
An apparatus and method for use in a cased well having a production tubing assembly installed in the well and terminating with a connection mechanism at a subterranean location. The apparatus and method utilizes a spoolable tubular assembly for installation extending into the well to the connection mechanism wherein the tubular assembly has a plurality of conductors formed connected to electrically operable valve, sensors and tubing latch in the tubular assembly. In the method the assembly is spooled into the well with the tubing latch being operated from outside the well through the tubing conductors to selectively connect and disconnect the assembly from the connector mechanism. Operating the valve and sensors from outside the well when the assembly is installed. The assembly tubing is preferably made of a non-conductive, and preferably composite material that enclosed at least one, and preferably a plurality of electrical conductors.					
					

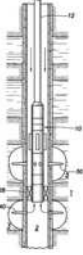
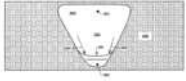
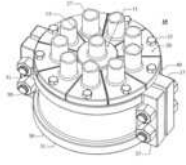
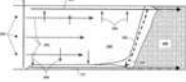
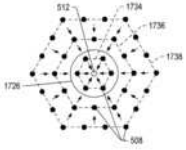
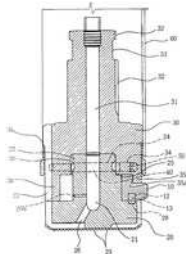
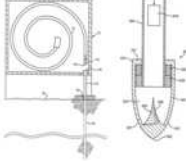
48.	A retrievable downhole tool and running tool	WO2005045181	2004-10-21	PEAK WELL SERVICES PEAK WELL SYSTEMS*	71 %
A downhole tool (10) and a running tool (12) are described, each being retrievably settable within a suitably sized cased well bore without the need for any interaction between the downhole tool or the running tool and any restrictions or recesses in the well bore to land, anchor or retrieve either tool. The downhole tool has a mandrel (56), an anchoring means (74) mounted on the mandrel and controllably reconfigurable from a retracted configuration to permit movement of the downhole tool through the well bore to a radially expanded configuration for releasably engaging the cased well bore. The downhole tool anchoring means is reconfigured using a ratchet (61) that resists movement of the tool anchoring means from the expanded configuration back to the retracted configuration until a release mechanism is released to allow retraction of the downhole tool anchoring means and retrieval of the downhole tool from the well bore.					
					
49.	Methods of forming earth-boring rotary drill bits	US20070102198	2005-11-10	BAKER HUGHES*	71 %
Methods of forming earth-boring rotary drill bits (50) include providing a bit body (52), providing a shank(70) that is configured for attachment to a drill string, and attaching the shank to the bit body. Providing a bit body includes providing a green powder component having a first region (54) having a first composition and a second region (56) having a second, different composition, and at least partially sintering the green powder component. Other methods include providing a powder mixture, pressing the powder mixture to form a green component, and sintering the green component to a final density. A shank(70) is provided that includes an aperture (72), and a feature(60) is machined in a surface of the bit body. The aperture is aligned with the feature, and a retaining member (80) is inserted through the aperture. An earth-boring bit includes a bit body comprising a particle-matrix composite material including a plurality of hard particles dispersed throughout a matrix material. A shank is attached to the bit body using a retaining member.					
					
50.	Apparatus and method to reduce fluid pressure in a wellbore	US20050045382	2004-10-05	WEATHERFORD TECHNOLOGY HOLDINGS*	70 %
The present invention generally provides apparatus and methods for reducing the pressure of a circulating fluid in a wellbore. In one aspect of the invention an ECD (equivalent circulation density) reduction tool provides a means for drilling extended reach deep (ERD) wells with heavyweight drilling fluids by minimizing the effect of friction head on bottomhole pressure so that circulating density of the fluid is close to its actual density. With an ECD reduction tool located in the upper section of the well, the friction head is substantially reduced, which substantially reduces chances of fracturing a formation.					
					
51.	Subsea intervention system, method and components thereof	WO03070565	2003-02-19	VARCO*	70 %
The subsea intervention system (SIM) includes a BOP module (10) and CT module (20). A tool positioning system (76) is used for positioning a selected subsea tool (22) stored within a rack (18) with a tool axis in line with the BOP axis, while a maritized coiled string injector (80) is moved by positioning system (81) to an inactive position. Power to the subsea electric motors (162) is supplied by an electrical line umbilical extending from the surface for powering the pumps (164), with the hydraulic system controlled by power control unit (198). The injector (80) preferably includes a pressure compensator roller bearing (220) and a pressure compensated drive system case (254).					
					
52.	Tubular deployment tool and method of use	US20040149449	2003-02-04	HALLIBURTON ENERGY SERVICES* WAIN CHRISTOPHER PAUL	70 %
A vent screen pressure deployment tool (10) and method for use in running tubular members into a pressurized well. The apparatus comprises a top sub (12) and a stinger (16). The top sub (12) is adapted for connection to the upper end of a tubular member, such as a vent screen (14). An upper end of the top sub (12) is adapted for connection to a conveying tool (24), such as a slick line deployment tool, and the top sub defines a collet recess (28) therein. The stinger (16) comprises a locator sub (34) adapted for connection to the lower end of another tubular member and a collet sub (36) shearably attached to the locator sub. The collet sub has a plurality of flexible collets (70) thereon adapted for latching engagement with the collet recess (28) when aligned therewith, thereby providing a latched connection between the tubular members.					
					
53.	Junction assembly, system and method for providing a downhole junction	CA2418565	2003-02-10	CANADIAN NATURAL RESOURCES*	70 %
The invention is directed at a junction assembly adapted for insertion in a borehole and a system and a method for providing a junction in a borehole. The junction assembly is comprised of a primary conduit and a lateral conduit. The primary conduit has an upper end, a lower end, and defines a primary conduit bore extending through the primary conduit from the upper end to the lower end. The lateral conduit is connected with the primary conduit at a conduit junction located between the upper end of the primary conduit and the lower end of the primary conduit, wherein the lateral conduit extends within the primary conduit bore from the conduit junction towards the upper end of the primary conduit.					
					

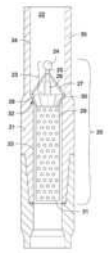
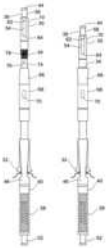
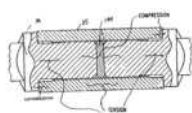
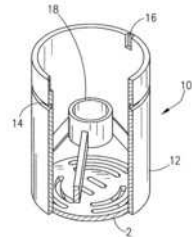
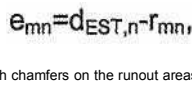
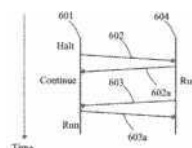
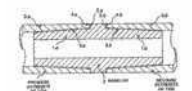
54.	Through tubing real time downhole wireless gauge	US20050055912	2003-12-08	SHELL* SHELL CANADA SHELL INTERNATIONALE RESEARCH SHELL OIL	70 %
A telemetry system having: a pipe; a SCADA box acoustically coupled to the pipe; and a gauge inserted in the pipe, the gauge comprising: an acoustic wave generator; a coupler mechanically connected to the acoustic wave generator, wherein the coupler is engageable and disengageable with the pipe, wherein the coupler defines an acoustic transmission path between the acoustic wave generator and the pipe when engaged with the pipe; and a signal controller in communication with the acoustic wave generator. A method for communicating information in a wellbore from a downhole location to the surface, the method having the following steps: running a downhole gauge into a pipe within the wellbore, wherein the downhole gauge comprise an acoustic wave generator; setting the downhole gauge in the pipe; and communicating an acoustic signal between the downhole gauge and the pipe.					
					
55.	Subsea process assembly	EP1353038	2002-04-08	COOPER CAMERON* ONESUBSEA*	70 %
A subsea process assembly for separating a multiphase flow, the assembly comprising: an inlet for a multiphase medium; a pressure reducing means for reducing the pressure of the multiphase flow from the inlet and creating a source of energy; a multiphase separator for separating the multiphase input into individual phases; and a pumping system for, in use, pumping at least one of the desired individual phases to a delivery point by utilising at least some of the energy from the source of energy. <IMAGE>					
					
56.	Protection sleeve	GB0506640	2005-04-01	HALLIBURTON MANUFACTURING & SERVICES* RED SPIDER TECHNOLOGY	70 %
A protection sleeve (12) for locking over a seal (72) in a wellbore is described. The sleeve (12) is adapted for releasable engagement to a running tool (14) and has a locking mechanism (28) comprising first and second tubula members and a collet (56) is provided. One tubular member includes a profile adapted to mate with a profile of the seal (72). The sleeve (12) may be located on a work string (14), including a rotary drill string, and the invention also relates to methods of running in, setting, carrying out an intervention operation and retrieving the sleeve in a single run. The invention has particular application in Through Tubing- Rotary Drilling (TTRD).					
					
57.	Well treatment apparatus and method	US20040040707	2002-08-29	HALLIBURTON ENERGY SERVICES*	70 %
Apparatus and methods are disclosed for sequentially treating multiple zones in underground formation in a single trip of the well treatment work string. In the one embodiment, the work string includes composite tubing (100) having electrical conductors (144) embedded within the walls, the conductors (144) enabling power transmission and two way communication between the surface and the sensor (209) or detectors downhole so that real time data can be sensed and communicated. Isolation packers (220) are actuated via electrical signals from the surface communicated to the bottom hole assembly via the conductors(144). A detector (207) located in the bottom hole assembly may be provided to detect perforations or other anomalies in the casing, such as joints, enabling the surface controller to position packers properly in blank segments of casing so that the well intervals can be properly isolated and the adjacent formation effectively treated.					
					
58.	Downhole force generator and method for use of same	GB0420426	2003-09-15	HALLIBURTON ENERGY SERVICES*	70 %
A downhole force generator (60) adapted to be moved to a target location within a wellbore (70) for interaction with a well tool (74) previously positioned in the wellbore (70) comprises a downhole power unit (62) having a moveable shaft (68). An anchor (64) is operably associated with the downhole power unit (62). The anchor (64) has an anchoring configuration and a running configuration. In the anchoring configuration, the anchor (64) longitudinally secures the downhole force generator (60) within the wellbore (70). An operating tool (66) is operably associated with the downhole power unit (62) and is operably engageable with the well tool (74) such that when the operating tool (66) is operably engaged with the well tool (74) and the anchor (64) is in the anchoring configuration, movement of the moveable shaft (68) will transmit a force to the well tool (74).					
					
59.	Downhole milling machine and method of use	GB0320906	2003-04-04	WEATHERFORD LAMB WEATHERFORD TECHNOLOGY HOLDINGS*	70 %
The present invention is directed to a method and apparatus for providing a pathway for fluid communication through a tubing-retrievable subsurface safety valve (TRSSV). The method and apparatus are designed to be deployed within a hydrocarbon wellbore after the TRSSV has failed. The apparatus is a milling tool that is run into the wellbore and landed within the TRSSV. The milling tool comprises a housing system, a cutting system, a drive system, and an actuating system. In operation, the milling tool is landed within the housing of the TRSSV. Thereafter, the actuating system is initiated. The actuating system actuates the drive system, which in turn drives the cutting system. In one arrangement, the cutting system includes blades for shaving the pressure containing body of the TRSSV, thereby forming a pathway for fluid communication between a hydraulic fluid line and a bore of the safety valve.					
					
60.	Remote delivery of latex drag-reducing agent	US20060144595	2004-12-30	CONOCOPHILLIPS LIQUIDPOWER SPECIALTY PRODUCTS* LUBRIZOL SPECIALTY PRODUCTS PHILLIPS 66	70 %
Latex drag reducers and systems for delivering latex drag reducers are disclosed. The latex drag reducers comprise a polymer that is formed via an emulsion polymerization reaction dispersed in a continuous phase and can undergo subsequent modification in order to increase the solubility of the polymer in hydrocarbons. The polymers generally present a particle size of less than about 1000 nm and are suitable for delivery to a subsea flowline via a small diameter conduit of an umbilical line without an unacceptable level of pressure drop or plugging of the conduit.					
					

61.	Side entry sub hydraulic wireline cutter	US20050133227	2003-12-17	BAKER HUGHES*	70 %
A side entry sub (22) for use with a drill string (15), where the side entry sub receives a wireline (10) within its inner diameter, includes a device (44) capable of severing the wireline proximate to the side entry sub. It can further include a capturing device (48, 49) to grapple the severed portion of the wireline to prevent it from being dropped within the wellbore (5).					
					
62.	Electrical pump for use in well completion	US20020197174	2002-06-26	ENI* HARDING RICHARD PATRICK SHELL INTERNATIONAL EXPLORATION & PRODUCTION* TOTAL TOTAL FINA ELF* WEATHERFORD LAMB	70 %
An improved electrical pump is first provided for use in a wellbore. The pump (100) comprises a stator (120) and a stator housing (110), and an armature (130) and an armature housing (136). The stator housing and the armature housing define concentrically nested tubular bodies. The armature housing is configured to permit production fluids to flow therethrough. In one aspect, the stator and armature are assembled in connectible and interchangeable sections called "modules" (122, 132) that can be attached in series. In one aspect, the electrical operation of coils within the stator is protected from individual coil short-circuiting or failure by wiring them in parallel, rather than in series. In addition, each module may be wired in parallel. In this way, a failure of one stator module will not result in the failure of another stator module. In an embodiment of the present invention, the valves (150, 160) of the pump are capable of being retrieved by a wireline, without pulling the entire production string. A method for using a plurality of electrical pumps is also provided. The configuration of the electrical pumps allows multiple linear pumps to be placed in series with the production tubular. Alternatively, a rotary pump design is provided which allows multiple rotary pumps to be placed in series with the production tubular.					
					
63.	A disconnect device	US20050087338	2003-10-28	VARCO*	70 %
A disconnect device (10) comprising a mandrel (11) having formed on an outer surface locking formations, and a female member (12) in which the mandrel is releasably securable and which includes one or more lugs (19) that are moveably retained relative to an inner surface thereof by a first retainer member engaged with at least one retainer formation formed in each lug. Each lug includes locking formations engageable with a locking formation on the outer surface of the mandrel to lock it in the female member in first position, and that release the mandrel from the female member in a second position. The device includes a second locking member moveable into and out of engagement with the retainer formation of each lug respectively to lock the lug in the first position and release it.					
					
64.	Apparatus and method for dewatering low pressure gradient gas wells	WO2005100744	2005-03-28	BJ SERVICES*	70 %
Disclosed is an apparatus and method for removing extraneous water from a natural gas well using a miniaturized jet pump assembly and a concentric coiled tubing string. The miniaturized jet pump assembly is attached to a concentric coiled tubing string at the surface and then run into the well as a single unit. Alternatively, the concentric coiled tubing string may be assembled in the well. Once downhole, the jet pump assembly is activated to remove extraneous water from the well thereby facilitating the production of natural gas. Should the functional portion of the jet pump assembly corrode or wear out, that portion may be uninstalled and replaced without removing the jet pump assembly and concentric coiled tubing string from the well.					
					
65.	Intervention rod	GB0415223	2004-07-07	SENSORNET ZIEBEL*	70 %
A rod having an embedded optical fibre has a stiff composite outer layer (10) to make the rod self straightening to enable it to be pushed into a pipe or borehole from a spool. This can help enable a reduction of friction between rod and conduit and can enable longer reach. A barrier layer is provided to separate the fibre from the composite layer. The rod can be retrieved after use. The rod can be narrow enough to enable normal flow along the pipe or borehole, and can be injected and retrieved even when the pipe or borehole is pressurised. The fibre can be used for remote sensing of conditions along the conduit. Other tools can be inserted by the rod during the intervention.					
					
66.	Injecting a fluid into a borehole ahead of the bit	WO03010410	2002-07-23	SCHLUMBERGER SCHLUMBERGER TECHNOLOGIES* SHELL CANADA SHELL INTERNATIONALE RESEARCH	69 %
A method and system for introducing a fluid into a borehole (2), in which there is arranged a tubular drill string (3) including a drill bit (1), wherein the drill bit (1) is provided with a passageway (8, 20) between the interior (3a) of the drill string (3) and the borehole (2), and with a removable closure element (10) for selectively closing the passageway in the passageway in a closing position, and wherein there is further provided a fluid injection tool comprising a tool inlet and a tool outlet, the method comprising passing the fluid injection tool through the drill string to the closure element, and using it to remove the closure element from the closing position; passing the fluid injection tool outlet through the passageway, and introducing the fluid into the borehole from the interior of the drill string through fluid injection tool into the borehole.					
					
67.	Translating downhole tool	GB0330070	2003-12-27	WEATHERFORD LAMB WEATHERFORD TECHNOLOGY HOLDINGS*	69 %
A tool for generating a force downhole comprises a body, a longitudinally movable activating member mounted to the body, and a longitudinally movable driven member also mounted to the body. The driven member is operatively associated with the activating member such that on translation of the activating member in one axial direction, the driven member is translated in an opposite axial direction. The tool may be utilised to convert a pulling action, applied by a spoolable member, to a pushing action, useful in disengaging a downhole lock.					
					
68.	In situ recovery from a kerogen and liquid hydrocarbon containing formation	US20030178191	2002-10-24	SHELL*	69 %
In an embodiment, a method of treating a kerogen and liquid hydrocarbon containing formation in situ may include providing heat from one or more heat sources to at least a portion of the formation. Heat may be allowed to transfer from the one or more heat sources to a part of the formation. In some embodiments, at least a portion of liquid hydrocarbons in the part may be mobilized. At least a portion of kerogen in the part may be pyrolyzed. In certain embodiments, a pressure within at least a part of the formation may be controlled. The pressure may be controlled to be at least about 2.0 bars absolute. A mixture may be produced from the formation.					
					

69.	Filter for a drill string	US20060065444	2004-09-28	INTELLISERV*	69 %
A filter for a drill string comprises a perforated receptacle having an open end and a perforated end and first and second mounting surfaces are adjacent the open end. A transmission element is disposed within each of the first and second mounting surfaces. A capacitor may modify electrical characteristics of an LC circuit that comprises the transmission elements. The respective transmission elements are in communication with each other and with a transmission network integrated into the drill string. The transmission elements may be inductive couplers, direct electrical contacts, or optical couplers. In some embodiments of the present invention, the filter comprises an electronic component. The electronic component may be selected from the group consisting of a sensor, a router, a power source, a clock source, a repeater, and an amplifier.					
					
70.	Well pressure activated pack-off head	US2002006562	2001-04-24	BAKER HUGHES LG ELECTRONICS*	69 %
The present invention discloses a well pressure activated pack off head comprising a hollow body formed for coaxial connection to the wellhead which provides for unobstructed passage of a data transmitting wireline therethrough. Disposed coaxially within the hollow body is a pack off rubber with a passage formed along its longitudinal axis for passage of a data transmitting wireline. Located below the pack off rubber is a piston in pressure communication with the wellbore. High pressure inside of the wellbore squeezes the piston against the pack off rubber and compresses it tightly around the wireline. A pressure seal is formed between the pack off rubber and the wireline when the pack off rubber is sufficiently compressed by the piston.					
					
71.	Downhole plug	NO20042939	2004-07-09	BROENTEKNOLOGIUTVIKLING BRÖNTEKNOLOGIUTVIKLING INTERWELL NORWAY*	69 %
Downhole plug, especially designed for closing an annular conduit in an oil or gas well, under high pressure and temperature. It has two radially expandable ring elements 13, 15, which are arranged on a carrying cylindrical element 32, between two mutually axially movable pressure elements 12, 14, having an expansion sleeve in between. The ring elements can, by insertion of the downhole plug in a well, be expanded from an inner position, seen radially, to a sealing position against the wall of the well. The radially expandable ring elements 13, 15, comprises a closed series of circumferentially overlapping seal elements 13 A, 15 A. By the expanding movement they are mutually moved in the circumferential direction, thereby maintaining a seal against each other. They form an outer sealing surface 38, which can provide a seal against a cylindrical pipe wall, and they have an inwards facing sealing surface 47.					
					
72.	A ground drilling hammer and the driving method	KR20060063158	2004-12-07	EVERDIGM ROCK TOOLS* Rim, Byong - duk Korea, 5 6 0 - 8 5 9 Cho Lulubutto, Chonju - Si, Wangsang, Hyoja - don 2 ga, The Sharp Apartment, 1 0 6 -1 8 0 3	69 %
Disclosed herein is a pneumatic operated hammer for rock drilling, the hammer comprising a cylindrical casing, a back head mounted at an upper portion of the casing, a check valve for opening/closing a compressed air passageway in the casing, a guide for supporting the check valve, a piston adapted to ascend and descend with compressed air in the casing, and a button bit for performing a drilling work through the striking of the piston. The piston is extended to a certain length to conform to the work condition of the pneumatic hammer to thereby prevent a water back-flow phenomenon in which underground water, etc., is introduced into the drilling equipment during the drilling work, compressed air passageways and variable compressed air chambers are formed between the piston and the casing so that when the piston ascends by the compressed air, it abruptly ascends at a load-free state, and the piston has axial portions with a reference diameter and different outer diameters so that it is possible to manufacture a hammer bit having a plurality of variable compressed air chambers formed between the casing the piston to fit for the work capacity. The piston ascended in a load-free state strikes the button bit with its rapid and strong striking force produced by the compressed air supplied from the variable chambers while abruptly descending to thereby perform the drilling work.					
					
73.	Well system	US20030075361	2002-10-07	HALLIBURTON ENERGY SERVICES*	69 %
The drilling system includes a work string (20) supporting a bottom hole assembly (310). The work string including lengths of pipe having a non-metallic portion. The work string includes a composite coiled tubing (320) having a fluid impermeable liner (32), multiple load carrying layers (38) and a wear layer (36). Multiple electrical conductors and data transmission conductors (42) are embedded in the load carrying layers for carrying current or transmitting data between the bottom hole assembly and surface. The bottom hole assembly (30) includes a bit, a gamma ray and inclinometer instrument package (130), a steerable assembly (124), an electronics section (110), a transmission (100) and a power section (90) for rotating the bit (140). It may or may not include a propulsion system. The drilling system may be a gravity based drilling system without a propulsion system. Various motive means (404) may be provided, such as gravity, to apply weight on the bit.					
					
74.	Bacterial strains, compositions including same and probiotic use thereof	WO2005019417	2004-08-12	BIO BALANCE* BIOBALANCE CARSTENSEN KENNETH J	69 %
A bacterial co-culture is provided. The bacterial co-culture comprises a first bacterial strain having all the identifying characteristics of Bacillus licheniformis PA (ATCC Deposition No: PTA-5311) and a second bacterial strain having all the identifying characteristics of Bacillus subtilis HE (ATCC Deposition No: PTA-5310)					
					
75.	In situ thermal processing of a tar sands formation	US20030155111	2002-10-24	SHELL*	69 %
An in situ process for treating a tar sands formation is provided. The process may include providing heat from one or more heaters to at least a portion of the formation. The heat may be allowed to transfer from the one or more heaters to a part of the formation such that heat from the one or more heat sources pyrolyzes at least some hydrocarbons within the part. Hydrocarbons may be produced from the formation.					
					
76.	Apparatuses and methods for deploying logging tools and signalling in boreholes	GB0218784	2002-08-13	REEVES WIRELINE TECHNOLOGIES* REEVES WIRELINE TECHNOLOGY	69 %
The apparatus includes a pump for circulating pressurized fluid in a wellbore. A control device controls the pump which a conduit interconnects to the wellbore. A downhole transducer detects changes in fluid pressure at a downhole location and generates signals accordingly. A processor generates actuator commands based on the signals. Actuators activate a downhole tool based on the actuator command. A modulating valve modulates the fluid pressure. A remote transducer detects the pressure remotely from the downhole transducer. The control device causes the pump to generate acoustic signals in the fluid via wave forms which the downhole transducer detects. The modulating valve generates wave forms in the fluid. The control device sends control signals via the fluid to the downhole transducer. Consequently the processor actuates the tools. Following correct actuation the modulating valve generates signals via pressure changes which the remote transducer receives to indicate successful tool deployment.					
					

77.	Method and apparatus for hydrocarbon subterranean recovery	WO200188320	2001-05-16	OMEGA OIL*	69 %	
Enhanced horizontal drilling systems and methods encompass the production of crude oil from wells (12, 14, and 16) drilled from a subterranean production facility. The wellhead is below the oil reservoir to improve flow rate and recovery due to gravity flow from the wellbore to the wellhead allowing wellbore production pressure to achieve extremely low fluid pressure, even up to 15 PSI. The present method is production of shallow crude oil by way of long, or near, horizontal boreholes drilled and serviced from a subsurface workroom. The subsurface workroom serves as the place to which production is centrally accumulated. Oil is collected in a central facility and lifted to the surface utilizing pumps (64).						
78.	Method and device for rock bolting	SE0301376	2003-05-12	ATLAS COPCO ATLAS COPCO LOCK DRILLS ACTIVORAG ATLAS COPCO ROCK DRILLS EPIROC ROCK DRILLS AKTIEBOLAG*	69 %	
Method and device for rock bolting, wherein a tubular bolt (2) with closed cross-section is inserted and expanded for anchoring inside a bore hole (12), wherein the tubular bolt is expanded to contact in the inner portion of the bore hole, a tension element (3, 7, 8, 9) which is arranged in the outer portion of the bore hole with an inner part (7) attached to the tubular bolt (2) is pre-stressed and a settable medium is injected into the outer portion of the bore hole (14) between (27) the tension element and the wall of the bore hole and is allowed to set.						
79.	Device for storing tubulars and devices for handling of tubulars	NO20054447	2005-09-26	FRED OL SEN EHNERDZHI FRED OLSEN ENERGY*	69 %	
Device for storing tubular on a drilling and/or production installation, comprising a shaft (8, 9, 10, 11) to accommodate a plurality of tubular in a substantially vertical position and a guide (15, 22) that is moveable above the shaft (8, 9, 10, 11). The device comprises means for displacing the guide (15, 22) in a substantially horizontal plane to a position above a selected one of all the tubular in the shaft. Also described are a catwalk (12) configured to displace the tubular in an axial direction through a V-door in the derrick (5), and which is further configured to be tilted into a substantially vertical position to receive or deliver a tubular, and a knuckle boom crane (7) with a grapple (27) that is adapted to grip an upper end of a substantially vertical tubular and carry the tubular in a substantially vertical orientation.						
80.	Method for using a reciprocating pump vent-dump valve	US20030159830	2003-02-25	CHERRY SELECT* VANN ROY R.	69 %	
A reciprocating pump vent-dump and methods of use for utilization in the hydrocarbon industry. The device is preferably used with barrel pumps although it may be used with tubing pumps. The device is positioned at the bottom of the wellbore immediately above the stinger and immediately below above the standing valve and comprises a sliding piston within an outer housing. The device may be opened pulling upwards on the pump drive mechanism thereby allowing fluid within the production tubing to drain back into the formation as long as the pump drive mechanism is held up. The device closes when the pump is returned to normal operation. The method of spotting chemicals requires a pre-measured quantity of chemicals at the surface which is sucked into the tubing string when the valve is opened followed by a pre-measured quantity of make-up fluid which is drawn into the well thereby placing the chemicals at the required point. The technique used for spotting chemicals may be used for flushing flower sand from the wellbore and the device may also be used to dump the hydrostatic head in the production tubing.						
81.	Roller cone drill bits with optimized bearing structures	GB0516638	2005-08-12	HALLIBURTON ENERGY SERVICES*	69 %	
A roller cone drill bit may include optimally designed bearing structures and cutting structures. The roller cone drill bit may include three cone assemblies rotatably mounted on respective spindles via respective bearing structures. Each cone assembly may have a respective cutting structure with a minimal moment center located along each respective axis of rotation. Each respective bearing structure has a center point located proximate each respective minimal moment center.						
82.	Patriot retrievable production packer	US20030196794	2003-04-18	BROOKEY ROBERT L. FORUM* FORUM CANADA ULC* FORUM ENERGY TECHNOLOGIES* INNOVEX DOWNHOLE SOLUTIONS* SOMMERS MICHAEL T. TEAM OIL HOLDINGS*	69 %	
The present invention provides a tool capable of being set and released. A novel arrangement of a push sleeve in the spring body eliminates several shear pins while an internal J slot formed directly on the mandrel significantly reduces the size of the lower drag body and thus the length of the tool. An internal pathway between the inner mandrel and the mandrel body selectively provide increase flow through the packer tool to facilitate running in of the tool.						
83.	Composite inflatable downhole packer or bridge plug	WO2004070163	2004-02-02	BAKER HUGHES*	69 %	
Inflatable packer assemblies and bridge plugs that incorporate selective components made of a composite material, thereby providing improvements in weight, drillability and corrosion resistance. A through-tubing packer assembly is described having end sleeves fashioned partially from composite material of high strength fiber and polymer resin. The inflatable packer element has longitudinal ribs fashioned from composite material with a specialized cross-section having a larger cross-section of rib material in locations where additional bending resistance is required and permits additional elastomeric material to be placed about the ribs in sealing areas. An external casing packer is also described having a composite valve assembly and central mandrel formed primarily of composite material. The mandrel includes metallic fittings for threaded attachments to be made.						
84.	Micro-switches for downhole use	NO20014282	2001-09-04	SCHLUMBERGER SCHLUMBERGER SERVICES PETROLIERS* SCHLUMBERGER TECHNOLOGIES	68 %	
A downhole tool includes a device to be activated by electrical energy and a micro-switch that includes conductors and an element between the first and second conductors selected from the group consisting of: a dielectric element capable of being modulated to provide a conductive path in response to receipt of electrical energy; and an element moveable in response to application of an electrical energy. The micro-switch may be formed of microelectromechanical system (MEMS) technology or microelectronics technology.						

85.	Fracturing method providing simultaneous flow back	US20060196667	2005-03-04	CURTIS PHILIP ANTHONY HALLIBURTON ENERGY SERVICES*	68 %
A bottom-up method of fracturing a multi-zone (3,5) subterranean formation intersected by a wellbore enables one zone to be fractured while simultaneously flowing previously placed fracture fluid from one or more other zones back to the surface. The method employs a bottom-hole assembly that is attached to the bottom end of a tubing string (12). Including a hydra jetting sub (18), a centralizer (14), a packer (26) and valve sub (28). The hydra jetting sub is used to perforate and initiate the fracture in the zones of interest. The zones are fractured by pumping fracturing fluid down the annulus formed between the tubing string and the wellbore. The previously placed fracture fluid flows back to the surface through the tubing string. It enters through the valve sub in the BHA.					
					
86.	Upgrading and mining of coal	US20030173085	2002-10-24	SHELL*	68 %
A method for treating a coal formation to alter properties of coal in the formation is provided. In one embodiment, heat from one or more heaters may be provided to at least a portion of the formation. Heat may be allowed to transfer from the one or more heaters to a part of the formation. In certain embodiments, the heat from the one or more heaters may pyrolyze at least some hydrocarbons within the part of the formation. The method may include producing a fluid from the formation. In some embodiments, the produced fluid may include at least some pyrolyzed hydrocarbons from the formation. In an embodiment, after at least some coal has been treated at least a portion of such coal may be produced from the formation.					
					
87.	Segmented steel tube bundle termination assembly	US20060157235	2005-10-06	OCEAN WORKS INTERNATIONAL* OCEANWORKS INTERNATIONAL	68 %
A termination and anchorage for steel helical segmented steel tubing bundles includes a set of multiple separable anchor blocks to which the individual tubes in the bundle can be attached and a clamp assembly for securing and supporting the set of anchor blocks. Multiple comating annular arcuate outer anchor blocks for the outer tubes in the tubing bundle surround a central anchor block, for the center tube in the tubing bundle. The aggregation of anchor blocks is compactly assembled and held together by surrounding the assembled blocks with a separable clamp assembly.					
					
88.	In situ thermal processing of an oil reservoir formation	US20030173081	2002-10-24	SHELL*	68 %
An in situ process for treating an oil containing formation is provided. The process may include providing heat from one or more heaters to at least a portion of the formation. The heat may be allowed to transfer from the one or more heaters to a part of the formation such that heat from the one or more heat sources pyrolyzes at least some hydrocarbons within the part. Hydrocarbons may be produced from the formation.					
					
89.	In situ thermal processing of a heavy oil diatomite formation	US20030173082	2002-10-24	SHELL*	68 %
An in situ process for treating a diatomite formation is provided. The process may include providing heat from one or more heaters to at least a portion of the formation. The heat may be allowed to transfer from the one or more heaters to a part of the formation such that heat from the one or more heat sources pyrolyzes at least some hydrocarbons within the part. Hydrocarbons may be produced from the formation.					
					
90.	Sliding extension closed percussion bit	KR20030065052	2002-01-29	LIM BYUNG DUK;LIN BINGDE	68 %
A closed hammer bit operated in a slide method, includes: a bit housing having a plurality connecting hole, a downward convex, a supporting convex, a connecting part and an air pressure feeding hole; a pilot bit having a connecting convex assembled by the connecting part of a bit housing and coupled with the bit housing, a connecting through hole formed on the extending line of connecting hole of the bit housing; a sliding wing bit, having a guide convex, and a boring hole, connected to a guide pin and fixed in a slide hole of a guide bit; a plurality of locking pins, matched with the connecting hole of the bit housing and the connecting through hole of the guide bit; and a gasket, filled in the residual spaces after the locking pins are equipped with the connecting hole of the bit housing and the connecting through hole of the guide bit.					
					
91.	Method and apparatus for moving a mass	US20030221867	2003-05-20	PAUL WESTMEYER	68 %
A combination for performing a variety of functions includes (a) apparatus for moving a projectile or other mass along an arcuate path and moving the path substantially radially along a local radius of curvature and (b) a toll, vehicle or other article for receiving such projectile and being moved thereby.					
					
92.	Rotary drill bits for directional drilling employing tandem gage pad arrangement with cutting elements and up-drill capability	US20010000885	2001-01-02	BAKER HUGHES*	68 %
A rotary drag bit suitable for directional drilling. The bit includes a bit body from which extend radially-oriented blades carrying PDC cutters. The blades extend to primary gage pads, above which secondary gage pads are either longitudinally spaced or rotationally spaced, or both, defining a gap or discontinuity between the primary and secondary gage pads through which drilling fluid from adjacent junk slots may communicate laterally or circumferentially. Longitudinally leading edges of the secondary gage pads carry cutters, such as chisel-shaped cutters for smoothing the sidewall of the borehole. The cutters are preferably configured and oriented so as to provide a relatively aggressive cutting edge to the formation in both longitudinal and rotational directions of bit movement. Cutters may likewise be disposed on the trailing ends of the secondary gage pads to provide an up-drill capability to facilitate removal of the bit from the borehole.					
					

93.	Drilling fluid filter	US20060065443	2004-09-28	INTELLISERV*	68 %
A drilling fluid filter for placement within a bore wall of a tubular drill string component comprises a perforated receptacle with an open end and a closed end. A hanger for engagement with the bore wall is mounted at the open end of the perforated receptacle. A mandrel is adjacent and attached to the open end of the perforated receptacle. A linkage connects the mandrel to the hanger. The linkage may be selected from the group consisting of struts, articulated struts and cams. The mandrel operates on the hanger through the linkage to engage and disengage the drilling fluid filter from the tubular drill string component. The mandrel may have a stationary portion comprising a first attachment to the open end of the perforated receptacle and a telescoping adjustable portion comprising a second attachment to the linkage. The mandrel may also comprise a top-hole interface for top-hole equipment.					
					
94.	Plunger lift tool and method of using the same	US7080692	2003-07-01	KEGIN KEVIN L	67 %
A plunger lift tool and method of using the same in a well having tubing comprising a tubular housing, having a top portion, a bottom portion, and said housing further defines a passageway therein; a positioning means attached to said housing for removably installing said housing in said well tubing; and a selective sealing means attached to said housing for creating a seal between said housing and said well tubing.					
					
95.	Connectable rod system for driving downhole pumps for oil field installations	US20020076273	2001-09-25	CARTSENSEN KENNETH J.	67 %
Improved sucker rod joints for down hole petroleum pumping applications are provided within the form factor of standard API sucker rods, such that existing inventory in suitable condition is fully usable in more demanding applications. The pin ends are selected or processed such as to provide preselected axial distance between a flat pin end and at least one reference surface, such as a threaded region or reference shoulder or both. The coupler is dimensioned such that the pin ends are in abutment either with each other or with opposite sides of an intervening torque washer in the central region, when the connection is made to a selected level of thread engagement. Furthermore, the engagement is such as to put the pin ends in compression and the coextensive length of coupler in tension. This increases frictional restraints and locks the elements together to resist fatigue failure upon cycling and to insure together with an anaerobic adhesive sealant, against back threading. This arrangement enables standard quality sucker rods to be employed in a configuration which is mechanically secure and highly resistant to tensile, bending and torsional forces, thus assuring a greater strength at the joint than in the rod itself, and resisting the effects of material fatigue arising from long term and stressful cycling operations.					
					
96.	Down-hole tool filter and method for protecting such tools from fluid entrained debris	US7188688	2004-11-05	LEJEUNE ROBERT J	67 %
An improved apparatus for filtering down-hole drilling fluids, insertable at any point in the drill string, i.e.: tool joints or within instrument subs. The filter element is a disk insertable between the two threadably connected ends of any two lengths of the drill string or adaptively placed within a tool joint containing down-hole tools such as data gathering instruments. The filter is essentially a disk having a series of expanding concentric radial slots and may be used in combination with an X collar support ring insert, combined with a sleeve having a landing ring or provided with a retrieval means.					
					
97.	Highly sealing screw joint for oilfield tubes (variants) and method for producing a screw joint therefor (variants)	RU2256767	2004-05-06	ZAKRYTOE AKTSIONERNOE OBSHCHESTVO ZAKRYTOE INVEST PROMTORG	67 %
The inventive highly sealing screw joint for oilfield tubes comprises a male and female tubular parts provided with thrust faces and external and internal sealing surfaces. A conical section is embodied on the internal surface of the male part on the side of the free end thereof. The surface of said end is embodied in the form of a cone tapered towards the external surface of the female part, is a counterpart of the conical thrust face of the male part and is provided with a transition section between a full thread and the internal sealing conical surface. The transition section adjacent to the full thread section is embodied in the form of a cylinder whose diameter is greater than the thread diameter or in the form of a V-shaped groove whose one inclined wall is a thread runout section. The full thread section of the external surface of the male part is provided with chamfers on the runout areas					
$e_{mn} = d_{EST,n} - r_{mn}$					
					
98.	Distributed processing system for subsurface operations	NO20054917	2005-10-10	SCHLUMBERGER SCHLUMBERGER TECHNOLOGIES*	65 %
A method for distributed processing in a subsurface environment includes running a local program on a local computation unit, wherein the local program is configured to call a remote procedure to be executed by a remote computation unit, wherein the local computation unit and the remote computation unit are disposed in a subsurface environment; initiating a remote procedure call; executing the remote procedure on the remote computation unit, while the local computation unit performs another operation; and returning a result from the executing the remote procedure to the local computation unit.					
					
99.	Drive train assembly between surface drive head and rotating pump at bottom of oil well has hollow pumping shafts connected by tapered threads to reduce leakage	BRPI0303892	2003-09-26	SIDERCA* SIDERKA	64 %
For an external diameter (DEN) of the connecting element, an internal diameter (DIN) of the connecting element and a diameter (DHN) from which the transmission shoulder leaves, the following ratios are maintained: DHN/DEN 0.6-0.98; DIN/DEN 0.15-0.90; DIN/DHT 0.25-0.92. Long drive train assembly made of a number of hollow pumping shafts (3a, 3b) with an axis, assembled together at between a drive head at the surface of an oil well and a rotating pump at the bottom of the well. One end of each pumping shaft has an internal female threaded surface coupled to an external male threaded surface on a connecting element (2). The threads are tapered, un-symmetrical, but both have a different diametric conicity. The free ends of the pumping shafts also have an annular shoulder transmitting couple on a connecting element. Each differential thread has a thread in the shape of a non-symmetrical trapezium. The thread is complete on the connecting element and incomplete on the first end of the hollow shaft. The transmission shoulder makes an angle of 75-90 degrees, preferably 83 degrees with the axis of the train. The ratio between the external diameter of the connecting element (DEVU) and the external diameter of the hollow shaft (DEV) is held so that (DEVU/DEV) = 1-1.5. The ratio between the diameter of the shoulder position (DHT) and the internal diameter of the hollow shaft at the free end of the thread (DIFR) is held so that (DIFR/DHT) = 1-1.1. The connecting elements are nipples or integrated with the second end of each hollow shaft with the same proportions. The threads are Modified Buttress threads with 8 threads per 2.54 cm. The male threads have a conicity of 0.0976 cm per cm diameter and the female threads have a conicity of 0.1 cm per cm diameter. An Independent claim is included for a hollow pumping shaft as described above and a connecting element for coupling such shaft sections.					
					

100. Layered pipe column for squeeze packing CN1603574 2004-11-03 CHINA SINOPEC SHENGLI OILFIELD* 63 %
sand control process

The invention discloses the petroleum use lamination backlog to fill guards against sand pipes the column, was suitable to the multi- oil layers extrusion packing tube column, in was sufficient string of tubing including ram and in fills the tool, outside filled the tube column including the crown hook wall packer, outside filled the tool and the sand filter, outside filled on the tool to be equipped with fills the mouth. In fills the tube column to be equipped with the seat to seal washes one's hands of, outside fills the tube column to be equipped with the level the packer. After the seat seals washes one's hands of is hit the pressure to cause the crown to hang the packer place to seal, the seat seals washes one's hands of prearranges the hook wall packer separation, in fills the tube column to be able to fill in the tube column in outside to reciprocate sits the sealing course gap, fills the tool coordination backlog with outside to fill the stratum. Enhances guards against the granulated substance effect and the term of validity. The next tube column then completes many oil layers lamination backlog to fill guards against the granulated substance the construction, greatly reduced the production cost and worker's labor intensity.

