

Diego Gonzalez

1) Family number: 3810464 (US3741294A)

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Title: UNDERWATER WELL COMPLETION METHOD AND APPARATUS

Abstract: Extended casing method and apparatus for completing an underwater well whereby complete and continuous pressure control is maintained at the surface drilling platform. A conductor casing is installed in the floor of a body of water with a casing head and riser attached near the floor. Other casing is installed and supported at the water floor by hanger heads and having other risers extending upwardly therefrom. Pressure control equipment is installed at the upper end of one of the risers. A tubing head designed to pass through the pressure control equipment and riser to which it is attached may be lowered to the innermost hanger-head and remotely latched thereto. Orientation apparatus may be lowered into the tubing head and attached thereto. A tubing hanger and tubing may be lowered through the pressure control equipment and latched to the tubing head in an annular position determined by the orientation apparatus. The tubing is plugged, the riser and control equipment removed and a Christmas tree assembly attached to the wellhead in fluidtight flow communication with the tubing string.

Classifications:

International (IPC 8-9): E21B17/01 E21B17/08 E21B33/035

E21B33/047 E21B41/02 (Advanced/Invention);

E21B17/00 E21B17/02 E21B33/03 E21B41/00 (Core/Invention)

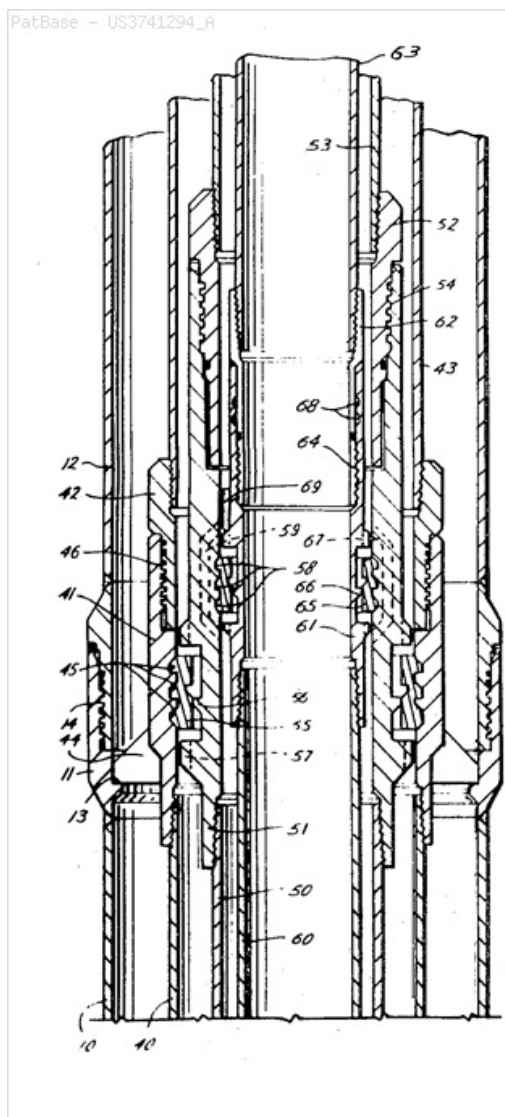
International (IPC 1-7): E21B33/035 E21B7/12

CPC: E21B33/047 E21B17/01 E21B17/085 E21B33/035 E21B41/02

European: E21B17/01 E21B17/08A E21B33/035 E21B33/047

E21B41/02

US: 166/0.5 166/358 166/363 166/367 166/382 175/7



Family:

Publication number	Publication date	Application number	Application date
GB1359319 A	19740710	GB19710044455	19710923
US3741294 A	19730626	US19720226348	19720214

Priority:

US19700076664 19700930 US19720226348 19720214

Probable Assignee: CAMERON IRON WORKS USA INC

Assignee(s): (std): COURTAULDS LTD ; ROCKWELL INT CORP

Assignee(s): SMITH INT ; SMITH INT INC A CORP OF CA ; CAMERON IRON WORKS USA INC ; COURTAULDS LTD GB

Inventor(s): (std): MORRILL C

Inventor(s): MORRILL C US

2) Family number: 765871 (US3353595A)

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Title: UNDERWATER WELL COMPLETIONS

Abstract: 1,107,001. Wells. CAMERON IRON WORKS Inc. 30 April, 1965 [22 May, 1964], No. 18376/65. Heading E1F. In a subaqueous well comprising a casing head 28, a tubing hanger 84 having flow passages 84c, 84d, and a Christmas tree 95 having flow passages 95a, 95b, means 94, 112 are provided to ensure accurate alignment of the passages in the tree with those in the hanger. The lug 94 on the hanger engages a slot 112 in a connector 99 which is lowered onto the head with the tree and has dogs 105 for connection to the head. During installation of the hanger the lug co-acts with a cam tube (74) (Fig. 5, not shown) to rotationally align the hanger, the tube being rotationally aligned with a connector (36) joining the hanger to blow out preventers by a spring pressed latch (73). The casing head is surrounded by guides for lowering the components of the wellhead, and a post (27) (Fig. 10 not shown) is adapted to support the head of a multiple flowline (113), which is connected to the tree by a section (116).

Classifications:

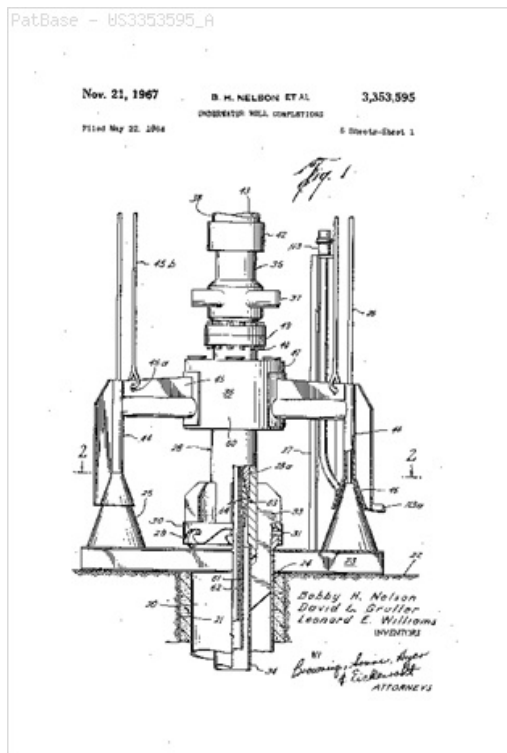
International (IPC 8-9): E21B33/035 E21B33/038 E21B33/047 E21B41/00 (Advanced/Invention); E21B33/03 E21B41/00 (Core/Invention)

International (IPC 1-7): E21B33/035 E21B33/04 E21B43/00 E21B7/12

CPC: E21B33/035 E21B33/038 E21B33/047 E21B41/0007

European: E21B33/035 E21B33/038 E21B33/047 E21B41/00A

US: 166/341 166/347 166/75.11



Family:

Publication number	Publication date	Application number	Application date
DE1271056 B	19680627	DE19651271056	19650521
GB1107001 A	19680320	GB19650018376	19650430
NL152631 B	19770315	NL19650006530	19650521
NL6506530 A	19651123	NL19650006530	19650521
US3353595 A	19671121	US19640369500	19640522

Priority:

US19640369500 19640522

Probable Assignee: CAMERON IRON WORKS INC

Assignee(s): (std): CAMERON IRON WORKS INC

Assignee(s): CAMERON IRON WORKS INC HOUSTON TEXAS VER ST V AM

Inventor(s): (std): GRULLER DAVID L ; NELSON BOBBY H ; WILLIAMS LEONARD E

3) Family number: 47449602 (US2010270032A)

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Title: SYSTEM, METHOD AND APPARATUS FOR THERMAL WELLHEAD HAVING HIGH POWER CABLE FOR IN-SITU UPGRADING PROCESSING

Abstract: A thermal wellhead having a high voltage cable for in-situ upgrading and processing unconventional oil reservoirs is disclosed. An electrical cable has a power umbilical with an electrical heater on a lower end and an electrical connector opposite the heater. An upper portion of the cable has a second electrical connector for connection with the first connector and is connected to a transformer. A well control device is installed at the wellhead and the umbilical is extended through the device in the well. The first connector is landed in the wellhead such that the umbilical extends downward through the well. The well control device is then removed from the wellhead, and the second connector is secured in a tubing bonnet. The bonnet is landed on the wellhead to make electrical connections between the connectors.

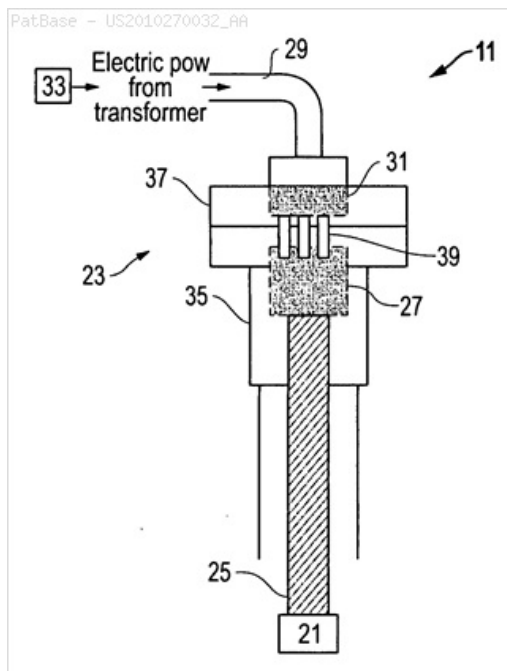
Classifications:

International (IPC 8-9): E21B19/00 E21B23/00 E21B23/14 E21B33/03 E21B33/068 E21B36/00 E21B36/04 E21B41/00 E21B43/24 (Advanced/Invention)

CPC: E21B33/03 E21B33/0407 E21B36/04

European: E21B33/03 E21B33/04E E21B36/04

US: 166/377 166/379 166/379S 166/381 166/381S 166/60 166/60S 166/65.1 166/65.100S



Family:

Publication number	Publication date	Application number	Application date
CA2700027 AA	20101023	CA20102700027	20100415
CA2700027 C	20170307	CA20102700027	20100415
US2010270032 AA	20101028	US20090428615	20090423
US8186445 BB	20120529	US20090428615	20090423

Priority:

US20090428615 20090423

Probable Assignee: VETCO GRAY INC

Assignee(s): (std): MONJURE NOEL A ; VETCO GRAY INC ; VETCO GREY INC

Inventor(s): (std): MONJURE NOEL A

Agent(s): CRAIG WILSON AND CO; PATENT DEPARTMENT,GE OIL AND GAS; PATENT DEPARTMENT GE OIL AND GAS; BRACEWELL AND GIULIANI LLP

4) Family number: 1312588 (US3800869A)

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Title: UNDERWATER WELL COMPLETION METHOD AND APPARATUS

Abstract: Extended casing method and apparatus for completing an underwater well whereby complete and continuous pressure control is maintained at the surface drilling platform. A conductor casing is installed in the floor of a body of water with a casing head and riser attached near the floor. Other casing is installed and supported at the water floor by hanger heads and having other risers extending upwardly therefrom. Pressure control equipment is installed at the upper end of one of the risers. An innermost casing having a tubing hanger-head attached is lowered through the pressure control equipment and installed. An orientation sleeve is aligned with the tubing hanger-head by properly orient the tubing hanger. The tubing hanger and tubing is then passed through the pressure control equipment and the innermost riser, to which the pressure control equipment is attached and is lowered to engage the orientation sleeve for proper alignment with the innermost hanger-head and remotely latched thereto. All seals are then pressure tested. The tubing is plugged, the riser and control equipment removed and a Christmas tree adapter connected to the tubing hanger head. A Christmas tree assembly is then attached to the adapter in fluidtight flow communication with the tubing string.

Classifications:

International (IPC 8-9): E21B17/08 E21B33/035 E21B33/047

F16L37/244 F16L37/252 (Advanced/Invention);

E21B17/02 E21B33/03 F16L37/00 (Core/Invention)

International (IPC 1-7): E21B33/035 E21B43/00 E21B43/01

E21B43/10 E21B7/12 F16L15/00 F16L37/24

CPC: E21B17/08 E21B17/085 F16L37/2445 E21B33/047 E21B33/035

E21B33/043

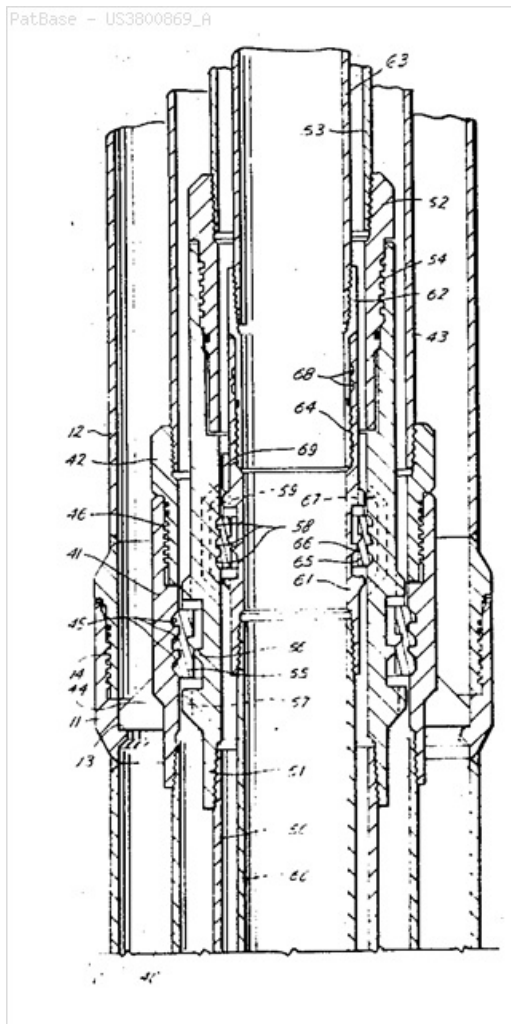
European: E21B17/08 E21B17/08A E21B33/035 E21B33/047

F16L37/244B F16L37/252

US: 166 166/0 166/0.0.6 166/337 166/348 166/359 166/365

166/367 166/368 166/382 166/387 175/7 285/27 285/332.2

285/332.4 285/351 285/376 285/391 285/87 405/224 411/437

**Family:**

Publication number	Publication date	Application number	Application date
FR1506986 A	19671222	FR19660089468	19661230
FR2028846 A1	19701016	FR19690042771	19691210
FR2028846 A5	19701016	FR19690042771	19691210
GB1161012 A	19690813	GB19660055366	19661209
GB1274694 A	19720517	GB19690050956	19691016
NL6711228 A	19680216	NL19670011228	19670815
US3442536 A	19690506	US19680728081	19680509
US3800869 A	19740402	US19710103839	19710104
US3847215 A	19741112	US19730387915	19730813
US3971576 A	19760727	US19730387667	19730813
US3974875 A	19760817	US19740499468	19740822
US4053023 A	19771011	US19740499467	19740822

Priority:

US19660572511 19660815	US19680728081 19680509	US19690792912 19690122
US19710103839 19710104	US19730387915 19730813	US19730387667 19730813
US19740499468 19740822	US19740499467 19740822	

Probable Assignee: CAMERON IRON WORKS USA INC**Assignee(s):** (std): MCEVOY OILFIELD EQUIPMENT CO ; ROCKWELL INT CORP ; ROCKWELL INTERNATIONAL CORP ; ROCKWELL MFG CO**Assignee(s):** SMITH INT ; ROCKWELL MANUFACTURING COMPANY ; SMITH INT INC A CORP OF CA ; ROCKWELL MANUFACTURING ; ROCKWELL INT CORP US ; MCEVOY OILFIELD EQUIPMENT CO US ; CAMERON IRON WORKS USA INC ; COOPER IND ; COOPER IND INC**Inventor(s):** (std): HERD D ; FOWLER J ; DROUIN A ; BUSH R ; FOWLER JOHN H ; HERD DAVID P**Inventor(s):** HERD D US ; DROUIN A US ; BUSH R US ; FOWLER J US ; JOHN H FOWLER**5) Family number: 366386 (US3540533A)**

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Title: REMOTE PACKOFF METHOD AND APPARATUS

Abstract: 1276886 Wells c ROCKWELL MFG CO 19 Sept 1969 [16 Dec 1968] 46313/69 Heading E1F A packing assembly for the annulus between casing hangers 110, 115 (Fig. 4) of a subaqueous wellhead comprises a latch retainer 230 having latches 220 engageable with a groove 112 in the hanger 110, a sleeve 210 movable to project and lock the latches in the groove, a sleeve 240 having a threaded connection with the retainer, a carrier 250 rotatably connected to the sleeve 240, and packing 260, 270, 280 supported by the carrier. The assembly is lowered into the wellhead supported on pins 163 of a tool 150, the pins engaging "L" slots 249 in the sleeve 240, the sleeve 210 having "L" slots engaged by pins 235 carried by the retainer and the sleeve 210 being connected to the tool by pins 173. The packing member 280 comes to rest on the

hanger 115, the assembly being rotated if necessary to engage anti-rotation lugs 285 with notches 114 on the hanger 115. The tool and sleeve 210 are rotated to the right and moved downwardly to force the latches into the grooves. On further rotation of the tool the pins 173 shear and pins 163 rotate the sleeve 240 relative to the retainer, their threaded connection causing the sleeve to move downwardly to set the packing. Finally the tool is lifted clear of the wellhead, the pins 163 sliding out of the grooves 249. The assembly is removed from the annulus by lowering the tool to engage the assembly, dropping a ball through the tool to block a bore 183, supplying fluid to the tool to force tool pins 165 to engage a groove 216 in the sleeve 210, and raising tool and assembly. As shown in Fig. 1 packing assemblies engage hangers 51, 71, 91 and the hanger 31. A centralizer 106 welded to tubing extension 105 guides extensions 104, 105 and a christmas tree into place. Surface casing 20 has centralizer ribs 23.

Classifications:

International (IPC 8-9): E21B33/043

E21B33/047 (Advanced/Invention);

E21B33/03 (Core/Invention)

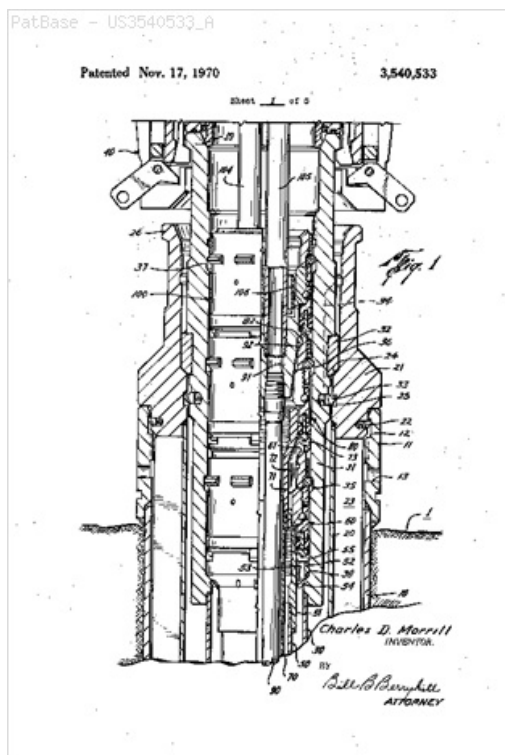
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E21B43/00 E21B7/12

CPC: E21B33/043 E21B33/047

European: E21B33/043 E21B33/047

US: 166/315 166/344 166/368 166/387



Family:

Publication number	Publication date	Application number	Application date
DE1962443 A1	19700827	DE19691962443	19691212
DE1962443 B2	19790726	DE19691962443	19691212
DE1962443 C3	19800327	DE19691962443	19691212
FR2026197 A1	19700918	FR19690036105	19691021
FR2026197 A5	19700918	FR19690036105	19691021
GB1276886 A	19720607	GB19690046313	19690919
NL6918802 A	19700618	NL19690018802	19691215
US3540533 A	19701117	US19680783943	19681216

Priority:

US19680783943 19681216

Probable Assignee: ROCKWELL MFG CO

Assignee(s): (std): MCEVOY OILFIELD EQUIPMENT CO ; ROCKWELL MFG CO

Assignee(s): SMITH INT ; MCEVOY OILFIELD EQUIPMENT CO PITTSBURGH PA V ST A ; ROCKWELL MANUFACTURING ; ROCKWELL MANUFACTURING CO ; ROCKWELL MANUFACTURING COMPANY

Inventor(s): (std): MORRILL CHARLES D ; DONOVAN MORRILL CHARLES ; MORRILL CHARLES DONOVAN

Inventor(s): CHARLES D MORRILL ; MORRILL CHARLES DONOVAN BELLAIRE TEX V ST A

6) Family number: 22661172 (US3137348A)

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Title: APPARATUS AND METHOD FOR DRILLING AND COMPLETING A WELL

Abstract: (Claim 1) 1. Wellhead equipment, comprising a head having a bore therethrough and a recess therein communicating with the bore, a bowl in the head communicating with the bore beneath the recess, a casing hanger comprising a plurality of slips within the recess, means on the head for moving the slips out of the recess and into the bore to suspend a casing therefrom, said means comprising cylinders on the head each having a piston reciprocably slidable therein and having a stem connected to a slip, means for reciprocating the pistons within the cylinders including fluid lines interconnecting the cylinders on opposite sides of each piston therein, each such line having a common connection to a fluid pumping system, each piston being limited in its movement to casing suspending position, all of said pistons having substantially equal pressure responsive areas thereon and all of said piston stems having casing engaging means on their inner ends extending laterally so as to surround a major portion of the casing when all are engaged therewith.

Classifications:

International (IPC 8-9): E21B33/043 E21B7/128 (Advanced/Invention);

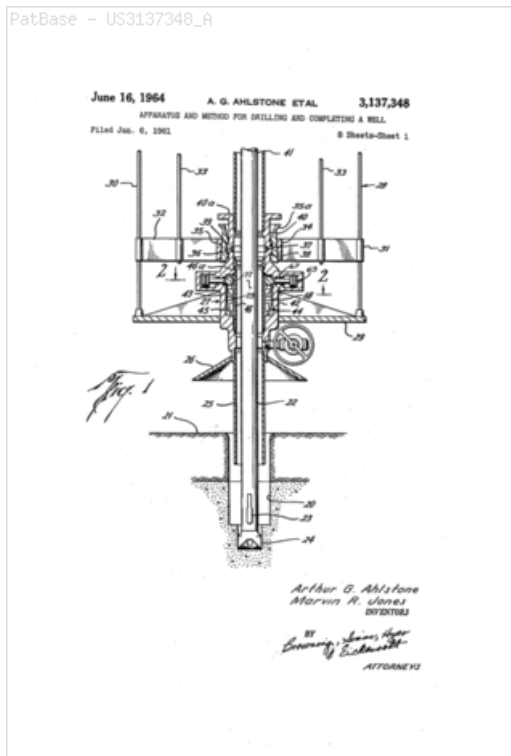
E21B33/03 E21B7/12 (Core/Invention)

International (IPC 1-7): E21B7/12

CPC: Y10S285/92 E21B33/043 E21B7/128 Y10T24/44068

European: E21B33/043 E21B7/128

US: 166/208 166/348 166/368 166/55.6 175/7 24/463 285/920

**Family:**

Publication number	Publication date	Application number	Application date
US3137348 A	19640616	US19610081142	19610106

Priority:

US19610081142 19610106

Probable Assignee:

CAMERON IRON WORKS INC

Assignee(s): (std):

CAMERON IRON WORKS INC

Inventor(s): (std):

JONES MARVIN R ; AHLSTONE ARTHUR G

7) Family number: 4885526 (US5076356A)

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Title: WELLHEAD EQUIPMENT

Abstract: There are disclosed several embodiments of wellhead equipment wherein a seal assembly is installed within a frusto-conically shaped space between the bore of a first wellhead member and a conically shaped surface about a second wellhead member to close same. In one embodiment, the first member is a casing hanger landed within the bore of a subsea casing head, the second member is a tubing hanger within the head, and the seal assembly closes off a space between the bore of the casing hanger and the outer surface of the tubing hanger. In another embodiment, the first member is a surface casing head, the second member is a tubing hanger landed within the bore of the head, and the seal assembly closes off a space between the bore and hanger. In a further embodiment, the first member is a Christmas tree adapter of a surface wellhead landed on a casing head, the second member is a tubing hanger landed in the bore of the head and having an upper extension within a counterbore of the adapter, and the seal assembly closes off a space between the counterbore of extension.

Classifications:**International (IPC 8-9):** E21B33/03 E21B33/04

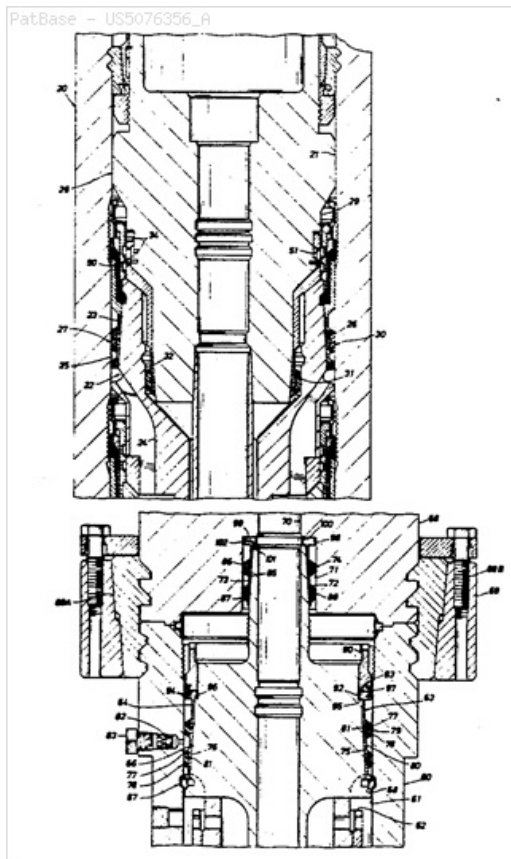
E21B33/043 (Advanced/Invention);

E21B33/00 (Advanced/Non-invention);

E21B33/03 (Core/Invention);

E21B33/00 (Core/Non-invention)

International (IPC 1-7): E21B33/03 E21B33/04**CPC:** E21B33/03 E21B33/04 E21B33/043 E21B2033/005**European:** E21B33/03 E21B33/04 E21B33/043 P21B33/00S**US:** 166/115 166/182 166/208 285/123.12 285/140

**Family:**

Publication number	Publication date	Application number	Application date
GB2233364 A1	19910109	GB19900009460	19900427
GB2233364 B2	19930217	GB19900009460	19900427
GB9009460 A0	19900620	GB19900009460	19900427
NO301387 B1	19971020	NO19900002339	19900525
NO902339 A	19901227	NO19900002339	19900525
NO902339 A0	19900525	NO19900002339	19900525
NO902339 L	19901227	NO19900002339	19900525
US5076356 A	19911231	US19890370234	19890621

Priority:

US19890370234 19890621

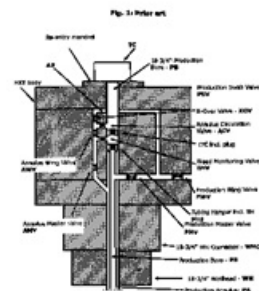
Probable Assignee: DRIL QUIP INC**Assignee(s):** (std): DRIL QUIP INC**Assignee(s):** BANK ONE TEXAS NATIONAL ASSOCIATION**Inventor(s):** (std): REIMERT LARRY E**Inventor(s):** LARRY E REIMERT**8) Family number: 66344542** (NO340784B)

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Title: METHOD FOR REMOVAL OF HXT

Abstract: Source: NO340784B [NO] The present invention relates to a method for removal of a subsea horizontal Christmas tree (HXT) from a wellhead (WH) of a subsea well. A production tubing (PT) of the well is hung off in a tubing hanger (TH) provided in the horizontal Christmas tree (HXT). The method comprises the steps of: a) connecting a subsea pressure Control device (PCE) to the horizontal Christmas tree (HXT); b) establishing a first and a second barrier in the well; c) cutting the production tubing (PT) at a cutting location (X) below the tubing hanger (TH); d) disconnecting the horizontal Christmas tree (HXT) from the wellhead (WH); e) elevating the horizontal Christmas tree (HXT) and the tree running tool (TRT) from the well head (WH).

Classifications:**International (IPC 8-9):** E21B29/12 E21B33/035 (Advanced/Invention)**CPC:** E21B29/12 E21B33/0355 E21B33/035

**Family:**

Publication number	Publication date	Application number	Application date
NO20151658 A	20170605	NO20150001658	20151204
NO340784 B1	20170619	NO20150001658	20151204

Priority:

NO20150001658 20151204

Probable Assignee:

BTI AS

Assignee(s): (std):

BTI AS

Inventor(s): (std):

DAHLE BJORN OLAV ; LIEN BIRGER

Inventor(s):

DAHLE BJOERN OLAV

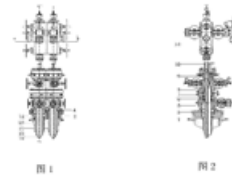
9) Family number: 51904839 (CN202417384U)

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Title: Single-bore dual-well wellhead devices

Abstract: The utility model discloses single-bore dual-well wellhead devices, which comprise a casing head (7), a dual-hole substrate (3), a tubing head (8), a tubing-head adapter flange (10), a Christmas tree (11) and hangers, wherein the dual-hole substrate (3) is arranged on a waterproof guide pipe (13); the casing head (7) is arranged on the dual-hole substrate (3); the tubing head (8) is arranged on the casing head (7); a mandrel type casing hanger (12) seals a surface layer casing (14) and is arranged in the dual-hole substrate (3); a slip type casing hanger (6) seals a technical casing (15) and is arranged in the casing head (7); a tubing hanger (9) is arranged in the tubing head (8); the tubing-head adapter flange (10) is arranged on the tubing hanger (9) and the tubing head (8); and Christmas tree (11) is arranged on the tubing-head adapter flange (10). According to the single-bore dual-well wellhead device, the two wellhead devices are arranged by utilizing one waterproof guide pipe, interference between the two wellhead devices is avoided, the space of a platform is saved, drilling operation is easy to perform, and oil is easy to extract.

Classifications:**International (IPC 8-9):** E21B33/03 (Advanced/Invention)



5

Family:

Publication number	Publication date	Application number	Application date
CN202417384 U	20120905	CN201120562731U	20111229

Priority:

CN201120562731U 20111229

Probable Assignee: JIANGSU JINSHI MACHINERY GROUP CO LTD**Assignee(s):** (std): JIANGSU JINSHI MACHINERY GROUP CO LTD**Inventor(s):** (std): ZHIJIAN QIN ; HELIN CHANG**Inventor(s):** CHANG HELIN ; QIN ZHIJIAN**10) Family number: 899390 (US3426845A)**

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Title: WELL HEAD SYSTEM AND METHOD OF INSTALLING THE SAME**Abstract:** ABSTRACT OF THE DISCLOSURE

The well head apparatus for suspending tubing in a well at a remote point, particularly adapted for submarine wells, having a cartridge for supporting in flow communication therewith the tubing flow strings in the well and valve means in the passages of the cartridge communicating with the tubing flow strings for controlling flow from the well, said valve means being remotely controlled to control flow from the well, said valve means for controlling the well thus being enclosed within the casing head of the well, together with the method of installing the same.

Classifications:

International (IPC 8-9): E21B33/047 E21B34/04 (Advanced/Invention);
E21B34/00 (Advanced/Non-invention);
E21B33/03 E21B34/00 (Core/Invention)

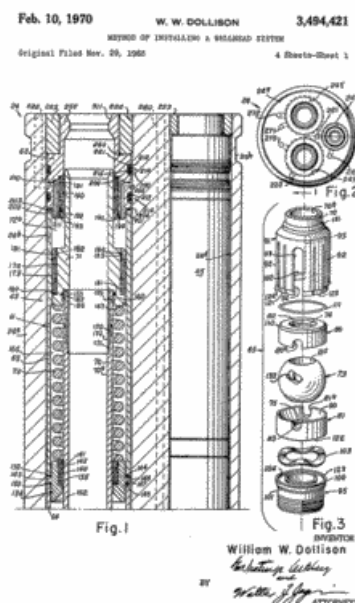
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E21B33/04 E21B43/12 E21B7/12

CPC: E21B33/047 E21B34/04 E21B2034/002

European: E21B33/047 E21B34/04 P21B34/00B

US: 166/265 166/315 166/348 166/368 166/386 166/72 166/97.1

PatBase - US3426845_A



Family:

Publication number	Publication date	Application number	Application date
US3426845 A	19690211		19651129
US3494421 A	19700210	US19680754165	19680604

Priority:

US19650510189 19651129 US19680754165 19680604

Probable Assignee: HALLIBURTON CO
Assignee(s): (std): OTIS ENG CORP
Assignee(s): HALLIBURTON CO
Inventor(s): (std): DOLLISON WILLIAM W
Inventor(s): WILLIAM W DOLLISON

11) Family number: 53138681 (CN202755939U)

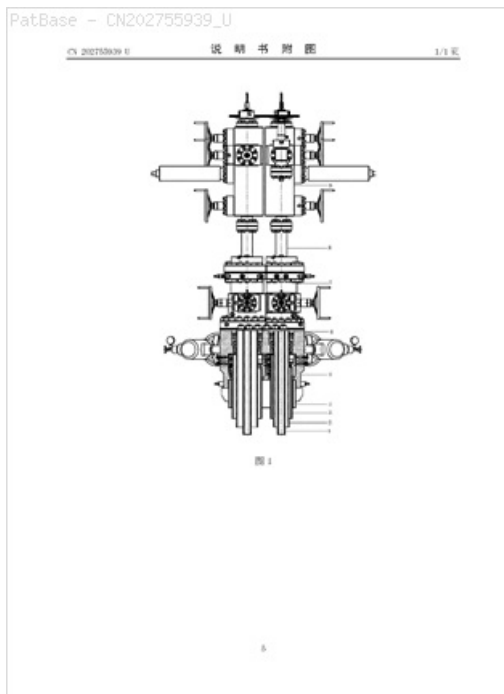
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Title: INTEGRAL TYPE CASING HEAD SINGLE-BARREL TWIN-WELL WELL HEAD DEVICE

Abstract: Source: CN202755939U **Machine translation:** The utility model discloses a unitary casing head Monocular shuangjing wellhead, the wellhead comprises a monolithic casing head (6), double base (5), tubing head (7), tubing head conversion method Blue (8) and christmas tree (9), double base (5) is located in the riser (1), the overall casing head (6) is mounted on a base with two holes (5) above, the tubing head (7) is mounted on the integral casing head (6) above, the conversion tubing head flange (8) is mounted on the tubing head (7) above, the Christmas tree (9) mounted on the tubing head conversion flange (8) above, the overall configuration wellhead; this utility model with a small riser, two separate borehole drilled and no interference between the production wellbore, space-saving platform, drilling simple, oil production and more convenient.

Classifications:

International (IPC 8-9): E21B33/03 (Advanced/Invention)

**Family:**

Publication number	Publication date	Application number	Application date
CN202755939 U	20130227	CN201220364907U	20120726

Priority:

CN201220364907U 20120726

Probable Assignee: JIANGSU JINSHI SCIENCE AND TECHNOLOGY CO LTD
Assignee(s): (std): JIANGSU JINSHI SCIENCE AND TECHNOLOGY CO LTD
Assignee(s): JIANGSU JINSHI SCIENCE AND TECHNOLOGY CO
Inventor(s): (std): ZOU YONG ; XIA YONG ; CHANG HELIN

12) Family number: 58607138 (CN104389544A)

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Title: REDUCING DUAL TUBING OIL RECOVERY WELLHEAD CASING HEAD

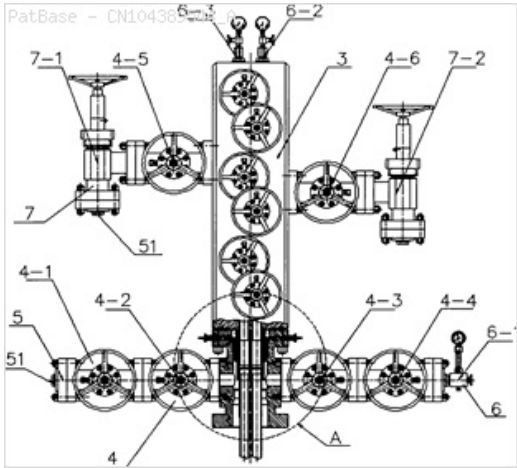
Abstract: The invention discloses a reducing dual tubing oil recovery wellhead casing head. The reducing dual tubing oil recovery wellhead casing head comprises two oil pipes, a casing head cross, a Christmas tree, flat gate valves, a screw thread flange, a pressure gauge stop valve assembly and a throttle valve, wherein the casing head cross is connected with the integral flange Christmas tree through bolts, the inside of the integral flange Christmas tree is provided with a reducing dual tubing hanger, the two oil pipes are fixed at the position of the hanger to achieve oil recovery operation of two different areas, the hanger is further provided with a stop unit, and the stop unit has the function of stopping release of a lower portion casing during dismantling well cementation top connecting collars to guarantee underground safe operation. Due to the improvement that the integral flange connected Christmas tree is used for replacing a traditional Christmas tree structure, the overall sealing performance of the oil recovery wellhead unit is improved, two flat gate valves are used in parallel,

therefore, when one of the gate valves of the integral flange connected Christmas tree is invalid, the other two gate valves can still be closed, and operation safety is improved.

Classifications:

International (IPC 8-9): E21B33/047 E21B43/14 (Advanced/Invention)

CPC: E21B33/047 E21B43/14



Family:

Publication number	Publication date	Application number	Application date
CN104389544 A	20150304	CN201410686370	20141118

Priority:

CN201410686370 20141118

Probable Assignee: JIANGSU SHUANGHUI MACHINERY MFG CO LTD
Assignee(s): (std): JIANGSU SHUANGHUI MACHINERY MFG CO LTD
Assignee(s): JIANGSU SHUANGHUI MACHINERY MFG CO
Inventor(s): (std): ZHU GUOYA ; YU DONG ; LI HONG

13) Family number: 57212612 (CN203783515U)

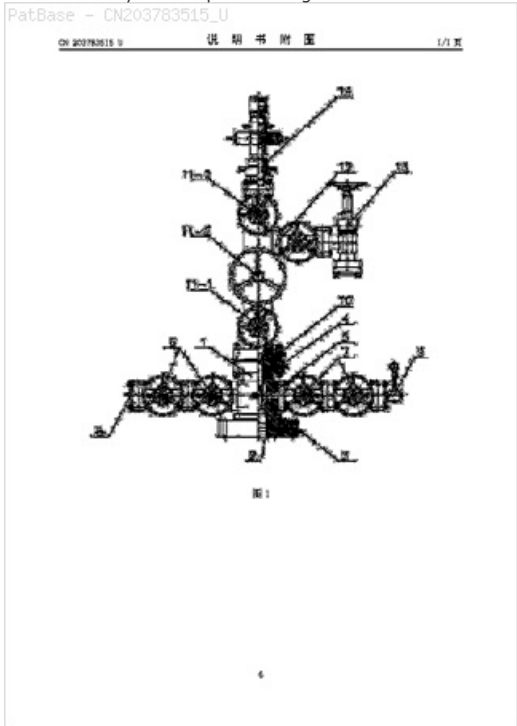
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Title: GAS-DRIVE PRODUCTION WELLHEAD DEVICE

Abstract: The utility model discloses a gas-drive production wellhead device comprises a tubing head four-way valve, secondary sealing devices, a pressure test plug screw, a hanger, a double-male nipple, first flat gate valves, second flat gate valves, a pressure gauge stop valve component, an integral type flanged joint gas-drive gate valve, a third flat gate valve, a throttle control valve and a sucker rod blowout preventer, wherein the tubing head four-way valve is externally connected with a Christmas tree and a casing head; the secondary sealing devices, the pressure test plug screw, the hanger and the double-male nipple are arranged at the bottom of the tubing head four-way valve; the first flat gate valves and the second flat gate valves are mounted on two sides of the tubing head four-way valve, and the pressure gauge stop valve component is connected with the second flat gate valves; and the integral type flanged joint gas-drive gate valve is connected onto the tubing head four-way valve, the third flat gate valve is connected with the integral type flanged joint-gas drive gate valve and the throttle control valve, and the sucker rod blowout preventer is connected with an upper flat valve. The gas-drive production wellhead device has the advantages that the extraction difficulty is reduced, the cost is saved, the extraction is clean and pollution-free, the working efficiency is improved, and the personal safety of an operator is guaranteed.

Classifications:

International (IPC 8-9): E21B33/03 E21B34/02 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN203783515 U	20140820	CN201420193426U	20140418

Priority:

CN201420193426U 20140418

Probable Assignee: JIANGSU SHUANGHUI MACHINERY MFG CO LTD**Assignee(s):** (std): JIANGSU SHUANGHUI MACHINERY MFG CO LTD**Assignee(s):** JIANGSU SHUANGHUI MACHINERY MFG CO**Inventor(s):** (std): LI HONG ; YU DONG ; ZHU GUOYA**14) Family number: 47419909** (CN201606027U)

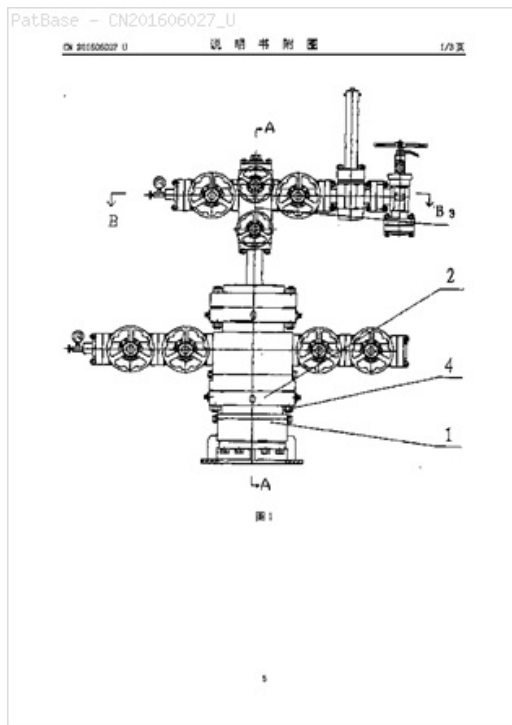
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Title: One multi-valve, christmas tree wellhead (Machine translation)

Abstract: Source: CN201606027U **Machine translation:** The utility model relates to a multi-valve, christmas tree wellhead equipment, which is used to solve the wellhead valve, four-way, and other components connected to bring the leak and occupy space height larger issues. Wherein the main valve, four-way valve and a plurality of components wax shell design as a whole; the main valve, the overall connection between Stone and wax valve housing a plurality of workpieces; said the main valve, four-way valve and wax more components are combined into a four-way. Using blind bore planted between the sleeve head body wire and tubing head body, wherein the single-head bolts through the flange and the casing head female body with a tubing head and upper body tight. The utility model has small size, low height, low weight, easy installation and maintenance operation and low cost.

Classifications:

International (IPC 8-9): E21B33/03 E21B34/02 (Advanced/Invention);
E21B33/00 E21B34/00 (Core/Invention)

**Family:**

Publication number	Publication date	Application number	Application date
CN201606027 U	20101013	CN201020116426U	20100212

Priority:

CN201020116426U 20100212

15) Family number: 47886879 (CN101915069A)

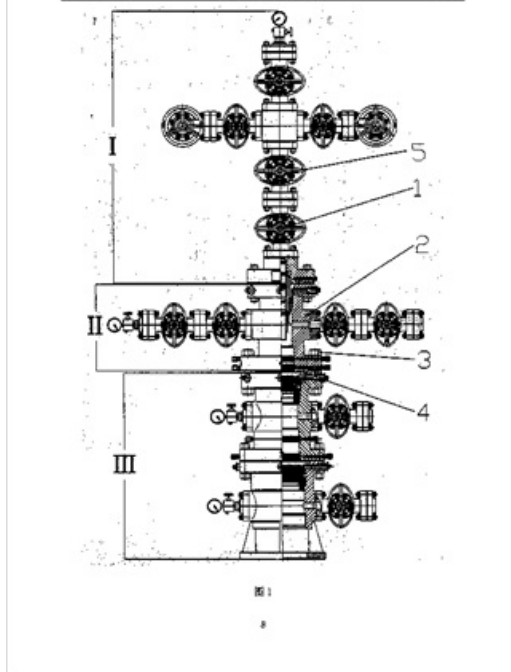
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Title: SULFUR-RESISTANT OIL AND GAS EXTRACTION WELLHEAD DEVICE PROVIDED WITH STRUCTURE FOR REPLACING NO.1 MAIN CONTROL VALVE

Abstract: The invention provides a sulfur-resistant oil and gas extraction wellhead device provided with a structure for replacing a No.1 main control valve. The device comprises a wellhead cut-off device and a pressure balancing device, wherein the wellhead cut-off device consisting of an operating rod and a movable sealing device is arranged on an oil gas well in an oil pipe hanger below the No.1 main control valve; the movable sealing device is arranged in the oil gas well in the oil pipe hanger and has a movable sealing surface corresponding to a flow passage cross section in an oil gas passage; one end of the operating rod is connected with a rotary sealing device while the other end passes through a wall of the oil pipe hanger and extends by a certain distance; and the pressure balancing device is a high-pressure gas passage of which one end is connected to the oil gas passage of a four-way casing valve of a tubing head below the No.1 main control valve while the other end is connected to the oil gas passage of a Christmas tree production valve above the No.1 main control valve. The device has the advantages of simple overall structure, accordance with the standard, scientific and reasonable design, convenient, rapid, safe and reliable use, no need of large-size special equipment and wide application range.

Classifications:

International (IPC 8-9): E21B33/03 E21B34/02 (Advanced/Invention)

**Family:**

Publication number	Publication date	Application number	Application date
CN101915069 A	20101215	CN201010236747	20100723
CN201826795 U	20110511	CN201020271360U	20100723

Priority:

CN201010236747 20100723 CN201020271360U 20100723

Probable Assignee:

ZHENFU HUANG

Assignee(s): (std):

ZHENFU HUANG

Assignee(s):

HUANG ZHENFU

Inventor(s): (std):

ZHENFU HUANG

Inventor(s):

HUANG ZHENFU

16) Family number: 47457957 (CN201614927U)

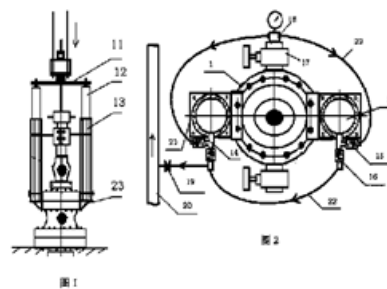
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Title: Interlocking rod pressurized oil gassing combination means (Machine translation)

Abstract: Source: CN201614927U **Machine translation:** The utility model relates to a light pole interlocking combination means pressurized oil gassing, including the square clamp, hanging rope, light pole, BOP boxes, small four-way joint production of valves and tubing head cone pedestal wellhead Christmas tree, its characterized in that: the solid rod connected with interlocking with plenum cylinder sleeve on the wellhead Christmas tree cone docking tubing head flange. Beneficial effects: low pressure can be pressurized to more than the well casing head gas back pressure of high-pressure state; device itself does not need power to be able to work, the nature of explosion during operation; automatic constant pressure, automatic pressure, automatic start and stop, unattended, ease of administration; regardless of back pressure variations, all of the oil well casing gas collected in the trunk; and the installation process does not require the use of wells stop pumping, does not affect the safety equipment; and enhance the stability of the original pumping system efficiency and productivity; both casing with pressure dosing, wash well, pressure, anti-theft and other features. Standard parts with petroleum system active connection, easy to install and replace the pound sign.

Classifications:

International (IPC 8-9): E21B43/00 E21B43/25 (Advanced/Invention)

**Family:**

Publication number	Publication date	Application number	Application date
CN201614927 U	20101027	CN201020302205U	20100203

Priority:

CN201020302205U 20100203

Probable Assignee:

ZHAO YANPING

Assignee(s):

ZHAO YANPING

17) Family number: 14527627 (US6293345B)

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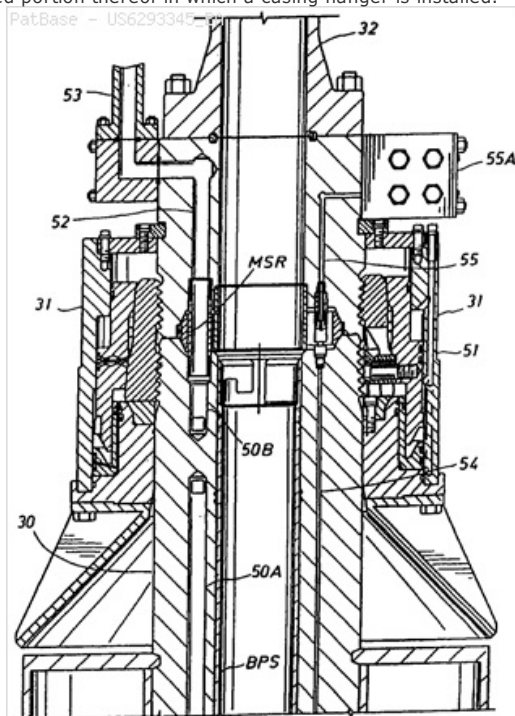
Title: Apparatus for subsea wells including valve passageway in the wall of the wellhead housing for access to the annulus

Abstract: Apparatus is disclosed for use in drilling and completing a subsea well of the type in which a blowout preventer stack positioned on a floating rig is connected to the well by a drilling riser, and wherein the flow of well fluid between the tubing/casing annulus and the upper end of the wellhead is controlled by valves means within passageway in a relatively thick walled upper portion of the housing above a relatively thin walled portion thereof in which a casing hanger is installed.

Classifications:**International (IPC 8-9):** E21B33/035

E21B33/043 (Advanced/Invention);

E21B33/03 (Core/Invention)

International (IPC 1-7): E21B E21B33/035 E21B33/043 E21B34/04**CPC:** E21B33/035 E21B33/0355 E21B33/043**European:** E21B33/035 E21B33/035C E21B33/043**US:** 166/345 166/360 166/368**Family:**

Publication number	Publication date	Application number	Application date
GB2335685 A1	19990929	GB19990006732	19990323

GB2335685 B2	20020424	GB19990006732	19990323
GB9906732 A0	19990519	GB19990006732	19990323
NO316037 B1	20031201	NO19990001435	19990324
NO991435 A	19990927	NO19990001435	19990324
NO991435 A0	19990324	NO19990001435	19990324
NO991435 L	19990927	NO19990001435	19990324
SG75164 A1	20000919	SG19990001390	19990319
US6293345 BA	20010925	US19980048614	19980326

Priority:

US19980048614 19980326

Probable Assignee:

DRIL QUIP INC

Assignee(s): (std):

DRIL QUIP INC

Inventor(s): (std):

WATKINS BRUCE J

Inventor(s):

BRUCE J WATKINS

18) Family number: 43136856 (CN201214997Y)

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Title: Metal seal double tube christmas tree wellhead device

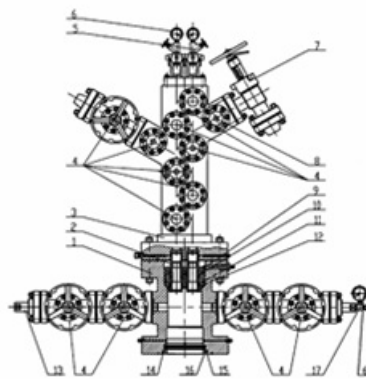
Abstract: The utility model provides a metal sealing wellhead device for a double tubing oil production tree. A double tubing oil production tree is composed of an oil production tree body and valves. Two pipelines are arranged in the oil production tree body, and valve holes which are provided with a plurality of valves are arranged in the pipelines. The lower ends of the two pipelines are respectively communicated with the upper opening of a two-column tubing hanger. Besides the metal upper compression ring and a sealing packing, an inverted conical metal sealing ring and an annulus metal sealing ring are sequentially arranged between the inner wall of a tubing head and the tubing hanger. The inner cavity of the lower end of the tubing head is provided with a ring groove used for hanging a casing head, a BT sealing ring and a split type metal sealing ring which is composed of an upper metal sealing ring and a lower metal sealing ring, the upper metal sealing and the lower metal sealing ring are corresponding conical surfaces and are attached, and the outer surfaces and the inner surfaces of the upper metal sealing ring and the lower metal sealing are provided with circular arc-shaped sealing lug bosses. The utility model is reasonable in structure, effectively improves the oil production and the working efficiency, has good sealing performance, is safe and reliable, and is especially applicable to high-pressure wellheads.

Classifications:

International (IPC 8-9): E21B33/03 (Advanced/Invention);

E21B33/03 (Core/Invention)

PatBase - CN201214997_Y



Family:

Publication number	Publication date	Application number	Application date
CN201214997 Y	20090401	CN200820037530U	20080611

Priority:

CN200820037530U 20080611

Probable Assignee:

JIANHU COUNTY HONGDA VALVE PIP

Assignee(s): (std):

JIANHU COUNTY HONGDA VALVE PIP

Assignee(s):

JIANHU COUNTY HONGDA VALVE PIPE FITTING CO

Inventor(s): (std):

PINXIAN QIU ; QICHUN WU

Inventor(s):

QIU PINXIAN ; WU QICHUN

19) Family number: 43734666 (RU84270U)

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Title: BUSH OIL WELL (Machine translation)

Abstract: Source: RU84270U

Machine translation: 1. Bush oil wells, characterized in that it comprises at least two oil wells, each of which contains a production casing string of tubing with an underground operating equipment containing, at least, the circulation, shear valves, ice-return valve and, if necessary, a separation plant designed to separate water from oil, and cuts off the flow of oil from the remote control device, made with the actuator, the wellhead to wellhead having a casing head, tubing head, which is set in a tree-mounted Christmas tree, including shut-off - nadkorennuyu and side valves with actuators, as well as adjacent to the final production rate regulating throttle valve operable actuator, and control and management bodies - fuse-link and control valve pressure systems, each hole through its shut-off, which regulates the throttle valve and shut-off device is associated with structurally mounted in the form of a case management station, including general station pump and battery

installation, and at least one in each well control unit with pump-accumulator plant involves pumping group and communicated with her working fluid line pressure force function hydropneumatic pressure, and each control unit includes fed from said line pressure through a pressure regulator, lowering fu

Classifications:

International (IPC 8-9): B21B43/00 (Advanced/Invention);
B21B43/00 (Core/Invention)

Family:

Publication number	Publication date	Application number	Application date
RU84270 U1	20090710	RU20080119647U	20080520

Priority:

RU20080119647U 20080520

20) Family number: 43736298 (RU83800U)

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Title: Gas well clusters (Machine translation)

Abstract: Source: RU83800U

Machine translation: 1. Bush gas wells, characterized in that it comprises at least two gas wells, each of which contains a production casing string of tubing with an underground operating equipment containing, at least, made an actuator with safety valve remote control, wellhead to wellhead having a casing head, tubing head, which is set in a tree-mounted Christmas tree, including shut-off - nadkorennuyu and side valves with actuators, as well as adjacent to the final production rate regulating throttle valve made the actuator, and control and management bodies - fuse-link and control valve pressure systems, with each hole through its shut-off, which regulates the throttle valve and the safety valve is associated with structurally mounted in the form of a case management station, including general station pump and battery installation, and at least one in each well control unit, the pump-and-battery unit includes a pump group and communicated with her working fluid line pressure force function hydropneumatic pressure, and each control unit includes fed from said line high pressure through a pressure regulator, reducing the pressure to the desired function, the field lines of the functional control of actuators locking bodies throttle slam shut valve for each well

Classifications:

International (IPC 8-9): E21B43/00 (Advanced/Invention);
E21B43/00 (Core/Invention)

Family:

Publication number	Publication date	Application number	Application date
RU83800 U1	20090620	RU20080119644U	20080520

Priority:

RU20080119644U 20080520

21) Family number: 57235614 (CN203835360U)

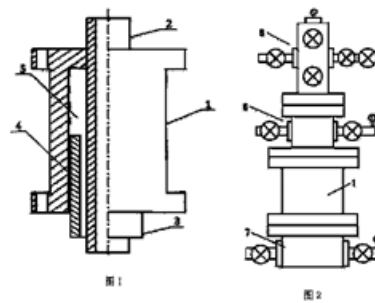
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Title: COMPENSATION DEVICE PREVENTING WELLHEAD ASCENSION DURING OFFSHORE HEAVY OIL THERMAL RECOVERY

Abstract: The utility model relates to a compensation device preventing wellhead ascension during offshore heavy oil thermal recovery. The compensation device comprises a barrel-shaped body, a plurality of seal rings, a tube-shaped tubing telescopic compensator and a casing, wherein the upper end of the barrel-shaped body is sealed, and the lower end of the barrel-shaped body is open; the seal rings are embedded in the body at intervals from top to bottom; the tubing telescopic compensator penetrates through the upper end of the body in the axial direction and then extends out of the body; the tube-shaped tubing telescopic compensator is sleeved with the casing. An annular reserved space exists between the tubing telescopic compensator and the body. The outer wall of the casing makes contact with the seal rings in the body, and a gap is reserved between the inner wall of the casing and the tubing telescopic compensator. The upper end and the lower end of the body are respectively provided with a flange structure, and the compensation device is fixed between a tubing head and a casing head through the flange structures at the upper end and the lower end of the body. According to the compensation device, in a heavy oil thermal recovery process, when multiple thermal fluids are injected in from the wellhead, the casing expands by being heated and ascends upwards along the reserved space of the body in the vertical direction, thermal stress is effectively released, and therefore the situation that because the casing is extended, a Christmas tree ascends is avoided, potential safety hazards are eliminated, and it is guaranteed that oil production proceeds normally.

Classifications:

International (IPC 8-9): E21B33/03 E21B43/24 (Advanced/Invention)



5

Family:

Publication number	Publication date	Application number	Application date
CN104005746 A	20140827	CN201410205884	20140515
CN203835360 U	20140917	CN201420249380U	20140515

Priority:

CN201410205884 20140515 CN201420249380U 20140515

Probable Assignee: UNIV CHINA PETROLEUM BEIJING**Assignee(s):** (std): CHINA NAT OFFSHORE OIL CORP ; CHINA NATIONAL OFFSHORE OIL CORP ; UNIV CHINA PETROLEUM BEIJING ; CNOOC RES INST ; UNIV CHINA PETROLEUM**Assignee(s):** CHINA UNIV OF PETROLEUM BEIJING ; CHINA UNIV OF PETROLUM BEIJING ; CNOOC RESEARCH INST**Inventor(s):** (std): ZHOU JIANLIANG ; ZHOU BO ; YANG JIN ; YANG JIANGANG ; YANG JIAN GANG ; XIE RENJUN ; LIU SHUJIE ; LI JIA ; GUO HUA**22) Family number: 57235702 (CN203835374U)**

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Title: WELLHEAD ASCENSION MONITORING DEVICE FOR OFFSHORE HEAVY OIL THERMAL RECOVERY

Abstract: The utility model relates to a wellhead ascension monitoring device for offshore heavy oil thermal recovery. The wellhead ascension monitoring device for offshore heavy oil thermal recovery comprises a barrel-shaped body, a plurality of seal rings, a tube-shaped tubing telescopic compensator, a casing, a spring device, a stress sensor and a computer display system, wherein the upper end of the barrel-shaped body is sealed, and the lower end of the barrel-shaped body is open; the seal rings are embedded in the body at intervals; the tube-shaped tubing telescopic compensator penetrates through the body in the axial direction; the tubing telescopic compensator is sleeved with the casing; the spring device is connected with the upper end of the casing through a spring base; the stress sensor is installed at the upper end of the spring device; the computer display system is electrically connected with the stress sensor. An annular reserved space exists between the tubing telescopic compensator and the body. The outer wall of the casing makes contact with the seal rings in the body, and a gap is formed between the inner wall of the casing and the tubing telescopic compensator. The upper end and the lower end of the body are respectively provided with a flange structure, and the monitoring device is fixed between a tubing head and a casing head through the flange structures at the upper end and the lower end of the body. According to the monitoring device, in a heavy oil thermal recovery process, the situation that because the casing is extended, a Christmas tree ascends is avoided, and it is guaranteed that oil production operation proceeds normally; besides, the extension length of the casing can be effectively monitored in time, guidance is provided for operation, and the operation risk is reduced.

Classifications:

International (IPC 8-9): E21B17/00 E21B43/24
E21B47/00 (Advanced/Invention)

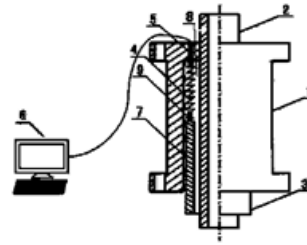


图 1

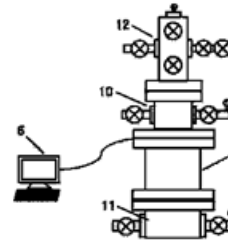


图 2

6

Family:

Publication number	Publication date	Application number	Application date
CN104005749 A	20140827	CN201410205826	20140515
CN203835374 U	20140917	CN201420248359U	20140515

Priority:

CN201410205826 20140515 CN201420248359U 20140515

Probable Assignee: UNIV CHINA PETROLEUM BEIJING

Assignee(s): (std): CHINA NAT OFFSHORE OIL CORP ; CHINA NATIONAL OFFSHORE OIL CORP ; UNIV CHINA PETROLEUM BEIJING ; CNOOC RES INST ; UNIV CHINA PETROLEUM

Assignee(s): CHINA UNIV OF PETROLEUM BEIJING ; CHINA UNIV OF PETROLUM BEIJING ; CNOOC RESEARCH INST

Inventor(s): (std): GUO HUA ; LI JIA ; LIU SHUJIE ; XIE RENJUN ; YANG JIAN GANG ; YANG JIANGANG ; YANG JIN ; ZHOU BO ; ZHOU JIANLIANG