



New connection on: : 25-09-2020 : 21:46:21 - Last disconnection on: : 25-09-2020 : 17:16:39

V 4.0.0.44803(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201820)) (RPM D201820)

Welcome to EPOQUE Rebuild under the Production Environment

[EPODOC: SS 4] rig and (door and V) and mast and frame

Results in EPODOC 0

[SS 5] slingshot and rig

Results in EPODOC 28

[SS 6] ..li



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PN - [US2020284100](#) A1 20200910

PR - US202016884239 20200527; US201715806088 20171107; US201662418656P 20161107

AP - US202016884239 20200527

DT - **

CCI - [E21B15/00](#)

CI - E04H12/345 (NO, US)
- E21B15/00 (EP, NO, US)

CA - E04H12/34 (US)
- E21B15/006 (US)
- E21B19/08 (US)

PA - NABORS DRILLING TECH USA INC [US]

TI - SIDE-SADDLE CANTILEVER MAST

AB - A side saddle **slingshot** drilling **rig** includes a right substructure and a left substructure, the substructures positioned generally parallel and spaced apart from each other. The right substructure includes a right lower box and a first strut, the first strut pivotably coupled to the drill **rig** floor and pivotably coupled to the right lower box. The left substructure includes a left lower box and a second strut, the second strut pivotably coupled to the drill **rig** floor and pivotably coupled to the left lower box. The side saddle **slingshot** drilling **rig** also includes a drill **rig** floor, the drill **rig** floor including a V-door. The side of the drill **rig** floor has the V-door defining the V-door side of the drill **rig** floor, the V-door side of the drill **rig** floor parallel to the right substructure. The side saddle **slingshot** drilling **rig** further includes a mast, the mast including an open side defining a mast V-door side. The open side is oriented to face perpendicular to the right substructure. The mast is pivotably coupled to the drill **rig** floor by one or more mast pivot points and one or more lower

mast attachment points, the mast being pivotable in a direction parallel to the V-door side of the drill **rig** floor or the mast being pivotable in a direction perpendicular to V-door side of the drill **rig** floor. The mast includes two or more subunits, wherein the two or more subunits are pinned together.

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- PN - [US2020270892](#) A1 20200827
- PR - US202016874288 20200514; US201916246472 20190112; US201715615322 20170606; US201662346982P 20160607
- AP - US202016874288 20200514
- DT - **
- CCI - [B66F7/0633](#) ; [B66F7/08](#) ; [E21B15/003](#)
- CI - B66F3/24 (NO, US)
- B66F3/28 (NO, US)
- B66F7/0633 (EP, US)
- B66F7/08 (EP, US)
- E04H12/345 (US)
- E21B7/02 (NO)
- E21B15/003 (EP, NO, US)
- PA - NABORS DRILLING TECH USA INC [US]
- TI - SIDE SADDLE **SLINGSHOT** DRILLING **RIG**
- AB - A side saddle **slingshot** drilling **rig** includes a left and right substructure including a left and right lower box. The side saddle **slingshot** drilling **rig** includes a drill **rig** floor mechanically and pivotably coupled to the left and right lower boxes such that it is pivotably movable from a lowered position to a raised position. The drill **rig** floor includes a V-door. The V-door is positioned on the V-door side of the drill **rig** floor. The V-door side of the drill **rig** floor is oriented to face the right substructure. A mast coupled to the drill **rig** floor may include an open side, defining a mast V-door side. The mast V-door side may be oriented to face the right substructure. The mast may pivot into its raised position or may be a bootstrap mast.

3/28 © EPODOC / EPO

- PN - [NO20190906](#) A1 20200120
- PR - US201862700704P 20180719
- AP - NO20190000906 20190719
- DT - I
- CCI - [E21B4/16](#) ; [E21B15/003](#) ; [E21B19/14](#) ; [E21B19/155](#)
- CI - E21B4/16 (EP)
- E21B7/02 (CN, NO)
- E21B7/04 (CN)
- E21B15/003 (EP, NO, US)
- E21B15/04 (CN)
- E21B15/045 (CN)
- E21B19/00 (NO)
- E21B19/14 (EP)
- E21B19/155 (EP)
- E21B21/00 (CN)
- CA - E04H12/34 (US)

- E21B19/164 (US)

PA - NABORS DRILLING TECH USA INC [US]

TI - Side saddle **slingshot** continuous motion **rig**

4/28 © EPODOC / EPO

PN - [CN110735598](#) A 20200131

PR - US201862700704P 20180719

AP - CN201910658951 20190719

DT - I

CCI - [E21B4/16](#) ; [E21B15/003](#) ; [E21B19/14](#) ; [E21B19/155](#)

CI - E21B4/16 (EP)
 - E21B7/02 (CN, NO)
 - E21B7/04 (CN)
 - E21B15/003 (EP, NO, US)
 - E21B15/04 (CN)
 - E21B15/045 (CN)
 - E21B19/00 (NO)
 - E21B19/14 (EP)
 - E21B19/155 (EP)
 - E21B21/00 (CN)

CA - E04H12/34 (US)
 - E21B19/164 (US)

PA - NABORS DRILLING TECH USA INC

TI - SIDE SADDLE **SLINGSHOT** CONTINUOUS MOTION DRILLING **RIG**

AB - The invention relates to a drilling **rig**. The drilling **rig** includes a **rig** floor, first and second support structures, a mast, a lower drilling machine, a continuous drilling unit, an upper drilling machine, and an upper mast assembly. The **rig** floor includes a V-door defining a V-door axis extending perpendicularly from the side of the **rig** floor that includes the V-door. The first and second support structures define a traverse corridor having a traverse corridor axis, wherein the traverse corridor axis is perpendicular to the V-door axis. The drilling **rig** may be used for continuous drilling of a wellbore.

5/28 © EPODOC / EPO

PN - [CA3050044](#) A1 20200119

PR - US201862700704P 20180719

AP - CA20193050044 20190718

DT - I

CCI - [E21B4/16](#) ; [E21B15/003](#) ; [E21B19/14](#) ; [E21B19/155](#)

CI - E21B4/16 (EP)
 - E21B7/02 (CN, NO)
 - E21B7/04 (CN)
 - E21B15/003 (EP, NO, US)
 - E21B15/04 (CN)
 - E21B15/045 (CN)
 - E21B19/00 (NO)
 - E21B19/14 (EP)

- E21B19/155 (EP)
- E21B21/00 (CN)
- CA - E04H12/34 (US)
- E21B19/164 (US)
- PA - NABORS DRILLING TECH USA INC [US]
- TI - SIDE SADDLE **SLINGSHOT** CONTINUOUS MOTION **RIG**
- AB - A drilling **rig** includes a **rig** floor, first and second support structures, a mast, a lower drilling machine, a continuous drilling unit, an upper drilling machine, and an upper mast assembly. The **rig** floor includes a V-door defining a V-door axis extending perpendicularly from the side of the **rig** floor that includes the V-door. The first and second support structures define a traverse corridor having a traverse corridor axis, wherein the traverse corridor axis is perpendicular to the V-door axis. The drilling **rig** may be used for continuous drilling of a wellbore.

6/28 © EPODOC / EPO

PN - [US2020024907](#) A1 20200123

PR - US201916514302
20190717; US201862700704P
20180719

AP - US201916514302 20190717

DT - *; Rep

CCI - [E21B4/16](#) ; [E21B15/003](#) ;
[E21B19/14](#) ; [E21B19/155](#)

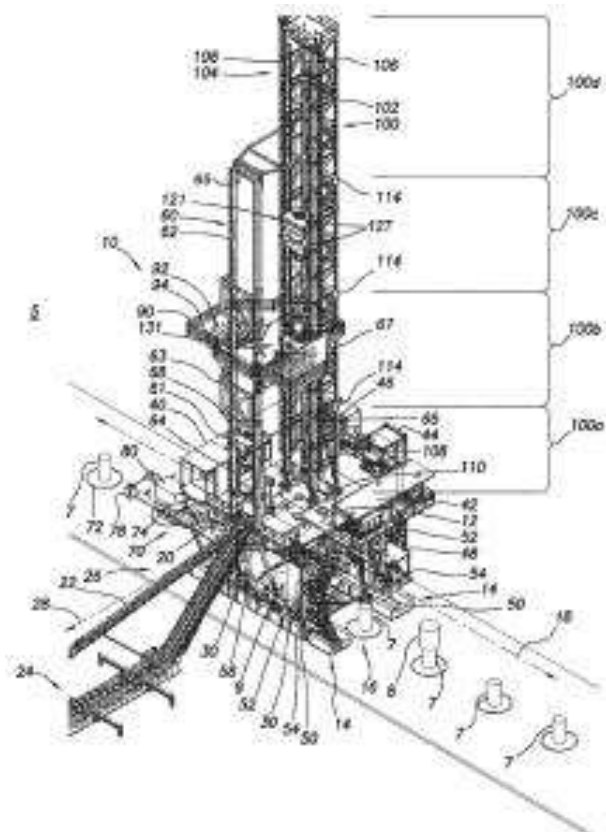
CI - E21B4/16 (EP)
- E21B7/02 (CN, NO)
- E21B7/04 (CN)
- E21B15/003 (EP, NO, US)
- E21B15/04 (CN)
- E21B15/045 (CN)
- E21B19/00 (NO)
- E21B19/14 (EP)
- E21B19/155 (EP)
- E21B21/00 (CN)

CA - E04H12/34 (US)
- E21B19/164 (US)

PA - NABORS DRILLING TECH USA
INC [US]

TI - SIDE SADDLE **SLINGSHOT**
CONTINUOUS MOTION **RIG**

AB - A drilling **rig** includes a **rig**
floor, first and second
support structures, a mast, a
lower drilling machine, a
continuous drilling unit, an
upper drilling machine, and
an upper mast assembly.
The **rig** floor includes a V-door
defining a V-door axis
extending perpendicularly



from the side of the **rig** floor that includes the V-door. The first and second support structures define a traverse corridor having a traverse corridor axis, wherein the traverse corridor axis is perpendicular to the V-door axis. The drilling **rig** may be used for continuous drilling of a wellbore.

7/28 © EPODOC / EPO

PN - [CN110593755](#) A 20191220
 PR - US201816006248 20180612
 AP - CN201810674046 20180626
 DT - I
 CCI - [E21B15/003](#)
 CI - E21B3/02 (CN)
 - E21B7/02 (CN, NO)
 - E21B15/003 (EP, CN, NO, US)
 PA - NABORS DRILLING TECH USA INC
 TI - **Slingshot** side saddle substructure
 AB - A land-based drilling **rig** includes a drill **rig** floor, the drill **rig** floor including a V-door, a side of the drill **rig** floor having the V-door defining a V-door side of the drill **rig** floor and an opposite V-door side of the drill **rig** floor opposite the V-door side of the drill **rig** floor. The land-based drilling **rig** also includes a mast, the mast mechanically coupled to the drill **rig** floor. Further, the land-based drilling **rig** includes at least four support bases, each support base coupled to the drill **rig** floor by a telescoping support arm, the support base and telescoping arm forming a support, wherein the support bases are square or cylindrical.

8/28 © EPODOC / EPO

PN - [CA3009407](#) A1 20191212
 PNFP - CA3009407 C 20200714
 PR - US201816006248 20180612
 AP - CA20183009407 20180626
 DT - I
 CCI - [E21B15/003](#)
 CI - E21B3/02 (CN)
 - E21B7/02 (CN, NO)
 - E21B15/003 (EP, CN, NO, US)
 PA - (A1 C)
 NABORS DRILLING TECH USA INC [US]
 TI - (A1 C)
SLINGSHOT SIDE SADDLE SUBSTRUCTURE
 AB - (A1 C)
 A land-based drilling **rig** includes a drill **rig** floor, the drill **rig** floor including a V-

door, a side of the drill **rig** floor having the V-door defining a V-door side of the drill **rig** floor and an opposite V-door side of the drill **rig** floor opposite the V-door side of the drill **rig** floor. The land-based drilling **rig** also includes a mast, the mast mechanically coupled to the drill **rig** floor. Further, the land-based drilling **rig** includes at least four support bases, each support base coupled to the drill **rig** floor by a telescoping support arm, the support base and telescoping arm forming a support, wherein the support bases are square or cylindrical.

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PN - [US2019203495](#) A1 20190704

PNFP - US10557281 B2 20200211

PR - US201916244974 20190110; US201816035375 20180713; US201815893463 20180209; US201615191140 20160623; US201514616234 20150206; US201414180049 20140213; US201361764259P 20130213

AP - US201916244974 20190110

DT - **

CT - || STSE (A1)
[US2009218139](#) A1 20090903 [Y] (DONNALLY ROBERT BENJAMIN [CN], et al)
[Y] 1-2, 7-9
* Fig.1C | Fig.3D | [0079] *;
[US6161358](#) A 20001219 [Y] (MOCHIZUKI DAVID A [US], et al)
[Y] 1-2, 7-9
* Fig.1 | Col.5:51-53 | Col.4:35-41 *;
[US2010186960](#) A1 20100729 [Y] (REITSMA DONALD G [US], et al)
[Y] 1-2, 7-9;
[US2003155154](#) A1 20030821 [A] (OSER MICHAEL S [US]);
[US2015053426](#) A1 20150226 [A] (SMITH SHAWN R [US], et al);
[US4403898](#) A 19830913 [A] (THOMPSON CARROLL R [US]);
[US6634436](#) B1 20031021 [A] (DESAI VINOD [US]);
[US4834604](#) A 19890530 [A] (BRITTAIN JOHN C [US], et al);
[US2014271094](#) A1 20140918 [A] (CRISP IRA [US], et al);
[US2009200856](#) A1 20090813 [A] (CHEHADE ELIE J [AE], et al);
[US2009218138](#) A1 20090903 [A] (DONNALLY ROBERT BENJAMIN [CN], et al);
[US8720128](#) B2 20140513 [A] (VOGT DEWAYNE G [US]);
[US7306055](#) B2 20071211 [A] (BARNES R MICHAEL [US]);
[US2011072737](#) A1 20110331 [A] (WASTERVAL PHILIP [US]);
[US2016010323](#) A1 20160114 [A] (KONDUC KAMERON WAYNE [CA], et al);
[US2006104746](#) A1 20060518 [A] (THOMPSON CARROLL R [US]);
[US6779614](#) B2 20040824 [A] (OSER MICHAEL S [US]);
[US2014044510](#) A1 20140213 [A] (ELDIB NEZAR [US], et al);
[US8549815](#) B2 20131008 [A] (DONNALLY ROBERT BENJAMIN [CN], et al);
[US2012138327](#) A1 20120607 [A] (SOROKAN RON [CA], et al);
[US4235566](#) A 19801125 [A] (BEEMAN ARCHIE W [US], et al);
[US7992646](#) B2 20110809 [A] (WRIGHT MONTE NEIL [CA], et al);
[US2013153309](#) A1 20130620 [A] (SMITH SHAWN R [US], et al);
[US3922825](#) A 19751202 [A] (EDDY KENNETH HARMON, et al);
[US2016115741](#) A1 20160428 [A] (DAVIS ROCKY E [CA]);
[US2014014417](#) A1 20140116 [A] (SMITH SHAWN R [US], et al);
[US2016137115](#) A1 20160519 [A] (DOHERTY BENJAMIN DANIEL [CA]);
[US2004211598](#) A1 20041028 [A] (PALIDIS ANASTASIOS [US]);
[US7832974](#) B2 20101116 [A] (FIKOWSKI LARRY M [CA], et al);
[US8316588](#) B2 20121127 [A] (CICOGNANI CLAUDIO [IT]);

	US8468753 B2 20130625 [A] (DONNALLY ROBERT BENJAMIN [CN], et al); US3942593 A 19760309 [A] (REEVE JR JOHN R, et al); US5492436 A 19960220 [A] (SUKSUMAKE S KARL [US])
-	STSE (B2) US3922825 A 19751202 [] (EDDY KENNETH HARMON, et al); US3942593 A 19760309 [] (REEVE JR JOHN R, et al); US4235566 A 19801125 [] (BEEMAN ARCHIE W [US], et al); US4403898 A 19830913 [] (THOMPSON CARROLL R [US]); US4834604 A 19890530 [] (BRITTAIN JOHN C [US], et al); US5492436 A 19960220 [] (SUKSUMAKE S KARL [US]); US6161358 A 20001219 [] (MOCHIZUKI DAVID A [US], et al); US6634436 B1 20031021 [] (DESAI VINOD [US]); US6779614 B2 20040824 [] (OSER MICHAEL S [US]); US7306055 B2 20071211 [] (BARNES R MICHAEL [US]); US7832974 B2 20101116 [] (FIKOWSKI LARRY M [CA], et al); US7992646 B2 20110809 [] (WRIGHT MONTE NEIL [CA], et al); US8316588 B2 20121127 [] (CICOGNANI CLAUDIO [IT]); US8468753 B2 20130625 [] (DONNALLY ROBERT BENJAMIN [CN], et al); US8549815 B2 20131008 [] (DONNALLY ROBERT BENJAMIN [CN], et al); US8720128 B2 20140513 [] (VOGT DEWAYNE G [US]); US2003155154 A1 20030821 [] (OSER MICHAEL S [US]); US2004211598 A1 20041028 [] (PALIDIS ANASTASIOS [US]); US2006104746 A1 20060518 [] (THOMPSON CARROLL R [US]); US2009200856 A1 20090813 [] (CHEHADE ELIE J [AE], et al); US2009218138 A1 20090903 [] (DONNALLY ROBERT BENJAMIN [CN], et al); US2009218139 A1 20090903 [] (DONNALLY ROBERT BENJAMIN [CN], et al); US2011072737 A1 20110331 [] (WASTERVAL PHILIP [US]); US2012138327 A1 20120607 [] (SOROKAN RON [CA], et al); US2013153309 A1 20130620 [] (SMITH SHAWN R [US], et al); US2014014417 A1 20140116 [] (SMITH SHAWN R [US], et al); US2014044510 A1 20140213 [] (ELDIB NEZAR [US], et al); US2014271094 A1 20140918 [] (CRISP IRA [US], et al); US2015053426 A1 20150226 [] (SMITH SHAWN R [US], et al); US2016010323 A1 20160114 [] (KONDUC KAMERON WAYNE [CA], et al); US2016115741 A1 20160428 [] (DAVIS ROCKY E [CA]); US2016137115 A1 20160519 [] (DOHERTY BENJAMIN DANIEL [CA])
CCI	- E21B15/003
CI	- E04H12/345 (US) - E21B15/00 (US) - E21B15/003 (EP, US)
CA	- E21B21/063 (US)
PA	- (A1 B2) NABORS DRILLING TECH USA INC [US]
TI	- (A1) SLINGSHOT SIDE SADDLE SUBSTRUCTURE - (B2) Slingshot side saddle substructure
AB	- (A1 B2) A land-based drilling rig includes a first substructure and a second substructure, the second substructure being positioned generally parallel to the first substructure. The land-based drilling rig also includes a drill rig floor coupled to the first and second

substructures, the drill **rig** floor including a V-door. The side of the drill **rig** floor has the V-door defining a V-door side of the drill **rig** floor, where the V-door side of the drill **rig** floor is parallel to the first substructure. The first and second substructures pivotably support the drill **rig** floor. The land-based drilling **rig** also includes a mast, the mast mechanically coupled to one or more of the first substructure, the second substructure, and the drill **rig** floor. The mast is pivotably coupled to one or more of the first substructure, the second substructure, and the drill **rig** floor by a mast pivot point. The mast includes a V-door side, the V-door side of the mast parallel to the first or second substructure. In addition, the land-based drilling **rig** includes a mast hydraulic lift cylinder coupled to the mast at a mast lift point and a choke manifold, the choke manifold positioned on the drill **rig** floor.

10/28 © EPODOC / EPO

- PN - [CN109804122](#) A 20190524
- PR - US201662418656P 20161107; WO2017US60429 20171107
- AP - CN20178062091 20171107
- DT - I
- CT - || STSE (A)
[US3101816](#) A 19630827 [A] (FOX CHARLES L)
 [A] 1-37
 * 全文 *;
[US2004211598](#) A1 20041028 [X] (PALIDIS ANASTASIOS [US])
 [X] 22-37
 * 说明书具体实施方式部分, 附图1-9 *;
[CN1985066](#) A 20070620 [A] (ASTEC IND [US])
 [A] 1-37
 * 全文 *;
[CN2929141Y](#) Y 20070801 [A] (BAOJI PETROLEUM MACH CO LTD [CN])
 [A] 1-37
 * 全文 *;
[CN102561954](#) A 20120711 [A] (CNPC GREATWALL DRILLING CO)
 [A] 1-37
 * 全文 *;
[CN202788612U](#) U 20130313 [A] (SICHUAN KUNLUN PETROLEUM EQUIPMENT MFG CO LTD)
 [A] 1-37
 * 全文 *;
[US2016298394](#) A1 20161013 [X] (PADIRA REDDY [US], et al)
 [X] 1-21
 * 说明书第【0012】-【0024】段及附图1-5 *
- CCI - [E21B15/00](#)
- CI - E04H12/345 (NO, US)
 - E21B15/00 (EP, NO, US)
- CA - E04H12/34 (US)
 - E21B15/006 (US)
 - E21B19/08 (US)
- PA - NABORS DRILLING TECH USA INC
- TI - SIDE-SADDLE CANTILEVER MAST
- AB - A side saddle **slingshot** drilling **rig** includes a right substructure and a left substructure, the substructures positioned generally parallel and spaced apart from

each other. The right substructure includes a right lower box and a first strut, the first strut pivotably coupled to the drill **rig** floor and pivotably coupled to the right lower box. The left substructure includes a left lower box and a second strut, the second strut pivotably coupled to the drill **rig** floor and pivotably coupled to the left lower box. The side saddle **slingshot** drilling **rig** also includes a drill **rig** floor, the drill **rig** floor including a V-door. The side of the drill **rig** floor has the V-door defining the V-door side of the drill **rig** floor, the V-door side of the drill **rig** floor parallel to the right substructure. The side saddle **slingshot** drilling **rig** further includes a mast, the mast including an open side defining a mast V-door side. The open side is oriented to face perpendicular to the right substructure. The mast is pivotably coupled to the drill **rig** floor by one or more mast pivot points and one or more lower mast attachment points, the mast being pivotable in a direction parallel to the V-door side of the drill **rig** floor or the mast being pivotable in a direction perpendicular to V-door side of the drill **rig** floor. The mast includes two or more subunits, wherein the two or more subunits are pinned together.

11/28 © EPODOC / EPO

PN - [US2019145122](#) A1 20190516

PNFP - US10731375 B2 20200804

PR - US201916246472 20190112; US201715615322 20170606; US201662346982P 20160607

AP - US201916246472 20190112

DT - **

CT - || STSE (B2)

[US4759414](#) A 19880726 [] (WILLIS CLYDE A [US]);
[US4821816](#) A 19890418 [] (WILLIS CLYDE A [US]);
[US7306055](#) B2 20071211 [] (BARNES R MICHAEL [US]);
[US7308953](#) B2 20071218 [] (BARNES R MICHAEL [US]);
[US8904716](#) B2 20141209 [] (DONNALLY ROBERT BENJAMIN [CN], et al);
[US9027287](#) B2 20150512 [] (TREVITHICK MARK W [US], et al);
[US9091126](#) B2 20150728 [] (THIESSEN JAY JOHN [CA], et al);
[US9399890](#) B2 20160726 [] (MARK FLUSCHE [US]);
[US9708861](#) B2 20170718 [] (REDDY PADIRA [US], et al);
[US2003172599](#) A1 20030918 [] (FRINK SHELBY [US]);
[US2009000218](#) A1 20090101 [] (LEE DOUGLAS WAYNE [US], et al);
[US2013343836](#) A1 20131226 [] (FLUSCHE MARK J [US]);
[US2014224543](#) A1 20140814 [] (PADIRA REDDY [US], et al);
[US2014298735](#) A1 20141009 [] (VOGT DEWAYNE G [US]);
[US2015008039](#) A1 20150108 [] (WIJNING BERNARDUS DIEDERICK [NL], et al);
[US2015143759](#) A1 20150528 [] (SPARKMAN JOSEPH MICHAEL [US], et al);
[US2016130877](#) A1 20160512 [] (FORTSON FRED L [US], et al);
[US2016258178](#) A1 20160908 [] (HOLST KATHERINE J [US], et al);
[US2016258225](#) A1 20160908 [] (HOLST KATHERINE J [US], et al);
[US2016312543](#) A1 20161027 [] (CHENG RUI [CN], et al);
[US2017328081](#) A1 20171116 [] (TREVITHICK MARK [US], et al)

CCI - [B66F7/0633](#) ; [B66F7/08](#) ; [E21B15/003](#)

CI - B66F3/24 (NO, US)

- B66F3/28 (NO, US)

- B66F7/0633 (EP, US)

- B66F7/08 (EP, US)

- E04H12/345 (US)

	- E21B7/02 (NO)
	- E21B15/003 (EP, NO, US)
PA	- (A1 B2) NABORS DRILLING TECH USA INC [US]
TI	- (A1) SIDE SADDLE SLINGSHOT DRILLING RIG
	- (B2) Side saddle slingshot drilling rig
AB	- (A1 B2) A side saddle slingshot drilling rig includes a left and right substructure including a left and right lower box. The side saddle slingshot drilling rig includes a drill rig floor mechanically and pivotably coupled to the left and right lower boxes such that it is pivotably movable from a lowered position to a raised position. The drill rig floor includes a V-door. The V-door is positioned on the V-door side of the drill rig floor. The V-door side of the drill rig floor is oriented to face the right substructure. A mast coupled to the drill rig floor may include an open side, defining a mast V-door side. The mast V-door side may be oriented to face the right substructure. The mast may pivot into its raised position or may be a bootstrap mast.

12/28 © EPODOC / EPO

PN	- CA3039669 A1 20180511
PR	- US201662418656P 20161107; WO2017US60429 20171107
AP	- CA20173039669 20171107
DT	- I
CCI	- E21B15/00
CI	- E04H12/345 (NO, US) - E21B15/00 (EP, NO, US)
CA	- E04H12/34 (US) - E21B15/006 (US) - E21B19/08 (US)
PA	- NABORS DRILLING TECH USA INC [US]
TI	- SIDE-SADDLE CANTILEVER MAST
AB	- A side saddle slingshot drilling rig includes a right substructure and a left substructure, the substructures positioned generally parallel and spaced apart from each other. The right substructure includes a right lower box and a first strut, the first strut pivotably coupled to the drill rig floor and pivotably coupled to the right lower box. The left substructure includes a left lower box and a second strut, the second strut pivotably coupled to the drill rig floor and pivotably coupled to the left lower box. The side saddle slingshot drilling rig also includes a drill rig floor, the drill rig floor including a V-door. The side of the drill rig floor has the V-door defining the V- door side of the drill rig floor, the V-door side of the drill rig floor parallel to the right substructure. The side saddle slingshot drilling rig further includes a mast, the mast including an open side defining a mast V-door side. The open side is oriented to face perpendicular to the right substructure. The mast is pivotably coupled to the drill rig floor by one or more mast pivot points and one or more lower mast attachment points, the mast being pivotable in a direction parallel to the V-door side of the drill rig floor or the mast being pivotable in a direction perpendicular to V- door side of the drill rig floor. The mast includes two or more subunits, wherein the two or more subunits are pinned together.

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- PN - [NO20181670](#) A1 20181221
- PR - US201662346982P 20160607; WO2017US36156 20170606
- AP - NO20180001670 20181221
- DT - I
- CCI - [B66F7/0633](#) ; [B66F7/08](#) ; [E21B15/003](#)
- CI - B66F3/24 (NO, US)
- B66F3/28 (NO, US)
- B66F7/0633 (EP, US)
- B66F7/08 (EP, US)
- E04H12/345 (US)
- E21B7/02 (NO)
- E21B15/003 (EP, NO, US)
- PA - NABORS DRILLING TECH USA INC [US]
- TI - SIDE SADDLE **SLINGSHOT** DRILLING RIG
- AB - A side saddle **slingshot** drilling **rig** includes a left and right substructure including a left and right lower box. The side saddle **slingshot** drilling **rig** includes a drill **rig** floor mechanically and pivotably coupled to the left and right lower boxes such that it is pivotably movable from a lowered position to a raised position. The drill **rig** floor includes a V-door. The V-door is positioned on the V-door side of the drill **rig** floor. The V-door side of the drill **rig** floor is oriented to face the right substructure. A mast coupled to the drill **rig** floor may include an open side, defining a mast V-door side. The mast V-door side may be oriented to face the right substructure. The mast may pivot into its raised position or may be a bootstrap mast.

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- PN - [CN109312601](#) A 20190205
- PR - US201662346982P 20160607; WO2017US36156 20170606
- AP - CN20178034973 20170606
- DT - I
- CT - || STSE (A)
[US3802137](#) A 19740409 [Y] (ARMSTRONG J)
[Y] 22,23
* 附图3,5 *;
[US4759414](#) A 19880726 [YX] (WILLIS CLYDE A [US])
[Y] 31-41
* 说明书第5-7栏, 附图1-4 *
[X] 26-30;
[US2004211598](#) A1 20041028 [YX] (PALIDIS ANASTASIOS [US])
[Y] 22-23,31-41
* 说明书第0047-0088段, 附图9-14 *
[X] 1-21,24-30;
[CN201013249Y](#) Y 20080130 [A] (RG PETRO MACHINERY GROUP CO [CN])
[A] 1-41
* 全文 *;
[CN103339340](#) A 20131002 [A] (T & T ENGINEERING SERVICES INC)
[A] 1-41
* 全文 *;

	CN203499575U U 20140326 [A] (ZHONGMAN PETROLEUM AND NATURAL GAS GROUP, et al) [A] 1-41 * 全文 *; CN103967062 A 20140806 [A] (DEERE & CO) [A] 1-41 * 全文 *; CN104302864 A 20150121 [A] (NAT OILWELL VARCO LP) [A] 1-41 * 全文 *; CN104662253 A 20150527 [A] (NAT OILWELL VARCO LP) [A] 1-41 * 全文 *
CCI	- B66F7/0633 ; B66F7/08 ; E21B15/003
CI	- B66F3/24 (NO, US) - B66F3/28 (NO, US) - B66F7/0633 (EP, US) - B66F7/08 (EP, US) - E04H12/345 (US) - E21B7/02 (NO) - E21B15/003 (EP, NO, US)
PA	- NABORS DRILLING TECH USA INC
TI	- Side saddle slingshot drilling rig
AB	- A side saddle slingshot drilling rig includes a left and right substructure including a left and right lower box. The side saddle slingshot drilling rig includes a drill rig floor mechanically and pivotably coupled to the left and right lower boxes such that it is pivotably movable from a lowered position to a raised position. The drill rig floor includes a V-door. The V-door is positioned on the V-door side of the drill rig floor. The V-door side of the drill rig floor is oriented to face the right substructure. A mast coupled to the drill rig floor may include an open side, defining a mast V-door side. The mast V-door side may be oriented to face the right substructure. The mast may pivot into its raised position or may be a bootstrap mast.
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PN	- CA3025968 A1 20171214
PR	- US201662346982P 20160607; WO2017US36156 20170606
AP	- CA20173025968 20170606
DT	- I
CCI	- B66F7/0633 ; B66F7/08 ; E21B15/003
CI	- B66F3/24 (NO, US) - B66F3/28 (NO, US) - B66F7/0633 (EP, US) - B66F7/08 (EP, US) - E04H12/345 (US) - E21B7/02 (NO) - E21B15/003 (EP, NO, US)
PA	- NABORS DRILLING TECH USA INC [US]
TI	- SIDE SADDLE SLINGSHOT DRILLING RIG
AB	- A side saddle slingshot drilling rig includes a left and right substructure including a

left and right lower box. The side saddle **slingshot** drilling **rig** includes a drill **rig** floor mechanically and pivotably coupled to the left and right lower boxes such that it is pivotably movable from a lowered position to a raised position. The drill **rig** floor includes a V-door. The V-door is positioned on the V-door side of the drill **rig** floor. The V-door side of the drill **rig** floor is oriented to face the right substructure. A mast coupled to the drill **rig** floor may include an open side, defining a mast V-door side. The mast V-door side may be oriented to face the right substructure. The mast may pivot into its raised position or may be a bootstrap mast.

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PN - [US2018320401](#) A1 20181108

PNFP - US10214937 B2 20190226

PR - US201816035375 20180713; US201815893463 20180209; US201615191140 20160623; US201514616234 20150206; US201414180049 20140213; US201361764259P 20130213

AP - US201816035375 20180713

DT - **

CT - || STSE (A1)

[US6161358](#) A 20001219 [Y] (MOCHIZUKI DAVID A [US], et al)
[Y] 1-6

* Fig.1 | Col.4:35-41 | Col.5:51-53 | *;

[US2010186960](#) A1 20100729 [Y] (REITSMA DONALD G [US], et al)
[Y] 1-6;

[US7306255](#) B2 20071211 [Y] (WALKER BEN [US], et al)
[Y] 1-6

* Fig.3 | Figs.7 and 9 | Figs.5-6 *

- || STSE (B2)

[US3922825](#) A 19751202 [] (EDDY KENNETH HARMON, et al);

[US3942593](#) A 19760309 [] (REEVE JR JOHN R, et al);

[US4235566](#) A 19801125 [] (BEEMAN ARCHIE W [US], et al);

[US4403898](#) A 19830913 [] (THOMPSON CARROLL R [US]);

[US4834604](#) A 19890530 [] (BRITTAIN JOHN C [US], et al);

[US5492436](#) A 19960220 [] (SUKSUMAKE S KARL [US]);

[US6161358](#) A 20001219 [] (MOCHIZUKI DAVID A [US], et al);

[US6634436](#) B1 20031021 [] (DESAI VINOD [US]);

[US6779614](#) B2 20040824 [] (OSER MICHAEL S [US]);

[US7306055](#) B2 20071211 [] (BARNES R MICHAEL [US]);

[US7600585](#) B2 20091013 [] (PATTON BARTLEY J [US], et al);

[US7832974](#) B2 20101116 [] (FIKOWSKI LARRY M [CA], et al);

[US7992646](#) B2 20110809 [] (WRIGHT MONTE NEIL [CA], et al);

[US8316588](#) B2 20121127 [] (CICOGNANI CLAUDIO [IT]);

[US8468753](#) B2 20130625 [] (DONNALLY ROBERT BENJAMIN [CN], et al);

[US8549815](#) B2 20131008 [] (DONNALLY ROBERT BENJAMIN [CN], et al);

[US8720128](#) B2 20140513 [] (VOGT DEWAYNE G [US]);

[US2003155154](#) A1 20030821 [] (OSER MICHAEL S [US]);

[US2004211598](#) A1 20041028 [] (PALIDIS ANASTASIOS [US]);

[US2006104746](#) A1 20060518 [] (THOMPSON CARROLL R [US]);

[US2009200856](#) A1 20090813 [] (CHEHADE ELIE J [AE], et al);

[US2009218138](#) A1 20090903 [] (DONNALLY ROBERT BENJAMIN [CN], et al);

[US2010186960](#) A1 20100729 [] (REITSMA DONALD G [US], et al);

[US2011072737](#) A1 20110331 [] (WASTERVAL PHILIP [US]);

[US2012138327](#) A1 20120607 [] (SOROKAN RON [CA], et al);

[US2016010323](#) A1 20160114 [] (KONDUC KAMERON WAYNE [CA], et al)

CCI - [E21B15/003](#)

CI - E04H12/345 (US)
- E21B15/00 (US)
- E21B15/003 (EP, US)

CA - E21B21/063 (US)

PA - (A1 B2)
NABORS DRILLING TECH USA INC [US]

TI - (A1)
SLINGSHOT SIDE SADDLE SUBSTRUCTURE
- (B2)
Slingshot side saddle substructure

AB - (A1 B2)
A land-based drilling **rig** includes a first substructure and a second substructure, the second substructure being positioned generally parallel to the first substructure. The land-based drilling **rig** also includes a drill **rig** floor coupled to the first and second substructures, the drill **rig** floor including a V-door. The side of the drill **rig** floor has the V-door defining a V-door side of the drill **rig** floor, where the V-door side of the drill **rig** floor is parallel to the first substructure. The first and second substructures pivotably support the drill **rig** floor. The land-based drilling **rig** also includes a mast, the mast mechanically coupled to one or more of the first substructure, the second substructure, and the drill **rig** floor. The mast is pivotably coupled to one or more of the first substructure, the second substructure, and the drill **rig** floor by a mast pivot point. The mast includes a V-door side, the V-door side of the mast parallel to the first or second substructure. In addition, the land-based drilling **rig** includes a mast hydraulic lift cylinder coupled to the mast at a mast lift point and a choke manifold, the choke manifold positioned on the drill **rig** floor.

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PN - [US2018258665](#) A1 20180913

PNFP - US10407938 B2 20190910

PR - US201815977997 20180511; US201815893463 20180209; US201615191140 20160623; US201514616234 20150206; US201414180049 20140213; US201361764259P 20130213

AP - US201815977997 20180511

DT - **

CT - || STSE (A1)
[US2009283324](#) A1 20091119 [Y] (KONDUC KAMERON WAYNE [CA], et al)
[Y] 1-13, 19-23, 25-30
* Fig.1B | Fig.1A | Fig.1B P.0013 | Fig.1D | Fig.1D Claim 5 | [0050] | [0047] | claim 6 and 15 | Claim 12 | Fig.1A Claim 13 | Fig.1 Claim 9 | Col.3:4040-41 | Claim 20 *;
[US6161358](#) A 20001219 [Y] (MOCHIZUKI DAVID A [US], et al)
[Y] 1-13, 25-30
* Fig.5 | Fig.1 | Col.5:51-53 | Fig.1 Claim 9 *;
[US7306055](#) B2 20071211 [Y] (BARNES R MICHAEL [US])
[Y] 1-13, 19-23, 25-35
* Fig.5 | Claim 19 | Fig.3 | Figs.7 and 9 | Fig.1 | Fig.4 | Fig.5-6 | Fig.7 | Fig.9 | Claim 20 | Claim 21 | Figs. 6, 7 | Claim 22 | Fig.7 and 9 Claim 23 | Claim 33 | Fig. 7 Claim 34 | Fig.9 Claim 35 *;
[US7600585](#) B2 20091013 [Y] (PATTON BARTLEY J [US], et al)

[Y] 9

* Col.3:4040-41 *;

[US2003155154](#) A1 20030821 [Y] (OSER MICHAEL S [US])

[Y] 19-23, 31-35

* Claim 19 | Fig.1 | Claim 32 *;

[US6848515](#) B2 20050201 [A] (ORR ALAN [US], et al);

[US4834604](#) A 19890530 [A] (BRITAIN JOHN C [US], et al);

[US2009200856](#) A1 20090813 [A] (CHEHADE ELIE J [AE], et al);

[US2009218138](#) A1 20090903 [A] (DONNALLY ROBERT BENJAMIN [CN], et al);

[US5921336](#) A 19990713 [A] (REED LOWELL M [US]);

[US2011072737](#) A1 20110331 [A] (WASTERVAL PHILIP [US]);

[US2016010323](#) A1 20160114 [A] (KONDUC KAMERON WAYNE [CA], et al);

[US4744710](#) A 19880517 [A] (REED LOWELL M [US]);

[US2010163247](#) A1 20100701 [A] (WRIGHT MONTE NEIL [CA], et al);

[US2012138327](#) A1 20120607 [A] (SOROKAN RON [CA], et al);

[US2004240973](#) A1 20041202 [A] (ANDREWS LLOYD E [US], et al);

[US7992646](#) B2 20110809 [A] (WRIGHT MONTE NEIL [CA], et al);

[US4757592](#) A 19880719 [A] (REED LOWELL M [US]);

[US3922825](#) A 19751202 [A] (EDDY KENNETH HARMON, et al);

[US7931076](#) B2 20110426 [A] (DITTA JOSEPH WILLIAM [US], et al);

[US3754361](#) A 19730828 [A] (BRANHAM D, et al);

[US2009053013](#) A1 20090226 [A] (MALTBY SCOTT R [US]);

[US2016215592](#) A1 20160728 [A] (HELMS MARTIN [DE], et al);

[US8316588](#) B2 20121127 [A] (CICOGNANI CLAUDIO [IT]);

[US7404697](#) B2 20080729 [A] (THOMPSON CARROLL R [US]);

[US3942593](#) A 19760309 [A] (REEVE JR JOHN R, et al);

[US5492436](#) A 19960220 [A] (SUKSUMAKE S KARL [US]);

[US4375892](#) A 19830308 [A] (JENKINS CECIL, et al)

- || STSE (B2)

[US3754361](#) A 19730828 [] (BRANHAM D, et al);

[US3922825](#) A 19751202 [] (EDDY KENNETH HARMON, et al);

[US3942593](#) A 19760309 [] (REEVE JR JOHN R, et al);

[US4375892](#) A 19830308 [] (JENKINS CECIL, et al);

[US4744710](#) A 19880517 [] (REED LOWELL M [US]);

[US4757592](#) A 19880719 [] (REED LOWELL M [US]);

[US4834604](#) A 19890530 [] (BRITAIN JOHN C [US], et al);

[US5492436](#) A 19960220 [] (SUKSUMAKE S KARL [US]);

[US5921336](#) A 19990713 [] (REED LOWELL M [US]);

[US6161358](#) A 20001219 [] (MOCHIZUKI DAVID A [US], et al);

[US6848515](#) B2 20050201 [] (ORR ALAN [US], et al);

[US7306055](#) B2 20071211 [] (BARNES R MICHAEL [US]);

[US7404697](#) B2 20080729 [] (THOMPSON CARROLL R [US]);

[US7931076](#) B2 20110426 [] (DITTA JOSEPH WILLIAM [US], et al);

[US7992646](#) B2 20110809 [] (WRIGHT MONTE NEIL [CA], et al);

[US8316588](#) B2 20121127 [] (CICOGNANI CLAUDIO [IT]);

[US2003155154](#) A1 20030821 [] (OSER MICHAEL S [US]);

[US2004240973](#) A1 20041202 [] (ANDREWS LLOYD E [US], et al);

[US2009053013](#) A1 20090226 [] (MALTBY SCOTT R [US]);

[US2009200856](#) A1 20090813 [] (CHEHADE ELIE J [AE], et al);

[US2009218138](#) A1 20090903 [] (DONNALLY ROBERT BENJAMIN [CN], et al);

[US2009283324](#) A1 20091119 [] (KONDUC KAMERON WAYNE [CA], et al);

[US2010163247](#) A1 20100701 [] (WRIGHT MONTE NEIL [CA], et al);

[US2011072737](#) A1 20110331 [] (WASTERVAL PHILIP [US]);

[US2012138327](#) A1 20120607 [] (SOROKAN RON [CA], et al);
[US2016010323](#) A1 20160114 [] (KONDUC KAMERON WAYNE [CA], et al);
[US2016215592](#) A1 20160728 [] (HELMS MARTIN [DE], et al)

CCI - [E21B15/003](#)
 CI - E04H12/345 (US)
 - E21B15/00 (US)
 - E21B15/003 (EP, US)
 CA - E21B21/063 (US)
 PA - (A1 B2)
 NABORS DRILLING TECH USA INC [US]
 TI - (A1)
 SLINGSHOT SIDE SADDLE SUBSTRUCTURE
 - (B2)
 Slingshot side saddle substructure
 AB - (A1 B2)
 The drilling **rig** includes a first substructure and a second substructure. The second substructure is positioned generally parallel to and spaced apart from the first substructure and generally the same height as the first substructure. The drilling **rig** further includes a drill floor coupled to the first and second substructures, where the drill floor positioned substantially at the top of the first and second substructures.

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PN - [US2018163426](#) A1 20180614
 PNFP - US10094137 B2 20181009
 PR - US201815893463 20180209; US201615191140 20160623; US201514616234 20150206; US201414180049 20140213; US201361764259P 20130213
 AP - US201815893463 20180209
 DT - **
 CT - || STSE (B2)
 [US3922825](#) A 19751202 [] (EDDY KENNETH HARMON, et al);
 [US3942593](#) A 19760309 [] (REEVE JR JOHN R, et al);
 [US4235566](#) A 19801125 [] (BEEMAN ARCHIE W [US], et al);
 [US4403898](#) A 19830913 [] (THOMPSON CARROLL R [US]);
 [US4834604](#) A 19890530 [] (BRITTAIN JOHN C [US], et al);
 [US5492436](#) A 19960220 [] (SUKSUMAKE S KARL [US]);
 [US6161358](#) A 20001219 [] (MOCHIZUKI DAVID A [US], et al);
 [US6634436](#) B1 20031021 [] (DESAI VINOD [US]);
 [US6779614](#) B2 20040824 [] (OSER MICHAEL S [US]);
 [US7306055](#) B2 20071211 [] (BARNES R MICHAEL [US]);
 [US7832974](#) B2 20101116 [] (FIKOWSKI LARRY M [CA], et al);
 [US7992646](#) B2 20110809 [] (WRIGHT MONTE NEIL [CA], et al);
 [US8316588](#) B2 20121127 [] (CICOGNANI CLAUDIO [IT]);
 [US8468753](#) B2 20130625 [] (DONNALLY ROBERT BENJAMIN [CN], et al);
 [US8549815](#) B2 20131008 [] (DONNALLY ROBERT BENJAMIN [CN], et al);
 [US8720128](#) B2 20140513 [] (VOGT DEWAYNE G [US]);
 [US2003155154](#) A1 20030821 [] (OSER MICHAEL S [US]);
 [US2004211598](#) A1 20041028 [] (PALIDIS ANASTASIOS [US]);
 [US2006104746](#) A1 20060518 [] (THOMPSON CARROLL R [US]);
 [US2009200856](#) A1 20090813 [] (CHEHADE ELIE J [AE], et al);
 [US2009218138](#) A1 20090903 [] (DONNALLY ROBERT BENJAMIN [CN], et al);

[US2011072737](#) A1 20110331 [] (WASTERVAL PHILIP [US]);
[US2012138327](#) A1 20120607 [] (SOROKAN RON [CA], et al);
[US2016010323](#) A1 20160114 [] (KONDUC KAMERON WAYNE [CA], et al)

CCI - [E21B15/003](#)
 CI - E04H12/345 (US)
 - E21B15/00 (US)
 - E21B15/003 (EP, US)
 CA - E21B21/063 (US)
 PA - (A1)
 NABORS DRILLING USA LP [US]
 - (B2)
 NABORS DRILLING USA LP [US]; NABORS DRILLING TECH USA INC [US]
 TI - (A1)
 SLINGSHOT SIDE SADDLE SUBSTRUCTURE
 - (B2)
 Slingshot side saddle substructure
 AB - (A1 B2)
 The drilling **rig** includes a first substructure and a second substructure. The second substructure is positioned generally parallel to and spaced apart from the first substructure and generally the same height as the first substructure. The drilling **rig** further includes a drill floor coupled to the first and second substructures, where the drill floor positioned substantially at the top of the first and second substructures.

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PN - [WO2018085850](#) A1 20180511
 PR - US201662418656P 20161107
 AP - WO2017US60429 20171107
 DT - **
 CT - |US| ISR (A1)
 [US2016298394](#) A1 20161013 [Y] (PADIRA REDDY [US], et al)
 [Y] 1-21
 * entire document *;
 [US2004211598](#) A1 20041028 [Y] (PALIDIS ANASTASIOS [US])
 [Y] 1-21
 * entire document *;
 [US2015008038](#) A1 20150108 [Y] (FOLK ROBERT [CA])
 [Y] 3-10
 * entire document *;
 [WO2016048458](#) A1 20160331 [Y] (SCHLUMBERGER CA LTD [CA], et al)
 [Y] 13
 * entire document *;
 [US2013305632](#) A1 20131121 [Y] (RIVERA SR PHILLIP [US], et al)
 [Y] 16
 * entire document *;
 [US2013269268](#) A1 20131017 [Y] (THIESSEN JAY JOHN [CA], et al)
 [Y] 17
 * entire document *;
 [US2005193645](#) A1 20050908 [A] (BARNES R M [US])
 [A] 1-37
 * entire document *;

[US2016002947](#) A1 20160107 [A] (WIJNING DIEDERICK BERNARDUS [NL], et al)

[A] 1-37

* entire document *;

[US2011072737](#) A1 20110331 [A] (WASTERVAL PHILIP [US])

[A] 1-37

* entire document *

- CCI - [E21B15/00](#)
- CI - E04H12/345 (NO, US)
 - E21B15/00 (EP, NO, US)
- CA - E04H12/34 (US)
 - E21B15/006 (US)
 - E21B19/08 (US)
- PA - NABORS DRILLING TECH USA INC [US]
- TI - SIDE-SADDLE CANTILEVER MAST
- AB - A side saddle **slingshot** drilling **rig** includes a right substructure and a left substructure, the substructures positioned generally parallel and spaced apart from each other. The right substructure includes a right lower box and a first strut, the first strut pivotably coupled to the drill **rig** floor and pivotably coupled to the right lower box. The left substructure includes a left lower box and a second strut, the second strut pivotably coupled to the drill **rig** floor and pivotably coupled to the left lower box. The side saddle **slingshot** drilling **rig** also includes a drill **rig** floor, the drill **rig** floor including a V-door. The side of the drill **rig** floor has the V-door defining the V- door side of the drill **rig** floor, the V-door side of the drill **rig** floor parallel to the right substructure. The side saddle **slingshot** drilling **rig** further includes a mast, the mast including an open side defining a mast V-door side. The open side is oriented to face perpendicular to the right substructure. The mast is pivotably coupled to the drill **rig** floor by one or more mast pivot points and one or more lower mast attachment points, the mast being pivotable in a direction parallel to the V-door side of the drill **rig** floor or the mast being pivotable in a direction perpendicular to V- door side of the drill **rig** floor. The mast includes two or more subunits, wherein the two or more subunits are pinned together.

[US9708861](#) B2 20170718 [
] (REDDY PADIRA [US], et al);
[US2005193645](#) A1 20050908 [
] (BARNES R M [US]);
[US2006213653](#) A1 20060928 [
] (CUNNINGHAM BRIAN [CA], et
 al);
[US2013330151](#) A1 20131212 [
] (ORGERON KEITH J [US]);
[US2014090333](#) A1 20140403 [
] (VOGT DEWAYNE G [US]);
[US2014298735](#) A1 20141009 [
] (VOGT DEWAYNE G [US]);
[US2015143759](#) A1 20150528 [
] (SPARKMAN JOSEPH MICHAEL
 [US], et al);
[US2015218891](#) A1 20150806 [
] (PADIRA REDDY [US], et al);
[US2016258215](#) A1 20160908 [
] (HOLST KATHERINE J [US], et al);
[US2016376808](#) A1 20161229 [
] (MAGNUSON CHRISTOPHER
 [US], et al);
[US2017096832](#) A1 20170406 [
] (ROBB STEVE [US])

- CCI - [E21B15/00](#)
- CI - E04H12/345 (NO, US)
- E21B15/00 (EP, NO, US)
- CA - E04H12/34 (US)
- E21B15/006 (US)
- E21B19/08 (US)
- PA - (A1 B2)
NABORS DRILLING TECH USA INC
[US]
- TI - (A1)
SIDE-SADDLE CANTILEVER MAST
- (B2)
Side-saddle cantilever mast
- AB - (A1 B2)
A side saddle **slingshot**
drilling **rig** includes a right
substructure and a left
substructure, the substructures
positioned generally parallel
and spaced apart from each
other. The right substructure
includes a right lower box and a
first strut, the first strut
pivotably coupled to the drill **rig**
floor and pivotably coupled to
the right lower box. The left

substructure includes a left lower box and a second strut, the second strut pivotably coupled to the drill **rig** floor and pivotably coupled to the left lower box. The side saddle **slingshot** drilling **rig** also includes a drill **rig** floor, the drill **rig** floor including a V-door. The side of the drill **rig** floor has the V-door defining the V-door side of the drill **rig** floor, the V-door side of the drill **rig** floor parallel to the right substructure. The side saddle **slingshot** drilling **rig** further includes a mast, the mast including an open side defining a mast V-door side. The open side is oriented to face perpendicular to the right substructure. The mast is pivotably coupled to the drill **rig** floor by one or more mast pivot points and one or more lower mast attachment points, the mast being pivotable in a direction parallel to the V-door side of the drill **rig** floor or the mast being pivotable in a direction perpendicular to V-door side of the drill **rig** floor. The mast includes two or more subunits, wherein the two or more subunits are pinned together.

21/28 © EPODOC / EPO

PN - [WO2017214148](#) A1 20171214

PR - US201662346982P 20160607

AP - WO2017US36156 20170606

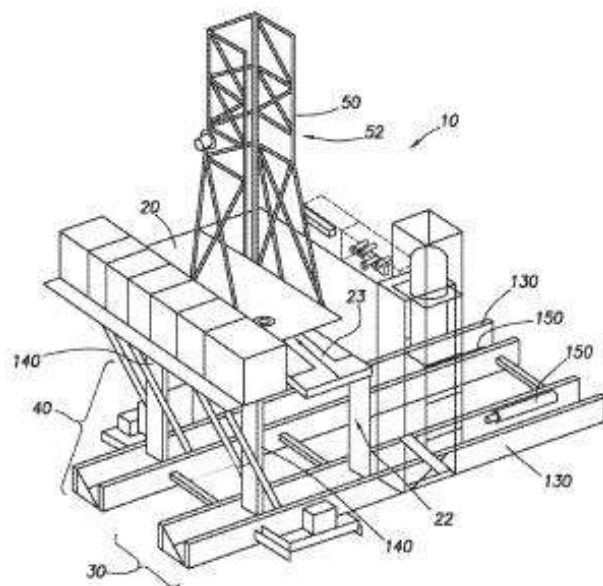
DT - **

CT - |US| ISR (A1)
[US2004211598](#) A1 20041028 [XY] (PALIDIS ANASTASIOS [US])
[X] 1-21 and 24-25
* , Figs. 9, 12A-12B, 13-14, 14A, para [0047]-[0088] *
[Y] 22-23, 27 and 31-41;
[US4759414](#) A 19880726 [XY] (WILLIS CLYDE A [US])
[X] 26, 28 and 30
* , Figs. 1, 2e-2f, 3-4, 4a, col. 5, ln. 28 - co. 6, ln. 13 *
[Y] 27, 29 and 31-41;
[US3802137](#) A 19740409 [Y] (ARMSTRONG J)

- [Y] 22-23
 * , Figs. 3 and 5 *;
[US2015008039](#) A1 20150108 [Y] (WIJNING BERNARDUS DIEDERICK [NL], et al)
 [Y] 29
 * , para [0031] *;
[US2015218891](#) A1 20150806 [A] (PADIRA REDDY [US], et al)
 [A] 1-41
 * , Fig. 3, para [0011]-[00 15] *;
[US2016298394](#) A1 20161013 [PA] (PADIRA REDDY [US], et al)
 [PA] 1-41
 * , Figs. 1-5, para [0013]-[0022] *
- CCI - [B66F7/0633](#) ; [B66F7/08](#) ; [E21B15/003](#)
- CI - B66F3/24 (NO, US)
 - B66F3/28 (NO, US)
 - B66F7/0633 (EP, US)
 - B66F7/08 (EP, US)
 - E04H12/345 (US)
 - E21B7/02 (NO)
 - E21B15/003 (EP, NO, US)
- PA - NABORS DRILLING TECH USA INC [US]
- TI - SIDE SADDLE **SLINGSHOT** DRILLING **RIG**
- AB - A side saddle **slingshot** drilling **rig** includes a left and right substructure including a left and right lower box. The side saddle **slingshot** drilling **rig** includes a drill **rig** floor mechanically and pivotably coupled to the left and right lower boxes such that it is pivotably movable from a lowered position to a raised position. The drill **rig** floor includes a V-door. The V-door is positioned on the V-door side of the drill **rig** floor. The V-door side of the drill **rig** floor is oriented to face the right substructure. A mast coupled to the drill **rig** floor may include an open side, defining a mast V-door side. The mast V-door side may be oriented to face the right substructure. The mast may pivot into its raised position or may be a bootstrap mast.

22/28 © EPODOC / EPO

- PN - [US2017350153](#) A1 20171207
- PNFP - US10214936 B2 20190226
- PR - US201715615322
 20170606; US201662346982P
 20160607
- AP - US201715615322 20170606
- DT - *; Rep
- CT - || R141 (A1)
[US4759414](#) A 19880726 [] (WILLIS CLYDE A [US]);
[US2003172599](#) A1 20030918 [] (FRINK SHELBY [US]);
[US7308953](#) B2 20071218 [] (BARNES R MICHAEL [US]);
[US7306055](#) B2 20071211 [] (BARNES R MICHAEL [US]);
[US2014224543](#) A1 20140814 [] (PADIRA REDDY [US], et al);



[US2014298735](#) A1 20141009 [
] (VOGT DEWAYNE G [US]);
[US8904716](#) B2 20141209 [
] (DONNALLY ROBERT BENJAMIN
 [CN], et al);
[US2015008039](#) A1 20150108 [
] (WIJNING BERNARDUS DIEDERICK
 [NL], et al);
[US2015143759](#) A1 20150528 [
] (SPARKMAN JOSEPH MICHAEL [US],
 et al);
[US9091126](#) B2 20150728 [
] (THIESSEN JAY JOHN [CA], et al);
[US2015284950](#) A1 20151008 [
] (STRAMANDINOLI GIOVANNI [IT]);
[US9399890](#) B2 20160726 [] (MARK
 FLUSCHE [US]);
[US2016312543](#) A1 20161027 [
] (CHENG RUI [CN], et al);
[US9708861](#) B2 20170718 [
] (REDDY PADIRA [US], et al)
 - || STSE (A1)
[US2014224543](#) A1 20140814
 [Y] (PADIRA REDDY [US], et al)
 [Y] 1-11, 42-53
 * claim 1 | fig. 1 | col. 1 lines 46-50
 claim 42 | *;
[US4759414](#) A 19880726 [Y] (WILLIS
 CLYDE A [US])
 [Y] 1-11, 42-53
 * fig. 1 | fig. 2a | col. 1 lines 46-50
 | claim 2 | fig. 2, 50 | claim 3 |
 claim 4 | claim 5 | fig. 1, 66 | claim
 6 | fig. 1, 70 | claim 7 | fig. 2, 20
 col. 4 lines 56-58 | claim 8 | claim
 9 | claim 10 | fig. 1, 56, 60 | claim
 11 | claim 43 | claim 44 | claim 45
 | claim 46 | fig. 1, 66, 68 | claim 47
 | claim 48 | claim 49 | claim 50 |
 claim 51 | claim 52 | claim 53 *;
[US9091126](#) B2 20150728
 [A] (THIESSEN JAY JOHN [CA], et al);
[US7308953](#) B2 20071218
 [A] (BARNES R MICHAEL [US]);
[US2003172599](#) A1 20030918
 [A] (FRINK SHELBY [US]);
[US2016312543](#) A1 20161027
 [A] (CHENG RUI [CN], et al);
[US9708861](#) B2 20170718
 [A] (REDDY PADIRA [US], et al);
[US2015143759](#) A1 20150528
 [A] (SPARKMAN JOSEPH MICHAEL
 [US], et al);

- [US7306055](#) B2 20071211
[A] (BARNES R MICHAEL [US]);
[US2015008039](#) A1 20150108
[A] (WIJNING BERNARDUS
DIEDERICK [NL], et al);
[US2014298735](#) A1 20141009
[A] (VOGT DEWAYNE G [US]);
[US9399890](#) B2 20160726
[A] (MARK FLUSCHE [US]);
[US2015284950](#) A1 20151008
[A] (STRAMANDINOLI GIOVANNI
[IT]);
[US8904716](#) B2 20141209
[A] (DONNALLY ROBERT BENJAMIN
[CN], et al)
- || STSE (B2)
[US4759414](#) A 19880726 [] (WILLIS
CLYDE A [US]);
[US7306055](#) B2 20071211 [
] (BARNES R MICHAEL [US]);
[US7308953](#) B2 20071218 [
] (BARNES R MICHAEL [US]);
[US8904716](#) B2 20141209 [
] (DONNALLY ROBERT BENJAMIN
[CN], et al);
[US9091126](#) B2 20150728 [
] (THIESSEN JAY JOHN [CA], et al);
[US9399890](#) B2 20160726 [] (MARK
FLUSCHE [US]);
[US9708861](#) B2 20170718 [
] (REDDY PADIRA [US], et al);
[US2003172599](#) A1 20030918 [
] (FRINK SHELBY [US]);
[US2014224543](#) A1 20140814 [
] (PADIRA REDDY [US], et al);
[US2014298735](#) A1 20141009 [
] (VOGT DEWAYNE G [US]);
[US2015008039](#) A1 20150108 [
] (WIJNING BERNARDUS DIEDERICK
[NL], et al);
[US2015143759](#) A1 20150528 [
] (SPARKMAN JOSEPH MICHAEL [US],
et al);
[US2015284950](#) A1 20151008 [
] (STRAMANDINOLI GIOVANNI [IT]);
[US2016312543](#) A1 20161027 [
] (CHENG RUI [CN], et al)
CCI - [B66F7/0633](#) ; [B66F7/08](#) ;
[E21B15/003](#)
CI - B66F3/24 (NO, US)
- B66F3/28 (NO, US)
- B66F7/0633 (EP, US)

- B66F7/08 (EP, US)
- E04H12/345 (US)
- E21B7/02 (NO)
- E21B15/003 (EP, NO, US)
- PA - (A1 B2)
NABORS DRILLING TECH USA INC
[US]
- TI - (A1)
SIDE SADDLE **SLINGSHOT**
DRILLING **RIG**
- (B2)
Side saddle **slingshot** drilling **rig**
- AB - (A1 B2)
A side saddle **slingshot** drilling **rig**
includes a left and right
substructure including a left and
right lower box. The side
saddle **slingshot** drilling **rig**
includes a drill **rig** floor
mechanically and pivotably
coupled to the left and right lower
boxes such that it is pivotably
movable from a lowered position
to a raised position. The drill **rig**
floor includes a V-door. The V-door
is positioned on the V-door side of
the drill **rig** floor. The V-door side
of the drill **rig** floor is oriented to
face the right substructure. A mast
coupled to the drill **rig** floor may
include an open side, defining a
mast V-door side. The mast V-door
side may be oriented to face the
right substructure. The mast may
pivot into its raised position or
may be a bootstrap mast.

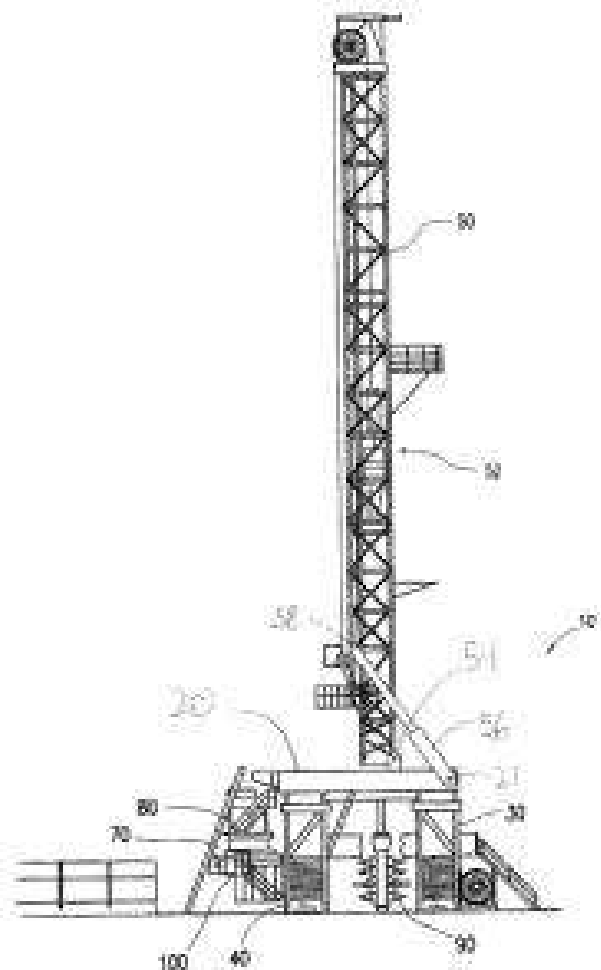
23/28 © EPODOC / EPO

- PN - [US2017292334](#) A1 20171012
- PNFP - US10280692 B2 20190507
- PR - US201715623143 20170614; US201514616234 20150206; US201414180049
20140213; US201361764259P 20130213
- AP - US201715623143 20170614
- DT - **
- CT - || STSE (B2)
[US3228151](#) A 00000000 []
- CCI - [E21B15/003](#)
- CI - E21B15/003 (EP, US)
- E21B19/14 (US)
- E21B21/065 (US)

- PA - (A1)
NABORS DRILLING USA LP [US]
- (B2)
NABORS DRILLING TECH USA INC [US]
- TI - (A1)
SLINGSHOT SIDE SADDLE SUBSTRUCTURE
- (B2)
Slingshot side saddle substructure
- AB - (A1 B2)
The drilling **rig** includes a first substructure and a second substructure. The second substructure is positioned generally parallel to and spaced apart from the first substructure and generally the same height as the first substructure. The drilling **rig** further includes a drill floor coupled to the first and second substructures, where the drill floor positioned substantially at the top of the first and second substructures.

24/28 © EPODOC / EPO

- PN - [US2016298394](#) A1 20161013
- PNFP - US9926719 B2 20180327
- PR - US201615191140
20160623; US201514616234
20150206; US201414180049
20140213; US201361764259P
20130213
- AP - US201615191140 20160623
- DT - *; Rep
- CT - || STSE (B2)
[US2332479](#) A 19431019 [
] (WOOLSLAYER HOMER J, et
al);
[US2345253](#) A 19440328 [
] (FUNK FRANK A);
[US2347115](#) A 19440418 [
] (WILSON LEWIS LEONA);
[US3739853](#) A 19730619 [
] (WALES B);
[US4493382](#) A 19850115 [
] (COLLINS ROBERT A [US], et
al);
[US4757592](#) A 19880719 [
] (REED LOWELL M [US]);
[US4823870](#) A 19890425 [
] (SOROKAN RONALD S [CA]);
[US5492436](#) A 19960220 [
] (SUKSUMAKE S KARL [US]);
[US6634436](#) B1 20031021 [
] (DESAI VINOD [US]);
[US6848515](#) B2 20050201 [
] (ORR ALAN [US], et al);
[US7600585](#) B2 20091013 [
] (PATTON BARTLEY J [US], et
al);



[US7765749](#) B2 20100803 [] (PALIDIS ANASTASIOS [US]);
[US7992646](#) B2 20110809 [] (WRIGHT MONTE NEIL [CA], et al);
[US8051930](#) B1 20111108 [] (BARNES R MICHAEL [US], et al);
[US8316588](#) B2 20121127 [] (CICOGNANI CLAUDIO [IT]);
[US8474216](#) B1 20130702 [] (GOERNER DOUGLAS C [US]);
[US8555564](#) B2 20131015 [] (WASTERVAL PHILIP [US]);
[US2008237170](#) A1 20081002 [] (ALTMAN RICHARD A [US], et al);
[US2009000218](#) A1 20090101 [] (LEE DOUGLAS WAYNE [US], et al);
[US2009200856](#) A1 20090813 [] (CHEHADE ELIE J [AE], et al);
[US2013269268](#) A1 20131017 [] (THIESSEN JAY JOHN [CA], et al);
[US2013299244](#) A1 20131114 [] (REDDY PADRIA [US], et al);
[US2014202769](#) A1 20140724 [] (MAGNUSON CHRISTOPHER [US]);
[CA2869171](#) A1 20131031 [] (NAT OILWELL VARCO LP [US]);
[CA2811620](#) A1 20140401 [] (WOOLSLAYER CO INC [US]);
[CA2755483](#) C 20151110 [] (NAT OILWELL VARCO LP [US]);
[CA2753417](#) C 20151229 [] (NAT OILWELL VARCO LP [US]);
[DE849533](#) C 19520915 [] (MOORE CORP LEE C);
[EP2751370](#) B1 20150708 [] (NAT OILWELL VARCO LP [US]);
[FR2556042](#) A1 19850607 [] (VARCO INT [US])

- CCI - [E21B15/003](#)
- CI - E04H12/345 (US)
- E21B15/00 (US)
- E21B15/003 (EP, US)

CA	- E21B21/063 (US)
PA	- (A1) NABORS DRILLING USA LP [US] - (B2) NABORS DRILLING USA LP [US]; NABORS DRILLING TECH USA INC [US]
TI	- (A1) SLINGSHOT SIDE SADDLE SUBSTRUCTURE - (B2) Slingshot side saddle substructure
AB	- (A1 B2) The drilling rig includes a first substructure and a second substructure. The second substructure is positioned generally parallel to and spaced apart from the first substructure and generally the same height as the first substructure. The drilling rig further includes a drill floor coupled to the first and second substructures, where the drill floor positioned substantially at the top of the first and second substructures.

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PN	- RU2014133732 A 20160310
PNFP	- RU2603116 C2 20161120
PR	- US201261586979P 20120116; US201313737199 20130109; WO2013US20923 20130110
AP	- RU20140133732 20130110
DT	- I
CCI	- E21B15/00 ; E21B15/04
CI	- E21B7/02 (CN) - E21B7/023 (US) - E21B15/00 (EP, CN, US) - E21B15/003 (CN, RU, US) - E21B15/006 (RU) - E21B15/04 (EP, US) - E21F15/04 (CN)
PA	- (C2) NESHNL OJLVELL VARKO EL PI [US]
TI	- (C2)

SLINGSHOT SUBSTRUCTURE FOR MOBILE DRILLING RIG

AB - (C2)
 FIELD: mining.SUBSTANCE: present invention offers a **slingshot** substructure of mobile drilling **rig**. In one exemplary version disclosed is a **slingshot** substructure of drilling **rig** including foundation with a fixed drill floor mounted thereon, the upper surface of the drilling floor is rigidly fixed on the working height above the foundation for drilling operation at well location at the drilling site. Besides, the composition also includes raising floor made with possibility of installation in lowered transport position for the **slingshot** substructure transportation to drilling site and lifting into working position, adjacent with a fixed drilling floor for drilling. Elevation of the upper surface of raising floor below elevation upper surface of fixed drilling floor, when raising the floor is installed in lower transport position. Present invention discloses a method of handling the **slingshot** substructure for mobile drilling **rig**, wherein the **slingshot** substructure is moved in horizontal direction above the well head equipment, so that a part of the equipment passes through the pit zone of **slingshot** substructure under the fixed drilling floor and sideways through the open side of **slingshot** substructure.EFFECT: technical result consists in improvement of efficiency for slant drilling **rig** in assembly, lifting and moving the drilling **rig** between neighboring wells during cluster drilling.34 cl, 22 dwg

26/28 © EPODOC / EPO

PN - [US2015218891](#) A1 20150806

PNFP - US9708861 B2 20170718

PR - US201514616234
 20150206; US201414180049
 20140213; US201361764259P
 20130213

AP - US201514616234 20150206

DT - *; Rep

CT - || R141 (A1)
[US6161358](#) A 00000000 [];
[US2003172599](#) A1 00000000
 [];
[US6962030](#) B2 00000000 [];
[US2016369570](#) A1 00000000
 []
 - || STSE (B2)
[US6161358](#) A 00000000 [];
[US6962030](#) B2 00000000 [];
[US2003172599](#) A1 00000000
 [];
[US2016369570](#) A1 00000000
 []

CCI - [E21B15/003](#)

CI - E21B15/003 (EP, US)

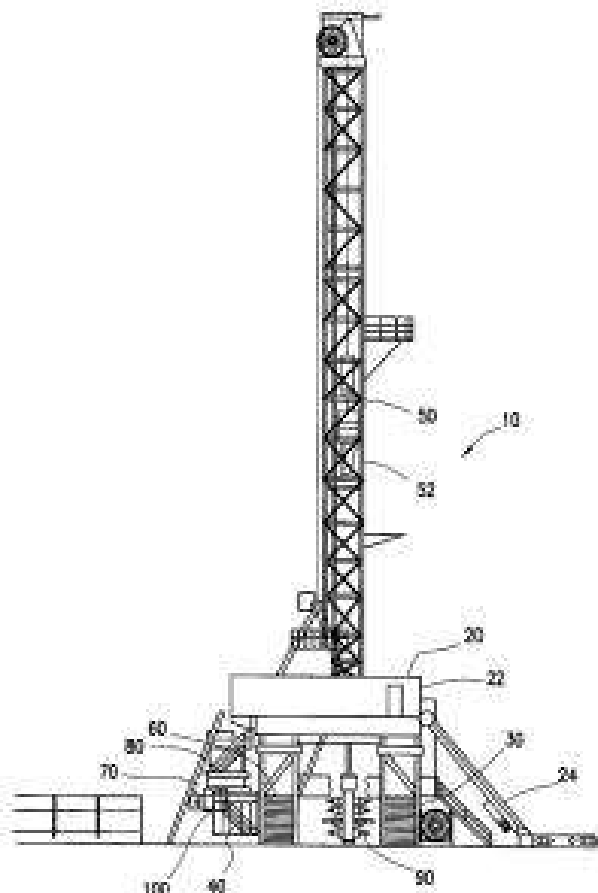
- E21B19/14 (US)

- E21B21/065 (US)

PA - (A1 B2)

NABORS DRILLING USA LP [US]

TI - (A1)



**SLINGSHOT SIDE SADDLE
SUBSTRUCTURE**

- (B2)

Slingshot side saddle
substructure

AB

- (A1 B2)

The drilling **rig** includes a first substructure and a second substructure. The second substructure is positioned generally parallel to and spaced apart from the first substructure and generally the same height as the first substructure. The drilling **rig** further includes a drill floor coupled to the first and second substructures, where the drill floor positioned substantially at the top of the first and second substructures.

27/28 © EPODOC / EPO

PN - [CN204532060U](#) U 20150805

PR - CN20152059431U 20150128

AP - CN20152059431U 20150128

DT - I

PA - COLD & ARID REGIONS ENVIRONMENTAL & ENG RES INST CAS

TI - Inner tube in spring formula binocular ice core machinery **rig**

AB - The utility model relates to an inner tube in spring formula binocular ice core machinery **rig**, its constitutional features are rotary joint, rotating head pellet shot from a **slingshot** and worm wheel root fixing that the **rig** unit head was equipped with through connecting rod and inner tube upper end, and the knife rest has been put to the lower extreme, and inner tube surface cloth has the helix, and inside the urceolus was arranged in to the inner tube, outside the shared space of inner tube was detached to urceolus inside, all the other deposited the spaces of icing the sediment for the drilling tool. The utility model discloses a small, the light in weight of inner tube, it is good that cloth some helixes in inner tube surface have the wearability, resistance to wears, low-temperature impact resistance can be good, characteristics that tensile strength is high. The task of ice core is got to satisfied brill.

28/28 © EPODOC / EPO

PN - [CN201778661U](#) U 20110330

PR - CN201020291564U 20100813

AP - CN201020291564U 20100813

DT - I

PA - BAOJI PETROLEUM MACH CO LTD

TI - Hydraulic-cylinder-lifted **slingshot** derrick substructure

AB - The utility model relates to a hydraulic-cylinder-lifted **slingshot** derrick substructure which comprises a derrick part and a substructure part. The substructure part consists of a left base and a right base which are arranged at a lower layer and a left upper seat and a right upper seat which are arranged at an upper layer. The left base and the right base which are arranged at the lower layer are connected through a connecting frame. A standpipe plate and a table beam are arranged at the upper layer. The upper layer is hinged with the lower layer through a front stand column, an inclined stand column, a middle stand column and a rear stand column. The derrick part comprises a derrick upper section and a derrick lower section. A locking mechanism is arranged between the derrick upper section and the derrick lower section. A racking platform is arranged above the locking mechanism. The front supporting leg of the lower end of the derrick lower section is hinged with standpipe plate. The rear support of the lower end of the derrick lower section is movably connected with the platform surface of the substructure through a rear supporting leg. The left base and the right base which are arranged at the lower layer are connected with the derrick lower section respectively through a lifting hydraulic cylinder. The erection and the lowering of the derrick of the utility model are completed by two double-acting multistage hydraulic cylinders which are arranged on the bases. The extension and the retraction of the derrick upper section are completed through the winch power of a drilling **rig**. Thereby, the **slingshot** derrick substructure can be moved and transported conveniently, the operation is safe and the working efficiency is high.

[SS 6] (drill+ w rig) and v_door

Results in EPODOC 45

EPODOC: term 'VDOOR' not found in index 'BI'. WARNING(1)

[SS 7] (drill+ w rig) and door

Results in EPODOC 99

[SS 8] 7 and slingshot

Results in EPODOC 19

[SS 9] ..li



1/19 © EPODOC / EPO

PN - [US2020284100](#) A1 20200910

PR - US202016884239 20200527; US201715806088 20171107; US201662418656P 20161107

AP - US202016884239 20200527

DT - **

CCI - [E21B15/00](#)

CI - E04H12/345 (NO, US)

- E21B15/00 (EP, NO, US)

CA - E04H12/34 (US)

- E21B15/006 (US)

- E21B19/08 (US)

- PA - NABORS DRILLING TECH USA INC [US]
- TI - SIDE-SADDLE CANTILEVER MAST
- AB - A side saddle **slingshot drilling rig** includes a right substructure and a left substructure, the substructures positioned generally parallel and spaced apart from each other. The right substructure includes a right lower box and a first strut, the first strut pivotably coupled to the **drill rig** floor and pivotably coupled to the right lower box. The left substructure includes a left lower box and a second strut, the second strut pivotably coupled to the **drill rig** floor and pivotably coupled to the left lower box. The side saddle **slingshot drilling rig** also includes a **drill rig** floor, the **drill rig** floor including a V-door. The side of the **drill rig** floor has the V-door defining the V-door side of the **drill rig** floor, the V-door side of the **drill rig** floor parallel to the right substructure. The side saddle **slingshot drilling rig** further includes a mast, the mast including an open side defining a mast V-door side. The open side is oriented to face perpendicular to the right substructure. The mast is pivotably coupled to the **drill rig** floor by one or more mast pivot points and one or more lower mast attachment points, the mast being pivotable in a direction parallel to the V-door side of the **drill rig** floor or the mast being pivotable in a direction perpendicular to V-door side of the **drill rig** floor. The mast includes two or more subunits, wherein the two or more subunits are pinned together.

2/19 © EPODOC / EPO

- PN - [US2020270892](#) A1 20200827
- PR - US202016874288 20200514; US201916246472 20190112; US201715615322 20170606; US201662346982P 20160607
- AP - US202016874288 20200514
- DT - **
- CCI - [B66F7/0633](#) ; [B66F7/08](#) ; [E21B15/003](#)
- CI - B66F3/24 (NO, US)
 - B66F3/28 (NO, US)
 - B66F7/0633 (EP, US)
 - B66F7/08 (EP, US)
 - E04H12/345 (US)
 - E21B7/02 (NO)
 - E21B15/003 (EP, NO, US)
- PA - NABORS DRILLING TECH USA INC [US]
- TI - SIDE SADDLE **SLINGSHOT DRILLING RIG**
- AB - A side saddle **slingshot drilling rig** includes a left and right substructure including a left and right lower box. The side saddle **slingshot drilling rig** includes a **drill rig** floor mechanically and pivotably coupled to the left and right lower boxes such that it is pivotably movable from a lowered position to a raised position. The **drill rig** floor includes a V- door. The V-door is positioned on the V-door side of the **drill rig** floor. The V-door side of the **drill rig** floor is oriented to face the right substructure. A mast coupled to the **drill rig** floor may include an open side, defining a mast V-door side. The mast V-door side may be oriented to face the right substructure. The mast may pivot into its raised position or may be a bootstrap mast.

3/19 © EPODOC / EPO

- PN - [CN110735598](#) A 20200131
- PR - US201862700704P 20180719

AP - CN201910658951 20190719

DT - I

CCI - [E21B4/16](#) ; [E21B15/003](#) ; [E21B19/14](#) ; [E21B19/155](#)

CI - E21B4/16 (EP)
 - E21B7/02 (CN, NO)
 - E21B7/04 (CN)
 - E21B15/003 (EP, NO, US)
 - E21B15/04 (CN)
 - E21B15/045 (CN)
 - E21B19/00 (NO)
 - E21B19/14 (EP)
 - E21B19/155 (EP)
 - E21B21/00 (CN)

CA - E04H12/34 (US)
 - E21B19/164 (US)

PA - NABORS DRILLING TECH USA INC

TI - SIDE SADDLE **SLINGSHOT** CONTINUOUS MOTION **DRILLING RIG**

AB - The invention relates to a **drilling rig**. The **drilling rig** includes a rig floor, first and second support structures, a mast, a lower drilling machine, a continuous drilling unit, an upper drilling machine, and an upper mast assembly. The rig floor includes a V-**door** defining a V-**door** axis extending perpendicularly from the side of the rig floor that includes the V-**door**. The first and second support structures define a traverse corridor having a traverse corridor axis, wherein the traverse corridor axis is perpendicular to the V-**door** axis. The **drilling rig** may be used for continuous drilling of a wellbore.

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PN - [CA3050044](#) A1 20200119

PR - US201862700704P 20180719

AP - CA20193050044 20190718

DT - I

CCI - [E21B4/16](#) ; [E21B15/003](#) ; [E21B19/14](#) ; [E21B19/155](#)

CI - E21B4/16 (EP)
 - E21B7/02 (CN, NO)
 - E21B7/04 (CN)
 - E21B15/003 (EP, NO, US)
 - E21B15/04 (CN)
 - E21B15/045 (CN)
 - E21B19/00 (NO)
 - E21B19/14 (EP)
 - E21B19/155 (EP)
 - E21B21/00 (CN)

CA - E04H12/34 (US)
 - E21B19/164 (US)

PA - NABORS DRILLING TECH USA INC [US]

TI - SIDE SADDLE **SLINGSHOT** CONTINUOUS MOTION RIG

AB - A **drilling rig** includes a rig floor, first and second support structures, a mast, a lower

drilling machine, a continuous drilling unit, an upper drilling machine, and an upper mast assembly. The rig floor includes a V-door defining a V-door axis extending perpendicularly from the side of the rig floor that includes the V-door. The first and second support structures define a traverse corridor having a traverse corridor axis, wherein the traverse corridor axis is perpendicular to the V-door axis. The **drilling rig** may be used for continuous drilling of a wellbore.

5/19 © EPODOC / EPO

PN - [US2020024907](#) A1 20200123

PR - US201916514302
20190717; US201862700704P
20180719

AP - US201916514302 20190717

DT - *; Rep

CCI - [E21B4/16](#) ; [E21B15/003](#) ;
[E21B19/14](#) ; [E21B19/155](#)

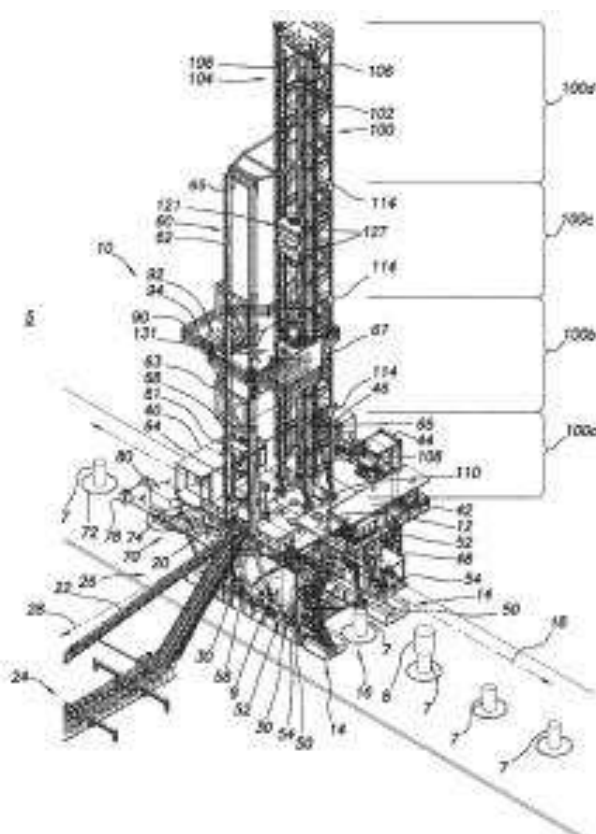
CI - E21B4/16 (EP)
- E21B7/02 (CN, NO)
- E21B7/04 (CN)
- E21B15/003 (EP, NO, US)
- E21B15/04 (CN)
- E21B15/045 (CN)
- E21B19/00 (NO)
- E21B19/14 (EP)
- E21B19/155 (EP)
- E21B21/00 (CN)

CA - E04H12/34 (US)
- E21B19/164 (US)

PA - NABORS DRILLING TECH USA
INC [US]

TI - SIDE SADDLE **SLINGSHOT**
CONTINUOUS MOTION RIG

AB - A **drilling rig** includes a rig floor, first and second support structures, a mast, a lower drilling machine, a continuous drilling unit, an upper drilling machine, and an upper mast assembly. The rig floor includes a V-door defining a V-door axis extending perpendicularly from the side of the rig floor that includes the V-door. The first and second support structures define a traverse corridor having a traverse corridor axis, wherein the traverse corridor axis is perpendicular to the V-door



axis. The **drilling rig** may be used for continuous drilling of a wellbore.

6/19 © EPODOC / EPO

- PN - [CN110593755](#) A 20191220
- PR - US201816006248 20180612
- AP - CN201810674046 20180626
- DT - I
- CCI - [E21B15/003](#)
- CI - E21B3/02 (CN)
 - E21B7/02 (CN, NO)
 - E21B15/003 (EP, CN, NO, US)
- PA - NABORS DRILLING TECH USA INC
- TI - **Slingshot** side saddle substructure
- AB - A land-based **drilling rig** includes a **drill rig** floor, the **drill rig** floor including a **V-door**, a side of the **drill rig** floor having the **V-door** defining a **V-door** side of the **drill rig** floor and an opposite **V-door** side of the **drill rig** floor opposite the **V-door** side of the **drill rig** floor. The land-based **drilling rig** also includes a mast, the mast mechanically coupled to the **drill rig** floor. Further, the land-based **drilling rig** includes at least four support bases, each support base coupled to the **drill rig** floor by a telescoping support arm, the support base and telescoping arm forming a support, wherein the support bases are square or cylindrical.

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- PN - [CA3009407](#) A1 20191212
- PNFP - CA3009407 C 20200714
- PR - US201816006248 20180612
- AP - CA20183009407 20180626
- DT - I
- CCI - [E21B15/003](#)
- CI - E21B3/02 (CN)
 - E21B7/02 (CN, NO)
 - E21B15/003 (EP, CN, NO, US)
- PA - (A1 C)
NABORS DRILLING TECH USA INC [US]
- TI - (A1 C)
SLINGSHOT SIDE SADDLE SUBSTRUCTURE
- AB - (A1 C)
A land-based **drilling rig** includes a **drill rig** floor, the **drill rig** floor including a **V-door**, a side of the **drill rig** floor having the **V-door** defining a **V-door** side of the **drill rig** floor and an opposite **V-door** side of the **drill rig** floor opposite the **V-door** side of the **drill rig** floor. The land-based **drilling rig** also includes a mast, the mast mechanically coupled to the **drill rig** floor. Further, the land-based **drilling rig** includes at least four support bases, each support base coupled to the **drill rig** floor by a telescoping support arm, the support base and telescoping arm forming a support, wherein the support bases are square or cylindrical.

PN - [US2019203495](#) A1 20190704

PNFP - US10557281 B2 20200211

PR - US201916244974 20190110; US201816035375 20180713; US201815893463 20180209; US201615191140 20160623; US201514616234 20150206; US201414180049 20140213; US201361764259P 20130213

AP - US201916244974 20190110

DT - **

CT - || STSE (A1)
[US2009218139](#) A1 20090903 [Y] (DONNALLY ROBERT BENJAMIN [CN], et al)
[Y] 1-2, 7-9
* Fig.1C | Fig.3D | [0079] *;
[US6161358](#) A 20001219 [Y] (MOCHIZUKI DAVID A [US], et al)
[Y] 1-2, 7-9
* Fig.1 | Col.5:51-53 | Col.4:35-41 *;
[US2010186960](#) A1 20100729 [Y] (REITSMA DONALD G [US], et al)
[Y] 1-2, 7-9;
[US2003155154](#) A1 20030821 [A] (OSER MICHAEL S [US]);
[US2015053426](#) A1 20150226 [A] (SMITH SHAWN R [US], et al);
[US4403898](#) A 19830913 [A] (THOMPSON CARROLL R [US]);
[US6634436](#) B1 20031021 [A] (DESAI VINOD [US]);
[US4834604](#) A 19890530 [A] (BRITTAIN JOHN C [US], et al);
[US2014271094](#) A1 20140918 [A] (CRISP IRA [US], et al);
[US2009200856](#) A1 20090813 [A] (CHEHADE ELIE J [AE], et al);
[US2009218138](#) A1 20090903 [A] (DONNALLY ROBERT BENJAMIN [CN], et al);
[US8720128](#) B2 20140513 [A] (VOGT DEWAYNE G [US]);
[US7306055](#) B2 20071211 [A] (BARNES R MICHAEL [US]);
[US2011072737](#) A1 20110331 [A] (WASTERVAL PHILIP [US]);
[US2016010323](#) A1 20160114 [A] (KONDUC KAMERON WAYNE [CA], et al);
[US2006104746](#) A1 20060518 [A] (THOMPSON CARROLL R [US]);
[US6779614](#) B2 20040824 [A] (OSER MICHAEL S [US]);
[US2014044510](#) A1 20140213 [A] (ELDIB NEZAR [US], et al);
[US8549815](#) B2 20131008 [A] (DONNALLY ROBERT BENJAMIN [CN], et al);
[US2012138327](#) A1 20120607 [A] (SOROKAN RON [CA], et al);
[US4235566](#) A 19801125 [A] (BEEMAN ARCHIE W [US], et al);
[US7992646](#) B2 20110809 [A] (WRIGHT MONTE NEIL [CA], et al);
[US2013153309](#) A1 20130620 [A] (SMITH SHAWN R [US], et al);
[US3922825](#) A 19751202 [A] (EDDY KENNETH HARMON, et al);
[US2016115741](#) A1 20160428 [A] (DAVIS ROCKY E [CA]);
[US2014014417](#) A1 20140116 [A] (SMITH SHAWN R [US], et al);
[US2016137115](#) A1 20160519 [A] (DOHERTY BENJAMIN DANIEL [CA]);
[US2004211598](#) A1 20041028 [A] (PALIDIS ANASTASIOS [US]);
[US7832974](#) B2 20101116 [A] (FIKOWSKI LARRY M [CA], et al);
[US8316588](#) B2 20121127 [A] (CICOGNANI CLAUDIO [IT]);
[US8468753](#) B2 20130625 [A] (DONNALLY ROBERT BENJAMIN [CN], et al);
[US3942593](#) A 19760309 [A] (REEVE JR JOHN R, et al);
[US5492436](#) A 19960220 [A] (SUKSUMAKE S KARL [US])
- || STSE (B2)
[US3922825](#) A 19751202 [] (EDDY KENNETH HARMON, et al);
[US3942593](#) A 19760309 [] (REEVE JR JOHN R, et al);
[US4235566](#) A 19801125 [] (BEEMAN ARCHIE W [US], et al);
[US4403898](#) A 19830913 [] (THOMPSON CARROLL R [US]);

[US4834604](#) A 19890530 [] (BRITAIN JOHN C [US], et al);
[US5492436](#) A 19960220 [] (SUKSUMAKE S KARL [US]);
[US6161358](#) A 20001219 [] (MOCHIZUKI DAVID A [US], et al);
[US6634436](#) B1 20031021 [] (DESAI VINOD [US]);
[US6779614](#) B2 20040824 [] (OSER MICHAEL S [US]);
[US7306055](#) B2 20071211 [] (BARNES R MICHAEL [US]);
[US7832974](#) B2 20101116 [] (FIKOWSKI LARRY M [CA], et al);
[US7992646](#) B2 20110809 [] (WRIGHT MONTE NEIL [CA], et al);
[US8316588](#) B2 20121127 [] (CICOGNANI CLAUDIO [IT]);
[US8468753](#) B2 20130625 [] (DONNALLY ROBERT BENJAMIN [CN], et al);
[US8549815](#) B2 20131008 [] (DONNALLY ROBERT BENJAMIN [CN], et al);
[US8720128](#) B2 20140513 [] (VOGT DEWAYNE G [US]);
[US2003155154](#) A1 20030821 [] (OSER MICHAEL S [US]);
[US2004211598](#) A1 20041028 [] (PALIDIS ANASTASIOS [US]);
[US2006104746](#) A1 20060518 [] (THOMPSON CARROLL R [US]);
[US2009200856](#) A1 20090813 [] (CHEHADE ELIE J [AE], et al);
[US2009218138](#) A1 20090903 [] (DONNALLY ROBERT BENJAMIN [CN], et al);
[US2009218139](#) A1 20090903 [] (DONNALLY ROBERT BENJAMIN [CN], et al);
[US2011072737](#) A1 20110331 [] (WASTERVAL PHILIP [US]);
[US2012138327](#) A1 20120607 [] (SOROKAN RON [CA], et al);
[US2013153309](#) A1 20130620 [] (SMITH SHAWN R [US], et al);
[US2014014417](#) A1 20140116 [] (SMITH SHAWN R [US], et al);
[US2014044510](#) A1 20140213 [] (ELDIB NEZAR [US], et al);
[US2014271094](#) A1 20140918 [] (CRISP IRA [US], et al);
[US2015053426](#) A1 20150226 [] (SMITH SHAWN R [US], et al);
[US2016010323](#) A1 20160114 [] (KONDUC KAMERON WAYNE [CA], et al);
[US2016115741](#) A1 20160428 [] (DAVIS ROCKY E [CA]);
[US2016137115](#) A1 20160519 [] (DOHERTY BENJAMIN DANIEL [CA])

CCI - [E21B15/003](#)

CI - E04H12/345 (US)
 - E21B15/00 (US)
 - E21B15/003 (EP, US)

CA - E21B21/063 (US)

PA - (A1 B2)
 NABORS DRILLING TECH USA INC [US]

TI - (A1)
SLINGSHOT SIDE SADDLE SUBSTRUCTURE

- (B2)
Slingshot side saddle substructure

AB - (A1 B2)

A land-based **drilling rig** includes a first substructure and a second substructure, the second substructure being positioned generally parallel to the first substructure. The land-based **drilling rig** also includes a **drill rig** floor coupled to the first and second substructures, the **drill rig** floor including a V-door. The side of the **drill rig** floor has the V-door defining a V-door side of the **drill rig** floor, where the V-door side of the **drill rig** floor is parallel to the first substructure. The first and second substructures pivotably support the **drill rig** floor. The land-based **drilling rig** also includes a mast, the mast mechanically coupled to one or more of the first substructure, the second substructure, and the **drill rig** floor. The mast is pivotably coupled to one or more of the first substructure, the second substructure, and the **drill rig** floor by a mast pivot point. The mast includes a V-door side, the V-door side of the mast parallel to the first or second substructure. In addition, the land-

based **drilling rig** includes a mast hydraulic lift cylinder coupled to the mast at a mast lift point and a choke manifold, the choke manifold positioned on the **drill rig** floor.

9/19 © EPODOC / EPO

- PN - [CN109804122](#) A 20190524
- PR - US201662418656P 20161107; WO2017US60429 20171107
- AP - CN20178062091 20171107
- DT - I
- CT - || STSE (A)
[US3101816](#) A 19630827 [A] (FOX CHARLES L)
 [A] 1-37
 * 全文 *;
[US2004211598](#) A1 20041028 [X] (PALIDIS ANASTASIOS [US])
 [X] 22-37
 * 说明书具体实施方式部分, 附图1-9 *;
[CN1985066](#) A 20070620 [A] (ASTEC IND [US])
 [A] 1-37
 * 全文 *;
[CN2929141Y](#) Y 20070801 [A] (BAOJI PETROLEUM MACH CO LTD [CN])
 [A] 1-37
 * 全文 *;
[CN102561954](#) A 20120711 [A] (CNPC GREATWALL DRILLING CO)
 [A] 1-37
 * 全文 *;
[CN202788612U](#) U 20130313 [A] (SICHUAN KUNLUN PETROLEUM EQUIPMENT MFG CO LTD)
 [A] 1-37
 * 全文 *;
[US2016298394](#) A1 20161013 [X] (PADIRA REDDY [US], et al)
 [X] 1-21
 * 说明书第【0012】-【0024】段及附图1-5 *
- CCI - [E21B15/00](#)
- CI - E04H12/345 (NO, US)
 - E21B15/00 (EP, NO, US)
- CA - E04H12/34 (US)
 - E21B15/006 (US)
 - E21B19/08 (US)
- PA - NABORS DRILLING TECH USA INC
- TI - SIDE-SADDLE CANTILEVER MAST
- AB - A side saddle **slingshot drilling rig** includes a right substructure and a left substructure, the substructures positioned generally parallel and spaced apart from each other. The right substructure includes a right lower box and a first strut, the first strut pivotably coupled to the **drill rig** floor and pivotably coupled to the right lower box. The left substructure includes a left lower box and a second strut, the second strut pivotably coupled to the **drill rig** floor and pivotably coupled to the left lower box. The side saddle **slingshot drilling rig** also includes a **drill rig** floor, the **drill rig** floor including a V-door. The side of the **drill rig** floor has the V-door defining the V-door side of the **drill rig** floor, the V-door side of the **drill rig** floor parallel to the right substructure. The side saddle **slingshot drilling rig** further includes a mast, the

mast including an open side defining a mast V-**door** side. The open side is oriented to face perpendicular to the right substructure. The mast is pivotably coupled to the **drill rig** floor by one or more mast pivot points and one or more lower mast attachment points, the mast being pivotable in a direction parallel to the V-**door** side of the **drill rig** floor or the mast being pivotable in a direction perpendicular to V- **door** side of the **drill rig** floor. The mast includes two or more subunits, wherein the two or more subunits are pinned together.

10/19 © EPODOC / EPO

- PN - [US2019145122](#) A1 20190516
- PNFP - US10731375 B2 20200804
- PR - US201916246472 20190112; US201715615322 20170606; US201662346982P 20160607
- AP - US201916246472 20190112
- DT - **
- CT - || STSE (B2)
[US4759414](#) A 19880726 [] (WILLIS CLYDE A [US]);
[US4821816](#) A 19890418 [] (WILLIS CLYDE A [US]);
[US7306055](#) B2 20071211 [] (BARNES R MICHAEL [US]);
[US7308953](#) B2 20071218 [] (BARNES R MICHAEL [US]);
[US8904716](#) B2 20141209 [] (DONNALLY ROBERT BENJAMIN [CN], et al);
[US9027287](#) B2 20150512 [] (TREVITHICK MARK W [US], et al);
[US9091126](#) B2 20150728 [] (THIESSEN JAY JOHN [CA], et al);
[US9399890](#) B2 20160726 [] (MARK FLUSCHE [US]);
[US9708861](#) B2 20170718 [] (REDDY PADIRA [US], et al);
[US2003172599](#) A1 20030918 [] (FRINK SHELBY [US]);
[US2009000218](#) A1 20090101 [] (LEE DOUGLAS WAYNE [US], et al);
[US2013343836](#) A1 20131226 [] (FLUSCHE MARK J [US]);
[US2014224543](#) A1 20140814 [] (PADIRA REDDY [US], et al);
[US2014298735](#) A1 20141009 [] (VOGT DEWAYNE G [US]);
[US2015008039](#) A1 20150108 [] (WIJNING BERNARDUS DIEDERICK [NL], et al);
[US2015143759](#) A1 20150528 [] (SPARKMAN JOSEPH MICHAEL [US], et al);
[US2016130877](#) A1 20160512 [] (FORTSON FRED L [US], et al);
[US2016258178](#) A1 20160908 [] (HOLST KATHERINE J [US], et al);
[US2016258225](#) A1 20160908 [] (HOLST KATHERINE J [US], et al);
[US2016312543](#) A1 20161027 [] (CHENG RUI [CN], et al);
[US2017328081](#) A1 20171116 [] (TREVITHICK MARK [US], et al)
- CCI - [B66F7/0633](#) ; [B66F7/08](#) ; [E21B15/003](#)
- CI - B66F3/24 (NO, US)
 - B66F3/28 (NO, US)
 - B66F7/0633 (EP, US)
 - B66F7/08 (EP, US)
 - E04H12/345 (US)
 - E21B7/02 (NO)
 - E21B15/003 (EP, NO, US)
- PA - (A1 B2)
 NABORS DRILLING TECH USA INC [US]
- TI - (A1)
 SIDE SADDLE **SLINGSHOT DRILLING RIG**
 - (B2)

Side saddle **slingshot drilling rig**

- AB - (A1 B2)
- A side saddle **slingshot drilling rig** includes a left and right substructure including a left and right lower box. The side saddle **slingshot drilling rig** includes a **drill rig** floor mechanically and pivotably coupled to the left and right lower boxes such that it is pivotably movable from a lowered position to a raised position. The **drill rig** floor includes a V- **door**. The V-**door** is positioned on the V-**door** side of the **drill rig** floor. The V-**door** side of the **drill rig** floor is oriented to face the right substructure. A mast coupled to the **drill rig** floor may include an open side, defining a mast V-**door** side. The mast V-**door** side may be oriented to face the right substructure. The mast may pivot into its raised position or may be a bootstrap mast.

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- PN - [CA3039669](#) A1 20180511
- PR - US201662418656P 20161107; WO2017US60429 20171107
- AP - CA20173039669 20171107
- DT - I
- CCI - [E21B15/00](#)
- CI - E04H12/345 (NO, US)
- E21B15/00 (EP, NO, US)
- CA - E04H12/34 (US)
- E21B15/006 (US)
- E21B19/08 (US)
- PA - NABORS DRILLING TECH USA INC [US]
- TI - SIDE-SADDLE CANTILEVER MAST
- AB - A side saddle **slingshot drilling rig** includes a right substructure and a left substructure, the substructures positioned generally parallel and spaced apart from each other. The right substructure includes a right lower box and a first strut, the first strut pivotably coupled to the **drill rig** floor and pivotably coupled to the right lower box. The left substructure includes a left lower box and a second strut, the second strut pivotably coupled to the **drill rig** floor and pivotably coupled to the left lower box. The side saddle **slingshot drilling rig** also includes a **drill rig** floor, the **drill rig** floor including a V-**door**. The side of the **drill rig** floor has the V-**door** defining the V- **door** side of the **drill rig** floor, the V-**door** side of the **drill rig** floor parallel to the right substructure. The side saddle **slingshot drilling rig** further includes a mast, the mast including an open side defining a mast V-**door** side. The open side is oriented to face perpendicular to the right substructure. The mast is pivotably coupled to the **drill rig** floor by one or more mast pivot points and one or more lower mast attachment points, the mast being pivotable in a direction parallel to the V-**door** side of the **drill rig** floor or the mast being pivotable in a direction perpendicular to V- **door** side of the **drill rig** floor. The mast includes two or more subunits, wherein the two or more subunits are pinned together.

12/19 © EPODOC / EPO

- PN - [NO20181670](#) A1 20181221
- PR - US201662346982P 20160607; WO2017US36156 20170606
- AP - NO20180001670 20181221
- DT - I
- CCI - [B66F7/0633](#) ; [B66F7/08](#) ; [E21B15/003](#)

- CI - B66F3/24 (NO, US)
 - B66F3/28 (NO, US)
 - B66F7/0633 (EP, US)
 - B66F7/08 (EP, US)
 - E04H12/345 (US)
 - E21B7/02 (NO)
 - E21B15/003 (EP, NO, US)
- PA - NABORS DRILLING TECH USA INC [US]
- TI - SIDE SADDLE **SLINGSHOT DRILLING RIG**
- AB - A side saddle **slingshot drilling rig** includes a left and right substructure including a left and right lower box. The side saddle **slingshot drilling rig** includes a **drill rig** floor mechanically and pivotably coupled to the left and right lower boxes such that it is pivotably movable from a lowered position to a raised position. The **drill rig** floor includes a V- **door**. The V-**door** is positioned on the V-**door** side of the **drill rig** floor. The V-**door** side of the **drill rig** floor is oriented to face the right substructure. A mast coupled to the **drill rig** floor may include an open side, defining a mast V-**door** side. The mast V-**door** side may be oriented to face the right substructure. The mast may pivot into its raised position or may be a bootstrap mast.

13/19 © EPODOC / EPO

- PN - [CN109312601](#) A 20190205
- PR - US201662346982P 20160607; WO2017US36156 20170606
- AP - CN20178034973 20170606
- DT - I
- CT - || STSE (A)
[US3802137](#) A 19740409 [Y] (ARMSTRONG J)
 [Y] 22,23
 * 附图3,5 *;
[US4759414](#) A 19880726 [YX] (WILLIS CLYDE A [US])
 [Y] 31-41
 * 说明书第5-7栏, 附图1-4 *
 [X] 26-30;
[US2004211598](#) A1 20041028 [YX] (PALIDIS ANASTASIOS [US])
 [Y] 22-23,31-41
 * 说明书第0047-0088段, 附图9-14 *
 [X] 1-21,24-30;
[CN201013249Y](#) Y 20080130 [A] (RG PETRO MACHINERY GROUP CO [CN])
 [A] 1-41
 * 全文 *;
[CN103339340](#) A 20131002 [A] (T & T ENGINEERING SERVICES INC)
 [A] 1-41
 * 全文 *;
[CN203499575U](#) U 20140326 [A] (ZHONGMAN PETROLEUM AND NATURAL GAS GROUP, et al)
 [A] 1-41
 * 全文 *;
[CN103967062](#) A 20140806 [A] (DEERE & CO)
 [A] 1-41
 * 全文 *;
[CN104302864](#) A 20150121 [A] (NAT OILWELL VARCO LP)
 [A] 1-41

* 全文 *;

[CN104662253](#) A 20150527 [A] (NAT OILWELL VARCO LP)

[A] 1-41

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- CCI - [B66F7/0633](#) ; [B66F7/08](#) ; [E21B15/003](#)
- CI - B66F3/24 (NO, US)
- B66F3/28 (NO, US)
- B66F7/0633 (EP, US)
- B66F7/08 (EP, US)
- E04H12/345 (US)
- E21B7/02 (NO)
- E21B15/003 (EP, NO, US)
- PA - NABORS DRILLING TECH USA INC
- TI - Side saddle **slingshot drilling rig**
- AB - A side saddle **slingshot drilling rig** includes a left and right substructure including a left and right lower box. The side saddle **slingshot drilling rig** includes a **drill rig** floor mechanically and pivotably coupled to the left and right lower boxes such that it is pivotably movable from a lowered position to a raised position. The **drill rig** floor includes a V- **door**. The V-**door** is positioned on the V-**door** side of the **drill rig** floor. The V-**door** side of the **drill rig** floor is oriented to face the right substructure. A mast coupled to the **drill rig** floor may include an open side, defining a mast V-**door** side. The mast V-**door** side may be oriented to face the right substructure. The mast may pivot into its raised position or may be a bootstrap mast.

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- PN - [CA3025968](#) A1 20171214
- PR - US201662346982P 20160607; WO2017US36156 20170606
- AP - CA20173025968 20170606
- DT - I
- CCI - [B66F7/0633](#) ; [B66F7/08](#) ; [E21B15/003](#)
- CI - B66F3/24 (NO, US)
- B66F3/28 (NO, US)
- B66F7/0633 (EP, US)
- B66F7/08 (EP, US)
- E04H12/345 (US)
- E21B7/02 (NO)
- E21B15/003 (EP, NO, US)
- PA - NABORS DRILLING TECH USA INC [US]
- TI - SIDE SADDLE **SLINGSHOT DRILLING RIG**
- AB - A side saddle **slingshot drilling rig** includes a left and right substructure including a left and right lower box. The side saddle **slingshot drilling rig** includes a **drill rig** floor mechanically and pivotably coupled to the left and right lower boxes such that it is pivotably movable from a lowered position to a raised position. The **drill rig** floor includes a V- **door**. The V-**door** is positioned on the V-**door** side of the **drill rig** floor. The V-**door** side of the **drill rig** floor is oriented to face the right substructure. A mast coupled to the **drill rig** floor may include an open side, defining a mast V-**door** side. The mast V-**door** side may be oriented to face the right substructure. The mast may pivot into its raised position or may be a bootstrap mast.

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PN - [US2018320401](#) A1 20181108

PNFP - US10214937 B2 20190226

PR - US201816035375 20180713; US201815893463 20180209; US201615191140
20160623; US201514616234 20150206; US201414180049
20140213; US201361764259P 20130213

AP - US201816035375 20180713

DT - **

CT - || STSE (A1)
[US6161358](#) A 20001219 [Y] (MOCHIZUKI DAVID A [US], et al)
[Y] 1-6
* Fig.1 | Col.4:35-41 | Col.5:51-53 | *;
[US2010186960](#) A1 20100729 [Y] (REITSMA DONALD G [US], et al)
[Y] 1-6;
[US7306255](#) B2 20071211 [Y] (WALKER BEN [US], et al)
[Y] 1-6
* Fig.3 | Figs.7 and 9 | Figs.5-6 *
- || STSE (B2)
[US3922825](#) A 19751202 [] (EDDY KENNETH HARMON, et al);
[US3942593](#) A 19760309 [] (REEVE JR JOHN R, et al);
[US4235566](#) A 19801125 [] (BEEMAN ARCHIE W [US], et al);
[US4403898](#) A 19830913 [] (THOMPSON CARROLL R [US]);
[US4834604](#) A 19890530 [] (BRITTAIN JOHN C [US], et al);
[US5492436](#) A 19960220 [] (SUKSUMAKE S KARL [US]);
[US6161358](#) A 20001219 [] (MOCHIZUKI DAVID A [US], et al);
[US6634436](#) B1 20031021 [] (DESAI VINOD [US]);
[US6779614](#) B2 20040824 [] (OSER MICHAEL S [US]);
[US7306055](#) B2 20071211 [] (BARNES R MICHAEL [US]);
[US7600585](#) B2 20091013 [] (PATTON BARTLEY J [US], et al);
[US7832974](#) B2 20101116 [] (FIKOWSKI LARRY M [CA], et al);
[US7992646](#) B2 20110809 [] (WRIGHT MONTE NEIL [CA], et al);
[US8316588](#) B2 20121127 [] (CICOGNANI CLAUDIO [IT]);
[US8468753](#) B2 20130625 [] (DONNALLY ROBERT BENJAMIN [CN], et al);
[US8549815](#) B2 20131008 [] (DONNALLY ROBERT BENJAMIN [CN], et al);
[US8720128](#) B2 20140513 [] (VOGT DEWAYNE G [US]);
[US2003155154](#) A1 20030821 [] (OSER MICHAEL S [US]);
[US2004211598](#) A1 20041028 [] (PALIDIS ANASTASIOS [US]);
[US2006104746](#) A1 20060518 [] (THOMPSON CARROLL R [US]);
[US2009200856](#) A1 20090813 [] (CHEHADE ELIE J [AE], et al);
[US2009218138](#) A1 20090903 [] (DONNALLY ROBERT BENJAMIN [CN], et al);
[US2010186960](#) A1 20100729 [] (REITSMA DONALD G [US], et al);
[US2011072737](#) A1 20110331 [] (WASTERVAL PHILIP [US]);
[US2012138327](#) A1 20120607 [] (SOROKAN RON [CA], et al);
[US2016010323](#) A1 20160114 [] (KONDUC KAMERON WAYNE [CA], et al)

CCI - [E21B15/003](#)

CI - E04H12/345 (US)
- E21B15/00 (US)
- E21B15/003 (EP, US)

CA - E21B21/063 (US)

PA - (A1 B2)

	NABORS DRILLING TECH USA INC [US]
TI	- (A1) SLINGSHOT SIDE SADDLE SUBSTRUCTURE - (B2) Slingshot side saddle substructure
AB	- (A1 B2) A land-based drilling rig includes a first substructure and a second substructure, the second substructure being positioned generally parallel to the first substructure. The land-based drilling rig also includes a drill rig floor coupled to the first and second substructures, the drill rig floor including a V-door. The side of the drill rig floor has the V-door defining a V-door side of the drill rig floor, where the V-door side of the drill rig floor is parallel to the first substructure. The first and second substructures pivotably support the drill rig floor. The land-based drilling rig also includes a mast, the mast mechanically coupled to one or more of the first substructure, the second substructure, and the drill rig floor. The mast is pivotably coupled to one or more of the first substructure, the second substructure, and the drill rig floor by a mast pivot point. The mast includes a V-door side, the V-door side of the mast parallel to the first or second substructure. In addition, the land-based drilling rig includes a mast hydraulic lift cylinder coupled to the mast at a mast lift point and a choke manifold, the choke manifold positioned on the drill rig floor.

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PN	- WO2018085850 A1 20180511
PR	- US201662418656P 20161107
AP	- WO2017US60429 20171107
DT	- **
CT	- US ISR (A1) US2016298394 A1 20161013 [Y] (PADIRA REDDY [US], et al) [Y] 1-21 * entire document *; US2004211598 A1 20041028 [Y] (PALIDIS ANASTASIOS [US]) [Y] 1-21 * entire document *; US2015008038 A1 20150108 [Y] (FOLK ROBERT [CA]) [Y] 3-10 * entire document *; WO2016048458 A1 20160331 [Y] (SCHLUMBERGER CA LTD [CA], et al) [Y] 13 * entire document *; US2013305632 A1 20131121 [Y] (RIVERA SR PHILLIP [US], et al) [Y] 16 * entire document *; US2013269268 A1 20131017 [Y] (THIESSEN JAY JOHN [CA], et al) [Y] 17 * entire document *; US2005193645 A1 20050908 [A] (BARNES R M [US]) [A] 1-37 * entire document *; US2016002947 A1 20160107 [A] (WIJNING DIEDERICK BERNARDUS [NL], et al) [A] 1-37

* entire document *;

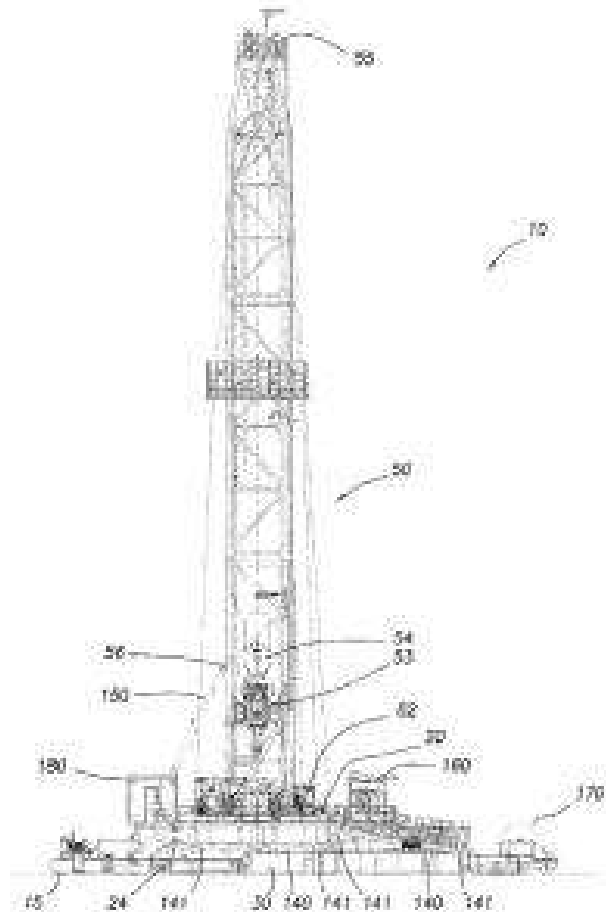
[US2011072737](#) A1 20110331 [A] (WASTERVAL PHILIP [US])

[A] 1-37

* entire document *

- CCI - [E21B15/00](#)
- CI - E04H12/345 (NO, US)
 - E21B15/00 (EP, NO, US)
- CA - E04H12/34 (US)
 - E21B15/006 (US)
 - E21B19/08 (US)
- PA - NABORS DRILLING TECH USA INC [US]
- TI - SIDE-SADDLE CANTILEVER MAST
- AB - A side saddle **slingshot drilling rig** includes a right substructure and a left substructure, the substructures positioned generally parallel and spaced apart from each other. The right substructure includes a right lower box and a first strut, the first strut pivotably coupled to the **drill rig** floor and pivotably coupled to the right lower box. The left substructure includes a left lower box and a second strut, the second strut pivotably coupled to the **drill rig** floor and pivotably coupled to the left lower box. The side saddle **slingshot drilling rig** also includes a **drill rig** floor, the **drill rig** floor including a V-door. The side of the **drill rig** floor has the V-door defining the V-door side of the **drill rig** floor, the V-door side of the **drill rig** floor parallel to the right substructure. The side saddle **slingshot drilling rig** further includes a mast, the mast including an open side defining a mast V-door side. The open side is oriented to face perpendicular to the right substructure. The mast is pivotably coupled to the **drill rig** floor by one or more mast pivot points and one or more lower mast attachment points, the mast being pivotable in a direction parallel to the V-door side of the **drill rig** floor or the mast being pivotable in a direction perpendicular to V-door side of the **drill rig** floor. The mast includes two or more subunits, wherein the two or more subunits are pinned together.

PN - [US2018128056](#) A1 20180510
 PNFP - US10704337 B2 20200707
 PR - US201715806088
 20171107; US201662418656P
 20161107
 AP - US201715806088 20171107
 DT - *; Rep
 CT - || STSE (A1)
[US9027287](#) B2 20150512
 [Y] (TREVITHICK MARK W [US], et al)
 [Y] 1-21;
[US2015218891](#) A1 20150806
 [Y] (PADIRA REDDY [US], et al)
 [Y] 1-21
 * figure 3 | *;
[US2006213653](#) A1 20060928
 [A] (CUNNINGHAM BRIAN [CA], et al);
[US9708861](#) B2 20170718
 [A] (REDDY PADIRA [US], et al);
[US9488014](#) B2 20161108
 [A] (SPARKMAN JOSEPH MICHAEL [US], et al);
[US4757592](#) A 19880719
 [A] (REED LOWELL M [US]);
[US2015143759](#) A1 20150528
 [A] (SPARKMAN JOSEPH MICHAEL [US], et al);
[US9677298](#) B2 20170613
 [A] (KONDUC KAMERON WAYNE [CA], et al);
[US2005193645](#) A1 20050908
 [A] (BARNES R M [US]);
[US5492436](#) A 19960220
 [A] (SUKSUMAKE S KARL [US]);
[US2014090333](#) A1 20140403
 [A] (VOGT DEWAYNE G [US])
 - || STSE (B2)
[US4757592](#) A 19880719 [] (REED LOWELL M [US]);
[US5492436](#) A 19960220 [] (SUKSUMAKE S KARL [US]);
[US9027287](#) B2 20150512 [] (TREVITHICK MARK W [US], et al);
[US9488014](#) B2 20161108 [] (SPARKMAN JOSEPH MICHAEL [US], et al);
[US9677298](#) B2 20170613 [] (KONDUC KAMERON WAYNE [CA], et al);



[US9708861](#) B2 20170718 [
] (REDDY PADIRA [US], et al);
[US2005193645](#) A1 20050908 [
] (BARNES R M [US]);
[US2006213653](#) A1 20060928 [
] (CUNNINGHAM BRIAN [CA], et
 al);
[US2013330151](#) A1 20131212 [
] (ORGERON KEITH J [US]);
[US2014090333](#) A1 20140403 [
] (VOGT DEWAYNE G [US]);
[US2014298735](#) A1 20141009 [
] (VOGT DEWAYNE G [US]);
[US2015143759](#) A1 20150528 [
] (SPARKMAN JOSEPH MICHAEL
 [US], et al);
[US2015218891](#) A1 20150806 [
] (PADIRA REDDY [US], et al);
[US2016258215](#) A1 20160908 [
] (HOLST KATHERINE J [US], et al);
[US2016376808](#) A1 20161229 [
] (MAGNUSON CHRISTOPHER
 [US], et al);
[US2017096832](#) A1 20170406 [
] (ROBB STEVE [US])

- CCI - [E21B15/00](#)
- CI - E04H12/345 (NO, US)
- E21B15/00 (EP, NO, US)
- CA - E04H12/34 (US)
- E21B15/006 (US)
- E21B19/08 (US)
- PA - (A1 B2)
NABORS DRILLING TECH USA INC
[US]
- TI - (A1)
SIDE-SADDLE CANTILEVER MAST
- (B2)
Side-saddle cantilever mast
- AB - (A1 B2)
A side saddle **slingshot drilling rig** includes a right substructure and a left substructure, the substructures positioned generally parallel and spaced apart from each other. The right substructure includes a right lower box and a first strut, the first strut pivotably coupled to the **drill rig** floor and pivotably coupled to the right lower box. The left substructure includes a

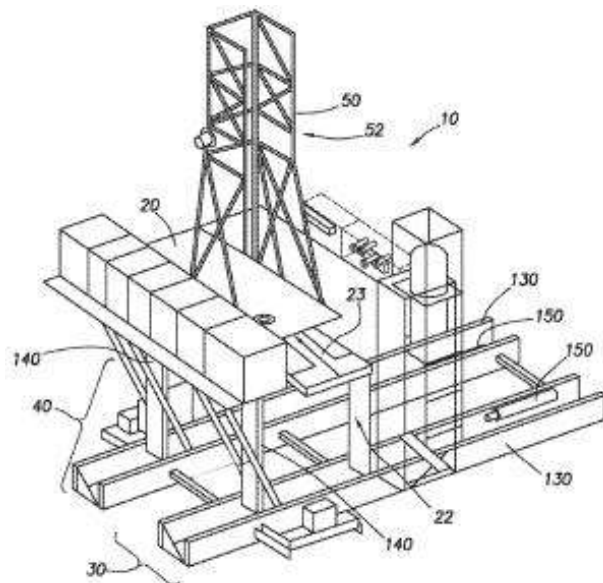
left lower box and a second strut, the second strut pivotably coupled to the **drill rig** floor and pivotably coupled to the left lower box. The side saddle **slingshot drilling rig** also includes a **drill rig** floor, the **drill rig** floor including a V-door. The side of the **drill rig** floor has the V-door defining the V-door side of the **drill rig** floor, the V-door side of the **drill rig** floor parallel to the right substructure. The side saddle **slingshot drilling rig** further includes a mast, the mast including an open side defining a mast V-door side. The open side is oriented to face perpendicular to the right substructure. The mast is pivotably coupled to the **drill rig** floor by one or more mast pivot points and one or more lower mast attachment points, the mast being pivotable in a direction parallel to the V-door side of the **drill rig** floor or the mast being pivotable in a direction perpendicular to V-door side of the **drill rig** floor. The mast includes two or more subunits, wherein the two or more subunits are pinned together.

- 18/19** © EPODOC / EPO
- PN - [WO2017214148](#) A1 20171214
- PR - US201662346982P 20160607
- AP - WO2017US36156 20170606
- DT - **
- CT - |US| ISR (A1)
[US2004211598](#) A1 20041028 [XY] (PALIDIS ANASTASIOS [US])
[X] 1-21 and 24-25
* , Figs. 9, 12A-12B, 13-14, 14A, para [0047]-[0088] *
[Y] 22-23, 27 and 31-41;
[US4759414](#) A 19880726 [XY] (WILLIS CLYDE A [US])
[X] 26, 28 and 30
* , Figs. 1, 2e-2f, 3-4, 4a, col. 5, ln. 28 - co. 6, ln. 13 *
[Y] 27, 29 and 31-41;
[US3802137](#) A 19740409 [Y] (ARMSTRONG J)
[Y] 22-23
* , Figs. 3 and 5 *;

- [US2015008039](#) A1 20150108 [Y] (WIJNING BERNARDUS DIEDERICK [NL], et al)
[Y] 29
*, para [0031] *;
[US2015218891](#) A1 20150806 [A] (PADIRA REDDY [US], et al)
[A] 1-41
*, Fig. 3, para [0011]-[00 15] *;
[US2016298394](#) A1 20161013 [PA] (PADIRA REDDY [US], et al)
[PA] 1-41
*, Figs. 1-5, para [0013]-[0022] *
- CCI - [B66F7/0633](#) ; [B66F7/08](#) ; [E21B15/003](#)
- CI - B66F3/24 (NO, US)
- B66F3/28 (NO, US)
- B66F7/0633 (EP, US)
- B66F7/08 (EP, US)
- E04H12/345 (US)
- E21B7/02 (NO)
- E21B15/003 (EP, NO, US)
- PA - NABORS DRILLING TECH USA INC [US]
- TI - SIDE SADDLE **SLINGSHOT DRILLING RIG**
- AB - A side saddle **slingshot drilling rig** includes a left and right substructure including a left and right lower box. The side saddle **slingshot drilling rig** includes a **drill rig** floor mechanically and pivotably coupled to the left and right lower boxes such that it is pivotably movable from a lowered position to a raised position. The **drill rig** floor includes a V- **door**. The V-**door** is positioned on the V-**door** side of the **drill rig** floor. The V-**door** side of the **drill rig** floor is oriented to face the right substructure. A mast coupled to the **drill rig** floor may include an open side, defining a mast V-**door** side. The mast V-**door** side may be oriented to face the right substructure. The mast may pivot into its raised position or may be a bootstrap mast.

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- PN - [US2017350153](#) A1 20171207
- PNFP - US10214936 B2 20190226
- PR - US201715615322
20170606; US201662346982P
20160607
- AP - US201715615322 20170606
- DT - *; Rep
- CT - || R141 (A1)
[US4759414](#) A 19880726 [] (WILLIS CLYDE A [US]);
[US2003172599](#) A1 20030918 [] (FRINK SHELBY [US]);
[US7308953](#) B2 20071218 [] (BARNES R MICHAEL [US]);
[US7306055](#) B2 20071211 [] (BARNES R MICHAEL [US]);
[US2014224543](#) A1 20140814 [] (PADIRA REDDY [US], et al);
[US2014298735](#) A1 20141009 [] (VOGT DEWAYNE G [US]);



[US8904716](#) B2 20141209 [
] (DONNALLY ROBERT BENJAMIN
 [CN], et al);
[US2015008039](#) A1 20150108 [
] (WIJNING BERNARDUS DIEDERICK
 [NL], et al);
[US2015143759](#) A1 20150528 [
] (SPARKMAN JOSEPH MICHAEL [US],
 et al);
[US9091126](#) B2 20150728 [
] (THIESSEN JAY JOHN [CA], et al);
[US2015284950](#) A1 20151008 [
] (STRAMANDINOLI GIOVANNI [IT]);
[US9399890](#) B2 20160726 [] (MARK
 FLUSCHE [US]);
[US2016312543](#) A1 20161027 [
] (CHENG RUI [CN], et al);
[US9708861](#) B2 20170718 [
] (REDDY PADIRA [US], et al)
 - || STSE (A1)
[US2014224543](#) A1 20140814
 [Y] (PADIRA REDDY [US], et al)
 [Y] 1-11, 42-53
 * claim 1 | fig. 1 | col. 1 lines 46-50
 claim 42 | *;
[US4759414](#) A 19880726 [Y] (WILLIS
 CLYDE A [US])
 [Y] 1-11, 42-53
 * fig. 1 | fig. 2a | col. 1 lines 46-50
 | claim 2 | fig. 2, 50 | claim 3 |
 claim 4 | claim 5 | fig. 1, 66 | claim
 6 | fig. 1, 70 | claim 7 | fig. 2, 20
 col. 4 lines 56-58 | claim 8 | claim
 9 | claim 10 | fig. 1, 56, 60 | claim
 11 | claim 43 | claim 44 | claim 45
 | claim 46 | fig. 1, 66, 68 | claim 47
 | claim 48 | claim 49 | claim 50 |
 claim 51 | claim 52 | claim 53 *;
[US9091126](#) B2 20150728
 [A] (THIESSEN JAY JOHN [CA], et al);
[US7308953](#) B2 20071218
 [A] (BARNES R MICHAEL [US]);
[US2003172599](#) A1 20030918
 [A] (FRINK SHELBY [US]);
[US2016312543](#) A1 20161027
 [A] (CHENG RUI [CN], et al);
[US9708861](#) B2 20170718
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 [US], et al);
[US7306055](#) B2 20071211
 [A] (BARNES R MICHAEL [US]);

[US2015008039](#) A1 20150108
 [A] (WIJNING BERNARDUS
 DIEDERICK [NL], et al);
[US2014298735](#) A1 20141009
 [A] (VOGT DEWAYNE G [US]);
[US9399890](#) B2 20160726
 [A] (MARK FLUSCHE [US]);
[US2015284950](#) A1 20151008
 [A] (STRAMANDINOLI GIOVANNI
 [IT]);
[US8904716](#) B2 20141209
 [A] (DONNALLY ROBERT BENJAMIN
 [CN], et al)
 - || STSE (B2)
[US4759414](#) A 19880726 [] (WILLIS
 CLYDE A [US]);
[US7306055](#) B2 20071211 []
 (BARNES R MICHAEL [US]);
[US7308953](#) B2 20071218 []
 (BARNES R MICHAEL [US]);
[US8904716](#) B2 20141209 []
 (DONNALLY ROBERT BENJAMIN
 [CN], et al);
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[US2003172599](#) A1 20030918 []
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 (PADIRA REDDY [US], et al);
[US2014298735](#) A1 20141009 []
 (VOGT DEWAYNE G [US]);
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[US2015143759](#) A1 20150528 []
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 et al);
[US2015284950](#) A1 20151008 []
 (STRAMANDINOLI GIOVANNI [IT]);
[US2016312543](#) A1 20161027 []
 (CHENG RUI [CN], et al)
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[E21B15/003](#)
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 - B66F3/28 (NO, US)
 - B66F7/0633 (EP, US)
 - B66F7/08 (EP, US)
 - E04H12/345 (US)

- E21B7/02 (NO)
- E21B15/003 (EP, NO, US)
- PA - (A1 B2)
NABORS DRILLING TECH USA INC
[US]
- TI - (A1)
SIDE SADDLE **SLINGSHOT DRILLING RIG**
- (B2)
Side saddle **slingshot drilling rig**
- AB - (A1 B2)
A side saddle **slingshot drilling rig** includes a left and right substructure including a left and right lower box. The side saddle **slingshot drilling rig** includes a **drill rig** floor mechanically and pivotably coupled to the left and right lower boxes such that it is pivotably movable from a lowered position to a raised position. The **drill rig** floor includes a **V-door**. The **V-door** is positioned on the **V-door** side of the **drill rig** floor. The **V-door** side of the **drill rig** floor is oriented to face the right substructure. A mast coupled to the **drill rig** floor may include an open side, defining a mast **V-door** side. The mast **V-door** side may be oriented to face the right substructure. The mast may pivot into its raised position or may be a bootstrap mast.