

Greene's Energy Group, LLC,
Petitioner

v.

Oil States Energy Services, LLC,
Patent Owner

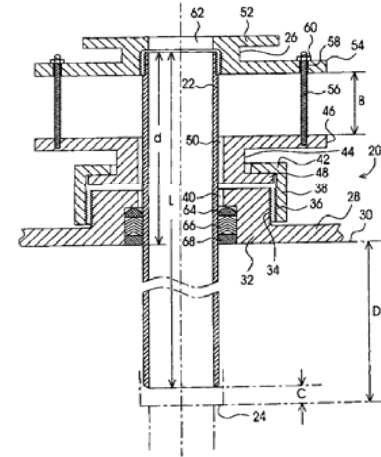
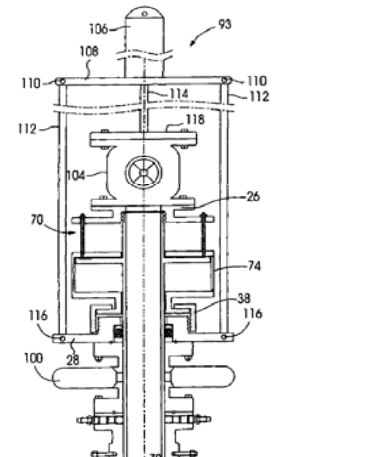
Case IPR 2014-00216
U.S. Patent 6,179,053

Greene's Oral Argument Presentation
February 11, 2015

U.S. Patent 6,179,053

"LOCKDOWN MECHANISM FOR WELL TOOLS REQUIRING FIXED POINT PACKOFF"

Challenged claims: 1 and 22

<p>(12) United States Patent Dallas</p> <p>(54) LOCKDOWN MECHANISM FOR WELL TOOLS REQUIRING FIXED-POINT PACKOFF</p> <p>(76) Inventor: L. Murray Dallas, 790 River Oaks Dr., Fairview, TX (US) 75069</p> <p>(*) Notice: Under 35 U.S.C. 154(b), the term of this patent shall be extended for 0 days.</p> <p>(21) Appl. No.: 09/373,418</p> <p>(22) Filed: Aug. 12, 1999</p> <p>(51) Int. Cl.⁷ E21B 23/03</p> <p>(52) U.S. Cl. 166/77.51; 166/341; 166/382</p> <p>(58) Field of Search 166/77.51, 348, 100/341, 338, 351, 381, 383, 382</p> <p>(56) References Cited</p> <p style="text-align: center;">U.S. PATENT DOCUMENTS</p> <table style="width: 100%; border: none;"> <tr><td>3,924,678</td><td>* 12/1975</td><td>Ashlstone</td><td>166/120</td></tr> <tr><td>4,241,786</td><td>12/1980</td><td>Bullen</td><td>.</td></tr> <tr><td>4,632,183</td><td>12/1986</td><td>McLeod</td><td>.</td></tr> <tr><td>4,867,243</td><td>9/1989</td><td>Garner et al.</td><td>.</td></tr> <tr><td>5,069,288</td><td>* 12/1991</td><td>Singeetham</td><td>166/348</td></tr> <tr><td>5,089,174</td><td>* 1/1992</td><td>Hynes</td><td>166/382</td></tr> <tr><td>5,145,006</td><td>* 9/1992</td><td>June</td><td>166/341</td></tr> </table>	3,924,678	* 12/1975	Ashlstone	166/120	4,241,786	12/1980	Bullen	.	4,632,183	12/1986	McLeod	.	4,867,243	9/1989	Garner et al.	.	5,069,288	* 12/1991	Singeetham	166/348	5,089,174	* 1/1992	Hynes	166/382	5,145,006	* 9/1992	June	166/341	<p>(10) Patent No.: US 6,179,053 B1</p> <p>(45) Date of Patent: Jan. 30, 2001</p> <table style="width: 100%; border: none;"> <tr><td>5,247,997</td><td>* 9/1993</td><td>Puccio</td><td>166/348</td></tr> <tr><td>5,540,282</td><td>* 7/1996</td><td>Dallas</td><td>166/379</td></tr> <tr><td>5,819,851</td><td>10/1998</td><td>Dallas</td><td>.</td></tr> </table> <p>* cited by examiner</p> <p>Primary Examiner—Frank Tsay (74) Attorney, Agent, or Firm—Dority & Manning, P.A.</p> <p>(57) ABSTRACT</p> <p>An apparatus for securing a mandrel of a well tool in an operative position in which the mandrel is packed off against a fixed-point in the well is described. The apparatus includes a mechanical lockdown mechanism to secure the tool to the wellhead and maintain the mandrel in proximity to the fixed-point for packoff, and a mechanical or a hydraulic mechanism to move the mandrel into the operative position while the mechanical lockdown mechanism is in a lockdown position. A second mechanical locking mechanism is provided to ensure the mandrel is maintained in the operative position in the event that hydraulic pressure is lost. The invention provides a mechanism to lock down well tools requiring fixed-point packoff in a well and advantageously improves the range of adjustment of the lockdown mechanism so that the length of a mandrel may be less precisely matched to a distance from a top of the wellhead to the fixed-point in the well.</p> <p style="text-align: center;">27 Claims, 9 Drawing Sheets</p> <div style="display: flex; justify-content: space-around;">   </div>	5,247,997	* 9/1993	Puccio	166/348	5,540,282	* 7/1996	Dallas	166/379	5,819,851	10/1998	Dallas	.
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'053 second embodiment with cylinder and piston

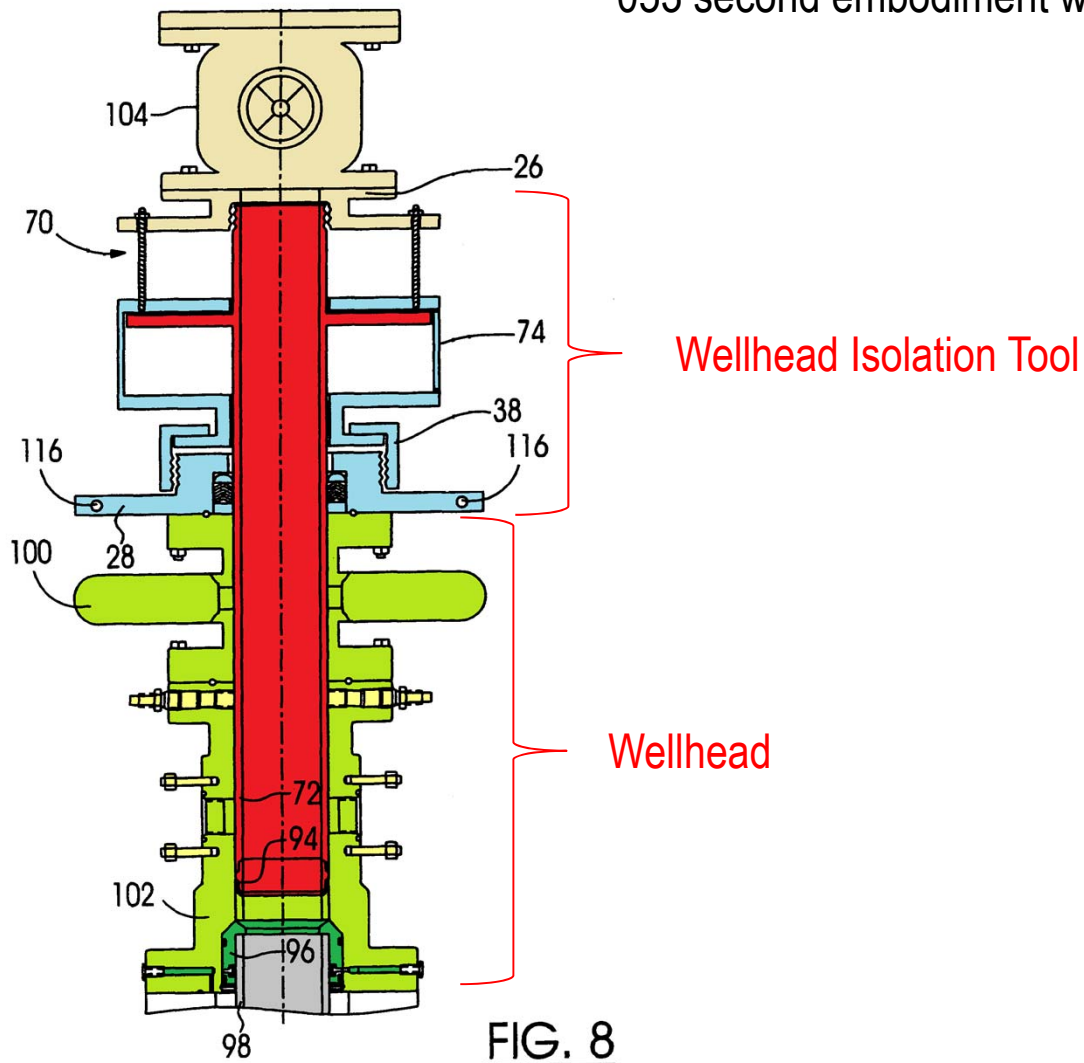


FIG. 8

U.S. Patent 6,179,053

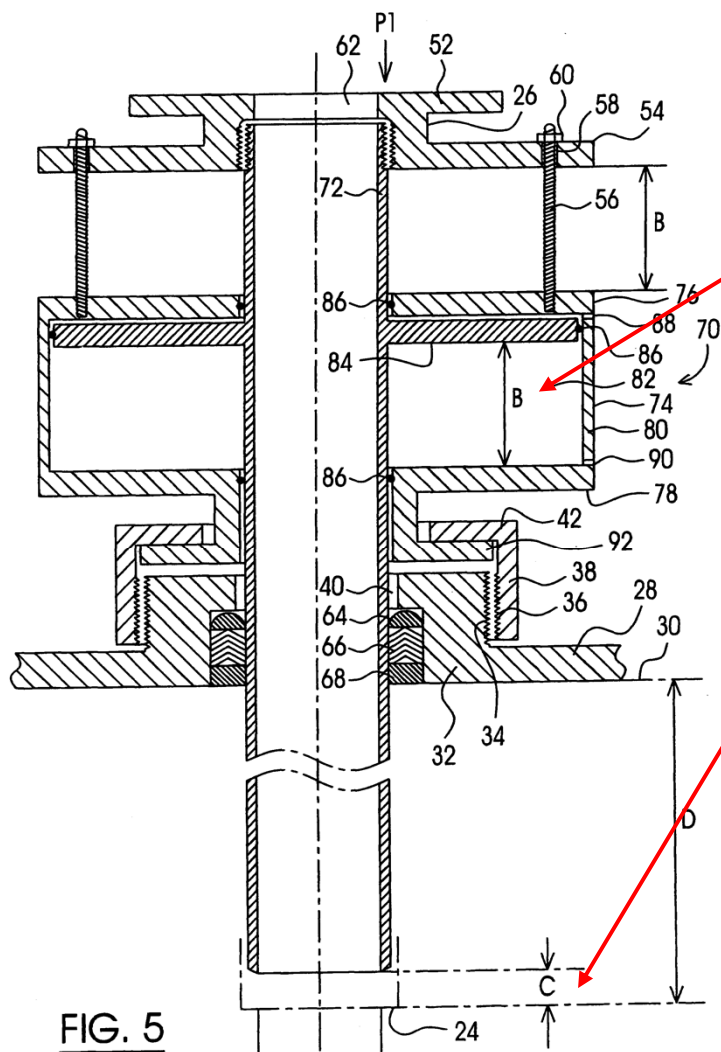


FIG. 5

“[A] range of adjustment ‘B’ is provided by a second locking member such that ‘B’ is greater than a distance ‘C’ between a bottom end of the mandrel 22 and the fixed packoff point 24 when the mandrel is locked down to the baseplate 28 . . .”

Col. 5, ll. 61 – 65.

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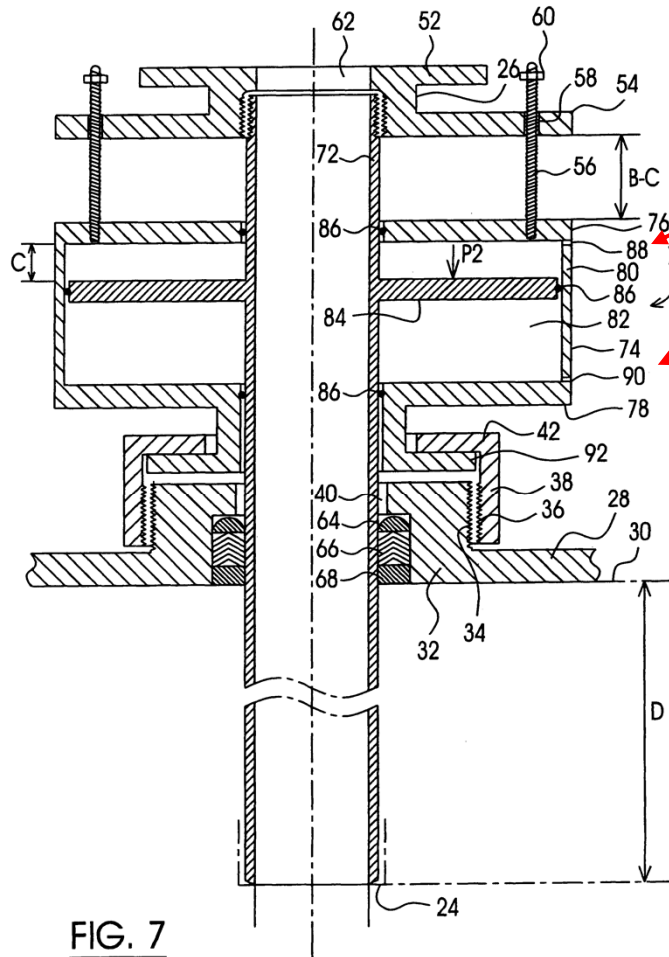


FIG. 7

“Pressurized hydraulic fluid is injected into the upper port 88 of the cylinder 74 while the hydraulic fluid below the piston 84 is drained from the lower port 90 so the mandrel 72 is forced downwardly to pack off against the fixed point 24 under a force P2 exerted on the piston by the pressurized hydraulic fluid, as shown in Fig. 7. The mandrel head 26 is thus forced downwardly over a distance ‘C’ so that the space between the mandrel head 26 and the upper wall 76 of the cylinder is reduced to B-C. **The mandrel is locked down in its operative position by the hydraulic force P2.**”

Col. 8, ll. 21 – 31.

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