Title: ORIENTATION SYSTEM FOR A SUBSEA WELL

Abstract: An outer wellhead housing has an external locator member (143) initially oriented in a desired direction. An inner wellhead housing lands in the outer wellhead housing (13). A BOP orientation spool (139) with an external orientation member (143) and an internal orientation member (141) lands on the inner wellhead housing and orients via the external locator member. A tubing hanger with an orientation member and associated tubing hanger running tool with another orientation member lower through the BOP orientation spool and orient as they land in the inner wellhead housing. A production tree (39) with an orientation member (155) on a lower end lands on the inner wellhead housing. The orientation member of the production tree engages the orientation member (127) of the tubing hanger to rotate the tree to a desired orientation.

Published:

— with international search report
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : E21B 29/12, 33/064, 33/076
US CL : 166/341,342,344,345,349,351,368,338

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 166/341,342,344,345,349,351,368,338

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>US 6,408,949 B (AQUILERA et al) 25 June 2002 (25.06.2002), see whole document.</td>
<td>1-11</td>
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<td>A</td>
<td>US 5,794,701 A (CUNNINGHAM et al) 18 August 1998 (18.08.1998), see figures.</td>
<td>1-11</td>
</tr>
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<td>A</td>
<td>US 4,095,649 A (CHATEAU et al) 20 June 1978 (20.06.1978), see document.</td>
<td>1-11</td>
</tr>
<tr>
<td>A</td>
<td>US 3,236,302 A (POSTLEWAITE) 22 February 1960 (22.06.1960), see whole document.</td>
<td>1-11</td>
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</tbody>
</table>

Further documents are listed in the continuation of Box C.

See patent family annex.

Date of the actual completion of the international search

31 October 2004 (31.10.2004)

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13 NOV 2004

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