
(12) **UK Patent Application**

(19) **GB** (11) **2 431 186** (13) **A**

(43) Date of Printing by UK Office **18.04.2007**

(21) Application No: **0625630.9**

(22) Date of Filing: **24.06.2005**

(30) Priority Data:
(31) **60582614** (32) **24.06.2004** (33) **US**

(86) International Application Data:
PCT/US2005/022751 En 24.06.2005

(87) International Publication Data:
WO2006/043999 En 27.04.2006

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(51) INT CL:
E21B 34/06 (2006.01) **B22D 31/00** (2006.01)
C22F 1/10 (2006.01) **E21B 34/00** (2006.01)

(52) UK CL (Edition X):
E1F FLM F302

(56) Documents Cited by ISA:
US 6632299 B1 **US 6138779 A**
US 5328763 A **US 5088554 A**
US 4869329 A **US 4630692 A**
US 20050284547 A1

(58) Field of Search by ISA:
INT CL **B22F, C22C, C22F, E21B, F16K**
Other: **EPO-Internal, WPI Data, PAJ, INSPEC,**
COMPENDEX

(54) Abstract Title: **Cast flapper with hot isostatic pressing treatment**

(57) Components of a subsurface safety valve are cast instead of machined for dramatic cost savings. In particular, the flapper is cast from a 718 nickel alloy and treated with the HIP process to increase strength and corrosion resistance while reducing porosity. Other downhole valve components are contemplated to be produced by the same technique and the materials can also be varied. Depending on the specific alloys, the resulting HIP components are either superior in performance (e.g. strength, corrosion resistance) or considerably cheaper to manufacture than their wrought counterparts.

GB 2431186 A continuation

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