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(71) Applicant (for all designated States except US): BAKER HUGHES INCORPORATED [US/US]; P.O. Box 4740, Houston, TX 77210-4740 (US).

(72) Inventors:


(54) Title: SEAL, SECTION OIL SEAL FOR SUBMERSIBLE PUMP ASSEMBLY

(57) Abstract: A seal section for location between a submersible rotary pump and motor has a primary mechanical seal and a secondary oil seal at the pump end of the seal section. The mechanical seal has rigid seal faces that slide in engagement with each other. The secondary seal has an inner portion that seals against the shaft of the seal section and an outer portion that seals against the housing. The seal section has a pressure equalizing device for equalizing pressure of motor lubricant with well bore pressure.
Published: with international search report

Date of publication of the international search report: 30 August 2007

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

INV. F04D13/10 F04D29/12

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)

F04D E21B F16J

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 practical, search terms used)

EPO-Internal

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
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<tr>
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<td>US 6 602 059 B1 (HOWELL ALAN [US] ET AL) 5 August 2003 (2003-08-05) the whole document</td>
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**S** document member of the same patent family.

Date of the actual completion of the international search: 6 June 2007

Date of mailing of the international search report: 15/06/2007

Name and mailing address of the ISA:

European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk
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Authorized officer:

Giorgini, Gabriele
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