

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
2 March 2006 (02.03.2006)

PCT

(10) International Publication Number
WO 2006/021162 A3

- (51) International Patent Classification:
F25B 30/02 (2006.01) F25B 9/00 (2006.01)
- (21) International Application Number:
PCT/CZ2005/000063
- (22) International Filing Date: 17 August 2005 (17.08.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
PV 2004-899 23 August 2004 (23.08.2004) CZ
- (71) Applicant and
- (72) Inventor: STREIT, Jirí [CZ/CZ]; Pflegerova 4, 792 01 BRUNTÁL (CZ).
- (74) Agent: KUBICKOVÁ, Kvetoslava; Czech Technical University in Prague, the Business and Innovation Centre of the Czech Technical University, Zikova 4, 166 33 Praha 6 (CZ).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,

GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv))

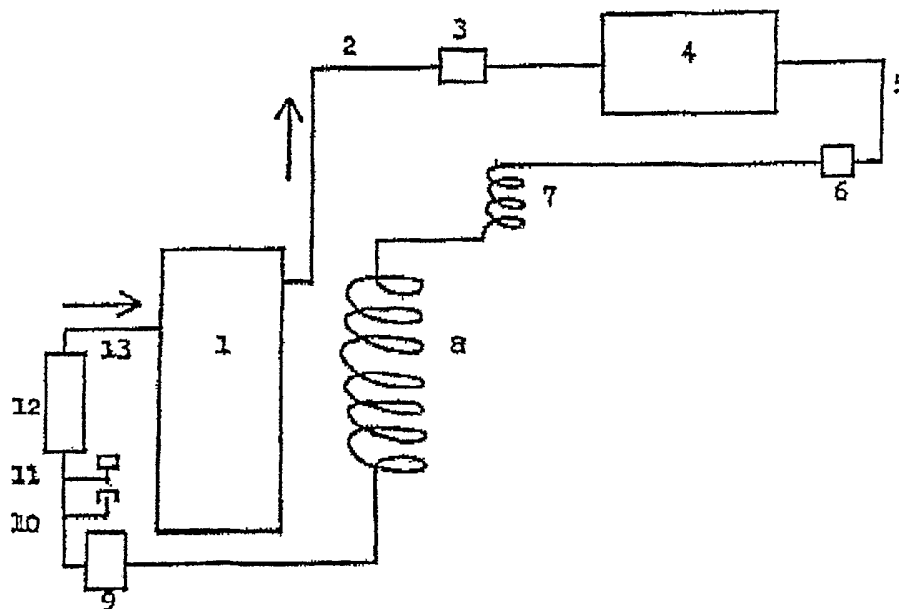
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
20 April 2006

[Continued on next page]

(54) Title: HEATING SYSTEM



(57) Abstract: A heating system consisting of at least one heating circuit comprising a compressor (1) with its delivery connected to the operating medium line (2) with the internal diameter of the metal tube of 3 to 70 mm; to the operating medium line (2) at least one heating unit (4) is connected and its delivery is connected to the operating medium return line (5). The operating medium return line (5) includes at least one throttle device (6), first cooling coil (7) with identical or smaller internal tube diameter than the operating medium line (2) followed by second cooling coil (8), which is connected to the operating medium pressure equalizer (12) and its delivery is connected to the input (13) of the compressor (1). The operating medium is selected from a group formed by fluorine, helium, ammonia, freon or their mixtures.

WO 2006/021162 A3



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

International application No
PCT/CZ2005/000063

A. CLASSIFICATION OF SUBJECT MATTER F25B30/02 F25B9/00		
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) F25B		
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		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 31 03 173 A1 (PFEIFER, JOHANN B) 26 August 1982 (1982-08-26) page 8, line 12 - page 10, line 7; figure 1	1-8
X	US 2002/014085 A1 (SAKAKIBARA HISAYOSHI ET AL) 7 February 2002 (2002-02-07) paragraphs '0048!', '0072!', '0073!', '0081!', '0107!; figure 14	1-8
A	US 5 103 897 A (CULLIMORE ET AL) 14 April 1992 (1992-04-14) the whole document	1-8
A	US 4 313 307 A (SISK ET AL) 2 February 1982 (1982-02-02) the whole document	1-8
----- -/--		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.		
<input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents :		
A document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family	
Date of the actual completion of the international search	Date of mailing of the international search report	
17 February 2006	24/02/2006	
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Ritter, C	

INTERNATIONAL SEARCH REPORT

International application No

PCT/CZ2005/000063

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2 526 529 A (INSTITUT FRANCAIS PETROLE) 10 November 1983 (1983-11-10) the whole document -----	1-8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/CZ2005/000063

Patent document cited in search report	Publication date	Patent family member(s)	Publication date																				
DE 3103173	A1	26-08-1982	NONE																				
US 2002014085	A1	07-02-2002	NONE																				
US 5103897	A	14-04-1992	NONE																				
US 4313307	A	02-02-1982	NONE																				
FR 2526529	A	10-11-1983	<table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">DE</td> <td style="width: 25%;">3264931</td> <td style="width: 25%;">D1</td> <td style="width: 25%;">29-08-1985</td> </tr> <tr> <td>DK</td> <td>461882</td> <td>A</td> <td>20-04-1983</td> </tr> <tr> <td>EP</td> <td>0081395</td> <td>A1</td> <td>15-06-1983</td> </tr> <tr> <td>FI</td> <td>823548</td> <td>A</td> <td>20-04-1983</td> </tr> <tr> <td>NO</td> <td>823441</td> <td>A</td> <td>20-04-1983</td> </tr> </table>	DE	3264931	D1	29-08-1985	DK	461882	A	20-04-1983	EP	0081395	A1	15-06-1983	FI	823548	A	20-04-1983	NO	823441	A	20-04-1983
DE	3264931	D1	29-08-1985																				
DK	461882	A	20-04-1983																				
EP	0081395	A1	15-06-1983																				
FI	823548	A	20-04-1983																				
NO	823441	A	20-04-1983																				