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(71) **Applicant** *(for all designated States except US)*: **CARRIER CORPORATION** [US/US]; One Carrier Place, Farmington, CT 06034-4015 (US).

(72) **Inventors; and**
(75) **Inventors/Applicants** *(for US only)*: **HEINBOKEL, Bernd** [DE/DE]; Am Rheinufer 21, 50999 Köln (DE). **DOUVEN, Christian** [DE/DE]; Wielandstrasse 15, 40699 Erkrath (DE).

(74) **Agent**: **KLUNKER. SCHMITT-NILSON.HIRSCH**; Destouchesstr. 68, 80796 Munich (DE).

(81) **Designated States** *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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Declarations under Rule 4.17:

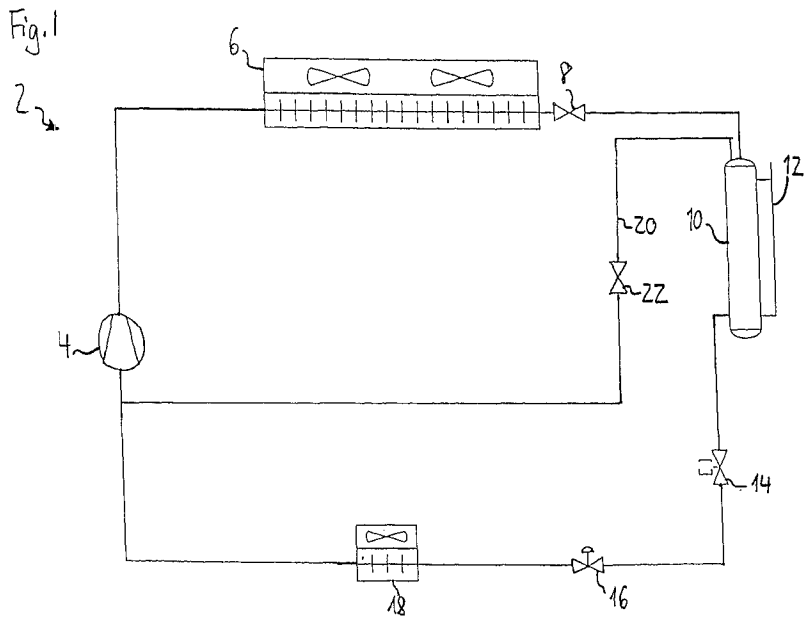
— *of inventorship (Rule 4.17(iv))*

Published:

— *with international search report (Art. 21(3))*

[Continued on next page]

(54) **Title**: REFRIGERATING SYSTEM AND METHOD FOR OPERATING THE SAME



(57) **Abstract**: A refrigerating system (2) according to the invention comprises a refrigerating cycle having a compressor (4), a condenser (6), a collecting container (10), an expansion device (16), an evaporator (18) and refrigerating circuits circulating a refrigerant therethrough; a by-pass line (20) comprising a by-pass valve (22), the by-pass line (20) connecting the gas space of the collecting container (10) with the suction line of the compressor (4); and a control unit that in operation allows switching between normal operation of the refrigerating cycle and refrigerant collecting operation in which the by-pass valve (22) is open and reduces the liquefying pressure in the condenser (6) such that the remaining liquid refrigerant in the condenser (6) is evaporated and led into the collecting container (10).

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:
18 March 2010

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2009/001060

A. CLASSIFICATION OF SUBJECT MATTER
INV. F25B49/00
ADD. F25B40/02 F25B7/00

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	EP 1 143 209 A (DAIKIN IND LTD [JP]) 10 October 2001 (2001-10-10) paragraphs [0086] - [0092]; figures 1,2	1,9-13, 15,18
X A	EP 1 582 827 A (DAIKIN IND LTD [JP]) 5 October 2005 (2005-10-05) column 13, line 21 - column 14, line 36; figures 1,8,9 column 17, line 16 - column 20, line 18	1,9-12 13,15,18
X	WO 2006/115053 A (DAIKIN IND LTD [JP]; SANGENYA HIDEKI [JP]; KITAGAWA TAKESHI [JP]) 2 November 2006 (2006-11-02) the whole document	1,10-13, 15
X	EP 0 685 692 A (MITSUBISHI ELECTRIC CORP [JP]) 6 December 1995 (1995-12-06) figures 7-9,24,32,65,67	1,10-12

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[X] Further documents are listed in the continuation of Box C.

[X] 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

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"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
22 January 2010	02/02/2010

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Léandre, Arnaud

Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2009/001060

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	WO 03/014637 A (LOWES ALBERT ROBERT [GB]) 20 February 2003 (2003-02-20) page 11, paragraph 2 - page 12, paragraph 1; figure 2	2,3,5-7, 10-12, 14,16,17 4,8,9,18
Y	DD 261 639 A1 (HALLE MASCHF VEB [DD]) 2 November 1988 (1988-11-02) the whole document	4,8,9,18
X	WO 2006/099378 A (YORK INT CORP [US]; KOPKO WILLIAM L [US]) 21 September 2006 (2006-09-21) paragraphs [0014], [0030], [0040], [0056], [0057]; figures 2,7	2,5-7, 10-12, 14,16,17
A	US 2007/033958 A1 (JANG JI-YOUNG [KR] ET AL) 15 February 2007 (2007-02-15) the whole document	1,9-13, 15,18
A	JP 09 113078 A (IDEMITSU KOSAN CO) 2 May 1997 (1997-05-02) abstract	9,18
A	DE 100 01 470 A1 (KARSCH MAX [DE]; HASSEL KARL HEINZ [DE]) 19 July 2001 (2001-07-19) figure 5	4,8
A	DE 26 36 055 A1 (BOSCH SIEMENS HAUSGERAETE) 16 February 1978 (1978-02-16) the whole document	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2009/001060

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1,9-13,15,18

   Refrigerating system or method using a by-pass line to connect the gas space of a collecting container with the suction line of a compressor.

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2. claims: 2-12,14,16,17,18

   Refrigerating system or method using a liquefying set to cool a collecting container.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
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