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**Datasheet for the decision
of 26 May 2010**

Case Number: T 1504/08 - 3.2.03

Application Number: 04778873.2

Publication Number: 1649224

IPC: F25B 41/04, F16K 5/06

Language of the proceedings: EN

Title of invention:
Hot gas bypass isolation

Applicant:
CARRIER CORPORATION

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 123(2), 54, 56

Relevant legal provisions (EPC 1973):
-

Keyword:
-

Decisions cited:
-

Catchword:
-



Case Number: T 1504/08 - 3.2.03

D E C I S I O N
of the Technical Board of Appeal 3.2.03
of 26 May 2010

Appellant: CARRIER CORPORATION
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Representative: Booth, Catherine Louise
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 4 March 2008
refusing European patent application
No. 04778873.2 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: U. Krause
Members: C. Donnelly
K. Garnett

Summary of Facts and Submissions

- I. The appeal lies from the decision of the examining division, posted on 4 March 2008, refusing the application for lack of inventive step of the subject-matter of the main and auxiliary requests filed with letter of 7 November 2007 with respect to GB-A-2 226 385 (D2).
- II. The applicant (hereinafter "the appellant") filed a notice of appeal against this decision by letter of 14 May 2008 received on 14 May 2008 and requested that the impugned decision be set aside. Together with the grounds of appeal dated 14 July 2008, received on 14 July 2008, the appellant filed a main request and first and second auxiliary requests as well as an indication that the first and second auxiliary requests could be combined to form a third auxiliary request.
- III. In a communication dated 27 January 2010, pursuant to Article 15(1) RPBA annexed to the summons to oral proceedings, the Board informed the appellant of its provisional opinion. In particular the Board indicated that the subject-matter of claim 1 according to the main request appeared to lack novelty with respect to D2.
- IV. By letter of 27 April 2010 the appellant withdrew the main request of 14 July 2008 and asked that the previously filed first auxiliary request be considered as the new main request. A copy of the new main request was also filed.

V. In a telephone interview conducted on 5 May 2010, the rapporteur informed the appellant that in order for the Board to be able to make a decision and possibly avoid the need to hold the oral proceedings scheduled for 27 May 2010, complete requests were required comprising not only a full set of claims, but also an adapted description. On the same occasion the rapporteur indicated that the subject-matter of claim 1 according to the main request filed on 27 April 2010 seemed to lack clarity and might constitute an intermediate generalisation, contrary to Article 123(2) EPC.

VI. By letter dated 17 May 2010 the appellant filed claims 1 to 5 as a new main request and an adapted description.

VII. Claim 1 according to the main request of 17 May 2010 reads:

"A refrigeration unit comprising a condenser (13) and a bypass line assembly, the bypass line assembly comprising:

a bypass line (17) for transporting a gas in a flow direction (27) from a condenser isolation valve (11) to a cooler isolation valve (15);

a manual throttle valve (25) comprising a throttle valve ball (41) comprising a pressure release passage (43); and

a bypass valve (23) located at a position along said bypass line (17);

wherein:

the manual throttle valve (25) is located between the condenser (13) and the bypass valve (23) and is upstream from said bypass valve (23); and

in a closed position of the manual throttle valve (25) the pressure release passage (43) provides a passage for flow of fluid from the portion of the bypass line (17) between the manual throttle valve (25) and the bypass valve (23) in an upstream direction toward the condenser (13)."

Reasons for the decision

1. The appeal is admissible.
2. *Article 123(2) EPC - Main request*
 - 2.1 Claim 1 according to the main request is based on the originally filed claim 1 together with the originally filed description as published at page 1, lines 7 to 17, page 3, lines 7 to 14 and figures 1 and 2 as regards the amendments relating to the position of the bypass line and valves within the refrigeration unit. The feature detailing the manual throttle valve operation is based on page 4, lines 9 to 15 and page 4, lines 24 to 25.
 - 2.2 Thus, the subject-matter of claim 1 was originally disclosed and meets the requirements of Article 123(2) EPC.
3. *Articles 54, 56 EPC - Main request*
 - 3.1 D2 cited by the examining division as rendering the subject-matter of claim 1 according to the first auxiliary request of 7 November 2007 obvious, deals with major pipeline assemblies prone to crusting

problems and implicitly relates to large pipeline installations such as would be found in the oil or chemical industries. Therefore, its teachings are not directly applicable to the field of refrigeration circuits without the benefit of hindsight.

3.2 US-A-5586579 (D1) describes a manual throttle valve (10) (see in particular figures 1 to 4 and column 2, lines 18 to 43) comprising a throttle valve ball (22) comprising a pressure release passage (30a, 30b); and wherein in a closed position of the manual throttle valve (10) the pressure release passage (30a,30b) provides a passage for flow of fluid. However, D1 does not mention problems that may arise in refrigeration units nor does it specify or hint at any detailed location of the valve in a refrigeration unit as now claimed.

3.3 As regards the further documents cited in the European search report: EP-A-1262348 (D3) (see in particular figure 1) shows a hot-gas bypass 22 around a condenser 25 comprising a bypass valve 24 and an expansion valve 29; EP-A-1103296 (D4) shows a compressor bypass assembly 17 comprising a bypass closing element 18 and a further control valve 19; and US-A-2002/0157407 (D5) shows a hot-gas condenser bypass 44, a high pressure cut-out valve 22 blocking the passage to the condenser and a solenoid valve 42 acting as the bypass valve.

3.4 However, although relating to refrigeration units, none of these documents shows or suggests a manual throttle valve provided with a pressure-release passage located between the condenser and the bypass valve upstream from the bypass valve; and wherein

in a closed position of the manual throttle valve the pressure-release passage provides a passage for flow of fluid from the portion of the bypass line between the manual throttle valve and the bypass valve in an upstream direction toward the condenser.

3.5 Such an arrangement prevents bursting of the bypass line and allows pressure to be relieved counter to the normal flow direction thereby enabling high pressures which may build up in the bypass line of the refrigeration device to be vented or relieved towards the condenser. It is feasible that components located towards the condenser are better suited for coping with high pressure surges.

3.6 Furthermore, none of the cited documents mentions the problem of pressure build-up and fracture of the hot gas by-pass line in a refrigeration system.

3.7 Hence, the subject-matter of claim 1 meets the requirements of Articles 54 and 56 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to grant a patent on the basis of the following documents:
 - Claims 1 to 5 of the main request filed with the letter dated 17 May 2010;
 - Description pages 1 to 4 filed with the letter dated 17 May 2010;
 - Figures 1 to 4 as published.

Registrar:

Chairman:

G. Nachtigall

U. Krause