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Datasheet for the decision of 24 March 2017

Case Number: T 0778/14 - 3.3.06

Application Number: 08728709.0

Publication Number: 2114550

IPC: B01D53/047

Language of the proceedings: EN

Title of invention:
PRESSURE SWING ADSORPTION METHOD AND SYSTEM FOR SEPARATING GAS COMPONENTS

Applicant:
Iacx Energy Llc

Headword:
PSA/IACX

Relevant legal provisions:
EPC Art. 123(2)

Keyword:
Amendments - added subject-matter (yes) - Main Request and First to Fourth Auxiliary Requests

Decisions cited:
T 1482/05

Catchword:

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Case Number: T 0778/14 - 3.3.06

D E C I S I O N
of Technical Board of Appeal 3.3.06
of 24 March 2017

Appellant: (Applicant)	Iacx Energy Llc 5400 LBJ Freeway, Suite 1070 Dallas, TX 75240 (US)
Representative:	Kellas, Fiona Maucher Jenkins 26 Caxton Street GB-London SW1H 0RJ (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 5 November 2013 refusing European patent application No. 08728709.0 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	B. Czech
Members:	G. Santavicca
	J. Hoppe

Summary of Facts and Submissions

I. The appeal lies from the decision of the Examining Division to refuse European patent application n° 08728709.0.

In the decision under appeal, the Examining Division came *inter* alia to the following conclusions:
- Amended Claims 1 and/or 13 according to each of the then pending Main Request and Auxiliary Requests 1 to 3 were objectionable under Article 123(2) EPC.
- Auxiliary Request 4 was not admitted into the proceedings, since it comprised the same Claim 1, found objectionable under Article 123(2) EPC, as Auxiliary Request 3.

II. With its statement setting out the grounds of appeal dated 14 March 2014, the Appellant (Applicant) submitted five sets of amended claims as Main Request and First to Fourth Auxiliary Requests.

Claim 1 according to the Main Request reads as follows (amendments to claim 1 of the application as filed made apparent by the Board):

"*1. A pressure swing adsorption method for separating gas components, comprising:*

pressurizing ***(202)*** *an adsorption bed* ***(12)*** *to an adsorption pressure using a first gas component of a feed gas* ***received from another adsorption bed in single step pressurization process wherein the other adsorption bed is operating in an adsorption phase****, the adsorption bed* ***(12)*** *including an adsorbent for substantially adsorbing a second gas component of a feed gas;*

*introducing the feed gas **(210)** to the pressurized adsorption bed **(12)**, wherein the first gas component of the feed gas substantially passes through the pressurized adsorption bed **(12a)** and the second gas component of the feed gas substantially adsorbs onto the adsorbent; and*

*depressurizing **(222)** the pressurized adsorption bed **(12a)** to recover at least a portion of the second gas component of the feed gas in the pressurized adsorption bed **(12)**.*"

Claims 1 according to the First to Fourth Auxiliary Requests all differ therefrom in that they additionally contain the following further feature, inserted before the reference to "*depressurizing (222) ...*":

"***recycling the feed gas for use by other adsorption beds***".

III. The Appellant was summoned to oral proceedings. In a communication issued in preparation for oral proceedings, the Board gave its provisional opinion on the salient issues of the case and *inter alia* raised objections under Articles 123(2) EPC against all pending claim requests.

IV. In its letter dated 17 March 2017, the Appellant informed the Board that it will not be attending the scheduled oral proceedings and requested "a written reasoned decision in respect of this case". The Appellant did not, however, submit any comment as regards the objections raised in the Board's communication.

V. By communication dated 22 March 2017, the Appellant was informed that the appointed oral proceedings had been

cancelled and that "[t]he Board understands the statement of the Appellant in his letter of 17 March 2017 not to attend the oral proceedings before the Board and his request for a written decision as a withdrawal of his request for oral proceedings."

VI. No further submission of the Appellant reached the Board after that.

VII. Requests

The Appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims according to the Main Request, auxiliarly on the basis of the claims according to one of the First to Fourth Auxiliary Requests, all requests submitted with the statement setting out the grounds of appeal.

VIII. The arguments of the Appellant of relevance for the present decision can be summarised as follows:

Main Request

This request corresponded to the Third Auxiliary Request filed during the oral proceedings before the Examining Division and was thus admissible.
The amended Claim 1 complied with Article 123(2) EPC and was also clear (Article 84 EPC).
More particularly, the amendments made found basis in the application as filed, page 8, lines 7 to 10, 16 and 17 and 26 to 32.
There was no need for Claim 1 to refer to a five-bed system, because the application as filed stated that "*any appropriate number*" of adsorption beds could be used.

First to Fourth Auxiliary Requests

These claims complied with Article 123(2) EPC and were clear (Article 84 EPC).
The insertion of the feature reading "*recycling the feed gas for use by other adsorption beds*" found basis in the application as filed, page 10, lines 22-23.

Reasons for the Decision

Procedural aspects

1. As indicated in the communication of 22 March 2017, the Board understood the statements and request submitted by the Appellant in its letter of 17 March 2017 (IV, *supra*) as being equivalent to a withdrawal of the request for oral proceedings and a request for a decision according to the state of the file (V, *supra)*, i.e. on the basis of the Appellant's written submissions.

   Since the Appellant did not wish to present further arguments at oral proceedings, they were cancelled in accordance with case law (see e.g. T 1482/05 of 8 February 2008, Reasons, 2).

2. The present decision is only based on objections already set out in the communication issued in preparation for the oral proceedings and on which the Appellant had the opportunity to comment (Article 113(1) EPC), but deliberately chose no to do so. The Board thus sees no reason to depart from these objections.

Main Request

3. The Main (claim) Request is identical to Auxiliary Request 3 filed during the oral proceedings held before the Examining Division, and dealt with in the decision under appeal. Its admissibility into the proceedings is thus not at stake.

4. Non-compliance with Article 123(2) EPC - Claim 1

4.1 The features "*received from another adsorption bed in a single step pressurization process wherein the other adsorption bed is operating in an adsorption phase*" are not comprised in any of the claims of the application as filed.

4.2 The passages of the description invoked as a basis for this amendment by the Appellant (page 8, lines 7-10, 16-17 and 26-32) belong to the detailed description of **one specific embodiment** (page 8, line 1, first sentence; Figures 1-3) of the process carried out in a "*system 10*" encompassing **five beds** (page 7, lines 13 and 14), or **a multiple of five beds** (page 7, line 18), wherein each of the beds operates in a different, separate phase of a **five-step process** (page 7, line 20).

4.3 The fact that other, more general passages of the application as filed invoked by the Appellant do not present as mandatory a five bed/steps process (page 6, lines 7 to 16) or even contain the express indication that "*any appropriate number of adsorption beds ... may be utilized*" (page 13, lines 5 to 7) have no bearing on the assessment of compliance of the amendment in question with Article 123(2) EPC, considering that the inserted feature was extracted from a description of

the specific five beds/steps method, and that "*any appropriate number of adsorption **beds***" (page 13, lines 6 and 7) may still refer to methods run in five steps but in a higher number of beds (e.g. a multiple of five).

4.4 In this respect, the statement "*any appropriate number of adsorption beds may be utilized*" (page 7, lines 14 and 15) pointed out by the Appellant, is a generic relativization, which is not further illustrated in the application as filed but, instead, narrowed down specifically by the subsequent statement "*five, or a multiple of five*" (page 7, lines 17 to 21), as the beds of system 10 are run in a five-step process.

4.4.1 Thus, adding the features quoted under 4.1, *supra*, whilst omitting a reference to the five-bed system and to the five-step process, amounts to a so-called "intermediate generalisation" of the process specifically disclosed in the application as filed, including other processes not disclosed in the application as filed and not requiring five beds and a five step process.

4.4.2 Moreover, the wording "*in a single step pressurization **process***" (emphasis added) is not disclosed *verbatim* in the application as filed. According to e.g. page 8, lines 20 and 21, "*the pressurization **phase***" (not the pressurization **process**) "*may occur in one step*".

4.4.3 Thus, the insertion of the features quoted under 4.1, *supra,* into Claim 1 of the application as originally filed finds no basis in the application as filed and therefore adds subject-matter extending beyond the contents of the application as filed, contrary to the requirements of Article 123(2) EPC.

First to Fourth Auxiliary Requests

5. Even if they were to be considered admissible into the proceedings, the Appellant's First to Fourth Auxiliary requests could not be allowed since they suffer from the deficiencies set out *infra*.

6. Non-compliance with Article 123(2) EPC

6.1 Independent Claim 1 (all auxiliary requests) contains a reference to the use of five adsorption beds, each bed operating in a different phase of a five-step pressure swing adsorption method.

6.2 However, independent Claim 1 according to each of the First to Fourth Auxiliary Requests contains the further added feature "*recycling the feed gas for use by other adsorption beds*".

6.3 This feature is more general in scope than the disclosure of the specific five-step process referred to e.g. in originally filed Claims 4 and 5, as well as on page page 10, lines 13-25, of the application as filed, according to which feed gas present in the voids of the adsorbent bed is recovered by displacing it using a flow of the strongly adsorbed component and then recycled to another adsorption bed.

6.4 It is not specified in Claim 1 (all auxiliary requests) which feed gas is to be recovered from where and how. In particular, none of the other amendments to Claim 1 (all requests) is of a nature to qualify the feature "*recycling the feed gas*" any further.

6.5 Hence, the incorporation of the feature "*recycling the feed gas for use by other adsorption beds*" into Claim 1

amounts to another intermediate generalisation, since the resulting Claim 1 is expressly directed to methods involving any kind of the feed gas recovery and recycling.

6.6 The respective Claims 1 according to each of the First to Fourth Auxiliary Requests (if considered admissible into the proceedings) are thus directed to subject-matter extending beyond the content of the application as filed, contrary to the requirements of Article 123(2) EPC.

Conclusion

7. None of the Appellant's requests is allowable.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Magliano B. Czech

Decision electronically authenticated