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Anmeldenummer / Filing No / N^o de la demande : 81 303 437.8

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Bezeichnung der Erfindung:

Title of invention:

Titre de l'invention :

An improved cyclic adsorption process

ENTSCHEIDUNG / DECISION

vom / of / du 15th October, 1984

Anmelder/Patentinhaber:

Applicant/Proprietor of the patent:

Demandeur/Titulaire du brevet :

Exxon Research and Engineering Company

Stichwort / Headword / Référence :

EPO / EPC / CBE

Art. 52(1), 54

"Novelty"

Leitsatz / Headnote / Sommaire

**Europäisches
Patentamt**

Beschwerdekammern

**European Patent
Office**

Boards of Appeal

**Office européen
des brevets**

Chambres de recours



Case Number: T 153 / 84

DECISION

of the Technical Board of Appeal 3.4.1

of 15th October 1984

Appellant:

**Exxon Research and Engineering Company
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USA**

Representative:

**Field, Roger Morton et al
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Decision under appeal:

**Decision of Examining Division 031
Office dated 26.04.84
application No 81 303 437.8
EPC**

**of the European Patent
refusing European patent
pursuant to Article 97(1)**

Composition of the Board:

Chairman: R. Kaiser

Member: J. Roscoe

Member: P. Ford

SUMMARY OF FACTS AND SUBMISSIONS

- I. European patent application No. 81 303 437.8 entitled "An improved cyclic adsorption process" filed on 27 July 1981, published on 3 February 1982 (publication No. 0045210) and claiming priority of 30 July 1980 from an earlier application in the USA was refused by decision of Examining Division 031 of the European Patent Office dated 26 April 1984 on the basis of Claims 1 and 2 filed on 18 June 1983, with the amendment to Claim 1 proposed in paragraph 3, page 2 of applicant's letter received 28 December 1983, and Claims 3 and 7 filed on 28 December 1983.

Claim 1, the only independent claim, was worded as follows:

1. A cyclic adsorption process comprising: passing a fluid stream containing an adsorbate to be removed therefrom through an adsorption zone and then through a heat storage zone, said adsorption zone containing an adsorbent and also heat capacity material, said heat capacity material being present in an amount sufficient to provide a temperature in said adsorption zone under operation conditions which is higher than the temperature that otherwise would exist in said adsorption zone under operating conditions; regenerating said adsorbent by passing a regeneration stream through said heat storage zone and then through said adsorption zone whereby said regeneration stream is heated in said heat storage zone and adding an incremental amount of heat to said regeneration stream at a point between said heat storage zone and said adsorption zone, said incremental amount of heat being sufficient to raise the temperature of said regeneration stream to a point sufficient for removing said adsorbate from said adsorbent in said adsorption zone whereby said adsorbent is regenerated.

- II. The ground for refusal was that the subject-matter of Claim 1, which differed from the original Claim 1 only in the addition of the words "also" and "and" underlined in the above text of the claim, is not novel (Articles 54 and 52(1) EPC) over the process disclosed in DE-C-608 464.
- III. On 15 May 1984 the appellant lodged an appeal against the decision. The appeal fee was duly paid. The appellant filed a Statement of Grounds on 4 June 1984.
- IV. The appellant requests cancellation of the decision to refuse, the grant of a patent with the claims on file at the time of refusal, and reimbursement of the appeal fee.

REASONS FOR THE DECISION

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is therefore admissible.
2. The only prior art document cited in the appealed decision is DE-C-608 464. This describes an apparatus (Figures 2 and 3) having three succeeding zones containing an adsorption medium (3), a heater (9, 10), and a heat store (2) respectively, together with inlet and outlet ducts (4-7) enabling streams of gas to be passed through the zones in the order in which they are mentioned above or in the reverse order. The only information regarding the nature of the adsorption medium is that it contains charcoal (Kohle). Two stages of an adsorption process are described starting from a situation in which the adsorption medium already contains benzene. In the first stage water in the form of steam is passed through the adsorption

medium to drive out the benzene and then through the heat store which absorbs and stores heat from the steam. Some of the steam is retained as water in the adsorption medium and is driven out in the second stage, which involves passing dry air through the zones in the reverse order, the heat taken up by the air in passing through the store serving to further the evaporation of the water from the adsorption medium.

3. It is clear from the first sentence on page 3 of the document that in the process the water retained is actually adsorbed by the charcoal and from the following sentence that the charcoal itself has a significant heat capacity, facts which the appellant does not contest. On the other hand there is absolutely no mention of the use of a combination of two different materials in the zone in which adsorption occurs.
4. The Examining Division therefore relied in its decision inter alia on the proposition that the requirements of Claim 1 as regards the content of the adsorption zone are fulfilled by a zone containing only a single material, such as the charcoal of the cited document, which is not only an adsorbent but can also appropriately be termed a heat capacity material.
5. In respect of this the Board notes that, in the phrase, "said adsorption zone containing an adsorbent and also heat capacity material" used in the claim, the word "adsorbent" is itself a noun and not an adjective qualifying the following noun "material", as is clear from the subsequent reference to "said adsorbent". This fact clearly indicates that the zone must contain, in addition to an adsorbent, heat capacity material.

6. That the adsorbent and heat capacity material are discrete entities is further emphasised by the contrasting references later in the claim, and also in the appendant claims, to "said heat capacity material" and "said adsorbent" respectively. Indeed the requirements of appendant claims 2 and 3 that the adsorbent and heat capacity material are present in a weight ratio satisfying particular criteria cannot be met if the adsorbent is also the heat capacity material. The description moreover makes no reference to use of a zone containing only a single material serving the dual role of adsorbent and heat capacity material and provides no other indication which might lead the reader to the conclusion that the claim should be construed to cover this situation.
7. Therefore, since, as indicated above, the cited document does not disclose an adsorption zone containing two different materials the subject-matter of Claim 1, and hence that of the remaining Claims, which are all directly or indirectly appendant to it, is novel.
8. In view of this conclusion the Board considers it unnecessary to enquire whether Claim 1 includes other features which are not disclosed in the cited document as the appellant alleges.
9. Although the process according to the claims is novel the Board has not investigated whether the application satisfies the other requirements of the EPC and it is not clear whether the Examining Division has reached a final conclusion on this matter. In order not to deprive the applicant of his right to an examination in two instances the Board deems it appropriate to remit the application to the Examining Division for further prosecution, in accordance with the provisions of Article 111(1) EPC.

10. A request was made for reimbursement of the Appeal Fee on the grounds that the rejection of the application was due to the Examining Division's incorrect interpretation of the wording of Claim 1.

Reimbursement of the appeal fee is ordered, where the Board of Appeal deems an appeal to be allowable if such reimbursement is equitable by reason of a substantial procedural violation (Rule 67 EPC).

According to Article 97(1) EPC the Examining Division shall refuse an application if it is of the opinion that such application or the invention to which it relates does not meet the requirements of the Convention. Of course in doing so it has to ensure that it is not contravening the provisions of Article 113(1) EPC.

In reaching its opinion it will inevitably have to interpret various documents and in particular the wording of the claims of the application. In doing so it is simply following the procedure laid down in Article 97(1). Thus, even though the decision under appeal was based on an interpretation of Claim I found by the Board to be incorrect, no procedural violation has occurred. It follows that the request for reimbursement of the appeal fee must be rejected.

ORDER

It is decided that

1. The decision under appeal is set aside.
2. The case is remitted to the Examining Division for further prosecution on the basis of the documents on which that decision was based.
3. The appellants' request for refund of the appeal fee is dismissed. ()

Registrar

Chairman

J. RÜCKERL

R. KAISER