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Datasheet for the decision of 21 February 2018

Case Number: T 1931/14 - 3.2.04

Application Number: 99905691.4

Publication Number: 1053392

IPC: F02B43/00, F01K23/06, F25J3/04

Language of the proceedings: EN

Title of invention:
COMBINED CRYOGENIC AIR SEPARATION WITH INTEGRATED GASIFIER

Patent Proprietor:
GE Energy (USA), LLC

Opponent:
L'AIR LIQUIDE, Société Anonyme pour L'étude et L'exploitation des procédés Georges Claude

Headword:

Relevant legal provisions:
EPC Art. 54(2)

Keyword:
Novelty - main request (yes) - functional technical features of a process

Decisions cited:
T 0304/08, T 0848/93, G 0002/88

Catchword:

In the context of a method it is important to differentiate between different types of stated purpose, namely those that define the *application* or *use* of a method, and those that define an *effect* arising from the steps of the method. Where the stated purpose defines the specific application of the method, in fact it requires certain additional steps which are not implicit in the remaining features, and without which the claimed process would not achieve the stated purpose. On the other hand, where the purpose merely states a technical effect which inevitably arises when carrying out the other remaining steps of the claimed method and is thus inherent in those steps, such a technical effect has no limiting effect because it is not suitable for distinguishing the claimed method from a known one. (point 2.2.4)

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Case Number: T 1931/14 - 3.2.04

D E C I S I O N
of Technical Board of Appeal 3.2.04
of 21 February 2018

Appellant: (Patent Proprietor)	GE Energy (USA), LLC 4200 Wildwood Parkway Atlanta, GA 30339 (US)
Representative:	Bedford, Grant Richard GPO Europe GE International Inc. The Ark 201 Talgarth Road Hammersmith London W6 8BJ (GB)
Respondent: (Opponent)	L'AIR LIQUIDE, Société Anonyme pour L'étude et L'exploitation des procédés Georges Claude 75, Quai d'Orsay 75321 Paris Cedex 07 (FR)
Representative:	Mercey, Fiona Susan L'Air Liquide SA Direction de la Propriété Intellectuelle 75, Quai d'Orsay 75321 Paris Cedex 07 (FR)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 9 July 2014 revoking European patent No. 1053392 pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	A. de Vries
Members:	S. Oechsner de Coninck
	T. Bokor

Summary of Facts and Submissions

I. The appellant (proprietor) lodged an appeal received on 17 September 2014 against the decision of the opposition division dispatched on 9 July 2014 on the revocation of the patent EP 1 053 392, and simultaneously paid the appeal fee. The statement setting out the grounds of appeal was received on 19 November 2014.

II. The opposition was based on Article l00(a) together with 52(1), 54(1) and 56 EPC and Articles 100(b) and (c) EPC. The Opposition Division came to the conclusion that the subject-matter of claim 1 of the patent as granted was not novel, and that the auxiliary request lacked clarity within the meaning of Article 84 EPC. In its decision the division considered *inter alia* the following document:
D6: US 5 265 429

III. Oral proceedings were held on 21 February 2018, in the absence of the duly summoned respondent, who announced with letter of 9 October 2017 that it will not attend.

IV. The appellant requests that the decision under appeal be set aside, and that the patent be maintained as granted (main request) or in an amended form on the basis of the auxiliary request filed 20 May 2014.

- The respondent requests in writing that the appeal be dismissed.

V. The wording of the relevant independent claims as granted reads as follows:
"A process for producing oxygen to fuel an integrated gasifier combined cycle power generation system at a

rate which corresponds to the power demand of the integrated gasifier combined cycle power production during peak demand periods while maintaining peak efficiency when the integrated gasifier combined cycle power and generation system operates at varying power production, comprising
cryogenically distilling air in an air separation unit comprising distillation means (5), heat exchange means (8) and a single liquid oxygen cold storage vessel (21);
wherein during reduction of the power demand from the integrated gasifier combined cycle system, relative to its nominal power production demand, liquid oxygen is produced in excess of that required by the integrated gasifier combined cycle system and such excess liquid oxygen is collected and stored in the liquid oxygen cold storage vessel (21) of said air separation unit; and
wherein during an increase in the power demand from the integrated gasifier combined cycle system, relative to its nominal power production demand, in an operation mode (i) excess liquid oxygen is withdrawn from the liquid oxygen cold storage vessel (21) and vaporized at elevated pressure by means of a liquid oxygen pump (31) and a vaporizer (33), and
in another operation mode (ii) excess liquid oxygen is withdrawn from the liquid oxygen cold storage vessel (21) and combined with liquid oxygen from the distillation means (5) not in excess and vaporized at elevated pressure in indirect heat exchange with the air undergoing cryogenic distillation."

VI. The Appellant's arguments are as follows:
The decision of the Opposition Division ignores the wording of claim 1 requiring to fuel an integrated gasifier combined cycle system. The decisions T 0848/93

and T 0304/08 are based on different facts and cannot be regarded as divergent decisions.

VII. The respondent's arguments are as follows:
The process for producing oxygen disclosed in D6 is suitable to fuel an integrated gasifier combined cycle system, thus the process disclosed in D6 is novelty destroying for the subject-matter of claim 1. T 304/08 also confirmed the lack of novelty where the (presumed) novelty resided solely in the use of an otherwise known method. A referral to the Enlarged Board of Appeal should be considered if this decision diverges from the older decision T 0848/93.

Reasons for the Decision

1. The appeal is admissible.

2. Main request - Novelty

2.1 Claim 1 as granted defines a process for producing oxygen to fuel an integrated gasifier combined cycle power generation system. Thus the process concerns the production of oxygen for the purpose of fuelling a power generation system of the integrated gasifier combined cycle type, commonly referred to by its acronym IGCC.

The impugned decision concluded that the process defined in claim 1 lacked novelty on the consideration that claim 1 is merely related to a "process for producing oxygen" that is restricted to the production of oxygen in a cryogenic air separation system, while the stated use "for fuelling an IGCC plant" did not limit the claimed method but merely indicated its suitability for that purpose.

2.2 Claim 1 explicitly refers to a process and therefore belongs to the category of method claims that define their subject-matter in terms of physical activities (cf. G 2/88, OJ EPO 1990, 93, Reasons 2.2).

2.2.1 According to established case law, where a claim concerns an apparatus differing from a known apparatus only as regards the use indicated, then the use is not an apparatus feature, meaning that two apparatuses (differing only in the intended use) are identical in terms of structure. If the known apparatus is suitable for the claimed use, the claimed invention lacks novelty. If, however, the claim is for a process, the situation is not comparable. In such a case, the use feature is a functional process feature comparable in category with the other features (steps) of the process (Case Law of the Boards of Appeal, 8th edition 2016, I.C.8.1.3 c); T 848/93, point 3.2 of the Reasons). In that respect it should be observed that the passage F-IV 4.3 of the Guidelines for Examination in the EPO referred to by the respondent is also based on the same case law, and also emphasises that a method claim is to be interpreted differently from a product claim. The Guidelines base their example on the method that was decided upon in T 848/93, namely a method for remelting galvanic layers, and state that the part "for remelting ..." should not be understood as meaning that the process is merely suitable for remelting galvanic layers.

2.2.2 The respondent also refers to decision T 304/08, that concluded the purpose of a claimed method not to be a functional feature thereof. Pointing at this apparent contradiction, the respondent also stated that there may be an occassion for a referral to the Enlarged

Board of Appeal, but did not submit any formal request to this end. The Board however is unable to identify any contradiction between the two decisions. T 848/93 decided that a method for remelting galvanic layers on circuit boards encompassed a functional step of the method (T 848/93, point 3.2), in other words the claimed purpose "for remelting galvanic layers on circuit boards" required that the method actually be carried out by melting a galvanic layer on a circuit board. In that case the claimed purpose defined the specific *application* or *use* of the method, and such application or use in itself represented a limitation of the method.

2.2.3 The situation in T 304/08 is quite different. There the method concerned application of a particular surface active agent to a specified absorbent product and defined its purpose "for reducing malodor " in terms of an intended technical effect. That effect would distinguish the claimed method from the prior art, all other features being known therefrom. The Board however held, reasons 3.3.2, that such an effect might represent a limiting functional technical for the use of a substance as in G2/88 and G6/88 (OJ EPO 1990, 93) but that this did not apply to a method for producing a product. It could at best be interpreted as meaning suitable for (producing that effect); in any case (reasons 3.3.5) the effect was found to be inherently present in the prior art.

2.2.4 The two decisions demonstrate that in the context of a method it is important to differentiate between different types of stated purpose, namely those that define the *application* or *use* of a method, and those that define an *effect* arising from the steps of the method and implicit therein. Where the stated purpose

defines the specific application of the method, in fact it requires certain additional steps which are not implied by or inherent in the other remaining steps defined in the claim, and without which the claimed process would not achieve the stated purpose (e.g. no actual re-melting of a galvanic layer would occur). In this manner the stated application represents a genuine technical limitation of the method and the claimed method must be applied in that manner. On the other hand, where the purpose merely states a technical effect which inevitably arises when carrying out the other remaining steps of the claimed method (e.g. the malodor is inherently reduced) and is thus inherent in those steps, such a technical effect has no limiting effect because it is not suitable for distinguishing the claimed method from a known one.

2.2.5 In view of the different situations treated in both decisions, the Board does not regard them as reaching divergent conclusions for a similar factual condition. The Board therefore sees no need for a referral to the Enlarged Board of Appeal under Article 112(1)(a) EPC. Apart from that, the a referral is also not necessary because the Board does not require it for its decision, given that the novelty of the claim is apparent on the basis of other features as well, see point 2.3 below.

2.2.6 The Board further concludes that in a manner analogous to the case underlying T 848/93, in the present case the stated application to fuel an IGCC represents a functional limitation of the claimed method.

2.3 In addition, the claimed method includes explicitly defined method steps that are specifically limited to and in fact further define the particular application

to producing fuel (in an amount necessary) for an IGCC. These steps are the following:
"wherein during reduction of power demand from the integrated gasifier combined cycle system .... liquid oxygen is produced in excess of that required by [that] system"
"wherein during an increase in power demand from the integrated gasifier combined cycle system... excess liquid is withdrawn ..."

These two steps explicitly instruct the skilled person to produce oxygen or withdraw liquid oxygen depending on the power demand of the IGCC, that the process for producing oxygen would need to fuel. In that these two steps are conditional to (reduction or increase in) IGCC power demand, they are limited thereby. In the Board's opinion at least these two steps indicate that the claimed process for producing oxygen cannot be regarded in isolation of the ultimate use of the oxygen produced to fuel an IGCC power system. Rather, the process and the two steps are to be carried out depending on the power demand of the IGCC power system, indicating that claim must be understood as relating to the specific application of the oxygen production process to IGCC power generation system. These parts of the claim thus define functional features of that process i.e. physical activities of steps that the process has to perform in order to fuel the IGCC as a function of its power demand: on the one hand during low demand from the IGCC to collect and store the excess oxygen produced, and during increased power demand from the IGCC to operate in two different operation modes i) and ii) defined in the claim. Indeed, the claim even seems to imply the necessity to monitor the power demand of the IGCC and to forward

this information to the oxygen production and distribution system.

2.4 In D6 there appears to be no mention, direct or otherwise, of application to IGCC power systems in D6, much less that oxygen should be produced or withdrawn depending on power demand from the IGCC power system as required by the above two steps. D6 discloses a cryogenic air separation system for producing gaseous oxygen and seeks to more effectively employ liquid oxygen storage to alleviate or dampen fluctuations in a cryogenic rectification plant operating rate (col 1, lines 50-55). As possible user of the oxygen thus produced, a steel mill is mentioned as an example in column 5, line 4. Therefore neither the specific application of fuelling an IGCC, nor the steps of taking into account a power demand from an IGCC to operate the process for producing oxygen of D6 is directly and unambiguously disclosed, nor has this indeed been argued by the respondent opponent.

2.5 It may thus be left undecided, whether or not the liquid storage tank 650 of D6 represent the single liquid storage vessel according to claim 1, or whether the liquid oxygen withdrawn from that vessel is further processed according to both operation modes i) or ii) defined in claim 1. Indeed the absence of any explicit or implicit acquisition or record of the power demand of an IGCC to initiate any of the measures or steps defined in the claim suffices in itself to establish novelty. This would also be the case even if, as assumed be the respondent and opposition division, the process for producing oxygen disclosed in D6 would also be suited to feed an IGCC system.

2.6 For the above reasons, the Board concludes that the decision was wrong to conclude lack of novelty of the claimed process vis-a-vis D6, and the subject-matter of claim 1 according to the main request as granted is thus new in respect of this cited prior art brought forward under Article 54(1) with 54(2) EPC.

3. Remittal

The Board has considered the opposition ground based on Article 100(a) together with 52(1), 54(1) EPC decided by the Opposition Division in its decision and challenged in the appeal, and has reached the conclusion that claim 1 of the main request is thus allowable in this respect.

However, the Opposition Division did not examine and decide the opposition ground of inventive step also raised in opposition in relation to many different combination of documents. The Board therefore considers it appropriate to exercise its discretion under Article 111(1) EPC to remit the case to the department of first instance for further prosecution. This is particularly so as the appellant also agrees to the remittal, and the respondent has not objected thereto.

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 for further prosecution.

The Registrar: The Chairman:

G. Magouliotis A. de Vries

Decision electronically authenticated