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**Datasheet for the decision
of 13 May 2013**

Case Number: T 1871/10 - 3.3.06

Application Number: 04025516.8

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B01D 63/04, B01D 65/02,
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Language of the proceedings: EN

Title of invention:
A permeate collection assembly

Patent Proprietor:
Zenon Technology Partnership

Opponents:
Koch Membrane Systems GmbH
Siemens Industry, Inc.

Headword:
Permeate collection assembly/ZENON

Relevant legal provisions (EPC 1973):
EPC Art. 100(c)

Keyword:
"Added subject-matter (yes) - all requests"

Decisions cited:
-

Catchword:
-



Case Number: T 1871/10 - 3.3.06

DECISION
of the Technical Board of Appeal 3.3.06
of 13 May 2013

Appellant I: Zenon Technology Partnership
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office posted
6 July 2010 concerning maintenance of European
patent No. 1527810 in amended form.

Composition of the Board:

Chairman: B. Czech
Members: E. Bendl
U. Tronser

Summary of Facts and Submissions

- I. The appeals lie from the decision of the opposition division concerning the maintenance of the European patent No. 1 527 810 in amended form.
- II. The patent in suit had been granted on a fourth generation divisional application stemming from the earliest application published as WO 97/06880 A2 (hereinafter referred to as "parent application").
- III. The opposition division concluded that claim 1 as granted was objectionable under Article 100(c) EPC 1973 due to an extension beyond the content of the parent application as filed. The first subsidiary request then on file was regarded to meet the requirements of the EPC. Claim 1 according to said first subsidiary request reads as follows:

"1. A permeate collection assembly having,

a) a permeate collection means (120, 120b) having walls (111, 112, 121, 122);

b) a solid mass of a potting material (101) having a first face and a second face, the potting material extending to and adhesively securing to the walls (111, 112, 121, 122) of the permeate collection means (120, 120b), the second face of the potting material (101) forming a permeate collection zone (128, 129) with the permeate collection means (120, 120b);

c) a plurality of hollow fibre membranes (12) sealed in the potting material (101), the membranes (12)

extending from the first face of the potting material (101) and having open ends protruding from the second face of the potting material (101) into the permeate collection zone (128, 129); and,

d) an air tube (103, 127) passing through the potting material (101), the air tube (103, 127) having a first end protruding from the first face of the potting material (101) and a second end protruding from the second face of the potting material (101), the second end in communication with a plenum or manifold (107) through which a gas can be supplied,

wherein the potting material (101) extends to and adhesively secures to the air tube (103, 127)."

- IV. In its statement of grounds of appeal, appellant I (referred to hereinafter as the proprietor) maintained that claim 1 as granted was not objectionable under Article 100(c) EPC 1973.
- V. In their respective statements of grounds of appeal, the appellants II and III (referred to hereinafter as the opponents), *inter alia* maintained that the amended claim 1 held allowable by the opposition division went beyond the content of the parent application as filed.
- VI. With its reply dated 4 April 2011 to the statements of grounds of appeal of the opponents, the proprietor filed three sets of amended claims as first to third subsidiary requests.
- VII. In their respective replies, both opponents objected that the proprietor's subsidiary requests also went

beyond the original disclosure of the parent application.

- VIII. Oral proceedings were held on 13 May 2013, during which the debate focussed on the issue of allowability of the amendments to claim 1 having regard to Article 100(c) EPC 1973. In reaction, the proprietor filed a newly amended main request and a newly amended first subsidiary request.

Claim 1 according to said amended **main request** is identical to claim 1 held allowable by the opposition division (see point III above).

Claim 1 according to said amended **first subsidiary request** differs from claim 1 according to the main request in that the expression "*an air tube*" is replaced by "*air tubes*" in part d) of the claim and in that the expression "*the air tube*" is replaced by "*each air tube*" in the characterising part of this claim.

Claim 1 according to the **second subsidiary request** differs from claim 1 according to the main request by the appended additional feature "*and the fibre membranes (12) are unconfined in a shell of a module*".

Claim 1 according to the **third subsidiary request** differs from claim 1 according to the second subsidiary request by the additional features "*the fibre membranes (12) are made from braided yarn covered with a water-insoluble polymeric material*" inserted before the expression "*the fibre membranes (12) are unconfined in a shell of a module*".

IX. The proprietor requested that the decision under appeal be set aside and the patent be maintained on the basis of the new main request filed during the oral proceedings or, in the alternative, on the basis of the new subsidiary request 1, filed during the oral proceedings, or on the basis of one of the subsidiary requests 2 or 3 filed with the letter dated 4 April 2011.

The opponents requested that the decision under appeal be set aside and that the patent be revoked.

X. Having regard to the question of whether or not the respective claims 1 according to all the pending requests are objectionable under Article 100(c) EPC 1973, the parties essentially argued as follows:

The **opponents** held the following:

- The combination of features of the respective claims 1 according to all requests was not derivable from the parent application.
- In particular, the adhesion of the air tubes to the potting material had not been described in the parent application.
- The parent application did not disclose devices with a single header.
- The claimed assemblies could also not be regarded as intermediate products of the process of preparing devices with a pair of headers, as figures 5, 6 and 8 of the parent application comprised further essential

features which were not reflected by the wording of the respective claims 1.

- Therefore, the claims according to all requests did not meet the criterion stipulated in Article 100 (c) EPC 1973 with regard to a divisional application.

The **proprietor** held the following:

- The feature concerning the adhesion of the air tubes to the potting material was implicitly disclosed by virtue of the method used for producing the permeate collection assembly, disclosed in the parent application.
- Support for devices with single headers could be found in figures 5, 6 and 8 and the corresponding passages of the description on pages 23 to 25 of the parent application.
- An assembly with a single header could alternatively be regarded as an intermediate product of the process for producing a device comprising a pair of headers and was thus disclosed in the parent application.
- Therefore, the claims were not objectionable under Article 100 (c) EPC 1973.

Reasons for the Decision

1. Admissibility of the main and first subsidiary request

1.1 The main request differs from the first subsidiary request held allowable by the opposition division only in that method claim 4 was deleted therefrom.

Compared to the claims according to the subsidiary request previously on file, the amendments in claims 1 and 3 according to the first subsidiary request at issue are only of a minor nature and did not raise issues of a particular complexity.

1.2 Accordingly, the opponents raised no objection with regard to the admissibility of these two requests.

1.3 The board thus decided to admit the main and first subsidiary requests to the proceedings despite their late filing at the oral proceedings (Article 13(1) and (3) RPBA).

2. Main request - Objection under Article 100 (c) EPC 1973

2.1 The combination of features of claim 1 is not directly and unambiguously derivable from the disclosure of the parent application as originally filed. This is shown in the following with respect to two of said features, which were exhaustively considered at the oral proceedings:

2.2 Feature (i): "*the potting material (101) extends to and **adhesively** secures to the air tube (103, 127)*" (emphasis added).

2.2.1 The proprietor argued that, although this feature was not explicitly mentioned in the parent application as filed, the adhesive securing of the potting material to the air tube would be an implicit feature of a permeate collection assembly prepared in accordance with the invention. According to the proprietor, this was apparent from e.g. figures 5, 6 and 8, which described devices wherein air tubes 103 are potted in and pass through the header 101 (see also the description of the parent application on page 7, lines 18 to 26 and page 8, and lines 1 to 4). According to the proprietor, feature (i) was the result of potting the air tube(s) in the header according to the methods described in this connection in the parent application as filed (page 23, line 8 to page 24, line 14; page 24, line 27 to page 26, line 1).

2.2.2 However, as was pointed out during the oral proceedings, a given potting material may or may not adhesively secure to the surface of an air tube embedded therein, depending on the chemical properties of the potting material and of the properties of the outer surface of the air tube.

Thus, considering that the description of the devices shown in figures 5, 6 and 8 of the parent application does not include sufficient details in this respect, it cannot be directly and unambiguously derived therefrom that the potting material used would necessarily **adhesively** secure to the air tube, rather than merely snugly embedding it.

2.3 Feature (ii): Undefined constructional features at the **second end** of the fibres, only "**a permeate collection means (120, 120b)**", "**a solid mass of potting material**" and "**a permeate collection zone**" (emphasis added) being mandatory

2.3.1 Claim 1 of the main request defines a "*permeate collection assembly*" comprising a plurality of hollow fibre membranes. Claim 1 only specifies the constructional design of the claimed assembly at one of the two respective ends of said hollow fibres. The wording of this claim thus undisputedly encompasses *inter alia* permeate collection assemblies which do not comprise a second, distinct "*header*" with permeate collection means.

However, for the board, a permeate collection assembly having all the features of present claim 1, but not comprising such a second, distinct header is not directly and unambiguously derivable from the parent application as originally filed in view of the following considerations:

2.3.2 The board observes that, according to the definition given on page 1, lines 9 to 15 of the parent application, the term "*skein*" as used in the application refers to an integrated combination of structural elements including *inter alia* i) a multiplicity of vertical fibres of substantially equal length, ii) a **pair** of headers in each of which are potted the opposed terminal portions of the fibres so as to leave their ends open and iii) permeate collection means held peripherally in fluid-tight engagement with each header so as to collect permeate

from the ends of the fibres. The term "*skein*", which is used throughout the disclosure, therefore implies *inter alia* that an upper and a lower header with permeate collection means are used.

Accordingly, independent claims 1, 5 and 8 of the parent application as filed refer only to devices for collecting permeate by means of a "*skein*" expressly including two such headers, one at each of end of the fibres.

2.3.3 The remaining claims 9 to 14 of the parent application as filed are directed to a method for forming a header for a *skein* and for a header obtainable by said method.

In addition it is to be noted that none of claims 1 to 14 of the parent application as filed expressly refers to an adhesive securing of the potting material forming the header with air tubes passing therethrough. Claims 9 to 14 do not even mention gas distribution means, let alone air tubes potted into a header.

2.3.4 For the proprietor, figures 5, 6 and 8 and the corresponding passages of the description on pages 23 to 25 constitute a support for a permeate collection assembly as now claimed, which may include only one header with associated permeate collection means.

However, the cited passages of the parent application as filed do not allow to draw this conclusion for the following reasons:

The passages of the description corresponding, respectively, to figures 5, 6 and 8 all refer to one or

more "skeins" (see page 7, lines 18 and 25; page 8, line 2; page 23, lines 12 and 24; page 24, line 28), as defined earlier in the application (see point 2.3.2 above). Therefore, figures 5, 6, and 8, each of which displays a device comprising air tubes passing through a lower header of a skein, must be regarded to illustrate only a part of the permeate collection assembly respectively referred to, the latter in each case necessarily comprising at least one **pair** of headers with permeate collection means having the features recited under point 2.3.2 ii) and iii).

2.3.5 According to a further argument of the proprietor in this context an assembly with a single header represented an intermediate product implicitly formed in the course of the process for fabricating an assembly with a pair of headers.

However, at the oral proceedings, the proprietor made the statement that processes A-C are inapplicable to the device according to figure 5. Indeed, even more generally, the board observes that none of the production processes A to D described on pages 21 to 23 of the parent application as filed refers to the incorporation of air tubes.

Moreover, the board is not convinced that such an intermediate assembly, wherein the second ends of the fibres are neither closed by, nor incorporated into a header with collecting means, could actually be considered to constitute a working "*permeate collection assembly*". However, even assuming purely for the sake of argument that this was the case, a process for preparing a "skein" including a header incorporating

air tubes, said process comprising as a **first**, distinct **step** the fabrication of only the **header comprising air tubes** embedded therein, let alone adhesively secured to the potting material, would not be directly and unambiguously derivable from the parent application as filed.

For this reason, an intermediate product showing all the features of claim 1 but comprising no second header of the type set out under point 2.3.2 above has not been disclosed either in the parent application.

2.4 Present claim 1 thus contains, on the one hand, a limiting feature (feature (i)) not disclosed in the parent application as filed and is, on the other hand, also directed to subject-matter corresponding to feature (ii) not originally disclosed but generated by an undue generalisation of more specific embodiments disclosed in the description and drawings of parent application as filed.

2.5 Claim 1 is this objectionable under Article 100 (c) EPC 1973, insofar as it refers to divisional applications.

3. Subsidiary requests 1 to 3 - Objections under Article 100(c) EPC 1973

3.1 Compared to claim 1 according to the main request, the respective claims 1 according to the three subsidiary requests all contain additional features. However, none of these additional features further qualifies the features (i) and (ii) addressed above. Therefore, their incorporation into claim 1 has no bearing on the considerations under points 2.2 to 2.4 above.

3.2 Therefore, the reasoning regarding claim 1 according to the main request applies *mutatis mutandis* to the respective claims 1 according to the subsidiary requests 1 to 3.

3.3 Since their subject-matter is not directly and unambiguously derivable from the parent application as originally filed they are likewise objectionable under Article 100 (c) EPC 1973.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar

The Chairman

D. Magliano

B. Czech