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D E C I S I O N
of 3 February 1997

Case Number: T 0187/95 - 3.4.2
Application Number: 90203135.0
Publication Number: 0436973
IPC: B01D 45/16, B04C 5/10
Language of the proceedings: EN

Title of invention:
Device for separating liquids and/or solids from a gas stream

Patentee:
N. V. NEDERLANDSE GASUNIE

Opponent:
-

Headword:
Separator/Gasunie

Relevant legal provisions:
EPC Art. 56, 113(1)
EPC R. 67

Keyword:
"Inventive step (yes - after amendment)"
"Substantial procedural violation (yes) - meaning of the term
'grounds' in Article 113(1) - reimbursement of appeal fee
(yes)"

Decisions cited:
T 0951/92, G 004/92

Catchword:
The term 'grounds' in Article 113(1) EPC means the essential reasoning on which the Examining Division has based its decision.



Case Number: T 0187/95 - 3.4.2

D E C I S I O N
of the Technical Board of Appeal 3.4.2
of 3 February 1997

Appellant:

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Representative:

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Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 25 November 1994
refusing European patent application
No. 90 203 135.0 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: E. Turrini
Members: R. Zottmann
L. C. Mancini

Summary of Facts and Submissions

- I. The Appellant (Applicant) lodged an appeal against the decision of the Examining Division refusing the European patent application No. 90 203 135.0 with publication No. 0 436 973 the Appellant also requested the reimbursement of the appeal fee.

The reason given for said decision was that the subject-matter of claim 1 did not involve an inventive step in the light of prior art disclosed in document

D1: US-A-3 822 533

when combined with prior art of document

D2: US-A-2 686 573.

- II. In a communication pursuant to Article 110(2) EPC, the Board of Appeal expressed its preliminary opinion that the application with claims as originally filed or according to the first and second auxiliary requests did not meet the provisions of the EPC and informed the Appellant by which amendments the existing deficiencies could be removed.

- III. To meet these objections, the Appellant reformulated the claims and filed an adapted description, thereby adopting the suggestions of the Board. He maintained his request for reimbursement of the appeal fee, put forward new arguments supporting this request and requested oral proceedings in case the Board intended to refuse said reimbursement.

Moreover, the Appellant requested that the decision under appeal be set aside and a patent be granted on the basis of the following documents:

Claims: 1 to 9 as filed with the letter dated 12 September 1996;

Description: pages 1, 1A, 2, 2A, 3, 4, 4A, 5, 5A and 6 as filed with the letter dated 12 September 1996;

Drawings: sheets 1/2 and 2/2 as originally filed.

IV. Claim 1 reads as follows:

"1. Device for the separation of liquids and/or solids from a gas stream, comprising a cylindrical vessel (2) with a virtually vertically set axis, provided with: a top compartment (1) to which the gas stream is supplied; a middle compartment (4) comprising a number of blades (5) shaped helicoidally around the axis; a bottom compartment for the separation of the liquid and/or solids and a coaxial gas discharge pipe (10) projecting upwards from the bottom compartment (6) through the middle (4) and top (1) compartments, around which the helicoidal blades (5) are fixed, in which bottom compartment (6) at least one settling plate (7) with a circular outer rim lies in a plane perpendicular to said axis and under the gas discharge pipe (1), and at least one vertical baffle (14, 15) extending diametrically from one wall of the vessel to the other and being provided beneath said plate (7), characterized in that the overall height of each baffle (14, 15) is at least 1.0 times the internal diameter of the vessel (2) and in that the distance from the bottom edge of said plate (7) to the top edge (19) of each baffle (14, 15) is at least 0.5 times the internal diameter of the vessel (2)."

Claims 2 to 9 are dependent on claim 1. ✓

V. The Appellant's arguments are summarized as follows:

Arguments why present claim 1 involves an inventive step were not submitted. However, the following arguments put forward with respect to a preceding version of claim 1 seem to apply also to present claim 1: It is not obvious for the skilled person to go beyond the preferred embodiments of D1 with a baffle and to leave the optimal situation defined by a plurality of proportions. No evidence was given why a skilled person first would contemplate to adapt the size of the baffle. It remains also unexplained why he would pick out from D2 only the size of the baffle but not the way of mounting.

Reimbursement of the appeal fee is justified among other reasons by the following reason: The decision was based on arguments which were in part communicated only for the first time in the decision under appeal. Thus, the Appellant was deprived from his right to be heard under Article 113(1) EPC. This was a substantial procedural violation.

Reasons for the Decision

1. The appeal is admissible.
2. The Board of Appeal is satisfied that the amended claims and the amended description do not contain subject-matter which extends beyond the content of the originally filed documents and thus do not contravene the requirements of Article 123(2) EPC.

3. *Novelty*

3.1 D1 discloses a device for the separation of liquids and/or solids from a gas stream with all the features of the preamble of claim 1 of the application-in-suit. The separator comprises at least a second settling plate (11, 12) under the first one (10). In the two embodiments with baffles (claim 3, column 3, line 34 to column 4, line 2 and Figures 3 and 4), the latter are fixed under the second settling plate (12) and fixed to it leaving no space between said lower settling plate and the baffles. The height of the baffles is limited to 0.125 to 0.5 times the diameter of the vessel. It is nowhere mentioned in D1 which of the two possible diameters - the inner or outer diameter - is meant in this context. Apart from the fact that the difference between the two diameters is not significant, it is obvious that the **inner** diameter is meant since for other dimensions only the inner or internal diameter is used (see e. g. claims 1 and 2 and column 2, lines 23 to 32).

Beyond the differences between these embodiments and the subject-matter of claim 1 as defined by the characterizing part, the alternative of claim 1 of the application-in-suit with only one settling plate is distinguished from D1 by the number of settling plates which amount to at least two (see claim 1 of D1).

In case of more than one such plate, the distance from bottom edge of the at least one plate (and thus of each of such plate) to the top edge of each baffle is at least 0.5 times the internal diameter of the vessel, whereas the lower one (12) of the settling plates of D1 is fixed to the top edge of each baffle (13) and thus the bottom edge of said plate (12) has no distance from the top edge of each baffle.

- 3.2 From D2 a cyclone separator is known with a cylindrical vessel. At least one baffle (19; 21, 22) is mounted on a support rod which is freely suspended in brackets across the diameter of the vessel. The gas stream is supplied by means of a tangentially mounted inlet pipe at the top of the vessel and leaves the vessel by way of an outlet pipe in the middle of the top part of the vessel. Blades or the like to guide the gas stream or a settling plate or the like are not provided. The vertical baffle is equal to 0.5 to 2 times the diameter of the vessel. An embodiment of vertical baffle consists of two vertical plates (21, 22) mounted at right angles to each other. More than two plates arranged one above the other at various angles to each other are possible.
- 3.3 The remaining documents of the Search Report are less relevant than D1. The subject-matter of claim 1 is, therefore, novel in the sense of Article 54 EPC.

4. *Inventive Step*

- 4.1 From section 3. above follows that the embodiments of Figures 3 and 4 and, respectively, of claim 3 of D1 constitute the nearest prior art with respect to claim 1. The differences between this prior art and claim 1 - see section 3.1 - have the effect that the fine moving particles are less entrained into the gas discharge pipe by the upward gas flow (see the application as originally filed, page 1 last paragraph to the first paragraph of page 2).

Therefore, the problem underlying the solution according to claim 1 is to improve the separator in such a manner that virtually no solids, particularly no fine particles, are entrained into the gas discharge pipe.

4.2 The provision of at least one radial baffle in D1 is unambiguously related to the condition that their height amounts to 0.125 to 0.5 of the diameter of the vessel (see claim 3 and column 3, paragraph 5 : " ... the dimensions of ... baffles ... are consistent with the numerical values mentioned in the description").

In view of the differences between D1 and claim 1 of the application-in-suit and taking into account that many other options for a solution exist (see 4.3 below, second paragraph) and that flow and separation characteristics are strongly dependent on the geometry of the flow channel and already minor changes of the dimensions and of the relative arrangement of the parts of the separator could have great and mostly unpredictable influence on these characteristics, the skilled person could not arrive at the apparatus of claim 1 on the basis of the teachings of D1 alone.

4.3 As far as the baffle dimensions are concerned the skilled person would not take into consideration the teachings of D2 since the separator of D2 differs considerably from that of D1 (see sections 3.1 and 3.2 above). In addition, document D2 states that cyclone separators with a complicated system of vanes and the like - which applies apparently to the separator according to D1 - are unsuitable for use in this connection (see column 1, lines 18 to 23). Thus, the skilled person would stick to the ranges of vertical baffle length as defined in D1.

Moreover, in order to solve the problem the skilled person could envisage other changes of the baffles and the lower part of the vessel. For example, he could provide a plurality of vertical plates one above the other at various angles to each other, provide ribs on the inner surface of the bottom part of the vessel projecting inward, reduce the distance between the

bottom of the vessel and lower edge of the baffles and/or vary the shape of the bottom part of the vessel which is, according to the drawings of D1, slightly curved and almost even.

As to the distance of the at least one settling plate to the baffle(s), D2 cannot hint at the solution since the separator does not comprise a settling plate.

- 4.4 The Board has also considered the remaining documents of the Search Report and found them non-prejudicial to claim 1 when combined with D1.
- 4.5 Therefore, the subject-matter of claim 1 involves an inventive step as defined in Article 56 EPC.
5. The amendment ordered by the Board, namely the deletion of the passage ", in which bottom ... beneath said plate" on page 1, lines 16 to 21, concerns an obvious clerical error since it was typed twice.
6. Since claim 1, the dependent claims and the other application documents comply with the (remaining) requirements of the EPC, a patent can be granted on the basis of the documents according to section III amended according to section 5 above.
7. *Procedural Matter*

In view of the fact that the Appellant filed amended application documents which comply with the requirements of the EPC and for which the Appellant requested grant of a patent and in view of the delay of the procedure due to the procedural violation of the

Examination Division, remittal of the case to the Examining Division for further prosecution would mean an inequitable decision. The Board, therefore, makes use of his power under Article 111(1) EPC to decide within the competence of the department which was responsible for the decision appealed.

8. *Request for Refund of the Appeal Fee*

In a single communication, the Examining Division, with respect to the limitation of the baffle dimensions in D1, argued in substance:

- (a) The skilled person knows that the effectiveness of a baffle to break the swirling motion of a fluid in a vessel and thus prevention of stirring up of particles can be improved by axial extension of the baffle.
- (b) Therefore, he could not be prevented by the limitation in D1 from applying a longer baffle as disclosed in D2.

The Appellant, in his letter of reply, produced counter arguments against the above reasoning.

In the subsequent decision, the Division (with respect to the limitation of the baffle dimensions in D1) argued in substance:

- (A) The claims of D1 set up a lot of ranges for the dimensions of the parts of the separator but D1 does not give any hint that a separator not fulfilling one or more of them is unsuitable for solving the problem.

- (B) When trying to reduce the resuspension of the particles, the skilled person would never draw the conclusion that the separator of D1 would work well only within said ranges, and, therefore, he is not bound to said ranges.
- (C) He would first put into question whether the size of the baffle is correctly chosen.
- (D) In a separate section (2.3), in substance the argument (a) of the communication was repeated, but was introduced by the term "Additionally".
- (E) In section 3, the Division came to a conclusion corresponding to (b) of the communication.

From the foregoing follows that argument (D) - already introduced in the preceding communication - merely confirms argument (C) but does not constitute an alternative to the new arguments (A) and (B), let alone an alternative to the chain of arguments (A) through (C). This view is emphasized by the fact the argument (D) is introduced by the term "Additionally". Vice versa, the arguments (A) and (B) cannot be seen as a confirmation or supererogation of the arguments submitted in the communication. Thus, the arguments (A) and (B) are essential and indispensable for the reasoning of the Division in its decision under appeal. They were not communicated to the Appellant before the decision.

As a consequence, the Appellant was not clearly informed before the decision of the essential factual reasons on which the finding of non-compliance was based, so that he did not have a proper opportunity to comment on such reasons and/or to propose amendments so as to avoid refusal of the application. Following decision T 0951/92 (OJ EPO 1996, from page 53 on), the

term "grounds or evidence" in Article 113(1) EPC should not be narrowly interpreted. In particular, in context of examination procedure the word "grounds" does not refer merely to a ground of objection to the application in the narrow sense of a requirement of the EPC which is considered not to be met. The word "grounds" should rather be interpreted as referring to the essential reasoning, both legal and factual, which leads to refusal of the application. Though opinion G 004/92 (OJ EPO 1994, from page 149 on) takes the view that new arguments communicated to a party for the first time in the decision may in principle be used to support the reasons for a subsequent decision against said party, this opinion is, however, clearly restricted to a particular situation which is hardly comparable with that of the present case: The arguments were put forward for the first time in oral proceedings in an *inter partes* case against a party who has been duly summoned but who failed to appear at said oral proceedings.

Since the communication did not contain the essential grounds in the above sense, the appealed decision was issued in violation of Article 113(1) EPC. Such a violation is clearly a substantial procedural violation within the meaning of Rule 67 EPC justifying reimbursement of the appeal fee.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to grant a patent on the basis of the following application documents as agreed by the Board of Appeal:

Claims: 1 to 9 as filed with the letter dated 12 September 1996;

Description: pages 1, 1A, 2, 2A, 3, 4, 4A, 5, 5A and 6 as filed with the letter dated 12 September 1996, whereby the passage "
", in which bottom ... beneath said plate" on page 1, lines 16 to 21 is deleted;

Drawings: sheets 1/2 and 2/2 as originally filed.

3. The request for reimbursement of the appeal fee is allowed.

The Registrar:

The Chairman:

P. Martorana

E. Turrini

