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Anmeldenummer / Filing No / N° de la demande : 85 850 194.3

Veröffentlichungs-Nr. / Publication No / N° de la publication : 0 164 326

Bezeichnung der Erfindung: System for diaphragm distillation
Title of invention:
Titre de l'invention :

Klassifikation / Classification / Classement : B01D 13/00, C02F 1/00

ENTSCHEIDUNG / DECISION

vom / of / du 6 February 1990

Anmelder / Applicant / Demandeur : Svenska Utvecklingsaktiebolaget (SU)
Swedish National Development Co.

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Art. 56

Schlagwort / Keyword / Mot clé : "Inventive step (denied)"
"Non-appearance at Oral Proceedings"

Leitsatz / Headnote / Sommaire

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Case Number : T 321/88 - 3.4.1

D E C I S I O N
of the Technical Board of Appeal 3.4.1
of 6 February 1990

Appellant : Svenska Utvecklingsaktiebolaget (SU)
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Representative : Örtenblad, Bertil Tore
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Decision under appeal : **Decision of Examining Division 031 of the European Patent Office dated 18 April 1988 refusing European patent application No. 85 850 194.3 pursuant to Article 97(1) EPC**

Composition of the Board :

Chairman : K. Lederer
Members : C. Black
C. Payraudeau

Summary of Facts and Submissions

I. European patent application No. 85 850 194.3 (publication No. 0 164 326) was refused by decision of the Examining Division.

II. The decision was based on Claims 1 to 6 received on 28 October 1987 of which Claim 1 reads as follows:

"1. A system for diaphragm distillation of a liquid, comprising a diaphragm, through which vapour, but not liquid can pass, and a condensation surface for condensing vapour having passed through the diaphragm, and necessary passageways, where the system comprises pipes located one within the other, c h a r a c t e r i z e d i n that the system comprises one or several units, each of which comprises a plurality of said pipes located one within the other viz. a first (1) inner pipe, a second (2) pipe located outside thereof and consisting of a diaphragm of the aforesaid kind, and a third (3) pipe located outside the second (2) pipe, which first (1) and third (3) pipes are of a gas-tight material, that said unit is surrounded by a fourth (4) gas-tight pipe, and a first (5) passageway is formed by the first (1) pipe, and a second (6), a third (7) and a fourth (8) passageway are formed between said pipes (1,2;2,3;3,4) in successive order in the direction from the inside outward, and that said passageways (5,6,7,8) in radial order are intended to transport a warm medium (WW) for the supply of heat, to transport the liquid (SW) to be distilled, to condensate gas having passed through the diaphragm (2) and to transport distillate (PW), which has been condensed, where condensation of the gas takes place against a condensation surface consisting of the passageway surface opposite to

the diaphragm, and, respectively, to transport a cold medium (CW) for heat removal."

Claims 2 to 6 are appendant claims relating to particular embodiments of the system according to Claim 1.

III. The reason for the refusal was that the subject-matter of Claim 1 did not involve an inventive step having regard to the disclosure in

EP-A-0 094 543
and US-A-3 540 986

taking into account the common general knowledge attributable to the person of average skill in the art.

IV. An appeal was filed against this decision. The Appellant (applicant) requested cancellation of the decision, grant of a patent on the basis of the claims specified in the decision and, as an auxiliary request, the appointment of oral proceedings.

V. The gist of the Appellant's argumentation is that in US-A-3 540 986 the vapour which passes through the diaphragm is not condensed by contact with a condensation surface but by vapour compression, the heat of compression of the vapour in the innermost channel warming up the distillant in the adjacent channel. Since this document discloses a different kind of apparatus, there is no suggestion to arrange a condensation surface which is tubular. EP-A-0 094 543 indeed discloses condensation by contact with a condensation surface. However, although it also discloses a tubular diaphragm, it does not disclose a corresponding tubular condensation surface. Neither document discloses arranging within the same unit (as the distillation elements) the heat exchanger for warming the

liquid to be distilled and for cooling the vapour which has passed through the membrane.

VI. In a communication in accordance with Article 11(2) of the Rules of Procedure of the Boards of Appeal, accompanying the summons to oral proceedings, the Board informed the Appellant of its provisional opinion that the subject-matter of Claim 1 did not involve an inventive step, the content of the communication in that respect being as follows:

The system claimed in Claim 1 differs from the disclosure in US-A-3 540 986 in requiring four concentric tubes instead of three. Moreover, US-A-3 540 986 does not specifically disclose the condensation of the pervaporated vapour on a condensation surface; it is rather directed to recovering the pervaporated material by vapour compression followed by condensation in a heat exchanger. However, column 3, lines 16 to 22 indicates that instead of using the heat of compression to warm up the liquid to be submitted to pervaporation, this can be heated by passing hot water or steam through the membrane support, that is the innermost tube. Now the average skilled person knows that condensing the pervaporated material directly on an adjacent condensation surface is an alternative to the vapour compression method - see e.g. EP-A-94543, page 15, lines 25 to 27 and also the acknowledgement of prior art in the application in suit, page 1, lines 7 to 15. From the passage in column 3, lines 16 to 22 of US-A-3 540 986 he appreciates that by passing water or steam through the central tube the need for vapour compression is removed and the possibility of the alternative means (an adjacent condensation surface) is opened up. Outer tube 1 presents itself as a suitable condensation surface and for cooling it, the passage formed by a further concentric tube would seem to be an obvious choice.

The Board further informed the Appellant that it could agree with the reasons given by the Examining Division for finding that Claims 2 to 6 were not allowable and referred to paragraph XIII of the reasons for the decision refusing the application.

VII. By telecopy on 2 February 1990 the Appellant's representative informed the Board that he would not participate at the oral proceedings.

VIII. At the oral proceedings the Board confirmed that no-one was present to represent the duly summoned Appellant. Therefore, the main request made in the Notice of Appeal (see paragraph IV above) is deemed to be maintained. There has, moreover, been no clear statement on behalf of the Appellant that the appeal has been withdrawn.

Reasons for the Decision

1. The appeal is admissible.

2. The Board sees no reason to give the Appellant a further opportunity to comment on its communication accompanying the summons to oral proceedings.

3. Since the arguments contained in that communication have not been refuted, they are maintained by the Board. The Board remains of the opinion that for the reasons stated in the said communication the subject-matter of Claim 1 does not involve an inventive step in accordance with Article 56 EPC.

4. Claims 2 to 6 are not allowable in view of their dependence on Claim 1.

Order

For these reasons, it is decided that:

The appeal is dismissed.

The Registrar: **The Chairman:**

M. Beer **F. Lederer**