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Aktenzeichen / Case Number / N<sup>o</sup> du recours : T 126/89 - 3.4.1

Anmeldenummer / Filing No / N<sup>o</sup> de la demande : 85 303 490.8

Veröffentlichungs-Nr. / Publication No / N<sup>o</sup> de la publication : 0 165 708

Bezeichnung der Erfindung: Fluid filter cleaning system

Title of invention:

Titre de l'invention :

Klassifikation / Classification / Classement : B01D 29/06, B01D 29/38

**ENTSCHEIDUNG / DECISION**

vom / of / du 10 January 1990

Anmelder / Applicant / Demandeur : Filtration Ltd.

Patentinhaber / Proprietor of the patent /  
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Articles 83 and 84 EPC

Schlagwort / Keyword / Mot clé : "Sufficiency of the disclosure (yes)";  
"Clarity and support of the claims by the  
description (yes)"

**Leitsatz / Headnote / Sommaire**

Europäisches  
Patentamt

European Patent  
Office

Office européen  
des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Case Number : T 126/89 - 3.4.1



**D E C I S I O N**  
of the Technical Board of Appeal 3.4.1  
of 10 January 1990

**Appellant :** Filtration Ltd.  
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**Decision under appeal :** Decision of Examining Division 031  
of the European Patent Office  
dated 23 September 1989 refusing  
European patent application  
No. 85 303 490.8 pursuant to  
Article 97(1) EPC

**Composition of the Board :**

**Chairman :** K. Lederer  
**Members :** J. Roscoe  
L. Mancini

## Summary of Facts and Submissions

- I. European patent application No. 85 303 490.8 (publication No. 0 165 708) was refused by a decision of the Examining Division.
  
- II. The reason given for the refusal was that independent Claims 1 and 3 filed with the letter dated 29 July 1988 failed to meet the requirements of Article 84 EPC, because essential features were missing from these claims. In particular, Claims 1 and 3 did not indicate how the suction pressure during cleaning of the filter element had to be taken into account for determining the upper limit of parameter E (height of the corrugations). However, this upper limit was dependent on the suction pressure, and, accordingly, indication of the pressure conditions was essential to solve the technical problem mentioned on page 1 of the description, namely to establish a relationship between filter element and suction nozzle parameters which, if adhered to, would ensure efficient cleaning of corrugated filter elements by suction nozzles.
  
- III. The Appellant lodged an appeal against this decision.
  
- IV. In his statement of the grounds of appeal dated 23 January 1989, the Appellant essentially submitted that the invention did not promise that any filter element can be cleaned efficiently at any suction pressure provided the system parameters comply with the expression set out in Claim 1, but only that the element is capable of being cleaned efficiently with the system. A range of suction pressures may be used, depending on the nature and construction of the filter element, the material to be cleaned from the element, and the pressure at which the

filter was operated during the preceding filtering operation, and a skilled person would readily be able to select an appropriate suction cleaning pressure by exercise of his knowledge of conventional flat filter suction cleaning practice, whereby the cleaning suction pressure selected would be much the same as, or perhaps slightly greater than, the working filter pressure.

Accordingly, to define the system of Claim 1 with reference to the suction pressure would be both inappropriate and irrelevant to the question of the compliance of the claims with the requirements of Article 84 EPC.

- V. In a communication pursuant to Article 110(2) EPC, the Rapporteur on the Board's behalf expressed the provisional opinion that the Appellant's arguments against the correctness of the appealed decision appeared to be convincing, but raised further objections under Articles 84 and 123(2) EPC against the claims, proposed corresponding amendments to the claims, and informed the Appellant that, provided these objections are met, the case will probably be remitted to the Examining Division for further prosecution in accordance with Article 111(1) EPC.
- VI. In response to this communication, the Appellant filed, with a letter dated 17 November 1989, a new set of Claims 1 and 2, amended as proposed by the Board, to replace Claims 1-4 previously on file.

The Appellant requests that the decision under appeal be set aside. Furthermore, his failing both to request the grant of a patent on the basis of these new claims, and to contest the Board's intention to remit the case to the Examining Division for further prosecution as set out in

the above-mentioned communication is interpreted as a request to proceed to such remittal of the case for further prosecution on the basis of Claims 1 and 2 as filed with the letter dated 17 November 1989.

VII. Independent Claims 1 and 2 read as follows:

"1. A system for suction cleaning a corrugated filter element having apices, comprising said corrugated filter element (2) and at least one suction nozzle (4) movable relative to the surface of said element (2) at a distance therefrom clearing the apices of said element, characterized in that the parameters of said system are interrelated in accordance with the expression:-

$$E < \frac{A (1.5 - 0.9 F \times G) - B \times C}{D}$$

where:

- A is the inside cross-sectional area of nozzle;
- B is the inside circumference of nozzle;
- C is the distance of nozzle mouth from the apices;
- D is the maximum width of nozzle perpendicular to the orientation of the corrugations;
- E is the height of the corrugations;
- F is the density of the corrugations defined as

F = length of filter portion when stretched flat  
length, across corrugations, of same portion  
in the corrugated state

G is the open fraction of the filter element defined as

$$G = \frac{\text{total area of opening in element}}{\text{total filter-element surface}}$$

2. A method of cleaning corrugated filter elements by means of suction nozzles, characterized by the use of filter elements and suction nozzles in conformity with the expression of Claim 1."

#### Reasons for the Decision

1. The appeal is admissible.
  
2. Independent Claim 1 is distinguished from originally filed Claim 1 only by the inclusion in its preamble of reference signs and of indications that the corrugated filter element has apices, and that the suction nozzle is movable relative to the surface of said element "at a distance therefrom clearing the apices of said element". The latter indications immediately follow from the definition of parameter C in the characterising portion of originally filed Claim 1, according to which C represents the distance from nozzle mouth to nozzle-side apices of filter corrugations.

Independent Claim 2 corresponds in substance to originally filed Claim 3.

No objection arises therefore under Article 123(2) EPC.

3. Compliance of the claims with the requirements of Article 84 EPC.

### 3.1 Clarity

Claim 1 is directed to a system which comprises a corrugated filter element and at least one suction nozzle which is movable past and at a distance from the apices of said element. In addition, the corrugated filter element, the suction nozzle and their relative position are selected in such a way that a number of parameters, labelled A to G, which define the shape and relative position of the corrugated filter element and the suction nozzle, are so related as to satisfy the mathematical expression set out also in the claim.

Neither the definitions in Claim 1 of parameters A to G, nor the mathematical expression itself give rise to any ambiguity whatsoever, and this has not been contested by the Examining Division. Accordingly, the Board is satisfied that the skilled person can, without difficulty, not only determine whether a given system comprises a corrugated filter element and at least one suction nozzle movable past and at a distance from the apices of said element, but also whether or not its configuration meets the mathematical expression set out in Claim 1. Similarly, the skilled person could also, without any difficulty, determine whether a method of cleaning corrugated filter elements by means of suction nozzles involves the use of a system as defined in Claim 1 or not.

For these reasons, Claims 1 and 2 are both considered to be clear in the sense of Article 84 EPC.

### 3.2 Support of the claims by the description

Generally, the issue to be considered when assessing whether claims are adequately supported by the description is whether it can reasonably be assumed that the technical

problem to which the invention is to provide a solution will actually be solved by the subject-matter of the claim, in its entire scope, and not only, for example, by a limited portion of that scope, which alone might have been disclosed in the description.

In the present case, the invention essentially aims at establishing a relationship between the geometrical parameters which characterise a system for suction cleaning a corrugated filter element, which, when fulfilled, will guarantee the capability of the corrugated filter elements to be efficiently cleaned, as set out expressly in the introductory portion of the description (page 1, third paragraph), and confirmed by the further reference in the description to the "cleaning capabilities" of the design (page 3, line 14) or to the capacity of the corrugations to be "still cleanable" by a given nozzle (page 4, lines 7 to 9).

The Board is not in a position to question the statement in the last mentioned passage of the description that the expression set out in Claim 1 gives the largest corrugation height E of a filter element that is still cleanable by a given nozzle. In addition, if it is admitted that the filter element can still be cleaned when exhibiting this largest corrugation height E, it seems reasonable to deduce that the filter element will also be cleanable for any corrugation height below that value, all other parameters being maintained unchanged.

For these reasons, the Board is satisfied that the system of Claim 1 and the method of Claim 2, which involves the use of such a system, actually exhibits the desired cleaning capability for any combination of the values of parameters A to G satisfying the expression set out in

Claim 1. For that reason, Claims 1 and 2 are considered to be adequately supported by the description in the sense of Article 84 EPC.

3.3 The Examining Division's argumentation in the appealed decision was based essentially on the fact that, obviously, achievement of efficient cleaning of a corrugated filter element does not only depend on the geometrical parameters of the cleaning system, but also on the suction pressure used for the cleaning operation.

However, for the reasons indicated in paragraph 3.2 above, the technical problem to which the subject-matter of Claim 1, in the light of the description, achieves a solution is not to provide a system which guarantees successful cleaning of a corrugated filter element for any suction pressure conditions whatsoever, but only to provide a system which is capable of efficiently cleaning such filter elements (provided that the operating conditions other than parameters A to G be properly selected).

Accordingly, features which do not contribute to solving the actual technical problem, such as the pressure conditions which are required for actually achieving cleaning of a corrugated filter element, cannot be considered as essential to the invention to which the patent relates, and their lacking from the claims, therefore, cannot by itself justify an objection under Article 84 EPC.

Furthermore, although, as admitted by the Appellant, only certain conditions will ensure effective cleaning when using any given system according to Claim 1, the Board deems it unnecessary, even if it were feasible for these to be set out in the method Claim 2. This claim is

considered to include the implicit limitation that pressure conditions be such as to ensure such cleaning and not therefore to be open to objection under Article 84 EPC either.

4. Sufficiency of the disclosure

The patent application does not comprise any detailed description of a specific embodiment of a suction cleaning system as defined in Claim 1, i.e. a system of which the parameters A to G would verify the expression set out in the claim. Neither does the patent application disclose how the suction pressure should be determined having regard to a given set of parameters verifying the mathematical expression of Claim 1, in order to perform a cleaning method as defined in Claim 2.

The Board, therefore, examined of its own motion whether the patent application nevertheless disclosed the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art.

- 4.1 Having regard to the absence from the description of any detailed example setting out a way of carrying out the claimed invention, the Board considers that in the requirement of Rule 27(1)(f) the description shall "describe in detail at least one way of carrying out the invention claimed using examples where appropriate", the expression "where appropriate" is to be construed as meaning where appropriate for the purpose of satisfying the requirements of sufficiency in Article 83 EPC.

In the present case, designing a system as defined in Claim 1 calls for no more than selection of a limited number of simple parameters in such a way that they satisfy an elementary mathematical expression, which in

the Board's view is well within the skilled person's competence, even in the absence of any guiding example.

- 4.2 Concerning the determination of a proper suction pressure for performing the cleaning method set out in Claim 2, there is no documentary evidence on file casting doubts on Appellant's submission that a skilled person would readily be able to select, in dependence on the system configuration and on the operational conditions of the preceding filtering operation, an appropriate suction cleaning pressure by exercise of his knowledge of conventional flat filter suction cleaning practice. Moreover, there seems no reason to suppose that such a pressure could not simply be established by routine experiments.
- 4.3 For these reasons, the Board is satisfied on the evidence before it that the disclosure of the invention in the patent application also meets the requirement of sufficiency set out in Article 83 EPC.
5. The Examining Division has not yet had an opportunity to reach a final opinion as to whether the subject-matter of Claims 1 and 2 is novel or involves an inventive step over the prior art. For this reason, the Board deems it appropriate to make use of the power conferred upon it by Article 111(1) EPC to remit the case to the first instance for further prosecution.

#### Order

For these reasons, 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 Claims 1 and 2 as filed with Appellant's letter dated 17 November 1989.

The Registrar:

The Chairman:

M. Beer

K. Lederer