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File Number: T 703/90 - 3.2.3
Application No.: 86 301 174.8
Publication No.: 0 194 074
Title of invention: Spraying apparatus

Classification: B05B 5/02

D E C I S I O N
of 17 March 1992

Applicant: IMPERIAL CHEMICAL INDUSTRIES PLC

Headword:

EPC Article 56, Rule 67

Keyword: "Inventive step (yes for a combination of Claim-version
"B" and "C"); request for reimbursement of appeal fee (rejected)"

Headnote



Case Number : T 703/90 - 3.2.3

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 17 March 1992

Appellant : IMPERIAL CHEMICAL INDUSTRIES PLC
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Decision under appeal : Decision of Examining Division 2.3.09.085 of the
European Patent Office dated 10 April 1990
refusing European patent application
No. 86 301 174.8 pursuant to Article 97(1) EPC.

Composition of the Board :

Chairman : C.T. Wilson
Members : F. Brösamle
J.-C. Saisset

Summary of Facts and Submissions

I. European patent application No. 86 301 174.8 was refused by a decision of the Examining Division dated 10 April 1990. That decision was based on document

(D1) GB-A-1 281 512

whereby the Examining Division came to the conclusion that Claims 23 and 25 filed with letter of 18 January 1990 (received on 19 January 1990) were not allowable under Articles 52(1) and 56 EPC.

II. A notice of appeal against this decision was filed on 25 May 1990, the appeal fee being paid on the same day. Together with the Statement of Grounds of Appeal received on 16 August 1990 the Appellants (Applicants) requested to consider alternative claims

- (i) in the version "A" i.e. Claims 1 to 24 and
- (ii) in the version "B" i.e. Claims 1 to 23.

Claims 2 and 3 of version "A" read as follows:

- "2. An apparatus as claimed in Claim 1 wherein the sprayhead comprises a series of mutually spaced plates, and each channel is formed by the space between a pair of adjacent plates."
and
- "3. An apparatus as claimed in Claim 2 wherein the sprayhead comprises a series of mutually spaced plates, and each channel is formed by the space between a pair of adjacent plates."

Claims 1 and 23 of version "B" read as follows:

"1. An electrostatic spraying apparatus for the electrostatic spraying of a plurality of liquids, the apparatus comprising a sprayhead formed with mutually spaced plates and a plurality of channels, each channel (4, 6) being formed by the space between a pair of adjacent plates (1, 3, 5), and each channel (4, 6) having a separate inlet (13, 15) connectable to a supply of liquid separate from supplies to other channels, and each channel (4, 6) communicating with an outlet means, the channels (4, 6) being so arranged that each of the said liquids flows through a respective one of the channels (4, 6), wherein said channels (4, 6) and said outlet means are each defined between an inner (1) and outer plate (3, 5) wherein the outlet edge of the relatively inner plate (1) is located downstream of the outlet edge (10, 12) of the relatively outer plate (3, 5) and the said liquids meet at the outlet means only outside the channels (4, 6), and a conducting or semi-conducting surface for contacting at least one of the liquids at or adjacent the outlet means, and high voltage generating means electrically connected to the surface, the voltage output by the generating means, in use, being sufficiently high for a mixture to be drawn from the outlet edge (7) of the inner plate (1) in the form of filaments (20), the or each filament (20) containing a mixture of liquids in proportions substantially equal to the proportions in which they were supplied to the apparatus."

and

"23. An electrostatic spraying apparatus for the electrostatic spraying of a plurality of liquids, the apparatus comprising a sprayhead formed with a body (61) of conducting material which has a generally

conical tip and is formed with four channels (63, 65, 67, 69) for liquids, each of the channels (63, 65, 67, 69) extending through the body (61) to an outlet at the tip, and each channel (63, 65, 67, 69) having a separate inlet connectable to a supply of liquid separate from supplies to other channels, the channels (63, 65, 67, 69) being so arranged that each of the said liquids flows through a respective one of the channels (63, 65, 67, 69), and high voltage generating means electrically connected to the body, the voltage output by the generating means, in use, being sufficiently high for a mixture to be drawn from the outlet edge of the tip in the form of filaments (20), the or each filament (20) containing a mixture of liquids in proportions substantially equal to the proportions in which they were supplied to the apparatus."

The Appellants requested to set aside the impugned decision and to allow either the set of Claims "A" or "B".

They further requested to reimburse the appeal fee, since the Examining Division in their opinion has used an argument not raised previously, without giving the Appellants an opportunity to comment.

By way of an auxiliary petition oral proceedings were requested.

III. With communication pursuant to Article 11(2) RPBA dated 19 December 1991 the Board gave its provisional opinion of the case namely that neither version "A" nor "B" was allowable particularly under the provisions of Articles 84 and 56 EPC .

IV. The Appellants with telecopy of 11 March 1992 replied to the Board's communication by giving notice to the Board that due to unforeseen circumstances they would be unable to attend the oral proceedings fixed on 17 March 1992 and by submitting further sets of claims i.e. versions "C" to "I" in case the Board should be unable to allow versions "A" or "B".

Claim 25 of Claim-version "C" reads as follows:

"25. A process for the electrostatic spraying of a plurality of liquids comprising supplying the liquids to respective channels (4, 6) in a sprayhead as defined in any of Claims 1 to 24, each channel (4, 6) communicating with an outlet means at which the liquids flowing through respective channels (4, 6) meet, and subjecting liquids emerging from the outlet means to an electrical field sufficiently high for a mixture of liquids to be drawn from the sprayhead in the form of at least one filament (20), the or each filament (20) containing a mixture of liquids in proportions equal to the proportions in which they were supplied."

The Appellants, see page 4 of the telecopy of 11 March 1992 under "Requests", also declared that they were willing to accept a claim-version with some modification according to the Board's findings in case all Claim-versions "A" to "I" were felt to be unallowable.

Thus the Appellants maintains their request to set aside the impugned decision and to remit the case to the first instance for further prosecution.

The request for reimbursement of the appeal fee was not withdrawn in Appellants' reply to the Board's communication dated 19 December 1991.

- V. Oral proceedings were held on 17 March 1992 without the Appellants. In the deliberation the Board came to the result that Claims 1 to 22 of Claim-version "B" in combination with a process-claim on the basis of Claim 25 of the Claim-version "C" as new Claim 23 would be allowable so that a decision on that basis was announced setting the impugned decision aside and remitting the case to the first instance for further prosecution.

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is admissible.
2. Claim-version "A":
 - 2.1 This claim-version contains two dependent claims with identical features, see Claims 2 and 3. Claim 2 refers to Claim 1 and Claim 3 refers to Claim 2 and indirectly also to Claim 1 so that identical subject-matter is twice claimed.
 - 2.2 Basically each request of the Appellant has to be dealt with as a whole i.e. in the case that one claim within a set of claims is found unallowable then the whole request has to be rejected.

Since Claim-version "A", see its Claims 2 and 3, is not concise (clear) within the meaning of Article 84 EPC this set of claims is not allowable. The Appellants, admitted in their telecopy of 11 March 1992 that an error in word

processing had occurred and that they therefore submitted Claim-version "C" (see later).

3. Combination of Claim-versions "B" and "C":

- 3.1 In the deliberation for the decision during the oral proceedings before the Board, the Board came to the conclusion that Claims 1 to 22 of Claim-version "B" in combination with Claim 25 of Claim-version "C" as new Claim 23 (dependency corrected into "1 to 22") could form the basis for an allowable set of claims for the following reasons:
- 3.2 Novelty of the subject-matter claimed not being contested by the Examining Division this issue needs no further argument (Article 54 EPC).
- 3.3 Claim 1 is drafted in a one-part form. Since this question has no influence on the outcome of Article 56 EPC - assessment the one-part form will be accepted in the present case.
- 3.4 The nearest prior art electrostatic spraying apparatus appears to be disclosed in the opening of the description of document (D1), see page 1, lines 44 to 57 in combination with lines 22 to 28 thereof, where such a spraying apparatus is described in combination with the use of two components, for instance a resin and a catalyst, which components are supplied separately and to opposite sides of a single electrostatic atomising disc where they are electrostatically atomised and as a consequence thereof subject to electrical forces by which the particles to be sprayed can be directed towards the surface to be coated, Rule 27(1)(b) EPC.

- 3.5 Not known from the introductory part of (D1) is the way in which the plurality of liquids are fed (inlet, channels, outlets...), i.e. how the channels and so on are shaped, how they are mutually arranged, how the liquid(s) is(are) electrically charged and how the liquids escape from the sprayhead.
- 3.6 The objective problem to be solved by the invention, Rule 27(1)(c) EPC, appears therefore to be to find a suitable arrangement for the means of how a plurality of liquids can be fed and can be electrically charged in combination with an electrostatic spraying apparatus.
- 3.7 This problem according to Claim 1 is solved by the features that plates (inner and outer) define the channels for the plurality of liquids, whereby the ends of these plates are arranged in a V-form - i.e. the inner plate is located downstream of the outlet edge of the relatively outer plate - and the liquids meet at the outlet means only outside the channels, whereby a conducting or semi-conducting surface connected with high voltage generating means is so foreseen that a mixture of the supplied liquids is drawn from the outlet edge of the inner plate in the form of filaments each containing a mixture of liquids in proportions substantially as supplied.
- 3.8 With this spraying apparatus it is achieved that sufficient time and space is given to the components to allow them to mix after they have left the outlet of their corresponding chamber, see Figures 2, 6, 8, 9, 12 and 13 as originally filed. The plurality of liquids is drawn by the high intensity electrostatic field into a series of mutually spaced filaments before the latter break up into droplets due to the instability of the liquid jet in air, see page 8 last paragraph to page 9 including second paragraph as originally filed.

3.9 The features of Claim 1 which solve the objective problem of the invention to the Board's conviction cannot be directly derived from documents (D1) to (D3) representing the prior art to be considered.

3.9.1 Channels defined by plates - however in the context of one liquid to be sprayed only - can be seen from (D2), see Figures 12 to 14 in particular, so that this feature per se is known; not known from any of the documents, (D1) to (D3) is however, the plate arrangement in the "V-form" (definition given above).

3.9.2 From document (D3), see single Figure in particular, it can be seen that the inverse arrangement is foreseen, i.e. the inner plate is not protruding in respect of the outer plates, see reference signs "7" and "2, 3", so that even a combination of documents (D1) and (D3) would not lead a skilled person to the apparatus of Claim 1.

Even if documents (D1) to (D3) were simultaneously considered there would be no direct lead to the teaching of Claim 1, since in (D2) basically a gravity/curtain-coater is disclosed not using a "V-configuration" of plates defining channels as claimed in Claim 1 of Claim-version "B".

3.9.3 The specific arrangement of plates in a "V-form" not being directly derivable from the prior art the Board is of the opinion that this feature alone makes the apparatus of Claim 1 unobvious in the meaning of Article 56 EPC, since in addition the advantages/effects linked to this plate-arrangement cannot be seen as predictable.

3.9.4 Claim 1 is thus allowable since its subject-matter is based on an inventive step within the meaning of Article 56 EPC.

Claims 2 to 22 can follow as dependent claims being directed to specific embodiments of the apparatus laid down in Claim 1.

3.10 The contribution of Claim 23 of Claim-version "B" over the prior art according to page 1 of (D1) can be seen in the provision of a conical tip of a sprayhead and in the provision of four channels "63, 65, 67, 69" - which seen in the light of originally filed Figures 10 and 11, Article 69 EPC - appear to be bores. It is to be noted therefore that Claim 23 does not relate to the arrangement of plates in a "V-form", as referred to in paragraph 3.9.3 above.

Moreover, bore-like channels are known from the sprayhead as defined in (D2), (see its Figures 7 to 9, reference signs "7, 39, 41, 43" and "7, 45, 46"), whereby the sprayhead has a body of conducting material, (see high voltage cable "10" being connected to parts "39" or "44" of the sprayhead (Figures 7/9 of (D2))). Also, conical tips for sprayheads are known per se, (see for example the single figure of (D3), DE-A-1 652 373, in particular reference signs "2, 3" and "7").

3.11 Since no clear combinatory effect of these features is apparent, the combination of document (D1) - disclosing the spraying of two liquids and the electrostatic forces for charging them - and (D2) - teaching the way in which channels can be embodied in a sprayhead - together with a known conical tip therefore deprives the subject-matter of Claim 23 of an inventive step in the meaning of Article 56 EPC.

- 3.12 Although Claim-version B does not include a process claim, it is clear from the requests that the Appellant wishes to have the protection of such a claim, if possible. In view of the wide ranging nature of the "Requests", the Board therefore exceptionally considered the process claim of Claim-version C together with the allowable apparatus claims of Claim-version "B".
- 3.13 Present Claim 23 (process Claim 25 of Claim-version "C") is based on the use of a patentable electrostatic spraying apparatus and is supported by the nonobviousness of the apparatus so that this claim is likewise allowable.
- 3.14 Under these circumstances the combination of apparatus claims of the Claim-version "B" and of a process-claim according to the Claim-version "C" (dependency slightly amended) leads to an allowable set of claims so that the case -as was requested by the Appellant - can be remitted to the first instance for further prosecution.

4. Reimbursement of the appeal fee:

- 4.1 According to Rule 67 EPC the reimbursement of appeal fees shall be ordered if the following conditions are fulfilled:
- (a) The Board of Appeal deems the appeal to be allowable (or the decision has been rectified by an interlocutory revision);
 - (b) a substantial procedural violation has been committed;
 - (c) the reimbursement must be equitable by reason of such a procedural violation.

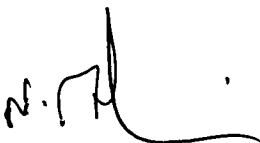
- 4.2 Claim-version "A" being not allowable the appeal taken as a whole is not allowable so that condition (a) above is not fulfilled and the appeal fee cannot be reimbursed (Rule 67 EPC).
- 4.3 Under these circumstances it has not to be decided whether or not the Examining Division has committed "a substantial procedural violation".

Order

For these reasons, it is decided that:

- 1. The impugned decision is set aside.
- 2. The Appellant's request in respect of set "A" of the claims is rejected.
- 3. The case is remitted to the first instance with the order to grant a patent on the basis of Claims 1 to 22 of set "B" together with Claim 25 (renumbered "Claim 23") of set "C" and a suitably amended description and drawings.
- 4. The request for reimbursement of the appeal fee is rejected.

The Registrar:



N. Maslin

The Chairman:



C.T. Wilson

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Bv. 22.4. 1992