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D E C I S I O N
of 4 December 1997

Case Number: T 0391/95 - 3.3.3

Application Number: 86300954.4

Publication Number: 0197631

IPC: C08J 3/22

Language of the proceedings: EN

Title of invention:
Dry blend concentrate of solid biocide and thermoplastic resin powder and method for its preparation

Patentee:
Morton International, Inc.

Opponent:
Akzo Nobel

Headword:
-

Relevant legal provisions:
EPC Art. 54(2), 56, 84

Keyword:
"Novelty (yes)"
"Inventive step (yes)"

Decisions cited:
G 0002/88

Catchword:
-



Case Number: T 0391/95 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 4 December 1997

Appellant: Morton International, Inc.
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 2 March 1995
revoking European patent No. 0 197 631 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: C. Gérardin
Members: R. Young
J. A. Stephens-Ofner

Summary of Facts and Submissions

- I. The mention of the grant of European patent No. 0 197 631, relating to "Dry blend concentrate of solid biocide and thermoplastic resin powder and method for its preparation", with 14 claims, in respect of European patent application No. 86 300 954.4, filed on 12 February 1986 and claiming a US priority of 4 March 1985 (US 707628) was announced on 29 January 1992 (Bulletin 92/05). Claim 1 read as follows:

"A composition comprising a dry blend mixture of a non-foamed porous thermoplastic resin powder which has interstices or channels crisscrossing through the particles thereof and from 1 to 80 weight percent of a microbiocide based upon the weight of the composition, the microbiocide being present in the mixture at a concentration of at least 20 times greater than the normal upper usage concentration of the microbiocide, and the microbiocide being a liquid at the temperature at which the pores of the resin open, or being readily soluble in a carrier which is readily absorbable by the porous resin, and being held within the interstices or channels of the thermoplastic resin powder, said composition being substantially non-dusting."

Claims 2 to 9 were dependent claims directed to elaborations of the composition according to Claim 1.

Claim 10, an independent claim, read as follows:

"A method of making the composition of claim 1 which comprises mixing a non-foamed porous thermoplastic powder and from 1 to 80 weight percent of a microbiocide in a high intensity high shear mixing apparatus at a temperature sufficient to open the pores

of the powder, the microbiocide being in solution or being in liquid form at the said temperature and then cooling the mixture to obtain a free-flowing powder."

Claims 11 to 13 were dependent claims directed to elaborations of the method according to Claim 10.

Claim 14, an independent claim, was worded as follows:

"A method of incorporating a microbiocide into a thermoplastic resin composition wherein a composition as claimed in any one of claims 1 to 9 is incorporated into a second thermoplastic resin composition in an amount of 0.5 to 15 weight per cent based upon the total weight of the resultant composition."

II. Notice of Opposition was filed on 28 October 1992, on the grounds of lack of novelty and lack of inventive step. The opposition was supported inter alia by the documents:

D1: BE-A-845 365; considered in the form of its counterpart US-A-4 153 682;

D2: US-A-4 086 297; and

D4: DE-A-2 165 841

III. By a decision given at the end of Oral Proceedings held on 24 January 1995 and issued in writing on 2 March 1995, the Opposition Division revoked the patent. The decision was based, inter alia, on a first auxiliary request, which had been successively amended during the oral proceedings, resulting in three versions. Claim 1 of the first two versions was found to contravene Article 123(2) EPC and Claim 1 of the third version not to involve an inventive step (Reasons for the decision, points 3.1 to 3.5).

IV. On 29 April 1995, a Notice of Appeal against the above decision was received, the prescribed fee having been paid on 26 April 1995.

With the Statement of Grounds of Appeal, filed on 4 July 1995, the Appellant submitted two further sets of claims forming a main request and a subsidiary request, respectively. Claim 1 of the main request was stated to correspond essentially to Claim 1 of the first version of the auxiliary request which had been disallowed under Article 123(2) EPC. Claim 1 of the subsidiary request was stated to correspond to the third version, which had been considered by the Opposition Division to lack inventive step.

V. Oral proceedings were held before the Board on 4 December 1997. Initially, the Appellant relied upon the previous main request and filed a number of further subsidiary requests, the previous sole subsidiary request becoming the second subsidiary request. Following the preliminary, provisional remarks of the Chairman, in which inter alia the objection under Article 123(2) EPC, previously raised by the Opposition Division in relation to the main request was reiterated, the Appellant abandoned both the main request and the first subsidiary request. He then relied, as new main request, upon the second subsidiary request, corresponding to the sole subsidiary request filed with the Statement of Grounds of Appeal, which was a set of Claims 1 to 10 and 12 (there being no Claim 11). Claim 1 of this set was then further amended, during the oral proceedings, in the light of an objection of lack of clarity, raised by the Respondent. The final main request is thus a set of Claims 1 to 10 and 12 made up as follows: Claims 1 to 3

(page 1) filed during the oral proceedings, and Claims 4 to 10 and 12 (pages 2 and 3) of the subsidiary request accompanying the Statement of Grounds of Appeal. Claim 1 reads as follows:

"A method of making a composition comprising a dry blend mixture of a non-foamed porous thermoplastic resin powder which has interstices or channels criss-crossing through the particles thereof and from 1 to 80 weight percent of a microbiocide based upon the weight of the composition, the microbiocide being present in the mixture at a concentration of at least 20 times greater than the normal upper usage concentration of the microbiocide, the microbiocide being a solid at ambient temperature, and being a liquid at the temperature at which the pores of the resin open or being readily soluble in a carrier which is readily absorbable by the resin, which method comprises the steps of mixing the non-foamed porous thermoplastic resin powder and the microbiocide in a high intensity shear mixing apparatus at a temperature sufficient to open the pores of the resin powder, the microbiocide being dissolved in said carrier prior to mixing with the resin powder or being melted during the mixing stage and liquid at the said temperature, and then cooling the mixture to obtain a substantially non-dusting free flowing powder in which the microbiocide is held within the interstices or channels of the thermoplastic resin powder."

Claims 2 and 3 are dependent claims relating to elaborations of the method of Claim 1, as are Claims 4 to 10.

Claim 12 is an independent claim directed to a method of incorporating a microbiocide into a thermoplastic resin composition, wherein a composition made by a method according to Claim 1 is incorporated into a second thermoplastic resin composition.

The unamended second auxiliary request and the remaining third, fourth and fifth subsidiary requests remained unchanged.

VI. The Appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of Claims 1 to 3 filed during oral proceedings as main request, and Claims 4 to 12 (i.e. Claims 4 to 10 and 12) as filed, as the subsidiary request, with the Statement of Grounds of Appeal, or on the basis of any one of the subsidiary requests also submitted during oral proceedings.

The Respondent requested that the appeal be dismissed.

Reasons for the Decision

1. The appeal is admissible.
2. *Admissibility of amendments; main request*
 - 2.1 Apart from the correction of four typographical errors, Claim 1 of the main request differs from that of the sole subsidiary request filed together with the Statement of Grounds of Appeal, only in that the phrase "or being in liquid form at the said temperature", has been amended to read "or being melted during the mixing stage and liquid at the said temperature". This amendment is supported by the description of the patent as granted on page 5 at lines 28 and 29 read in conjunction with Claim 1 as granted, and does not

result in a broadening of the claim. Claim 1 of the sole subsidiary request filed together with the Statement of Grounds of Appeal in turn corresponds, apart from the same four typographical errors, to Claim 1 of the third version of the first subsidiary request underlying the decision under appeal, i.e. that found to lack an inventive step. No objection under Article 123(2) or 123(3) EPC was, however, raised during the opposition proceedings against that request.

2.2 The features of Claims 2 to 6 of the main request correspond to those of Claim 10 and Claims 2 to 6 respectively of the patent in suit as granted, and those of Claims 7 and 8 by Claim 10 and Claims 8 and 9 respectively as granted. The change of category (from a composition to a method) does not involve a broadening of the scope of the relevant claim and thus does not contravene Article 123(3) EPC (Enlarged Board decision G 0002/88; OJ EPO 1990, 93).

2.3 Claims 9 and 10 of the main request correspond to Claims 11 and 12 of the patent in suit as granted, and Claim 12 to Claim 14 as granted.

2.4 No objection to any of these claims was raised by the Respondent in the appeal. Nor does the Board see any reason to raise such an objection of its own. Consequently, the claims of the main request are admissible under Article 123(2) and 123(3) EPC.

3. *Clarity*

The Respondent wished to draw attention to certain microbiocides mentioned in the description, in particular tributyl tin fluoride. Such microbiocides fell, according to his submission, outside the scope of

Claim 1 because they were liquids at ambient temperatures and would, consequently, need to be deleted from the description.

In this connection, the Board notes that there is no reference to tributyl tin fluoride in any of the claims. Nor did the Appellant raise any objection to making such consequential amendments to the description as might be necessary. Hence, the Board sees no reason *ex officio* to raise an objection under Article 84 EPC.

4. *The patent in suit; the technical problem*

The patent in suit is concerned with a method of making a solid biocide blend concentrate for incorporation into a resin composition to protect it against fungal or bacterial attack (page 2, lines 3 to 7; Claim 14). The concentrate, which is a mixture of a solid thermoplastic resin and from 1 to 80 weight percent of a microbiocide, based upon the weight of the solid composition, at a concentration of at least about 20 times greater than the normal upper usage concentration of the microbiocide, is substantially non-dusting (Claim 1). Such a composition is, however, known from D2, which is considered by the Board to represent the closest state of the art.

- 4.1 According to D2, there is provided a solid composition, which consists essentially of a homogeneous melt blended mixture of the microbiocide and resin, in which the microbiocide is immobilised and rendered physiologically inert in the resin (Claim 1). The composition can be incorporated subsequently in a second thermoplastic resin composition with reduced hazard to working personnel since the dusting problem associated with powdered microbiocides is eliminated (column 4, lines 30 to 34). The microbiocide and resin are mixed under conditions of heating to melt and to

soften the resin, preferably at a temperature of 150° to 300°F. The mixture is subjected to shear forces in a two-roll mill, Banbury mixer or extruder and the resultant softened composition formed by extrusion, milling or calendering. The formed composition is cooled so that it can be broken up into small particles, thereby permitting its incorporation into other thermoplastic compositions having an effective low concentration of the microbiocides (column 6, lines 7 to 19). According to a typical example, a formulation including a particulate PVC resin, a stabiliser, stearic acid, dioctyl phthalate, dipropylene glycol dibenzoate and a microbiocide ("Dowcil" S-13) is blended in a Henschel mixer at a temperature ranging from about 70 to 220°F for a period of 1 to 10 minutes to form a homogeneous powder blend. The composition is then extruded at a temperature between 150 and 300°F into a rod form which is then cooled to room temperature and subsequently pelletised (Example I).

4.2 According to the acknowledgment of prior art in the patent in suit, such a composition, whilst providing a convenient non-toxic dosage form of the microbiocide, has the disadvantages that (i) it is not suitable for incorporation in plastisols, (ii) the particles are not usable when screening to filter out impurities such as paper, (iii) the heating, mixing and cooling steps are relatively high in terms of energy costs and (iv) microbiocides which are heat sensitive cannot be used therein (patent in suit, page 2, line 58 to page 3, line 4).

4.3 Thus, the technical problem arising from this state of the art is the search for a simpler and lower energy cost method of preparing such a microbiocide concentrate so that the resulting concentrate is furthermore useful for addition to plastisol

formulations and allows a broad range of microbiocides to be used, whilst retaining the reduced toxicity and ease of handling (i.e. non-dusting character) of the prior art compositions (patent in suit, page 3, lines 14 to 16).

- 4.4 The solution proposed according to Claim 1 of the patent in suit is (a) to utilise, as the thermoplastic resin, a non-foamed porous thermoplastic resin powder which has interstices or channels criss-crossing through the particles thereof; (b) to mix the resin and the microbiocide at a temperature sufficient to open the pores of the resin powder (the "drop temperature"); (c) the microbiocide either being dissolved, prior to mixing, in a carrier which is readily absorbable by the resin, or being melted during the mixing stage and liquid at that temperature; and finally, instead of extruding and pelletising, (d) cooling the mixture to obtain a substantially non-dusting free flowing powder, in which the microbiocide is held within the interstices or channels of the thermoplastic resin.
- 4.5 It is evident from the examples of the patent in suit, in particular Examples 1, 2, 10, 11 and 12, that the result of mixing, in a Henschel mixer, a microbiocide and porous particles of a PVC resin (105 to 420 μm) to the "drop temperature" (82°C or 104°C) is a free-flowing, non-dusting powder concentrate, which is not subject to stratification or separation on storage and transport (Example 9), and which can further be incorporated uniformly in a different low or highly plasticised thermoplastic polymer composition (Examples 5, 6, and 7, 8, respectively).
- 4.6 The submission of the Respondent, presented for the first time at the oral proceedings before the Board, that the "drop temperature" was an imaginary phenomenon which had no existence in reality, was not supported by

any concrete evidence at all, but by argument. The argument was that the reference, in the patent in suit, to measuring the porosity of the porous resin by the "mercury intrusion method" (page 4, lines 39 to 44) was an indication that the pores were not closed at ambient temperatures, and therefore could not "open" at elevated temperatures. This is not convincing, however, for the following reasons.

- 4.6.1 The Proprietor is under a very great obligation of good faith in the presentation of his invention to the public. The patent in suit refers explicitly in both the general description and the examples to the "drop temperature", which is evidently the effect primarily responsible for the solution of the stated problem.
- 4.6.2 It is furthermore clear that, in the test referred to by the Respondent, the mercury is forced into the interstices under pressure (page 4, line 43). The need to use external pressure is, in the Board's view, itself evidence that the pores at ambient temperatures are indeed closed, or at least not open in the sense of being capable spontaneously of absorbing the mercury.
- 4.6.3 Finally, there is no statement in the patent in suit that the pores are necessarily "closed" at ambient temperature, but merely that they "... open and absorb the microbicide" (page 4, lines 31 to 33). Thus, the "opening" may be simply one of degree.
- 4.6.5 In summary, there is no inconsistency implied by the "mercury intrusion method", nor any other convincing reason for doubting the existence of the "drop temperature", or its significance for the solution of the technical problem.

4.7 The further objection of the Respondent, that the "drop temperature" was not mentioned in the claims, does not itself identify a non-compliance with any particular provision of the EPC. On the contrary, the "drop temperature" is merely, according to the patent in suit, the name by which the temperature at which the pores of the resin open is commonly referred to (page 4, lines 33 to 35). Since, however, Claim 1 already refers specifically to "a temperature sufficient to open the pores of the resin powder", there is, in the Board's view, no need for a further mention of the "drop temperature". In this connection, the precise choice of words used in the text is in any case a matter for the Applicant or Proprietor, and not for the Opponent (Article 113(2) EPC). Consequently, there is no objection to the absence, from the claims, of an explicit reference to the "drop temperature".

4.8 The objection that there was no technical problem solved by the patent in suit, which was not already solved by the disclosure of D2, also raised by the Respondent at the oral proceedings, is unconvincing, for the following reasons.

4.8.1 The argument that there was no reduction of energy costs compared with the comminuted extruded and pelleted products of D2, was based on the concept that the free-flowing powder product directly produced according to the patent in suit was itself the product of a previous comminution operation. This is, however, neither supported by the patent in suit, which does not refer to a previous comminution step, nor by any other evidence. On the contrary, it is well known in the art that many polymers are already produced directly in the form of a powder, e.g. from a slurry polymerisation process. Consequently, it is evident that the solution to the technical problem, by avoiding a melt blending

step, does indeed save a subsequent comminution step compared with D2. It therefore represents a simpler, lower energy cost process than that according to D2.

4.8.2 The argument that there was no technical problem in filtering out paper, etc. from the product, was based on the notion that there was no reason for expecting paper to be present in the product in the first place. According to Example 9 of the patent in suit, however, a sample of the powdered product was placed in the trunk of an automobile and the automobile driven for 1930 km. Clearly, for a product which is designed to be transported over long distances, it must be taken into account that a number of different conditions may be encountered on the way, including the presence of foreign bodies, such as paper. The possibility of removing such items by a simple screening technique represents, in the Board's view, a technical capability which is not present in the larger sized pellets according to D2.

4.8.3 The further argument, that the size of the pellets according to D2 was not, contrary to the suggestion in the Statement of Grounds of Appeal, disclosed as being 2 to 4 mm in size, is strictly true. However, the conclusion canvassed, that the "pellets" could therefore be any size, including that of a powder according to Claim 1 of the patent in suit, is not convincing, because there is no reason for concluding that the pellets as disclosed, for instance, in Example I of D2 (column 7, line 60 to column 8, line 2) would be cut so small as to be a free-flowing powder. Indeed, such a concept is incompatible, in the Board's view, with that of a "pellet".

4.8.4 Furthermore, even if the advantages of filterability had not been made plausible in relation to the removal of paper, the free-flowing powdery nature of the product according to the patent in suit renders it more suitable for addition to melts which are not subjected to mechanical shear, as in the production of plastisol parts, than would the addition of pellets as disclosed in D2, since the latter might not fully melt (Statement of Grounds of Appeal, page 4, last paragraph).

4.8.5 Consequently, the method according to the patent in suit and the products obtained thereby are indeed advantageous compared with those of D2 in the specific respects relevant to the solution of the technical problem.

4.9 In summary, it is credible to the Board that the claimed measures provide an effective solution of the stated problem.

5. *Novelty*

5.1 Lack of novelty was not alleged, in the appeal, in relation to the disclosures of D1 or D2. The Board also takes the view that there is no lack of novelty with regard to either of these disclosures. Consequently, the subject-matter of Claim 1 is novel over D1 and D2.

5.2 Lack of novelty was, however, alleged by the Respondent, for the first time at the oral proceedings before the Board, in relation to the disclosure of D4.

5.2.1 According to D4, there is a significant problem in protecting food, grain, plants and underground cables against rodents, insects and other pests. The use of compounds conferring a repelling effect, such as an N,N-dimethylsulphenyl dithiocarbamate presents difficulties, since, in many cases, the compound is

either incompatible with a synthetic carrier, or cannot be stably incorporated in a sufficient concentration into it. This also becomes evident during mixing and/or by tableting or pelletisation of the mixture (page 1, line 1 to page 2, line 20).

These difficulties are overcome by using, as the carrier, a copolymer of ethylene and a 1-olefin with 4 to 6 carbon atoms in its molecule, the copolymer containing 4 to 10 wt.% of the 1-olefin comonomer, and having a density of 0.910 to 0.930 g/cm³ (page 3, last paragraph; Claim 1). The polymer is preferably used in the granular, porous form in which it is obtained from a reaction vessel, and has, prior to tableting or pelletising, a bulk density of 0.29 to 0.38 g/cm³, 90 to 99 wt.% of the particles having a size corresponding to 10 to 60 mesh US Standard sieve (page 11, first paragraph). The carrier is capable of absorbing the active ingredient in amounts of 0.5 to 20 wt.% or more, so that the preparation may be used as a concentrate (page 12, second paragraph to page 13, first paragraph).

According to the Example, a copolymer of ethylene and butene-1 containing about 8 wt.% butene-1 and having a density of 0.924 g/cm³ is placed in a Henschel mixer and heated to about 60°C, after which, in a series of experiments, an amount of 5, 10 or 20 wt.% of N,N-dimethyl-S-tert.-butyl sulphenyldithiocarbamate is added, and both components are mixed for about 2 to 4 minutes to a homogeneous mass. The mixture is then tabletted/pelletised in a conventional manner at 149 to 177°C in a ribbon press and the tablets/pellets allowed to stand for 48 hours. None of the tablets/pellets shows a tendency of the active ingredient to "bleed" or "sweat" out of the carrier. Furthermore, they have a low odour level and can be stored for long periods (page 13, first complete paragraph to page 14, first

paragraph). The preparations may be used either in granular or in pelletised form (page 16, last sentence).

- 5.2.2 According to the uncontested submission of the Respondent at the oral proceedings, furthermore, the melting point of the exemplified N,N-dimethyl-S-tert.-butyl sulphenyldithiocarbamate is 69 to 70°C.
- 5.2.3 There is, however, no indication, in the relevant example of D4, of what the final temperature reached in the Henschel mixer might be, nor even of the amount of energy applied during the mixing step. Consequently, there is no direct and unambiguous disclosure of the active ingredient having reached its melting point, much less of the resin having reached its "drop temperature". On the contrary, the temperature of 60°C referred to in the Example of D4 is considerably below the general range of 71 to 104°C referred to in the patent in suit as typical of such temperatures (page 4, lines 37 to 38).
- 5.2.4 Consequently, D4 does not disclose all the features of Claim 1 of the patent in suit. It is therefore not novelty destroying for the claimed subject-matter.
- 5.3 Thus the subject-matter of Claim 1, and, by the same token of dependent Claims 1 to 10, and of independent Claim 12, which is limited to the subject-matter of Claim 1, is novel.

6. *Inventive step*

It is necessary to consider whether the skilled person, starting from D2, would have expected a solution of the stated problem in all its aspects to lie in the combined application of the measures proposed according to Claim 1 of the patent in suit (section 4.4, above).

- 6.1 There is no invitation in D2 to take these measures, since it does not mention a porous polymer, or a free-flowing powder product having non-dusting properties. On the contrary, it is a requirement of the method taught in D2 that the carrier be **melt** blended, which would inevitably involve the elimination of any porosity in the polymer carrier and furthermore exclude the possibility of obtaining, without a further comminuting step, a free-flowing powder product. Consequently, D2 does not contain any hint to the solution of the technical problem.
- 6.2 As to the disclosure of D4, whilst a porous polymer carrier is mentioned, it must be emphasised that this is only the form that the starting material takes. There is no statement as to the degree of granulation of the repellent-containing product emerging from the Henschel mixer stage, let alone a reference to a free-flowing, non-dusting powder.
- 6.2.1 The argument of the Respondent at the oral proceedings, that the reference, in D4, to the possibility of using the product in granular form (page 16, last sentence) was a teaching to apply a granular product originating from the Henschel mixer stage, is not supported by the grammatical construction of the passage relied upon, because the definite article is not used in relation to the relevant term. In other words, the reference on page 16 is to granules in general, and not to any particular, previously mentioned granules. This is perfectly logical because, for the reason given, there is no teaching in D4 that the product of the Henschel mixer stage is granular at all (section 6.2, above). Thus, the interpretation canvassed by the Respondent is not convincing.

6.2.2 Quite apart from this, the disclosure of D4 focusses on the problem of producing stable tablets or pellets from which the active ingredient will not "bleed" or "sweat" out and which can be stored without loss of usefulness (section 5.2.1, penultimate sentence, above), rather than with solving a problem of dusting. Thus, an interruption of the process at an intermediate stage, such as that corresponding to the product obtained from the Henschel mixer, as canvassed by the Respondent, would necessarily involve a failure to solve the technical problem addressed by D4. Consequently, there is no incentive for the skilled person to do this.

6.2.3 Even if one could suppose that the skilled person might nevertheless, for some other reason, interrupt the process before the tableting/pelletising step taught in D4, and if, furthermore, it turned out that a free-flowing powder product was in fact obtained at this point (cf. section 6.2.1, above), there is still no disclosure, in the document, of a "drop temperature", nor of the active ingredient being melted (section 5.2.3, above). Consequently, there is no reason for supposing that the result of such an interruption would be something corresponding to the solution of the technical problem.

6.2.4 In other words, there is no hint to the solution of the technical problem in D4.

6.3 The document D1, although cited in the decision under appeal, was not relied upon by the Respondent in the appeal itself. This document is, in the Board's view, more remote from the claimed subject-matter than either D2 or D4, and also does not offer any hint to the solution of the technical problem.

6.4 Thus, the solution of the technical problem does not arise in an obvious way, from the cited state of the art, starting from D2.

6.5 The result would not have been different if D4 had been taken as the closest state of the art, as proposed by the Respondent at the oral proceedings.

6.5.1 Although the method of preparing a concentrate disclosed in D4 has a number of features in common with that claimed in the patent in suit, such as the mixing, in a Henschel mixer, of a porous powder polymer carrier with an active ingredient, nevertheless the purpose is different (section 6.2.2, above). In particular, the active ingredient, (a pest repellent), which is somewhat different from that with which the patent in suit is concerned (a microbiocide), is not stated to present a problem of dusting. Nor is there is any mention in D4 of a free-flowing powder product (section 6.2, above), let alone any of the relevant effects associated with such a product (section 4.8, etc., above). Hence, none of the essential aspects of the technical problem to be solved according to the patent in suit is derivable from the disclosure of D4.

6.5.2 In view of the above, it is evident that D4 does not form an appropriate starting point for the derivation of a typical technical problem. On the contrary, the choice of this document, according to the approach of the Respondent at the oral proceedings, as the starting point, leads to the special situation that the subject-matter claimed in the patent in suit is non-obvious with respect to such art, since any attempt by the skilled person to establish a chain of considerations leading in an obvious way to the claimed subject-matter

gets stuck at the start, for lack of an identifiable relevant problem. Clearly, if the problem itself is not derivable, its solution is *a fortiori* not derivable, let alone obvious.

6.5.3 Nor would the skilled person be led to combine with D4 a prior art disclosure more directly relating to the relevant problem than that of D4, since, in view of the above, the relevance of such a disclosure would not be apparent.

6.6 In summary, the subject-matter of Claim 1 and, by the same token, that of dependent Claims 2 to 10, and of Claim 12 which contains a limitation to the subject-matter of Claim 1, involves an inventive step, and this irrespective of whether one starts from D2 or from D4 as the closest state of the art.

7. Consequently, it is not necessary for the Board to consider any of the subsidiary requests of the Appellant.



Order**For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The case is remitted to the Opposition Division with the order to maintain the patent on the basis of the main request consisting of: Claims I to 3 submitted during oral proceedings, and Claims 4 to 12 (i.e. Claims 4 to 10 and 12) submitted as the subsidiary request with the Statement of Grounds of Appeal, after any necessary and consequential amendment of the description.

The Registrar:



E. Görgmayer

The Chairman:



C. Gérardin

