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**Datasheet for the decision
of 14 March 2011**

Case Number: T 0475/09 - 3.2.07

Application Number: 02785131.0

Publication Number: 1467841

IPC: B24C 11/00

Language of the proceedings: EN

Title of invention:

A process for treating a surface

Patent Proprietor:

Exa SA

Opponent:

OMYA DEVELOPMENT AG

Headword:

-

Relevant legal provisions:

EPC Art. 56

Relevant legal provisions (EPC 1973):

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Keyword:

"Inventive step (no), gap in disclosure of closest prior art is filled by the disclosure of further document (points 9.4.1 and 9.4.2)"

Decisions cited:

-

Catchword:

-



Case Number: T 0475/09 - 3.2.07

DECISION
of the Technical Board of Appeal 3.2.07
of 14 March 2011

Appellant: Exa SA
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 10 December 2008
revoking European patent No. 1467841 pursuant
to Article 101(2) and (101)(3)(b) EPC.

Composition of the Board:

Chairman: H. Meinders
Members: H.-P. Felgenhauer
E. Dufrasne

Summary of Facts and Submissions

- I. This appeal is against the decision of the opposition division revoking European patent No. 1 467 841.
- II. The appellant (proprietor) requested that the decision under appeal be set aside and the patent be maintained on the basis of the set of claims according to the main request or to the first or second auxiliary requests, all requests filed with the grounds of appeal.

The respondent (opponent) requested that the appeal be dismissed.

Both parties filed an auxiliary request for oral proceedings.

- III. With letter dated 6 January 2011 the appellant informed the Board that it will not attend the oral proceedings scheduled for 31 March 2011.
- IV. Claim 1 according to the main request reads, with characters introduced by the board, as follows:
- (a) a process for treating a surface to remove a coating from the surface,
 - (b) the process being of the type which employs an erasing agent comprising a plurality of particles,
 - (c) the particles comprising a precipitate or agglomerate of calcium carbonate,

- (d) the process comprising the step of contacting the surface with the erasing agent such that at least some of the particles roll along at least a portion of the surface,
- (e) wherein an angle of incidence of the particles and the surface is between 0° and 60°,
- (f) wherein the particles are generally round and have an irregular surface configuration to effect a rolling movement along the surface
- (g) such that the particles rub and absorb the coating from the surface,
- (h) and wherein the erasing agent is substantially non-aqueous,
- (i) wherein the particles have an average maximum diameter of between 30 and 1000 microns, and
- (j) wherein processes for the treatment of the human or animal body by therapy are excluded.

Claim 1 according to the first auxiliary request is identical to claim 1 according to the main request; claim 1 according to the second auxiliary request differs from claim 1 according to the main request in that the disclaimer (feature (j)) reads "wherein dental and bone, and skin exfoliation, treatments are excluded".

V. In the present decision the following documents, referred to in the decision under appeal and relied upon by both parties

E2: WO-A-94-07658

E4: US-A-5 827 114

are considered.

VI. The submissions of the appellant are essentially as follows

The impugned decision is flawed in that the disclosure of document E4 has not been considered properly. The reference to a Mohs hardness of "less than 5" refers to the water soluble blast media and not to the calcium carbonate used. The latter would have a Mohs hardness of 5 or more.

Although claim 1 does not define a specific hardness for the particles proper interpretation of this claim considering the description leads to the result that the particles are relatively soft, similar to the particles of precipitated or agglomerated calcium carbonate according to E2.

Concerning inventive step one question to be addressed is whether the skilled person would have been motivated to replace the CaCO_3 of E4 with the particular softer particles of E2.

In view of the teachings of documents E2 and E4 it would be counter-intuitive for the skilled person to

replace the calcium carbonate hard abrasive of E4 with the relatively soft precipitated or agglomerated calcium carbonate particles of E2. On the contrary, the skilled person trying to improve the cleaning efficacy of the water soluble blast media of E4 would look for an equally hard abrasive to replace the calcium carbonate.

Further, the present invention is based on the surprising finding that generally round particles of precipitated or agglomerated calcium carbonate have an erasing effect on a coating on the surface when they are projected at or along the surface at an angle of between 1 and 60°. This erasing effect has the result that the coating is removed in a less aggressive process as can be derived from figure 2 of the patent in suit and from the patentee's website "www.exasa.com".

The arguments given with respect to the claims according to the main request apply similarly to the claims according to the first and the second auxiliary requests.

VII. The submissions of the respondent are essentially as follows

The understanding of the disclosure of document E4 as referred to by the appellant is obviously not correct since apart from the fact that the patent in suit likewise relates to the hard material mentioned in E4 the calcium carbonate disclosed in this document is the most preferred material according to the patent in suit. E4 is relevant as closest prior art as it relates to improvements in wet blasting using non-aqueous media

such as glycerine to remove materials such as paint, scale, dirt, grease and the like from solid surfaces and discloses a process for cleaning a surface employing abrasive particles having an average size range of 10 to 1000 microns and which may be calcium carbonate, wherein the object to be cleaned is subjected to the blasting stream under an angle of below 60°.

Consequently the argument of the appellant that since the patent in suit relates to soft abrasive material whereas E4 relates to hard materials, such that it would be counter-intuitive for the skilled person to replace the calcium carbonate "hard abrasive" according to E4 with the relatively soft precipitated or agglomerated calcium carbonate of E2, is not correct.

Since E4 discloses the broad range of abrasive materials having a Mohs hardness of at least 1 to less than 10, there is no reason why the skilled person would not combine the teaching of E4 mentioning the use of soft calcium carbonate having a Mohs hardness of 3 with the teaching of E2 relating to precipitated or agglomerated particles of calcium carbonate having a Mohs hardness of 3 as well.

The argument of the appellant according to which the angle of incidence of the particles and the surface lying between 0° and 60° is not suggested by the prior art and has the surprising effect that the coating is removed from the surface in a less aggressive manner, cannot be considered as being valid.

In this respect it needs to be considered that already E4 discloses such an angle. Furthermore it cannot be considered as surprising that a rolling body having an irregular, i.e. rough surface is capable of removing coatings. It also cannot be considered as being surprising that the impact of a body on a surface is lower at a certain angle smaller than 90° than at a perpendicular angle. The reason is the known physical fact that at a smaller impact angle impact energy is partially transformed into kinetic energy due to rolling. Finally the observation that a body being essentially round will perform a rolling movement due to the angular momentum which is affected by the impact at a certain angle cannot be considered as being surprising. Thus the selection of a suitable angle providing enough impact to clean the surface is nothing else than the result of routine experimentation on a specific material.

The respondent furthermore made objections of lack of novelty, insufficiency of disclosure and inadmissible amendments.

VIII. In the annex to the summons to oral proceedings dated 9 December 2010 (in the following: the annex), to which it is referred in the following the Board gave its preliminary opinion with respect to the manner in which claim 1 needs to be construed, the disclosures of E2 (section 7.5) and E4 (section 7.4) and aspects to be considered in the examination of inventive step, starting from the process of E4 as closest prior art and taking E2 into account (section 7.7).

The appellant, apart from announcing its non-attendance at the oral proceedings, did not react in substance to the annex to the summons.

Reasons for the decision

1. *Procedural aspects*

The Board considers the appellant's statement (cf. section III above) that it will not attend the oral proceedings as a withdrawal of its request for oral proceedings.

Consequently the Board is in a position to decide without oral proceedings being held, based on the arguments of both parties given in writing and the position of the Board on it (cf. the annex as referred to in point VIII above).

2. *Amended claims*

2.1 Claim 1 according to the main request and the identical claim 1 according to the first auxiliary request have been amended adding the disclaimer defined by feature (j).

2.2 Claim 1 according to the second auxiliary request differs from claim 1 according to the main request in that the disclaimer defined by feature (j) has been amended to read "wherein dental and bone, and skin exfoliation, treatments are excluded".

2.3 According to the respondent the sets of claims according to all requests do not satisfy the requirements of Articles 84 and 123(3) EPC; the sets of claims according to the auxiliary requests furthermore do not satisfy the requirement of Article 123(2) EPC.

3. *Basis of the present decision*

As can be derived from the following the Board considers, based on the understanding of the process according to claim 1 and the disclosure of documents E2 and E4 as indicated in the annex and repeated below, the process according to claim 1 of all requests as not involving an inventive step; the ground of opposition of Article 100(a) EPC therefore is successful.

For this reason the admissibility of the amendments to the claims and the objections of the respondent under Article 100(a) EPC, lack of novelty and Article 100(b) EPC (insufficiency of disclosure) need not be dealt with.

4. *Subject-matter of claim 1 according to the main and the first auxiliary requests*

4.1 As indicated in the annex (section 7.3.1) claim 1 concerns a process for treating a surface to remove a coating from the surface and comprises features defining the erasing agent used (features (b), (c), (f), (h) and (i)) and features defining the manner in which the erasing agent is applied to and acts on the surface to be treated (features (d), (e) and (g)).

4.2 Concerning the definition of the erasing agent, namely the plurality of particles comprised therein (feature (b) the appellant is of the opinion that although in claim 1 no specific hardness is defined for these particles, proper interpretation of this claim infers that the particles are relatively soft, similar to the particles of precipitated or agglomerated calcium carbonate according to E2 (grounds of appeal, page 3, second full paragraph from the bottom).

According to the respondent (letter dated 8 September 2009, page 9, point 1)) the description of the patent in suit refers to particles of relatively high hardness (up to 10 Mohs) such that the distinction made by the appellant (particles according to claim 1 have a low hardness as opposed to the particles according to E4 which are harder abrasives with a Mohs hardness of 5 or more) is not to be followed.

4.3 The Board in this respect indicated in the annex (section 7.3.2) that firstly the hardness of the particles as known from E2 is not suited to form the basis for the appellant's interpretation of the subject-matter of claim 1. It noted in this respect that E2 is acknowledged in the patent in suit (cf. paragraph [0005]), however only as a general prior art. Neither the hardness of the particles of E2 is mentioned nor does the acknowledgement of E2 serve also as disclosure for the particles of the patent in suit.

4.4 The Board further indicated that it appears that due to the wide range of hardnesses referred to in the patent in suit (cf. paragraph [0015]), it is questionable whether there is in fact basis in the description for

the narrow interpretation offered by the appellant, i.e. the claimed particles necessarily having a low Mohs hardness.

Consequently it has been indicated that it appears to be questionable whether, with respect to E4, the hardness of the particles can be a distinguishing feature of the process claim 1.

Since the appellant has not reacted in substance to the annex the Board considers this preliminary opinion still to be valid and considers that for the erasing agent in the process of claim 1 a particular hardness, which could distinguish it from the erasing agent in the process according to E4, is not defined.

- 4.5 Furthermore the Board indicated in the annex (section 7.3.3) that as feature (b) defines that the erasing agent comprises a plurality of particles it appears that this feature cannot be considered as defining that the erasing agent only comprises a plurality of particles. Such an interpretation would appear to be contrary to the description of the patent in suit, according to which the process according to the invention can be carried out by means of wet blasting, which means that a liquid could also be present, more particularly a non-aqueous liquid (cf. paragraph [0017]).

5. *Subject-matter of claim 1 according to the second auxiliary request*

The above considerations apply correspondingly with respect to claim 1 according to the second auxiliary

request since this claim only differs from claim 1 of the main and the first auxiliary request in that the disclaimer is differently worded (cf. point 2.3 above).

6. *Disclosure of E4*

6.1 In the annex (section 7.4.1) the Board referred to the impugned decision (reasons, point 3.6) according to which the process of claim 1 is distinguished from the one according to E4 in that the particles comprise a precipitate or agglomerate of calcium carbonate (feature (c)) and that the particles are generally round and have an irregular surface configuration (first part of feature (f)).

6.2 Apart from the fact that the particles defined in claim 1 cannot be seen as having a specific hardness providing a further difference over the process of E4 (cf. point 4.4 above), the annex indicated that in E4 the hardness of the erasing agent is in any case disclosed as being in direct relation to the hardness of the surface to be treated and that treatment with abrasive particles having a Mohs hardness of less than 5.0 is specifically referred to (column 5, lines 33 - 62; column 7, lines 38 - 44).

Concerning the disclosure of E4 with respect to feature (b) as referred to in point 4.5 above ("comprises a plurality of particles") it is stated in the annex that this document appears to disclose that the erasing agent may include insoluble abrasives such as calcium carbonate, that it further defines that the calcium carbonate can be in an amount of 1 to 50 wt.% relative to the total abrasive used (column 5, lines

55 - 60) and that for wet blasting glycerin can be used as a carrier fluid (column 6, lines 49 - 54).

Concerning feature (e) the annex stated that it appears that the (only) figure of E4 shows a stream of abrasive slurry 19 directed via a nozzle 20 to a vertical and a horizontal surface of a substrate 14. It thus appeared to be necessary to determine whether this arrangement can be understood as being one leading to angles of incidence lying in the range defined by feature (e). In this connection it has been indicated further that it might be necessary to take into consideration that according to E4 the nozzle is usually a hand held device (column 8, lines 7 - 9).

Concerning the other features of claim 1 the annex stated that E4 appears to disclose, corresponding to a part of feature (d), that the process comprises the step of contacting the surface with the erasing agent (cf. E4, column 8, lines 3 - 9; figure) and that the particles according to E4 appear as at least participating in that, corresponding to feature (g), the coating is rubbed and absorbed from the surface (cf. e.g. column 5, lines 5 - 17).

Concerning feature (j) it has been concluded in the annex that the disclaimer according to this feature appears as not adding technical information to the subject-matter of claim 1 and that it thus appeared that feature (j) need not be considered as a feature distinguishing the process according to claim 1 from the one disclosed by E4.

7. *Distinguishing features*

7.1 In the annex (section 7.4.3) it has then been concluded that the impugned decision correctly considers the **part of feature (f) as a distinguishing feature** according to which the particles are generally round and have an irregular surface configuration. It further has been concluded that in connection with this definition concerning the shape of the particles, the **remainder of feature (f)** according to which this shape effects a rolling movement of the particles along the surface and the **remainder of feature (d)**, according to which at least some of the particles roll along at least a portion of the surface, need also to be seen as **distinguishing features**, as they appear to be the result of the form of the particles defined in feature (f).

Furthermore according to the annex the impugned decision appeared to correctly consider **feature (c)** as a **further distinguishing feature** (reasons, point 3.6), according to which the particles comprise a precipitate or agglomerate of calcium carbonate.

7.2 Referring to the disclosure of E4 in this connection it has been indicated in the annex (section 7.4.4) that this document discloses that the abrasive used will typically be in the form of powder having an average size range of from 10 to 1000 microns in diameter (column 5, lines 33 - 38) and that furthermore it is disclosed that such particles will substantially retain their original geometry and inherent abrading efficiency (column 5, lines 5 - 10). The document appears to be silent concerning the type, form and

shape of the particles and how the particles move on the surface after their impact on it.

8. *Disclosure of E2*

8.1 The Board indicated in the annex (section 7.5.1) that the consideration of the disclosure of E2 in the impugned decision (reasons, point 3.6) appeared to be correct in that particles comprising a precipitate or agglomerate of calcium carbonate as defined by feature (c), the particles having the shape as defined by feature (f), are known from E2.

8.2 In the annex it is more particularly indicated that it is known from **E2** that the **particles** can be water-insoluble **obtained from precipitated or agglomerated calcium carbonates**, the agglomerates **being predominantly of spherical shape and having a particle size range of 10 - 200 microns**, wherein the **spherical shape has been found to result in less scratching of the surface** (cf. the paragraph bridging pages 3 and 4). In this connection it has been referred to the Mohs hardness of these particles being in the same range as for dolomite (e.g. 3.0 as stated for Example 1) and that the particles used as blasting element have a cleaning effect similar to the one of crushed dolomite but being less damaging to the substrate.

9. *Inventive step of the process according to claim 1 according to the main request*

9.1 Concerning the examination of inventive step the Board relies on its preliminary opinion given in the annex with respect to the manner in which claim 1 has to be

construed, the disclosure of E2 and E4 (cf. points 4 - 8 above) and the manner in which inventive step has to be assessed. The appellant has not responded in substance to that opinion.

Concerning the examination of inventive step the Board stated in the annex (section 7.7.1) that starting, with the impugned decision, from the **process of E4 as closest prior art** the disclosure of this document and the features distinguishing the process according to claim 1 from the process according to E4 and their effects have to be considered in formulating the objective problem to be solved.

According to the annex, based on this objective problem it then appears to be necessary to examine whether consideration of E2 would have rendered the process according to claim 1 obvious.

9.2 *Distinguishing features*

The features distinguishing the process according to claim 1 from the process according to E4 are outlined in point 7.1 above.

9.3 *Problem to be solved*

- 9.3.1 The **distinguishing features** relate to, as indicated in the impugned decision (grounds, point 3.6), a **specific form and type of the particles** to be used. These lead, as further defined by these distinguishing features, **to a rolling movement of the particles** along the surface being effected, such that at least some of the particles roll along at least a portion of the surface.

9.3.2 Based on these distinguishing features and considering that E4 has been considered in the annex as being silent concerning the type, form and shape of the particles and how the particles move on the surface after their impact on it (cf. point 7.2 above), the **problem to be solved** in view of the process of E4 can be seen in the **provision of particles suitable for an effective removal of coatings without damaging the surface of the substrate.**

9.3.3 This problem is in line with the one stated in the patent in suit, namely to overcome at least some of the disadvantages of the prior art processes (cf. paragraph [0007]), taking into account that the disadvantages referred to concern i.a. the prevention of mechanical or chemical damage to the surface of a substrate (cf. paragraph [0004]).

The problem stated above furthermore relates to the one stated in the impugned decision and addressed in the annex, namely "how to manufacture calcium carbonate blasting particles", considering that the "how" relates to the type and form of the particles.

9.4 *Obviousness*

9.4.1 When reducing the process according to E4 into practice the skilled person necessarily has to fill the gap in the disclosure of this document (cf. section 7.2 above) in that a choice has to be made as to the type, form and shape of the particles to be used.

9.4.2 Considering in this context that E2 discloses a process of the kind concerned (cf. points 8.1 and 8.2 above) that the relationship between the form of the particles and the mechanical damage inflicted on a surface is also disclosed in E2, namely that "the spherical shape of the particles results in less scratching of the surface" and that according to E2 particles are used of the type comprising a precipitate or agglomerate of calcium carbonate (see for both the paragraph bridging pages 3 and 4 of E2 and the acknowledgement of E2 in the patent in suit paragraph [0005]), the choice for the particles of E2, which results in particles according to the distinguishing features referred to above (point 7.1), is evident.

9.4.3 The above applies also considering the argument of the appellant that it would be counter-intuitive for the skilled person to replace the calcium carbonate hard abrasive of E4 with relatively soft precipitated/agglomerated calcium carbonate of E2 (grounds of appeal, paragraph bridging pages 3 and 4).

As indicated above (cf. point 6.2) the hardness of the particles cannot be considered as distinguishing feature with respect to E4 and consequently this argument lacks a support.

9.4.4 Thus the question referred to in the annex, namely, whether starting from E4 as closest prior art consideration of E2 would have rendered the process according to claim 1 obvious, has to be answered in the affirmative. This process thus does not involve an inventive step (Article 56 EPC).

10. *Inventive step of the process according to claim 1 according to the first and second auxiliary request*

10.1 Since the claims 1 according to the main request and the first auxiliary request are identical (cf. point 2.1 above) the above applies likewise with respect to claim 1 according to the first auxiliary request.

Consequently the subject-matter of claim 1 according to the first auxiliary request does not involve an inventive step (Article 56 EPC).

10.2 Claim 1 according to the second auxiliary request differs from claim 1 according to the main request only with respect to the wording of the disclaimer (cf. point 2.2 above). Since the wording of the disclaimer does not contribute to the definition of the technical teaching as defined by claim 1 according to this request the above result given with respect to claim 1 according to the main request applies likewise (cf. section 7.8 of the annex).

Consequently the subject-matter of claim 1 according to the second auxiliary request does not involve an inventive step (Article 56 EPC).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Nachtigall

H. Meinders