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**Datasheet for the decision
of 17 February 2009**

Case Number: T 0068/08 - 3.2.06

Application Number: 03251174.3

Publication Number: 1340587

IPC: B23P 6/00

Language of the proceedings: EN

Title of invention:

Process of removing a coating deposit from a through-hole in a component and component processed thereby

Patentee:

GENERAL ELECTRIC COMPANY

Opponent:

SIEMENS AKTIENGESELLSCHAFT

Headword:

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Relevant legal provisions:

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Relevant legal provisions (EPC 1973):

EPC Art. 54(2), 56

EPC R. 67

Keyword:

"Novelty (yes)"

"Inventive step (yes)"

"Reimbursement of the appeal fee (no)"

Decisions cited:

T 0367/91

Catchword:

-



Case Number: T 0068/08 - 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 17 February 2009

Appellant: SIEMENS AKTIENGESELLSCHAFT
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Representative: -

Respondent: GENERAL ELECTRIC COMPANY
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 23 November 2007
rejecting the opposition filed against European
patent No. 1340587 pursuant to Article 102(2)
EPC.

Composition of the Board:

Chairman: P. Alting Van Geusau
Members: G. Pricolo
W. Sekretaruk

Summary of Facts and Submissions

I. The appeal is from the decision of the Opposition Division posted on 23 November 2007 rejecting the opposition filed against European patent No. 1 340 587, granted in respect of European patent application No. 03 251 174.3.

II. The patent as granted includes claims 1 to 5 directed to a process and claims 6 to 10 directed to a component. Claim 1 reads as follows:

"1. A process of removing a deposit (22) from a through-hole (12) of a component (10) having a coating (20) on a first surface (14) thereof, the deposit (22) being contiguous with the coating (20) and not fully closing the through-hole (12), the process comprising the step of directing a liquid-containing jet (34) at the through-hole (12) from a second surface (16) of the component (10) opposite the first surface (14) characterized in that, the jet (34) is containing non-abrasive particulate media and is being emitted from a nozzle (36) at a pressure insufficient to remove substantially all of the deposit (22) from the through-hole (12) if the particulate media were not present in the jet (34), whereby removal of the deposit (22) is primarily by the particulate media propelled by the jet (34) and not the liquid."

III. In coming to its decision the Opposition Division held that the claimed subject-matter was novel and inventive over the available prior art including:

D1 : EP-A-1 103 627;

D6 : JP-A-59-001166.

IV. On 7 January 2008 the appellant (opponent) filed a notice of appeal against this decision and submitted a statement of grounds of appeal. The payment of the appeal fee was registered on the same day.

V. In an annex to the summons for oral proceedings pursuant to Article 11(1) Rules of Procedure of the Boards of Appeal the Board gave a preliminary assessment of the case. This can be summarized as follows:

The appellant's objection of lack of novelty over D1 was based on the argument that "non-abrasive particulate media" also covered impurities inevitably present in water. However, these impurities would not provide the substantial effect recited in claim 1, according to which removal of the deposit was primarily by the particulate media. In fact, it appeared that the subject-matter of claim 1 differed from D1 by the features defined in the characterizing portion of claim 1.

The characterizing portion of independent claim 6 defined features of the component by reference to its process of manufacture, but in assessing inventive step only the features of the claimed component that were the direct result of the process should be taken into account.

It appeared that the appellant's request for reimbursement of the appeal fee could not be allowed

because it was based on an alleged error of judgment by the opposition division. This could not be regarded as a substantial procedural violation justifying the reimbursement of the appeal fee in accordance with Rule 103 EPC.

VI. With letter dated 13 January 2009 the respondent (patent proprietor) filed a set of claims according to an auxiliary request for maintenance of the patent in amended form in which claims 6 to 10 relating to a component had been deleted.

VII. Oral proceedings took place on 17 February 2009.

The appellant requested that the decision under appeal be set aside and the European patent be revoked, and that the appeal fee be reimbursed.

The only request upheld by the respondent was that the European patent be maintained on the basis of the claims according to the auxiliary request filed with letter of 13 January 2009, with the description as amended during the oral proceedings and the figures as granted.

VIII. The arguments of the appellant, in as far as they are relevant to this decision, can be summarized as follows:

Even if it was not explicitly disclosed in D1, the water jet used in the process according to D1 included impurities which could be regarded as non-abrasive particulate media in accordance with claim 1 of the patent in suit. Claim 1 indeed did not specify the amount of non-abrasive particulate media present in the

jet. Accordingly, the subject-matter of claim 1 was not novel over D1. In any case, the subject-matter of claim 1 did not involve an inventive step. When putting into practice the process of D1, the skilled person would notice that a jet consisting essentially of water was relatively ineffective in removing the deposit from the through-hole. This, in fact, was acknowledged in the patent in suit. Accordingly, the skilled person would be faced with the problem of improving the method of D1 such that it was more effective. In order to solve this problem the skilled person would consider the teaching of D6, consisting in adding ice particles to a water jet. D6 did not relate to a process for removing a deposit from a through-hole but to a process for removing a paint coating. However, removing a coating of paint involved the same physical mechanism as removing a deposit from a through-hole. Moreover claim 1 did not specify the kind of deposit, the material of the component, or other process parameters such as the pressure of the jet. In fact, the deposit of claim 1 could well be a paint coating as in D6.

The reimbursement of the appeal fee was justified by the obvious error of judgment by the opposition division, in particular having regard to the interpretation of granted claim 6 which was directed to a product. In assessing novelty and inventive step of the claimed product, the opposition division took into account features of the claim that were exclusively related to the process for the manufacture of the product. This was a gross error of judgment that amounted to a substantial procedural violation.

IX. In response to these submissions the respondent essentially argued as follows:

In D1 there was no hint at all to include particles of any kind in the water jet. On the contrary, it was an essential feature of D1 that the fluid jet was substantially free of solid particulate such that the deposit could be removed without removing metal from the component. D6 disclosed that ice particles were used to remove a top coating without damaging the primary film coating. The ice particles impinged on the top coating so as to exert a large impact and frictional force on the top-coating film. However, D6 was not related to the removal of coatings from through-holes. Furthermore, the ice particles of D6 could not be considered as non-abrasive as they had a polygonal shape with edges. Consequently the subject-matter of claim 1 was novel and inventive over the combination of the teachings of documents D1 and D6.

Reasons for the Decision

1. The appeal is admissible.

2. *Novelty*

2.1 D1 undisputedly discloses a process according to the preamble of claim 1, namely (see Figs. 3 and 4 of D1) a process of removing a deposit from a through-hole (50) of a component (10) having a coating (60) on a first surface (22) thereof, the deposit being contiguous with the coating (60) and not fully closing the through-hole (see Fig. 3), the process comprising the step of

directing a liquid-containing jet (see col. 6, lines 3 to 7) at the through-hole (50) from a second surface (42) of the component (10) opposite the first surface (22). According to the teaching of D1, the deposit is removed by means of a water-jet which has a pressure sufficient to remove only the bond coat without removing metal from the component (see col. 6, lines 6 to 21). D1 discloses that the water-jet has a pressure of between about 5000 and 50000 pounds per square inch (345-3450 bar), preferably about 20000 (1380 bar; see col. 6, lines 18-24). This range overlaps the range of 6000 to 15000 psi disclosed in the patent in suit (see page 4, lines 51 to 53) for the values of pressure insufficient to remove substantially all of the deposit. However, D1 positively teaches that the deposit is completely removed (see para. [0028], [0032] and Figs. 4 and 6 of D1). Therefore, since the extent of removal of the deposit depends not only on the jet pressure but also on the material of the coating, the low pressure values within the disclosed ranges can only be intended for coatings that are completely removed even at such low pressure values, e.g. because these coatings are relatively soft. Accordingly, there is no disclosure in D1 of a jet emitted at a pressure insufficient to remove substantially all of the deposit from the through-hole.

Furthermore, the Board does not accept the appellant's view that impurities necessarily present in the water forming the jet should be regarded as non-abrasive particulate media in accordance with the wording of claim 1 of the patent in suit. Claim 1 requires that the deposit is removed from the through-hole with a jet emitted at a pressure insufficient to remove

substantially all of the deposit if the particulate media were not present in the jet, whereby removal of the deposit is primarily by the particulate media propelled by the jet, and not by the liquid. D1 teaches that the water-jet must be substantially free of solid particulate to permit the jet to remove the deposit from the hole without removing metal from the component (col. 3, lines 42 to 45 and col. 6, line 7 to 10). Accordingly, in D1 removal of the deposit is primarily by the pressure of the jet and not by impurities of the water, which are in any case present in a very small amount and have therefore an effect on the erosive capability of the jet which is negligible in industrial practice.

Therefore, the subject-matter of claim 1 is distinguished from D1 by the features defined in the characterizing portion, according to which the jet is containing non-abrasive particulate media and is being emitted from a nozzle at a pressure insufficient to remove substantially all of the deposit from the through-hole if the particulate media were not present in the jet, whereby removal of the deposit is primarily by the particulate media propelled by the jet and not the liquid.

2.2 Other documents relevant for novelty have not been cited and are not apparent to the Board.

3. *Inventive step*

3.1 The Board shares the appellant's view that the problem solved by means of the features distinguishing the subject-matter of claim 1 from the closest prior art D1

is to provide a more effective removal of the deposit from the through-hole. As explained in the patent in suit (see page 9, lines 40 to 43), a jet consisting essentially of water, as in D1, is relatively ineffective in removing deposits within a through-hole unless very high pressures are employed.

3.2 The appellant essentially argued that the skilled person faced with this problem would turn to document D6, the general teaching of which consisted in providing ice particles in a water jet.

D1 specifically relates to a method of removing a bond coat and a thermal barrier coating on a metal piece having a cooling hole (see claim 1). In contrast thereto, document D6 (see the abstract) relates to a process specifically tailored to removing a fatigued finishing top-coating film (5) of paint from a component (6) without damaging the underlying primary film coating (4) of paint. The water acts as a carrier for the ice particles (1) that impinge on the top-coating (5) to exert a large impact and frictional force thereon, thereby removing it. Contrary to the appellant's view, no general teaching can be derived from D6 that a water jet including ice particles provides a more effective removal of a coating than a water jet substantially free of solid particulate, such as disclosed in D1. The disclosure of D6 is in fact limited to the removal of a specific coating, namely a fatigued paint coating, by means of a water jet that only serves as a carrier for the ice particles (and indeed according to D6 the water jet can be replaced by compressed air), the removal action being caused exclusively by the ice particles. Therefore, not only

is there no apparent reason why the skilled person would turn to D6, since it relates to a specific process whose only similarity to the process of D1 is that a coating is removed by means of a jet comprising water, but even if the skilled person were to take D6 into consideration, he would find no indication in it suggesting that the effectiveness of the water jet of D1 could be improved by including ice particles, or even that ice particles could be appropriate in the process of D1 for removing a bond coat and a thermal barrier coating from a cooling hole of a metal component.

3.3 No other attack based on a combination of documents cited in the opposition proceedings has been substantiated by the appellant in the course of the appeal proceedings. The Board is also satisfied that the remaining documents contain no additional relevant information which would point towards the claimed subject-matter.

4. It follows that the subject-matter of claim 1 is novel (Article 54(2) EPC 1973) and involves an inventive step (Article 56 EPC 1973).

Therefore, claim 1 with dependent claims 2 to 5, the description as amended during the oral proceedings by deletion of all references to claim 6, and the figures as granted, form a suitable basis for maintenance of the patent in amended form.

5. *Reimbursement of the appeal fee*

One of the requirements for reimbursement is that it is equitable by reason of a substantial procedural violation (Rule 67 EPC 1973). This requirement is, however, not met.

In the statement of grounds of appeal, the request for reimbursement of the appeal fee was based generally on an alleged error of judgment by the opposition division. At the oral proceedings the appellant specified that the error of judgment was the obvious misinterpretation of claim 6 by the opposition division, which amounted to a substantial procedural violation. However, such a wrong assessment of the claimed invention (or of the prior art) would always be a substantive issue (see e.g. T 367/91, point 7). As a consequence, a decision based only on such a wrong assessment cannot be regarded as a substantial procedural violation justifying the reimbursement of the appeal fee in accordance with Rule 67 EPC 1973.

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 European patent on the basis of the following documents:

Claims 1 to 5 of the auxiliary request of 13 January 2009;

description pages 2 to 11 as granted, whereby on page 2, line 4, the words "and to a component according to the preamble of claim 6"; and on page 2, line 58 and on page 3, line 1, the words "and a product according to claim 6", and on page 3, line 8, the words "and 6" are deleted;

drawings figures 1 to 8 as granted.

3. The request for reimbursement of the appeal fee is rejected.

The Registrar:

The Chairman:

M. Patin

P. Alting Van Geusau