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**Datasheet for the decision  
of 5 September 2019**

**Case Number:** T 1282/15 - 3.2.06

**Application Number:** 06022506.7

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**IPC:** F01D5/28, F01D9/02, F01D25/24,  
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**Language of the proceedings:** EN

**Title of invention:**  
Steam turbine

**Patent Proprietor:**  
Kabushiki Kaisha Toshiba

**Opponent:**  
Siemens Aktiengesellschaft

**Headword:**

**Relevant legal provisions:**  
EPC Art. 100(a)

**Keyword:**  
Novelty - main request (no)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
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Case Number: T 1282/15 - 3.2.06

**D E C I S I O N**  
**of Technical Board of Appeal 3.2.06**  
**of 5 September 2019**

**Appellant:** Kabushiki Kaisha Toshiba  
(Patent Proprietor) 1-1, Shibaura 1-chome,  
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**Representative:** Kramer Barske Schmidtchen  
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**Respondent:** Siemens Aktiengesellschaft  
(Opponent) Werner-von-Siemens-Straße 1  
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**Decision under appeal:** **Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
29 April 2015 concerning maintenance of the  
European Patent No. 1780379 in amended form.**

**Composition of the Board:**

**Chairman** M. Harrison  
**Members:** M. Hannam  
E. Kossonakou

## Summary of Facts and Submissions

- I. An appeal was filed by the appellant (patent proprietor) against the interlocutory decision of the opposition division in which it found that European patent No. 1 780 379 in an amended form met the requirements of the EPC.
- II. The appellant requested that the decision be set aside and the patent be maintained as granted or, in the alternative, that the patent be maintained according to auxiliary request 1 or 2.
- III. The respondent (opponent) requested that the appeal be dismissed.
- IV. The following document referred to by the parties is relevant to the present decision:  
  
E10 DE-A-100 56 241
- V. The Board issued a summons to oral proceedings and a subsequent communication containing its provisional opinion, in which it indicated *inter alia* that the subject-matter of claim 1 of the main request (corresponding to claim 1 of the patent as granted) seemingly lacked novelty with respect to E10.
- VI. With letter of 5 August 2019 the appellant re-filed auxiliary request 2 and filed auxiliary request 3 as its sole auxiliary requests.
- VII. Oral proceedings were held before the Board on 5 September 2019, during which the appellant withdrew all auxiliary requests on file.

VIII. The final requests of the parties were thus as follows:

The appellant requested that the decision under appeal be set aside and that the patent be maintained as granted (main request).

The respondent requested that the appeal be dismissed.

IX. Claim 1 of the main request reads as follows:

"A steam turbine (100) comprising:  
a turbine casing (101);  
a turbine rotor (102) disposed in the turbine casing (101);  
a bucket (23; 107) implanted in the turbine rotor; and  
a nozzle (20; 106) disposed on an upstream side of the bucket (23; 107) and supported by the turbine casing (101), in which a plurality of stages (105), each including the bucket (23; 107) and the nozzle (20; 106), are arranged axially in the turbine (100) so as to define a steam path,  
characterized in that  
a hydrophilic coating portion (21) is disposed on an area of a concave surface of the nozzles (20; 106) along a trailing edge thereof."

X. The appellant's arguments may be summarised as follows:

The subject-matter of claim 1 was novel over E10 which failed to disclose a hydrophilic coating portion being disposed on a nozzle. While an oxide of titanium would form on the nozzle of E10, this was formed by way of a passive process; the claimed coating could only be formed by way of an active process in order to control the thickness, structure and area of the coating. Even if these features were not explicitly included in claim

1, the described method should be used to interpret the claims and this unambiguously implied the coating being formed through an active coating process. The suggestion that a passively applied coating of a nozzle could anticipate the claimed coating was first mooted by the Board in its preliminary opinion and thus surprised the appellant. Even the German language used by the opponent had clearly distinguished between a passively achieved coating ('Schicht') and an actively applied coating ('Beschichtung'). The coating of E10 thus did not anticipate the claimed coating. E10 further failed to disclose the coating being 'disposed on an area of a concave surface of the nozzles along a trailing edge thereof'. The coating in E10 was in no way limited to a particular portion of the nozzle whereas the claimed coating was applied only in a very specific area. The claimed coating was applied only where most effective (see e.g. para. [0093] of the patent) and a skilled person would not apply it in areas where it was not needed due to cost issues, this again influencing how this feature of claim 1 would be interpreted.

XI. The respondent's arguments may be summarised as follows:

The subject-matter of claim 1 lacked novelty over E10. Irrespective of whether actively or passively applied, the oxide of titanium formed on the nozzles in E10 anticipated the claimed hydrophilic coating portion of the product claim. No ambiguity existed in claim 1 such that the description did not need to be consulted to interpret the scope of claim 1. Claim 1 was not limited to a coating solely to 'an area of a concave surface of the nozzles along a trailing edge thereof'.

## **Reasons for the Decision**

### 1. *Main request*

#### 1.1 *Article 100(a) EPC - Novelty*

The ground for opposition under Article 100(a) EPC prejudices maintenance of the patent as granted since the subject-matter of claim 1 lacks novelty over E10.

##### 1.1.1 The appellant holds that the following features i.e. those in the characterising portion of claim 1 are not known from E10:

'a hydrophilic coating portion is disposed on an area of a concave surface of the nozzles along a trailing edge thereof'

This is not accepted by the Board.

##### 1.1.2 E10 discloses both buckets and nozzles of a steam turbine made from titanium (see e.g. para. [0001], col. 1, lines 40 to 41 and col. 2, lines 1 to 4). It is implicitly the case, and has notably not been disputed by the appellant, that such titanium turbine blades would oxidise such that a layer of titanium oxide would form over the surface of the blades. Titanium oxide is acknowledged in para. [0042] of the patent to be hydrophilic. With the oxide forming without restriction over the entirety of the blades, the Board thus finds the features in the characterising portion of claim 1 as being known from E10.

##### 1.1.3 The Board notes that the scope of protection conferred by a patent is defined by the claims; the independent

claim(s) define the invention in its broadest sense. Whilst detailed embodiments of the claimed invention often populate the description, these are typically more limited in scope than the invention as defined by the independent claim(s). This structure is borne out in the present patent in which claim 1, which is a product claim, indicates the nozzle to have a hydrophilic coating portion, only the description detailing that this is actively applied, for example to a specific thickness and in a particular area of the nozzle. These limitations, however, do not appear in claim 1 and thus, by equal measure, cannot be used to differentiate the subject-matter of claim 1 from the prior art. It is for this reason that the appellant's arguments regarding claim 1 allegedly implying an 'active' application, rather than a passive appearance, of a coating must fail. Claim 1 simply defines a coating to be present (i.e. 'is disposed on') on the nozzles with no limitation as to how this is achieved; the coating of titanium oxide on the nozzles of E10 thus anticipates the coating portion of claim 1.

- 1.1.4 The appellant's argument that the description should be used to interpret the claims does not alter this finding. The present claim 1 and its scope are perfectly clear. First, there is no need for the skilled person to refer to the description in order to interpret the meaning of any feature(s) in the claim. Even doing so would only result in the skilled person being confronted with one or more preferred methods which might be carried out (e.g. as in paragraph [0093] cited by the appellant). Likewise, any cost issues that a skilled person might encounter if applying a coating over a larger area merely concern the fact that a skilled person who wants only to coat a specific portion would not then coat the whole portion; this



however again finds no corresponding limitation in the claim. The claimed 'coating portion' is thus directly anticipated by the titanium oxide coating which forms in a passive process on the titanium nozzles of E10.

1.1.5 The appellant's suggestion that the German language as used by the respondent in its oral submissions clearly showed that there was a distinction between a passively achieved coating ('Schicht') and an actively applied coating ('Beschichtung') is irrelevant to the present case. The procedural language, and thus the definitive language for determining the scope of claim 1, is English. The term 'coating' in English can be applied to both passively and actively achieved 'coatings' e.g. a coating of rust (results passively) or a coating of paint (actively applied). Thus, the term 'coating' in claim 1 can relate to both passively and actively achieved coatings such that the passively formed oxide coating on the titanium nozzles of E10 anticipates the claimed 'hydrophilic coating portion'.

1.1.6 The appellant's further contention that it was the Board which first mooted the possibility of a passive coating anticipating the claimed coating portion (and that the objection should thus not be admitted) is quite simply incorrect. In point 2.1 of the respondent's letter of response to the grounds of appeal, the issue of active and passive coatings was discussed at length with the conclusion that the passive coating in E10 anticipated the claimed coating. That this was also part of the opposition division's considerations is also evident from item 2.1.3 of the decision, albeit that the opposition division had concluded differently.

- 1.1.7 The appellant's still further contention that E10 failed to disclose the coating being 'disposed on an area of a concave surface of the nozzles along a trailing edge thereof', which it perceived to restrict the coating to only a specific area, is also not accepted. E10 implicitly discloses the titanium oxide coating over the entirety of the nozzles, which was not contested by the appellant. Being coated on the entirety of the nozzles, this thus includes the claimed 'area of a concave surface of the nozzles along a trailing edge thereof'. Claim 1 fails to limit the coating to solely the trailing edge of the concave surface, such that E10 clearly discloses this feature as part of the entirety of the nozzles being coated.
- 1.1.8 The appellant's argument that the coating, seen in the patent as a whole, was applied only in a very specific area is not contested. However, claim 1 fails to define this, simply indicating that the coating was 'disposed on an area of a concave surface of the nozzles along a trailing edge thereof' and not defining in claim 1 that the coating was, for example, only provided on this portion of the nozzles.
- 1.1.9 In summary, therefore, E10 is found not only to disclose the features of the preamble of claim 1, but also to unambiguously disclose the characterising features of claim 1, that the coating was 'disposed on an area of a concave surface of the nozzles along a trailing edge thereof'. It follows that all features of claim 1 are disclosed in E10.
- 1.1.10 The subject-matter of claim 1 consequently lacks novelty such that the ground for opposition under Article 100(a) EPC prejudices maintenance of the patent

as granted. The main request is thus not allowable.

2. Since there are no auxiliary requests remaining in the appeal proceedings, the Board must dismiss the appeal.

## Order

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

The appeal is dismissed.

The Registrar:

The Chairman:



M. Kiehl

M. Harrison

Decision electronically authenticated