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**Datasheet for the decision  
of 10 December 2020**

**Case Number:** T 0900/18 - 3.3.05

**Application Number:** 10004443.7

**Publication Number:** 2248919

**IPC:** C21D8/12, C21D9/22, C22C38/04,  
C22C38/18, C22C38/20

**Language of the proceedings:** EN

**Title of invention:**  
High corrosion-resistant, high-strength and non-magnetic  
stainless steel

**Patent Proprietor:**  
Daido Tokushuko Kabushiki Kaisha

**Opponent:**  
Schoeller-Bleckmann Oilfield Technology  
GmbH & Co. KG

**Headword:**  
Non-magnetic stainless steel/Daido

**Relevant legal provisions:**  
EPC Art. 100(a), 100(c), 123(2), 54, 56

**Keyword:**

Grounds for opposition - added subject-matter (no)

Novelty - (yes)

Inventive step - (yes)

**Decisions cited:**

T 1634/13, T 0628/14, T 0261/15

**Catchword:**



**Beschwerdekammern**

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Case Number: T 0900/18 - 3.3.05

**D E C I S I O N**  
**of Technical Board of Appeal 3.3.05**  
**of 10 December 2020**

**Appellant:** Schoeller-Bleckmann Oilfield Technology  
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**Decision under appeal:** **Decision of the Opposition Division of the European Patent Office posted on 7 February 2018 rejecting the opposition filed against European patent No. 2248919 pursuant to Article 101(2) EPC.**

**Composition of the Board:**

**Chairman**            E. Bendl  
**Members:**            G. Glod  
                             P. Guntz

## Summary of Facts and Submissions

- I. The opponent's (appellant's) appeal lies from the opposition division's decision to reject the opposition against European patent No. EP-B-2 248 919.

The only claim of the patent is as follows:

*"1. A high corrosion-resistant, high-strength and non-magnetic stainless steel comprising, by mass:*

*C: 0.01% to 0.05%*

*Si: 0.05% to 0.50%*

*Mn: more than 16.0% but 19.0% or less*

*Cu: 0.50% to 0.80%*

*Ni: 3.5% to 5.0%*

*Cr: 17.0% to 21.0%*

*Mo: 1.80% to 3.50%*

*B: 0.0010% to 0.0050%*

*N: 0.45% to 0.65%*

*and optionally comprises*

*P: 0.040% or less*

*S: 0.010% or less*

*O: 0.010% or less*

*Ca, Mg and REM: 0.0001% to 0.0100% in total*

*Nb, V, Ta and Hf: 0.1% to 2.0 in total*

*Al: 0.001% to 0.10%*

*W and Co: 0.1% to 3.0% in total,*

*with the balance composed of Fe and unavoidable impurities, the steel satisfying the following equations (1) to (4):*

$$[Cr] + 3.3x[Mo] + 16x[N] \geq 30 \quad (1)$$

$$[Cr]/[C] \geq 330 \quad (2)$$

$$[Cr]/[Mn] \geq 1.0 \quad (3)$$

$$([Ni] + 3x[Cu]) / ((Cr) + [Mo]) > 0.25 \quad (4)$$

*wherein [Cr], [Mo], [N], [C], [Mn], [Ni] and [Cu] represent the content of Cr, the content of Mo, the content of N, the content of C, the content of Mn, the content of Ni, and the content of Cu in the steel in terms of mass %, respectively."*

II. The following documents are of relevance here:

D1: WO 91/16469 A1

D2: EP 1 624 082 A1

D3: EP 1 538 232 A1

D4: US 4 434 006 A

D5: WO 2008/127262 A2

D6: Bargel, H.-J. und Schulze, G, Werkstoffkunde,  
Springer-Verlag, 8. Aufl., 2004, Seiten 228-241

D7: JP 2004 156086 A

III. In its communication under Article 15(1) RPBA 2020 of 17 June 2020, the board was of the preliminary opinion that the appeal was likely to be dismissed.

IV. In response to this communication, the appellant withdrew its request for oral proceedings on 3 November 2020. Thus, the decision can be given in writing.

V. The appellant's arguments relevant to the present decision can be summarised as follows.

The opposition division did not correctly exercise its discretion when not admitting D7 into the proceedings. D7 was highly relevant for the question of inventive step and should be part of the proceedings. Thus, as an auxiliary measure, the case should be remitted to the opposition division.

The requirements of Article 123(2) EPC were not fulfilled since O, P and S were now only optional components while it was evident from the application as filed that these components were always present as unavoidable impurities.

D1 anticipated the novelty of the claim. In particular, D1 explicitly disclosed the value of 3.5% for Ni as a lower end point.

D2 was also prejudicial to the novelty of the claim. Although the amount of Cu indicated in claim 1 of D2 was 0.2% higher than in the claim of the patent, the skilled person would still have worked in the range claimed.

There was no purposeful selection shown with respect to D4, so novelty could not be given.

The subject-matter of the claim lacked an inventive step in view of D1 in combination with the common general knowledge or D6. If the amount of Ni were increased as taught in D6, the skilled person would also have adapted the amounts of Cr and Mo.

Furthermore, the skilled person starting from D1 as the closest prior art would also have considered D3 or D5 and arrived at the claimed subject-matter without inventive skills.

- VI. The respondent refuted these arguments and contested the admissibility of the opposition.
  
- VII. The appellant requests that the decision under appeal be set aside and that the patent be revoked.

The respondent (patent proprietor) requests that the appeal be dismissed or, alternatively, that the patent be maintained in amended form on the basis of one of the first to sixth auxiliary requests submitted with the reply to the appeal.

## **Reasons for the Decision**

### 1. Admissibility of the opposition

The opposition is admissible for the following reasons.

In its notice of opposition, the appellant (then the opponent) clearly indicated the grounds (see page 2, first paragraph) on which the opposition was based and argued why in its view each of the mentioned grounds was prejudicial to the maintenance of the patent (see points 3, 4 and 5). The fact that the arguments may not be convincing is not a question of admissibility but of merit (see also Case Law of the Boards of Appeal of the EPO, 9th edition, 2019, IV.C.2.2.8 a)).

### 2. Admissibility of D7

The board cannot see how the appellant's right to be heard would have been violated.

The minutes of the oral proceedings before the opposition division (point 6.1) indicate that the relevance of D7 was discussed during oral proceedings and that the appellant did not request to further discuss this document. The decision contains a reasoning (page 2, last paragraph, and page 3, first paragraph), albeit short, on why the opposition division considered D7 not to be *prima facie* relevant. From the decision, it is evident that this evaluation



concerned not only the question of novelty but also inventive step.

In accordance with the similar case T 628/14 (Reasons 1), the board sees no reason for overturning the opposition division's decision not to admit document D7 into the proceedings.

Main request - Patent as granted

3. Article 100(c) EPC

There is no reason to deviate from the opposition division's decision.

Claim 1 is identical to claim 1 as filed and includes further optional compounds each in a specified weight range. Therefore, basis can be found in the application as filed on page 10, line 18; page 10, line 25; page 12, line 21; page 13, lines 17 to 21; page 14, lines 3 to 7; page 14, line 10; and page 14, lines 18 and 19.

None of P, S and O was mentioned in claim 1 as filed, so their presence was not mandatory. If they are considered unavoidable impurities, they are still covered by current claim 1 since the unavoidable impurities are still part of claim 1. The fact that they are also mentioned as optional means that optionally they may be present but only up to the specified maximum amount.

4. Article 100(a) EPC together with Article 54 EPC

The board sees no reason to deviate from the impugned decision for the following reasons.

4.1 D1 discloses several examples in Table III. It is common ground that none of these is prejudicial to the novelty of the subject-matter of claim 1. The general disclosure of the ranges in Table II also cannot be considered to anticipate the novelty of claim 1. This table discloses broad ranges, intermediate ranges and preferred ranges for the different components.

When considering the intermediate and preferred ranges, it is immediately apparent that the amount of Ni (max. 2.5 and max. 1.5, respectively) is outside of the Ni range claimed in the patent.

When considering the broad ranges, it is apparent that the end values of the ranges of C, Si, Cu, Mo, B and N claimed in the patent in suit are not disclosed and that the ranges of these components as claimed are small compared to the broad ranges of D1.

The criterion that the selected area should not provide an arbitrary specimen from the prior art is more a question of inventive step than novelty as has been pointed out in the recent case law (see, for instance, T 261/15, Reasons 2.2.2). In addition, a combination of different end values from different ranges cannot be considered disclosed (see T 1634/13, Reasons 3.2).

4.2 D2 does not disclose a Cu content of 0.5 weight% to 0.8 weight%. Furthermore, the ranges of Mn, Cu, Ni, Cr, Mo and N claimed in the patent in suit are narrower than the ranges disclosed in claim 1 of D2.

4.3 D4 only discloses very broad ranges for all the components of claim 1 of the patent. The ranges of

claim 1 of the patent are narrow ranges falling within the ranges of those of D4, so the steel is novel.

5. Article 100(a) together with Article 56 EPC

The board sees no reason to deviate in this respect from the impugned decision either for the following reasons.

5.1 The invention at issue relates to a high corrosion-resistant, high-strength and non-magnetic stainless steel (paragraph [0001]).

5.2 D1 is the closest prior art, as confirmed by both parties. It relates to an austenitic, non-magnetic, stainless steel alloy which provides an outstanding combination of properties including non-magnetic behaviour, high yield strength and good corrosion resistance, particularly resistance to chloride stress corrosion cracking (page 4, lines 17 to 25). It discloses in Table II the preferred ranges of the components of the alloy. This is not an explicit disclosure of a specific alloy but encompasses many different alloys. Specific compositions are disclosed in Table III, examples 1 to 8. When looking at these examples, example 1 is considered to be a good starting point in view of its amounts of Cr (17.56 weight%) and Mn (17.46 weight%) falling within the ranges claimed in the patent.

5.3 The problem to be solved according to the patent is to provide a high corrosion-resistant, high-strength and non-magnetic stainless steel having high corrosion resistance.

- 5.4 The problem is solved by a steel according to claim 1 characterised in that it comprises 3.5 weight% to 5.0 weight% Ni, 0.5 weight% to 0.8 weight% Cu and 1.8 weight% to 3.5 weight% Mo.
- 5.5 In view of the numerous examples in the patent, which provide higher tensile strength and yield strength than the alloys of D1 (see the test results on pages 11 and 12 of the patent and Table IV of D1), and in view of the lack of evidence that would prove the contrary, it is accepted that the problem is successfully solved.
- 5.6 It is the proper balancing of the components that allows obtaining the desired corrosion resistance and high strength. It is not apparent why the skilled person when starting from D1 would have increased the amount of Ni and Cu since D1 teaches that low amounts provide a benefit (see page 17, lines 11 and 12).

Even when considering the teaching of D6 (for example, chapter 4.8.6.3), there is no reason why the amount of nickel should be increased contrary to D1's teaching. Increasing nickel would lead to a reduction in Mn (see annotation of figure 4.109 in D6), so the amount of Mn would be outside of the claimed range. The same would apply to Mo in relation to Cr.

Although D3 describes the benefits of Mo and Ni in paragraphs [0028] and [0032], respectively, it also clearly teaches to add more than 19 weight% Mn (see paragraph [0026]). Even if the skilled person would only have increased Ni and Mo in the composition of D1, they would also have had to adjust Cr and Mn. This would not have inevitably led to compositions inside the claimed range.

The same applies to the teaching of D5, which also discloses at least 22 weight% Mn (claim 1).

5.7 The proposed solution to the problem is not obvious, so an inventive step can be acknowledged.

6. Article 111 (1) EPC

Since D7 is not considered part of the proceedings, the appellant's condition for remitting the case to the opposition division does not apply (grounds of appeal, page 5, first full paragraph).

Therefore, there is no reason for remitting the case to the opposition division.

## Order

### For these reasons it is decided that:

The appeal is dismissed

The Registrar:

The Chairman:



C. Vodz

E. Bendl

Decision electronically authenticated