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D E C I S I O N
of 9 March 2006

Case Number: T 1228/03 - 3.2.02

Application Number: 99923888.4

Publication Number: 1018564

IPC: C22C 38/00

Language of the proceedings: EN

Title of invention:

Stainless steel product having excellent antimicrobial activity and method for production thereof

Applicant:

JFE Steel Corporation

Opponent:

-

Headword:

-

Relevant legal provisions:

EPC Art. 54, 87

Keyword:

"Priority right (yes)"

"First application - same invention"

Decisions cited:

G 0002/98

Catchword:

-



Case Number: T 1228/03 - 3.2.02

D E C I S I O N
of the Technical Board of Appeal 3.2.02
of 9 March 2006

Appellant:

JFE Steel Corporation
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Representative:

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Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 22 July 2003
refusing European application No. 99923888.4
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: T. K. H. Kriner
Members: R. Ries
E. Dufrasne

Summary of Facts and Submissions

I. This appeal is against the decision of the Examining Division posted 22 July 2003 to refuse European patent application No. 99 923 888.4

The application was filed on 3 June 1999 and claims a priority date of 5 June 1998, on the basis of the Japanese patent application JP 15809198, hereafter called (PR).

It was refused by the Examining Division on the grounds that the subject matter of all claims did not meet the novelty requirement of Article 54(1) EPC.

As the only documents of interest, the Examining Division cited the earlier Japanese patent application

D5: JP-A-11012692 including

D5a: a translation of document D5 into English language
by computer

and the textbooks

D9: Gmelin Handbook of Organometallic Chemistry, 8th edition, Springer Verlag, 1992, Gmelin-Durrer 11b, page 55b

D10: P. Lacombe et al.: "Stainless Steels", Les Editions de Physique Les Ulis, ISBN 2-86883-189-3, 1993, page 866.

Particular reference was made to document D5 that was published on 19 January 1999 between the claimed priority date of 5 June 1998 and the filing date of 3 June 1999 of the present application.

In the Examining Division's view, Japanese patent application JP 15809198 of which priority was claimed (PR), was not directed to a stainless steel comprising an open ended range of "not less than 10 wt% Cr" as claimed in the present application. Although the priority document (PR) actually disclosed the lower limit of "10% Cr" for austenitic, ferritic and martensitic stainless steel, individual upper limits of the chromium contents were to adhere to for each steel type. The technical feature of "not less than 10 wt% Cr" without setting an upper limit stipulated in the claims of present application was, therefore, rated as a generalisation that was unsupported by the disclosure of the document whose priority was claimed (PR).

The Examining Division further held that, except for the amount of silver oxide featuring in the claims of the main request and the first auxiliary request, all the remaining technical features were already literally described in document D5. Based on the text book reference D10 disclosing a continuous casting speed for stainless steel generally in the order of 1 m/min, this feature was, however, found implicitly disclosed in document D5. Given the same stainless steel composition and processing route, the same amount of silver oxide as claimed in the present application was expected to form likewise in the stainless steel known from document D5. The Examining Division therefore concluded that the document whose priority was claimed (PR)

actually was not the "first application" within the meaning of Article 4 of the Paris Convention (Article 87(4) EPC) and that the priority was invalidly claimed. Accordingly, the subject matter of all claims of all requests of the present application lacked novelty vis-à-vis the disclosure of document D5.

In an additional remark, the clarity of the claims was objected to with respect to Article 84 EPC.

II. On 22 August 2003 the appellant (applicant) lodged an appeal against the decision. On the same date, the prescribed fee was paid. A statement of grounds of appeal was filed on 28 December 2003.

III. The appellant's arguments can be summarised as follows:

Contrary to the Examining Division's assessment, document D5 could not qualify as the "first application". This document neither disclosed a compositional range for silver oxide nor mentioned a casting speed at all, let alone a casting rate of 0.8 to 1.6 m/min, these features being claimed both in the present application and in the document whose priority is claimed (PR).

The cited textbooks D9 and D10 did not provide any hint that a silver containing stainless steel comprising silver oxide in the range of not less than 0.0005% to not more than 1.1 x (%Ag) could be obtained by controlling the casting rate in the range of 0.8 to 1.6 m/min. Any interpretation by the Examining Division that document D5 implicitly disclosed such a feature

was based on an ex-post view and represented a mere speculation.

Hence, document D5 did not relate to the "same" invention as claimed in the present application. Since document D5 was published after the validly claimed priority date of the present application, it did not belong to the state of the art and, therefore, could not anticipate the subject matter claimed in the present application.

As to the wording of claims according to the main request, the lower limit of not less than 10% Cr for a generic stainless steel was derivable from the whole content of Japanese patent application JP 15809198 (PR) which disclosed this minimum amount of chromium for austenitic, ferritic and martensitic stainless steels. Therefore, such a generalisation was admissible.

IV. Oral proceedings took place on 9 March 2006 at the end of which the appellant (applicant) requested that

- the impugned decision be set aside and
- a patent be granted on the basis of the main request (claims 1 to 8) filed with letter dated 3 December 2003 or, in the alternative, on the basis of the first auxiliary request (claims 1 to 8) filed during the oral proceedings.

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

"1. A stainless steel having antibacterial properties, comprising:

not less than 10 percent by weight of chromium;
0.001 to 0.30 percent by weight of silver;
not less than 0.0005 percent by weight of a silver
oxide,

the amount of the silver oxide being not more than
1.1 times the amount of the silver; not more than 0.015
percent by weight of sulfur; and

optionally 0.001 to 1.0 percent by weight of
vanadium;
said stainless steel being obtainable from a method
comprising the step of performing continuous casting of
molten stainless steel at a casting rate of 0.8 to
1.6 m/min."

VI. Independent claims 1 and 6 of the first auxiliary
request submitted on 9 March 2006 read as follows:

"1. A stainless steel having antibacterial
properties, comprising:
0.001 to 0.30 percent by weight of silver;
not less than 0.0005 percent by weight of a silver
oxide, the amount of the silver oxide being not more
than 1.1 times the amount of the silver; not more than
0.015 percent by weight of sulfur; and
optionally 0.001 to 1.0 percent by weight of vanadium;
wherein said stainless steel is selected from the
group consisting of
an austenitic stainless steel comprising
0.001 to 0.1 percent by weight of carbon,
not more than 2.0 percent by weight of silicon,
not more than 2.0 percent by weight of manganese,
not more than 0.1 percent by weight of phosphorus,
10 to 35 percent by weight of chromium,
6 to 15 percent by weight of nickel,

0.001 to 0.1 percent by weight of nitrogen, optionally not more than 3.0 percent by weight of molybdenum, optionally not more than 1.0 percent by weight of copper; optionally not more than 0.30 percent by weight of tungsten; optionally not more than 0.3 percent by weight of aluminum; optionally not more than 1.0 percent by weight of titanium; optionally not more than 1.0 percent by weight of niobium; optionally not more than 1.0 percent by weight of zirconium; optionally 0.001 to 0.5 percent by weight of cobalt; optionally not more than 0.01 percent by weight of boron, and the balance being iron and incidental impurities;

a ferritic stainless steel comprising 0.0001 to 0.1 percent by weight of carbon, not more than 1.0 percent by weight of silicon, not more than 2.0 percent by weight of manganese, not more than 0.1 percent by weight of phosphorus, 10 to 50 percent by weight of chromium, not more than 0.10 percent by weight of nitrogen, optionally not more than 0.3 percent by weight of aluminum; optionally not more than 1.0 percent by weight of nickel; optionally not more than 3.0 percent by weight of molybdenum; optionally not more than 1.0 percent by weight of titanium; optionally not more than 1.0 percent by weight of niobium; optionally not more than 1.0 percent by weight of zirconium; optionally not more than 1.0 percent by weight of copper; optionally not more than 0.30 percent by weight of tungsten; optionally 0.001 to 0.5 percent by weight of cobalt; optionally not more than 0.01 percent by weight of boron, and the balance being iron and incidental impurities; and

a martensitic stainless steel comprising 0.001 to 1.0 percent by weight of carbon, not more than 1.0

percent by weight of silicon, not more than 2.0 percent by weight of manganese, not more than 0.1 percent by weight of phosphorus, 10 to 19 percent by weight of chromium, 0.001 to 0.1 percent by weight of nitrogen, optionally not more than 1.5 percent by weight of aluminum; optionally not more than 1.0 percent by weight of titanium; optionally not more than 1.0 percent by weight of niobium; optionally not more than 0.3 percent by weight of tungsten; optionally not more than 1.0 percent by weight of zirconium; optionally not more than 3.0 percent by weight of nickel; optionally not more than 3.0 percent by weight of molybdenum; optionally not more than 1.0 percent by weight of copper; optionally 0.001 to 0.5 percent by weight of cobalt; optionally not more than 0.01 percent by weight of boron and the balance being iron and incidental impurities."

"6. A method for manufacturing a stainless steel raw material having antibacterial properties, comprising the steps of:

controlling amounts of 0.001 to 0.30 percent by weight of silver, and not more than 0.015 percent by weight of sulfur,

optionally 0.001 to 1.0 percent by weight of vanadium, in a molten stainless steel; wherein said stainless steel is selected from the group consisting of

an austenitic stainless steel comprising 0.001 to 0.1 percent by weight of carbon, not more than 2.0 percent by weight of silicon, not more than 2.0 percent by weight of manganese, not more than 0.1 percent by weight of phosphorus, 10 to 35 percent by weight of chromium, 6 to 15 percent by weight of nickel, 0.001 to 0.1 percent by weight of nitrogen, optionally

not more than 3.0 percent by weight of molybdenum, optionally not more than 1.0 percent by weight of copper; optionally not more than 0.30 percent by weight of tungsten; optionally not more than 0.3 percent by weight of aluminium; optionally not more than 1.0 percent by weight of titanium; optionally not more than 1.0 percent by weight of niobium; optionally not more than 1.0 percent by weight of zirconium; optionally 0.001 to 0.5 percent by weight of cobalt; optionally not more than 0.01 percent by weight of boron, and the balance being iron and incidental impurities;

a ferritic stainless steel comprising 0.0001 to 0.1 percent by weight of carbon, not more than 1.0 percent by weight of silicon, not more than 2.0 percent by weight of manganese, not more than 0.1 percent by weight of phosphorus, 10 to 50 percent by weight of chromium, not more than 0.10 percent by weight of nitrogen, optionally not more than 0.3 percent by weight of aluminium; optionally not more than 1.0 percent by weight of nickel; optionally not more than 3.0 percent by weight of molybdenum; optionally not more than 1.0 percent by weight of titanium; optionally not more than 1.0 percent by weight of niobium; optionally not more than 1.0 percent by weight of zirconium; optionally not more than 1.0 percent by weight of copper; optionally not more than 0.30 percent by weight of tungsten; optionally 0.001 to 0.5 percent by weight of cobalt; optionally not more than 0.01 percent by weight of boron, and the balance being iron and incidental impurities; and

a martensitic stainless steel comprising 0.001 to 1.0 percent by weight of carbon, not more than 1.0 percent by weight of silicon, not more than 2.0 percent by weight of manganese, not more than 0.1

percent by weight of phosphorus, 10 to 19 percent by weight of chromium, 0.001 to 0.1 percent by weight of nitrogen, optionally not more than 1.5 percent by weight of aluminum; optionally not more than 1.0 percent by weight of titanium; optionally not more than 1.0 percent by weight of niobium; optionally not more than 0.3 percent by weight of tungsten; optionally not more than 1.0 percent by weight of zirconium; optionally not more than 3.0 percent by weight of nickel; optionally not more than 3.0 percent by weight of molybdenum; optionally not more than 1.0 percent by weight of copper; optionally 0.001 to 0.5 percent by weight of cobalt; optionally not more than 0.01 percent by weight of boron and the balance being iron and incidental impurities and performing continuous casting of the molten stainless steel at a casting rate of 0.8 to 1.6 m/min."

Reasons for the Decision

1. The appeal is admissible.
2. *Main request*

Product claim 1 of the main request is defined in terms of a process for its preparation (i.e. a so-called "product-by-process" claim). Such claims are, however, only admissible if the products themselves fulfil the requirement of patentability and no other information is available in the application to define the product satisfactorily by reference to its composition, structure or some other testable parameter. However, this does not apply to the present application.

Objection also arises under Article 84 EPC since product claim 1 does not define a stainless steel composition comprising all the compulsory and optional components in a manner to sum up to a total of 100%. As can be seen from claim 2 and the description, page 8 to 10, the claimed stainless steel alloy can comprise, apart from the balance iron and residual impurities, a plethora of other elements within specific ranges. To satisfy however the clarity requirement according to Article 84 EPC, the composition of an alloy must be given completely.

In view of these considerations, claim 1 of the main request is not allowable.

Furthermore, the Board concurs with the position of the Examining Division that a stainless steel composition comprising an open ended chromium range of "not less than 10% Cr", featuring in independent claims 1 and 6 of the main request, has no basis in JP 15809198 whose priority is claimed (PR). The subject matter of claim 1 is therefore an unsupported generalization of the technical teaching defined in the priority document (PR) and hence, there is no right for priority.

3. *First auxiliary request*

3.1 Priority right - "first application"

3.2 The first question the Board has to answer in order to assess the validity of the priority claimed is whether the Japanese patent application JP 15809198 whose priority is claimed (PR) by the present application, is

the "first application" in the meaning of Article 87(1) EPC.

Pursuant to Article 87(4) EPC, the Board has to compare the "subject-matter" of the application whose priority is claimed (PR) with the "subject-matter" of the earlier application filed in the same country, JP-A-11-012692 (D5). Should the "subject-matter" of the application whose priority is claimed (PR) be the same as the "subject-matter" of the earlier application D5, then the application whose priority is claimed (PR) would not qualify as a "first application" and could not form the basis for a priority right.

In its assessment, the Board has to follow the interpretation of Article 87 EPC under the Opinion G 2/98 (OJ EPO 2001, 413) of the Enlarged Board of Appeal, stating that a narrow or strict interpretation of the concept of the "same invention" in Article 87(1) EPC, equating it to the concept of "the same subject-matter" under Article 87(4) EPC, is necessary to ensure a proper exercise of priority rights. The decision further emphasises that the priority of a previous application is to be acknowledged only if the person skilled in the art can derive the subject matter of the claim in a European patent application directly and unambiguously, using common general knowledge from the previous application as a whole (cf. G 2/98, point 9, last sentence).

It, therefore, has to be decided whether or not document D5 already discloses the subject matter of application whose priority is claimed (PR).

Document D5a is regarded as representing a true translation of the Japanese patent application JP 11-12692 into English language. This application aims at providing a ferritic stainless steel having excellent antibacterial properties and comprising 12 to 35% Cr, 0.0005 to 0.30% Ag, 0.01 to 0.30% V, less than 0.3% Al, less than 1.0% Si, less than 1.0% Mn, not more than 0.08% P, not more than 0.02% S, not more than 0.02% C, not more than 0.04% N, further optional elements, the balance being Fe and residual impurities (cf. D5a, claims 1 to 6). Document D5a, however, fails to disclose the presence or absence of silver oxide AgO or Ag₂O in the steel and does not mention a casting speed when producing slabs of 260 mm by a continuous casting process.

The Board does not contest the Examining Division's argument supported by the disclosure of D10 that for stainless steels the casting speed is generally of the order of 1 m/min. Apart from being rather broad in its meaning, a casting speed "in the order of 1 m/min" is not an imperative parameter. Other casting rates may also be used, as can be learned from the examples given in the application JP 15809198 (PR). However, the question to be answered is not whether it would have been obvious for the person skilled in the art knowing document D10 to use this casting speed, but whether this technical feature is directly and unambiguously derivable from the disclosure of document D5. A continuous casting rate is, however, not mentioned in this document and there is no information whatsoever that the casting rate should be controlled at all, let alone in order to finely and homogeneously disperse not less than 0.0005% silver oxide in the steel.

Document D5a being silent on both technical features, the person skilled in the art could thus only derive from this specification that the continuous casting rate of the stainless steel is not a critical parameter and, therefore, may be freely selected.

3.3 It is therefore concluded that the invention which forms the subject matter of the document (PR) whose priority is claimed by the present application and which relates to a silver/silver oxide containing stainless steel and a process for producing such a steel is different from the invention of D5. This document thus cannot be rated as concerning "the same invention" in the sense of Article 87(1) EPC or "the same subject-matter" according to Article 87(4) EPC, as interpreted by G 2/98, point 6.8, respectively. Consequently, the earlier application D5 cannot prevent the application whose priority is claimed (PR) from being the "first application" in the sense of Article 87(1) EPC for the purpose of establishing the priority right.

3.4 Priority right - "same invention"

The second question the Board has to answer when assessing the validity of the priority claimed is whether the present application concerns the "same invention" as the application whose priority is claimed (PR).

The stainless steel composition featuring in claims 1 to 5 and the method for manufacturing the stainless steel stipulated in claims 6 to 8 according to the

first auxiliary request are amply described in Japanese patent application JP 15809198 whose priority is claimed (PR) and, therefore, can be relied upon as a basis for claiming priority for the present patent application.

3.5 Amendments, Articles 84, 123(2) EPC

Claims 1 to 8 as amended according to the first auxiliary request find support in the technical disclosure of the application, in particular that given on pages 8 to 11 and pages 16, first full paragraph to page 17. Moreover, claims 1 and 6 define all the components making up the claimed stainless steel alloy to give a 100% disclosure of the composition, and product claim 1 does not comprise a "product-by-process" feature. The dependent claims 2 to 5 and 7 and 9 correspond to originally filed claims 2, 4 to 6 and 8, 9, respectively.

The requirements of Articles 123(2) and 84 are, therefore satisfied.

3.6 Novelty

In view of the above considerations, document D5 merely constitutes an intermediate national prior right which cannot be considered for the assessment of novelty. Since the decision to refuse the Examining Division was exclusively based on the ground of lack of novelty with respect to document D5, now removed, the Board finds it appropriate to remit the case to the first instance for further prosecution.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance for further prosecution on the basis of the first auxiliary request (claims 1 to 8).

The Registrar:

The Chairman:

V. Commare

T. K. H. Kriner