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Datasheet for the decision of 26 June 2019

Case Number: T 1743/15 - 3.3.05

Application Number: 10009925.8

Publication Number: 2305843

IPC: C22C1/03, C22C14/00, B22F1/00

Language of the proceedings: EN

Title of invention:
Method of adjusting the elemental composition of a metal melt

Applicant:
ATI Properties LLC

Headword:
Elemental composition adjustement/ATI

Relevant legal provisions:
EPC Art. 76, 123(2), 84, 54, 56

Keyword:
Clarity - main request, first and second auxiliary requests - (no)
Divisional application - third auxiliary request - added subject-matter (no)
Amendments - third auxiliary request - allowable (yes)
Clarity - third auxiliary request - (yes)
Novelty - third auxiliary request - (yes)
Inventive step - third auxiliary request - (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

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Case Number: T 1743/15 - 3.3.05

D E C I S I O N
of Technical Board of Appeal 3.3.05
of 26 June 2019

Appellant: (Applicant)	ATI Properties LLC 1600 N.E. Old Salem Road Albany OR 97321 (US)
Representative:	Potter Clarkson The Belgrave Centre Talbot Street Nottingham NG1 5GG (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 10 March 2015 refusing European patent application No. 10009925.8 pursuant to Article 97(2) EPC.**

Composition of the Board:

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

Summary of Facts and Submissions

I. The appeal of the applicant (appellant) lies from the decision of the examining division to refuse European patent application No. EP 10 009 925.8. The examining division found that claim 1 of the then sole request lacked novelty over D10 and inventive step starting from D2.

The following documents are of relevance here:

D2: US 3 768 999 A
D7: US 4 880 462 A
D9: US 6 322 608 B1
D10: US 4 108 637 A

II. With the statement of grounds, the appellant filed four claim requests.

III. In its communication under Article 15(1) RPBA, the board was of the preliminary opinion that none of the requests fulfilled the requirements of the EPC.

IV. On 19 June 2019 the appellant filed a new third auxiliary request and informed the board that it would not be present at the oral proceedings scheduled by the board.

Claim 1 of the main request is as follows:

"*1. A method of adjusting the elemental composition of a metal melt, the method comprising:*
adding into the melt a predetermined quantity of a master alloy, in the form of at least one formed article comprising particles of the master alloy bound

together by at least one organic polymer binder, wherein the formed article comprises 5% to 60% by weight of the at least one organic polymer binder, and wherein the master alloy consists of titanium dioxide particles."

In claim 1 of the first auxiliary request, "*metal melt*" has been replaced by "*titanium melt*".

Claim 1 of the second auxiliary request is as follows:

"*1. A method of adjusting the elemental composition of a metal melt, the method comprising:*
adding into the melt a predetermined quantity of a master alloy, in the form of at least one formed article consisting of particles of the master alloy bound together by 5% to 60% by weight of at least one organic polymer binder, wherein the master alloy consists of titanium dioxide particles."

Claim 1 of the third auxiliary request is as follows:

"*1. A method of adjusting the elemental composition of a titanium melt, the method comprising:*
adding into the melt a predetermined quantity of titanium dioxide particles, in the form of at least one formed article consisting of the titanium dioxide particles bound together by 5% to 60% by weight of at least one organic polymer binder."

Claims 2 to 9 are dependent on claim 1 and describe preferred embodiments thereof.

V. Oral proceedings took place on 26 June 2019 in the absence of the appellant. The chairman established the

requests put forward by the appellant in the course of the written proceedings as follows:

The appellant requests that the impugned decision be set aside and that a patent be granted on the basis of the set of claims of the main request, or, in the alternative, on the basis of the set of claims of one of the first to second auxiliary requests filed with the statement of grounds of appeal, or on the basis of the set of claims of the third auxiliary request filed on 19 June 2019.

Reasons for the Decision

Main request and first auxiliary request

1. Article 84 EPC

The scope of claim 1 is not clearly defined in view of the combination of the expressions "comprising", "comprises" and "consists". The formed article could comprise any type of particles, since it is not limited to particles of the master alloy. As a consequence, the restriction of the master alloy to "consists of titanium dioxide particles" is not considered as limiting the composition of the formed article but rather as a contradiction to the use of the word "comprises". This is also confirmed by the wording of the dependent claims, e.g. claim 6 leaves open what the exact composition of the formed article is supposed to be.

Therefore, the main request and first auxiliary request are not allowable and must fail.

Second auxiliary request

2. Article 84 EPC

Although the wording of claim 1 has now been amended by the repetitive use of "consisting of", the scope of claim 1 is still not clearly defined, since claim 6 for instance still employs the wording "comprises titanium dioxide", which is contradictory to claim 1.

Therefore, this request also fails.

Third auxiliary request

3. Article 13(1) EPC

Although this request was only filed one week before the oral proceedings, it is admitted into the proceedings, since it overcomes the previous objections and is allowable for the reasons set out below.

4. Article 76 (1) EPC

The requirements of Article 76(1) EPC are considered to be met for the following reasons:

Claim 1 is directly and unambiguously derivable from claim 46 of the parent application (EP 05 851 670.9) in combination with page 11, lines 15 and 16; page 12, lines 19 to 21, and from claim 11 which provides the preferred range of the binder. This is also in line with the examples and page 32, lines 5 to 9 of the parent application.

Claims 2 to 9 are based on claims 4 to 8, 10, 12 and 13 of the parent application.

5. Article 123(2) EPC

The requirements of Article 123(2) EPC are considered to be met for the following reasons:

Claim 1 is directly and unambiguously derivable from claim 1 of the application as filed (EP 2 305 843 A2) in combination with page 4, lines 52 to 53.

Claims 2 to 9 are based on claims 3 to 10 of the application as filed.

6. Article 84 EPC

It is now clear that titanium dioxide particles in the form of a mixture of titanium dioxide particles with a binder are added in a predetermined -albeit undefined- amount to the melt. The added particles cannot contain other ingredients. However, other method steps are not excluded by claim 1.

Claims 5 and 6 have now been rephrased, so they are no longer contradictory to claim 1, and claim 8 has been brought into agreement with amended claim 1.

The requirements of Article 84 EPC are fulfilled.

7. Article 54 EPC

8. The requirements of Article 54 EPC are met for the following reasons:

8.1 D2 does not disclose titanium dioxide and does not disclose 5% to 60% of an organic binder.

8.2 D9 does not disclose a titanium melt.

8.3 D10, which was regarded as anticipating the novelty of claim 1 of the request underlying the impugned decision, does not disclose titanium dioxide particles.

9. Article 56 EPC

9.1 The invention relates to a method of adjusting the elemental composition of a titanium melt.

9.2 D2 is the closest prior art because it also relates to the addition of components to molten metals (column 1, lines 53 to 57). It discloses a metal wire consisting of a wire core and a binder that is added to molten metal (column 2, lines 28 to 33).

9.3 The problem to be solved is to provide a method for adjusting the composition of a titanium melt (see also paragraphs [0008] and [0012]).

9.4 The problem is solved by a method according to claim 1 characterised in that at least one formed article consisting of the titanium dioxide particles bound together by 5% to 60% by weight of at least one organic polymer binder is added to the titanium melt.

9.5 It is accepted that the problem is solved although the amount of titanium dioxide particles to be added is not defined. Every added quantity of titanium dioxide particles will have an impact on the composition of the titanium melt.

9.6 The solution is not obvious for the following reasons:

D2 does not relate to titanium melts or disclose titanium dioxide. Titanium dioxide is not within the teaching of D2 because the addition of oxygen is to be avoided (see column 2, lines 34 to 36 and claim 4).

D7 provides mixtures of alkali metal aluminium fluoride and/or an alkali metal aluminium containing salt mixture with a component containing at least one alloying metal (column 1, lines 57 to 61).

D9 discloses in example 1 a master alloy consisting of titanium dioxide particles and 13% polymer binder (column 6, lines 22 to 32) that gives a sacrificial body which is subsequently filled with aluminium and subject to heat treatment (column 7, lines 1 to 6). The filler is removed before or during the filling with aluminium (claim 1). However, D9 does not relate to titanium melts and the adjustment of its composition; it relates rather to different temperatures (far below the melting temperature of titanium) and different densities involving different mixing conditions.

D10 discloses the preparation of a substantially uniform mixture of solid particles of a treating agent and a solid flexible binder vaporisable upon contact with said molten metal. The treating agent can consist of a carbonaceous material or a ferrosilicon alloy containing 45-85% Si and one or more of calcium, aluminium, strontium, barium, magnesium or zirconium (column 2, lines 65 to 68 and column 3, lines 9 to 15). D10 does not relate to titanium melts or disclose titanium dioxide.

9.7 Consequently, the subject-matter of claim 1 and dependent claims 2 to 9 involves an inventive step.

10. Double patenting

Neither the patent granted on the basis of the parent application (EP 1 866 450) nor the patent granted to a divisional application (EP 2 305 842) based on the same parent application as the current application relate to a method as claimed. Therefore, no problem of double patenting arises.

11. Adaptation of the description

Although the appellant submitted, in addition to the third auxiliary request, amended pages of the description, the board understands that the description has not yet been completely adapted (see for example page 11, lines 15 and 16 of the proposed amendments dated 7 July 2015; the description does not correctly reflect restricted claim 1 or, in particular, the restricted formed article. Consequently, the board exercises its discretion under Article 111(1) EPC to remit the case to the examining division for the adaptation of the description.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to grant a patent based on the set of claims of the third auxiliary request submitted on 19 June 2019 and a description to be adapted.

The Registrar: The Chairman:

C. Vodz E. Bendl

Decision electronically authenticated