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Datasheet for the decision of 29 November 2007

Case Number: T 1084/05 - 3.2.06

Application Number: 95304265.2

Publication Number: 0688630

IPC: B23K 35/368

Language of the proceedings: EN

Title of invention:
Flux-cored wire for gas shielded arc welding

Patentee:
KABUSHIKI KAISHA KOBE SEIKO SHO

Opponents:
L'AIR LIQUIDE S.A.
The Lincoln Electric Company

Headword:
-

Relevant legal provisions:
EPC Art. 102(3), 84, 54(2), 111(1)

Keyword:
"Clarity of claim resulting from the cobmination of granted claims - not objectionable"
"Novelty (yes)"
"Remittal (yes"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1084/05 - 3.2.06

D E C I S I O N
of the Technical Board of Appeal 3.2.06
of 29 November 2007

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Decision under appeal:
Decision of the Opposition Division of the European Patent Office posted 21 June 2005 revoking European patent No. 0688630 pursuant to Article 102(1) EPC.

Composition of the Board:

Chairman: P. Alting Van Geusau
Members: G. Pricolo
K. Garnett

Summary of Facts and Submissions

I. The appeal is from the decision of the Opposition Division posted on 21 June 2005 revoking European patent No. 0 688 630, granted in respect of European patent application No. 95 304 265.2.

II. Claim 1 as granted reads as follows:

"1. A flux-cored wire for gas shielded arc welding including a steel sheath and a titania-based flux filled in said steel sheath, containing, based on the total weight of said wire, 3 to 9% of titanium oxide (TiO_2-converted value), and 0.0001 to 0.0120% of Nb, wherein said wire further contains 0.02% or less of V, 0.0001 to 0.0150% of (Nb + 0.5xV), and 0.02% or less of P, and wherein titanium oxide filled in said flux contains as impurities, on the basis of the total weight of said titanium oxide, 0.05% or less of Nb, 0.08% or less of V, and 0.07% or less of (Nb + 0.5xV)."

III. The opposition division considered that document

D1: JP-A-4-300092,

filed with its translation into English, disclosed all the features of the first portion of claim 1 relating to the composition of the flux. D1 was silent about the features recited in the second portion of claim 1 relating to the impurities contained in the titanium oxide. However, since the latter features were not critical to the solution of the problem which was already solved in D1, the subject-matter of claim 1 according to the main request could not involve

anything novel or at least anything inventive (point 5.1 of the decision under appeal). The same applied to claim 1 in accordance with all the auxiliary requests filed by the patent proprietor. The sole additional feature introduced in this claim, which feature refers back to the first portion of claim 1, and which could support a finding of novelty or inventive step, was the feature according to which the titanium oxide had a specific bulk density of 1.0 to 4.0. Since the density of rutile (TiO_2) was 4.2 - 4.3 it was "*held credible that the bulk density (the bulk comprising voids) normally laid in the claimed field of 1.0 to 4.0*" and therefore the additional feature did not provide a distinction over D1 (point 5.2 of the decision under appeal).

IV. The appellant (patent proprietor) lodged an appeal on 22 August 2005. Payment of the appeal fee was recorded on 24 August 2005. The statement setting out the grounds of appeal was received at the EPO on 26 October 2005.

V. Oral proceedings, at the end of which the decision of the Board was announced, took place on 29 November September 2007.

The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the request filed during the oral proceedings, alternatively on the basis of the second to seventh auxiliary requests filed with the grounds of appeal. Respondent II (opponent II) requested that the appeal be dismissed, alternatively that the case be remitted

to the Opposition Division for continuation of the opposition proceedings.

Respondent I (opponent I) did not appear at the oral proceedings, as announced in its letter dated 11 October 2007. Oral proceedings were continued without him, pursuant to Rule 71(2) EPC. Respondent I requested in writing that the appeal be dismissed.

VI. In addition to the features of claim 1 as granted, claim 1 according to the main request filed during the oral proceedings includes the following wording (after "…*TiO_2 converted value*"):

"having a bulk specific density of 1.0 to 4.0, a water content (measured at 450°C in Ar atmosphere by KF method) of 1000 ppm or less and a maximum particle size of 500 μm or less".

VII. The arguments of the appellant in support of its request can be summarized as follows:

The skilled person would have been aware that titanium oxide in the context of welding electrodes was used either in pure form or in an impure form such as rutile. He would understand that D1 referred to TiO_2 in the impure form, i.e. with Nb and V present as impurities in amounts greater than the limits specified in claim 1 of the patent in suit. The tables 2 and 3 of D1 merely gave the amounts of the flux components which should be put together to form different fluxes, not their exact chemical compositions. Moreover, the amounts of Nb and V in comparative example 9 of D1 were so low that it would have been clear to the skilled

person that these elements were not separately added to the flux but that their source was the impure titanium oxide. In any event, D1 did not disclose the features recited in granted claim 7, which were introduced into claim 1 of the main request filed during the oral proceedings before the Board. Therefore, the subject-matter of this claim was novel over D1.

VIII. Respondent II took a clarity objection in relation to claim 1 according to the main request, arguing that it was not clear how the method for determining the water content was carried out. Novelty was acknowledged, but only in view of the features newly introduced into claim 1, i.e. the features of granted claim 7. All the features of granted claim 1 were known from D1, which could only be read as referring to pure TiO_2. The teaching according to D1, consisting of adding into the flux low amounts of Nb and V, would not make sense if the TiO_2 itself was a source of these elements. Therefore, D1 disclosed that the titanium oxide added into the flux contained essentially no impurities.

Although amended claim 1 in accordance with the main request consisted of the combination of granted claims 1 and 7, the respondent could not have anticipated this amendment and thus was not prepared to discuss the inventiveness of the claimed subject-matter. This justified remittal of the case to the opposition division for continuation of the opposition proceedings.

Reasons for the Decision

1. The appeal is admissible.

2. *Amendments (main request)*

2.1 The main request was filed during the oral proceedings before the Board, thus at a very late stage of the appeal proceedings. It was, however, filed in order to overcome an objection pursuant to Article 123(2) EPC raised by the Board during the oral proceedings, when discussing the appellant's first auxiliary request, this request not having been allowed by the opposition division in the decision under appeal. The objection raised by the Board was that claim 1 had been amended by taking an isolated feature from the combination of features within claim 7. The amendments made in response to this objection, consisting of the inclusion all the features of claim 7 into claim 1, constituted a logical reaction to the Board's objection. Therefore, the main request can be admitted into the proceedings.

2.2 Since claim 1 consists of the combination of granted claims 1 and 7, and corresponds to the combination of claims 1, 5 and 8 of the application as filed, the amendments made do not give rise to objections under Article 123(2) and (3) EPC.

2.3 Respondent II objected to the clarity of claim 1. An objection to an amended claim under Article 84 EPC may only be considered when the alleged deficiency is a consequence of the amendments. (In this respect Article 102(3) EPC does not allow objections to be based upon Article 84 EPC if such objections do not

arise out of the amendments made, see e.g. T 301/87, OJ 1990, 335; or T 367/96). This is not the case here, because claim 1 results in substance from the combination of claims of the patent as granted in accordance with the cross-references therein, and thus concerns a specific object which was already claimed in the patent as granted. Therefore, Respondent II's objection based upon Art. 84 EPC is not permissible.

3. *Novelty (main request)*

3.1 D1 (reference is made to the English translation) discloses a flux-cored wire for gas shielded arc welding including a steel sheath and a titania-based flux filled in said steel sheath (see abstract). The wire of comparative example 9 (see table 3), which is fabricated in accordance with the invention of D1 except in respect of the content of Nb and V (see par. [0030]), contains 6.5% TiO_2 (falling within the range of 3 to 9% recited in claim 1 of the patent in suit), 0.004% Nb (within the range of 0.0001 to 0.0120% recited in claim 1 of the patent in suit) and 0.004 V (within the claimed range of 0.02% or less recited in claim 1 of the patent in suit). With these amounts of Nb and V, the wire of comparative example 9 fulfils the requirement of claim 1 of the patent in suit that Nb + 0.5xV be within the range of 0.0001 to 0.0150%. It is noted that the wire of comparative example 9 is the only embodiment of D1 which fulfils this requirement. Furthermore, the Board agrees with the view of the opposition division (see point 4 of the decision under appeal), which was not in dispute, that the amount of P in the flux of D1 is certainly less than 0.02%. P is not mentioned as a flux component in D1, and therefore

can only be present as an impurity, in an amount which is certainly less than 0.02%.

3.2 The Board disagrees with the view of the opposition division that the features of the second portion of claim 1, namely that the titanium oxide added into the flux contains as impurities, on the basis of the total weight of said titanium oxide, 0.05% or less of Nb, 0.08% or less of V, and 0.07% or less of (Nb + 0.5xV), are irrelevant for the question of novelty. However, the Board considers that these features are known from D1 because, contrary to the appellant's view, the references in D1 to TiO_2 can only be read as being references to pure titanium dioxide, thus containing essentially no impurities (and in any case Nb and V in amounts well below 0.05% and 0.08%, respectively, whereby also the requirement Nb+0.5xV<0.07% is met). It is true, as acknowledged by the appellant itself, that in the art of flux-cored wires for welding a reference to titanium oxide (TiO_2) can either be a reference to pure titanium oxide or to titanium oxide in impure form, normally the mineral rutile. However, the skilled reader, who it is not disputed would be aware of the fact that the elements Nb and V are present as impurities in rutile, and who would notice that these elements are flux components that must be present in amounts within specific, small ranges (Nb and V may each be added in an amount of 0.005% according to the invention of D1; their amount in comparative example 9 is in each case 0.004%), would consider that the term "TiO_2" can only mean titanium oxide with no impurities, otherwise some essential flux components such as Nb and V would be introduced by the titanium oxide itself in an undetermined and uncontrolled manner.

3.3 D1 is silent about the particle size and the water content of the titanium oxide and therefore the subject-matter of claim 1, which requires the titanium oxide to have a water content (measured at 450°C in Ar atmosphere by KF method) of 1000 ppm or less and a maximum particle size of 500 μm or less, must be regarded as being novel over D1. This, in fact, was not contested by Respondent II.

3.4 The novelty of the subject matter of claim 1 according to the main request has also not been contested on the basis of any of the other available documents. The Board on its own does not see any reason to take a different view.

Therefore, the subject-matter of claim 1 according to the main request must be regarded as novel over the available prior art (Article 54(2) EPC).

4. *Remittal*

4.1 The above conclusion on novelty is reached irrespective of whether the feature of claim 1 according to which the titanium oxide has a bulk specific density of 1.0 to 4.0 is known from any prior art (there are in any case other distinguishing features, see in particular point 3.3 above in respect of D1).

This feature was present in claim 1 according to the first auxiliary request considered by the opposition division, who did not acknowledge it as a novel feature. In the Board's view it is however not clear on what basis the opposition division (see paragraph 5.2 of the

decision under appeal) could have derived from the numerical value of the density of rutile (4.2 to 4.3), the conclusion that the "*bulk density (the bulk comprising voids)*" of TiO_2 disclosed in D1 "*normally lies in the claimed field of 1.0 to 4.0*". If the bulk specific density (or gravity) is dependent on the voids present in the substance, as apparently the opposition division thought (whereby in the calculation of the bulk specific density the volume of the solid including both the permeable and impermeable voids should be taken into account), without any information on the voids, or at least the grain size, of the TiO_2 used, it cannot be clearly and unambiguously derived from D1 that the bulk specific density is within the claimed range of 1.0 to 4.0. However, the conclusion of the opposition division may be based an interpretation of the term "bulk specific density" which at the moment is not known to the Board.

4.2 From the above it follows that when considering inventive step, consideration should be given to:

(a) the distinguishing features relating to the water content and the maximum particle size of the titanium oxide, which have not played any role in the decision under appeal, and

(b) the feature relating to the bulk specific density, in respect of which the decision under appeal is obscure.

It follows that the assessment of inventive step for the main request would have to be made essentially on the basis of aspects which were not considered in the decision under appeal, thereby in substance depriving

the parties of the opportunity of presenting their case at two levels.

4.3 Under these circumstances, and considering further that Respondent II requested remittal of the case and the appellant did not object, the Board considers it appropriate to exercise its discretion and to remit the case to the opposition division for further prosecution pursuant to Article 111(1) EPC.

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 for continuation of the opposition proceedings.

The Registrar: The Chairman:

M. Patin P. Alting van Geusau