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D E C I S I O N
of 28 June 1994

Case Number: T 0109/92 - 3.3.1

Application Number: 89307334.6

Publication Number: 0364074

IPC: C10J 3/46

Language of the proceedings: EN

Title of invention:
Prevention of formation of nickel subsulfide in partial oxidation of heavy liquid and/or solid fuels

Applicant:
Texaco Development Corporation

Opponent:
-

Headword:
Nickel subsulfide/TEXACO

Relevant legal norms:
EPC Art. 83, 84

Keyword:
"Clarity of claims - yes"
"Sufficiency of disclosure - yes"

Decisions cited:
-

Catchword:
-

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Case Number: T 0109/92 - 3.3.1

D E C I S I O N
of the Technical Board of Appeal 3.3.1
of 28 June 1994

Appellant: Texaco Development Corporation
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White Plains
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Representative: Ben-Nathan, Laurence Albert
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London W1M 8AH (GB)

Decision under appeal: **Decision of the Examining Division of the European Patent Office dated 9 September 1991 refusing European patent application No. 89 307 334.6 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: A. Jahn
Members: P. Krasa
J.A. Stephens-Ofner

Summary of Facts and Submissions

I. European patent application No. 89 307 334.6 (publication No. 0 364 074) was filed on 19 July 1989.

II. By a decision dated 9 September 1991, the Examining Division refused the application on the grounds that the subject-matter of the application in suit as defined in the then pending Claims 1 and 2 were unclear and insufficiently disclosed. Having regard to the fact that the two separate ranges given in feature (1) for the weight ratio of the copper and/or cobalt additive can be mutually exclusive, a skilled person would obtain contradictory results when calculating the amounts of the additive making it impossible to carry out the invention contrary to Article 83 EPC.

Claims 1 and 2 as originally filed read, as far as relevant for the present decision, as follows:

"1. A process for the production of gaseous mixtures comprising H_2 + CO by partial oxidation of a fuel feedstock comprising sulfur-containing heavy liquid hydrocarbonaceous fuel and/or solid carbonaceous fuel, and said fuels having nickel, vanadium and silicon-containing ashes, and said feedstock includes a minimum of about 0.5 ppm nickel, a minimum of about 0.2 wt. % of sulfur, a minimum of about 1.0 ppm of vanadium, and a minimum of about 5.0 ppm of silicon; said process comprising

(1) mixing together a copper and/or cobalt-containing material with said fuel feedstock; wherein the weight ratio of copper and/or cobalt to nickel in said mixture is in the range of about 0.2 to 10; and the weight ratio of copper and/or cobalt to silicon in said mixture is in the range of about 0.0001 to 0.04;

(2) ..... and

(3) .....",

and

"2. A process for the production of gaseous mixtures comprising H_2 + CO by partial oxidation of a fuel feedstock comprising sulfur-containing heavy liquid hydrocarbonaceous fuel and/or solid carbonaceous fuel, and said fuels having nickel, vanadium and silicon-containing ashes, and said feedstock includes a minimum of about 0.5 ppm to 4,000 ppm of nickel, a minimum of about 0.2 wt. % of sulfur, of about 1.0 ppm to 2000 ppm of vanadium, and about 5 ppm to 10,000 ppm silicon; said process comprising

(1) mixing together with said fuel feedstock a first additive comprising silicon-containing material comprising from about 25 to 65 wt. % of silicon; wherein the wt. ratio of silicon in said first additive plus the silicon in said fuel feedstock to vanadium in said fuel feedstock in said mixture is in the range of about 1 to 7; and including in said mixture a second additive comprising a material selected from the group consisting of a copper-containing material, a cobalt-containing material, and mixtures thereof; whereby the ratios of copper to nickel, cobalt to nickel, and copper + cobalt to nickel when said metals are present in said mixture are in the range of about 0.5 to 20; and the weight ratio of said second additive to ash in said fuel feedstock is in the range of about .01 to 1.5;

(2) ..... and

(3) ..... ".

III. An appeal was lodged against this decision on 04 November 1991 with payment of the appropriate fee. In his Statements of Grounds of Appeal, filed on 13 December 1991, the Appellant contended that the requirements of Article 83 EPC were fulfilled. He submitted that the amount of copper and/or cobalt in

question were related to both the nickel and the silicon content of the fuel feedstock and that, therefore, the skilled person would first calculate the required copper/cobalt amount on the basis of the fuel's nickel content, then on the basis of its silicon content, and then he would add the sum of the two amounts to the fuel.

IV. During oral proceedings, which took place on 28 June 1994, the Appellant requested that the decision under appeal be set aside and that a European patent be granted on the basis of the claims as originally filed or, alternatively, on the basis of the set of claims designated A and B, respectively, filed on 13 December 1991 (auxiliary requests A and B) or on the basis of the claims filed during oral proceedings as the auxiliary request C.

V. At the end of the oral proceedings, the Chairman announced the Board's decision to allow the main request.

Reasons for the Decision

1. The appeal is admissible.

2. The issues before the Board are only whether Claims 1 and 2 according to the requests are clear in the sense of Article 84 EPC and whether their subject-matter is sufficiently disclosed to meet the requirements of Article 83 EPC.

3. *Main Request*

3.1 The claims according to the main request are those as originally filed, therefore no objections arise under Article 123(2) EPC against these claims.

3.2 The subject-matter of Claim 1 is a process for producing a gaseous mixture of H_2 + CO from a fuel and under conditions as defined in said claim. In the first step a copper and/or cobalt-containing material is mixed to the fuel. The amounts of copper (and/or cobalt) to be added are related to the nickel contents of the fuel and to its silicon contents.

3.3 It is quite clear that the amounts of the troublesome contaminants nickel and silicon are not interrelated, and only depend on the quality of the fuel used. Thus, while in Claim 1 certain minimum contents in the fuel concerned are specified for nickel and for silicon, the respective contents are independent from and not related to each other. Thus, the skilled person, who is the addressee of Claim 1, can reasonably understand Claim 1 as only requiring the addition of the copper (and/or cobalt) in amounts, which independently take care of both the nickel and the silicon present in the fuel.

3.4 In the light of this clear teaching, the Examining Division's finding that Claim 1 requires an amount of copper (and/or cobalt) additive which has to meet simultaneously those figures resulting from the two separate ranges in Claim 1, is artificial and clearly wrong. It would not make sense if a skilled person, having calculated the necessary copper (and/or cobalt) amount on the basis of the fuel's nickel contents, would then have to reduce it in view of the second calculation based on the fuel's silicon contents.

3.5 Therefore, in the Board's judgement, Claim 1 can be reasonably understood only as to independently calculate the copper (and/or cobalt) amounts to be added to the fuel on the basis of the nickel and of the silicon present in the fuel in question and to add the sum of the copper (and/or cobalt) amounts resulting from these two calculations so that both the nickel and the silicon may be blocked in the course of the further process steps.

3.6 Hence, Claim 1 is sufficiently clear and meets the requirements of Article 84 EPC. The same considerations apply mutatis mutandis to Claim 2.

3.7 If already the claims as such disclose the invention in a manner sufficiently clear and complete to be carried out by a skilled person, it is unnecessary to further investigate the specification in this context. It follows that the Examining Division's finding of insufficiency fails and that, thus, in the absence of further objections, the present application complies with the requirements of Article 83 EPC.

4. *Auxiliary Requests*

In these circumstances it is not necessary to deal with the auxiliary requests A, B, and C.

5. The Examining Division did not yet decide whether the application and the disclosed invention comply with the other requirements of the EPC (e. g. novelty and inventive step). Therefore, the Board uses its power under Article 111(1) EPC and remits the case to the Examining Division for further prosecution.

Order

For these reasons, it is decided that

1. The Examining Division's decision is set aside.

2. The case is remitted to the Examining Division for further prosecution on the basis of the main request.

The Registrar: The Chairman:

E. Görgmaier A. Jahn