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D E C I S I O N
of 1 July 1998

Case Number: T 0604/94 - 3.3.5

Application Number: 91305883.0

Publication Number: 0465161

IPC: C10G 11/18

Language of the proceedings: EN

Title of invention:

Method of controlling temperature, yields and selectivity in a fluid hydrocarbon conversion and cracking apparatus and process

Applicant:

EXXON RESEARCH AND ENGINEERING COMPANY

Opponent:

-

Headword:

Apparatus and process for controlling fluid coking/EXXON

Relevant legal provisions:

EPC Art. 54(3)

Keyword:

"Novelty (yes)"
"Reimbursement of appeal fee (no)"

Decisions cited:

-

Catchword:



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Boards of Appeal

Chambres de recours

Case Number: T 0604/94 - 3.3.5

:
D E C I S I O N
of the Technical Board of Appeal 3.3.5
of 1 July 1998

Appellant: EXXON RESEARCH AND ENGINEERING COMPANY
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 12 November 1993
refusing European patent application
No. 91 305 883.0 pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: R. K. Spangenberg
Members: G. Dischinger-Höppler
J. H. van Moer

Summary of Facts and Submissions

I. European patent application No. 91 305 883.0 was refused by a decision of the examining division. The decision was based on the set of amended claims filed with letter dated 5 April 1993. The independent Claims 1 and 9 of this set read as follows:

"1. Apparatus for the fluidized coking of a hydrocarbon feed and/or hydrocarbonaceous feed, comprising a fluidized coking reactor, at least one feed injector connected to a wall of said reactor, which feed injector is capable of adjusting in a controllable manner the atomization of said feed while installed in said reactor wall, and further comprising a means for monitoring a temperature in the apparatus, a product yield and/or product quality, and further comprising a means for generating a first signal based on said temperature, said product yield and/or product quality, and a controller means operable to respond to said first signal by adjusting the feed atomization produced by said feed injector.

9. A process for controlling an apparatus for fluidized coking of a hydrocarbon and/or hydrocarbonaceous feed, the apparatus comprising a fluidized coking reaction zone and at least one feed injector for introducing feed into the reaction zone in the form of a spray of atomised droplets, and wherein the injector(s) is/are adjustable to vary the feed entering the reaction zone, the process comprising: (i) monitoring at least one parameter selected from: (a) a temperature in the apparatus; (b) at least one characteristic of the feed; (c) at least one characteristic (e.g., yield and/or quality) of the product; (d) the yield of at least a selected component in the product; and (e) any combination of two or more of parameters (a) to (d);

and (ii) adjusting the said injector(s) to attain a desired value of the selected parameter(s)."

II. The grounds for refusal were that in view of

D1: EP-A-0 444 859

the subject-matter of the independent Claims 1 and 9 did not meet the requirements of Article 54(1) and (3) EPC. The examining division held that the structural features of these claims had all to be considered as being disclosed in D1, because, although D1 referred to a "fluid catalytic cracking unit" and present Claim 1 related to a "fluidized coking reactor", the description appeared to contain no teaching that would distinguish these applications.

III. The appellants lodged an appeal against this decision. They filed photocopies of two brochures of their own, one describing "Fluid Catalytic Cracking", the other describing "Fluid Coking", to show the difference which consists in that fluid coking is performed in the presence of non-catalytic fluidised solids, ie in the absence of a catalyst. They argued that the different nature of the equipment and processes involved in the present application and in D1 were also evident from the respective descriptions.

The appellants filed an amended description to highlight the fact that the process and apparatus employed in accordance with the application are in the field of "Fluid Coking" and not in the field of "Fluid Catalytic Cracking". They further filed amended claims according to a first and second auxiliary request.

IV. The appellants requested as a main request that the decision under appeal be set aside, and as first and

second auxiliary requests that the amended sets of claims should be considered.

Reimbursement of the appeal fee was also requested, on the sole basis that it should have been clear from the description that the process and equipment as claimed were different from those of D1.

Reasons for the Decision

1. The appeal is admissible.
2. The decision under appeal concerns the single question of novelty in the light of D1, a document forming part of the state of the art pursuant to Article 54(3) and (4) EPC for all Contracting States designated in the application under appeal.
 - 2.1 This document, entitled "process and apparatus for controlling a fluid catalytic cracking unit", describes an apparatus (ie process unit) which differs from that of present Claim 1 only in that it comprises a reactor for fluid catalytic cracking of a petroleum-derived feed instead of a fluidised coke reactor for the fluidised coking of a hydrocarbon feed (see in D1, Claim 11, Figure 2 and page 9, lines 21 to 49). Likewise, the process described in D1 differs from that of present Claim 9 only in that it is applied to a fluid catalytic cracking unit (see in D1, Claims 1, 4 and 6 and page 6, lines 5 to 45) and not to an apparatus for fluidized coking.
 - 2.2 The decision under appeal does not address the question whether the apparatus and process disclosed in the application as originally filed were an apparatus and process applicable for fluidized coking according to

the claims of the main request. The Board is, however, satisfied that this particular feature is indeed mentioned in various passages of the description as originally filed (see page 2, second full paragraph, page 12, lines 15 to 22, page 16, last paragraph, pages 18/19, bridging paragraph, page 26, lines 5 to 7, page 34, lines 2 to 4 and page 40, lines 26 to 29). In this context it is added that it has also not been called into question by the examining division and is, in the Board's judgment, clear from the application as originally filed, that the term "fluidized coking" is equivalent to "fluid coking" (see in the application, description of figures 1 and 2, in particular page 12, lines 15 to 22). This particular amendment is therefore allowable under Article 123(2) EPC. Since the other amendments made to Claims 1 and 9 of the main request do not touch on the question of novelty, it is not at present the Board's task to decide thereon (see point 3 below).

- 2.3 According to the contested decision, the term "fluidized coking of a hydrocarbon feed" was, in the examining division's opinion, totally unclear and could not be considered to have any meaning in the art, nor was it possible to derive from the description any teaching that would allow the attachment of a specific meaning to said term. Hence it was found to be not possible to accept the appellants' assertion that D1 would not anticipate the features of the amended claims.

The documents filed by the appellants during the appeal proceedings with the intention of showing the difference between "Coking" and "Catalytic Cracking" do not reveal any publication date. It cannot therefore be established whether these documents have ever been made available to the public (see Article 54(2) EPC).

However, the content of these documents corresponds to the general technical knowledge of those skilled in the field of petroleum technology. According to such general technical knowledge which is represented in eg

- Ullmanns Encyklopädie der technischen Chemie, vol. 10, 4th edn., Verlag Chemie, Weinheim, 1975, pp. 664, 665, 669 to 673 and 678,
- Römpf Chemielexikon, 9th edn., Georg Thieme Verlag Stuttgart, 1990, p. 2354 or
- G.D. Hobson, Modern Petroleum Technology, 4th edn., Applied Science Publishers Ltd., Barking, Essex, England, 1975, pp. 199-203,

the difference between the two processes consists in that "Coking" is a purely thermal process wherein the decomposition of hydrocarbons is performed solely by the action of heat whereas "Catalytic Cracking" additionally uses a catalyst. The Board, therefore, considers that the indication of the intended purpose in present Claim 1 and 9 is to be regarded as a functionally defined technical feature of the claimed subject-matter. It is further clear from such general technical knowledge that the coke used in the fluidized bed according to the application (see description page 12, line 15, to page 13, line 20) is not a catalyst within the meaning of D1 (see page 8, lines 10 to 26). Having regard to Fig. 1 of D1 and the corresponding part of the description (see page 8, line 10, to page 9, line 11), the Board further considers that the fluidised bed comprising a catalyst forms an essential part of the transferline reactor (12) of D1. By this feature, the reactor of D1 is clearly distinguished from the "fluidised coking reactor" forming part of the apparatus according to

present Claim 1, which apparatus was originally, and probably more appropriately, called a "process unit". The Board therefore agrees with the appellants' assertion that the different nature of the particles contained in the fluidized beds, which in D1 comprise a catalyst and in the application do not, amount to a technical difference in the equipment claimed in the present application in comparison with the disclosure of D1. For this reason, D1 does not prejudice the novelty of the subject-matter of present Claim 1.

The same technical difference, i.e. the absence of a catalyst, also confers novelty on the subject-matter of process Claim 9.

Under these circumstances it is not, at present, expedient to consider the claims of the auxiliary requests.

3. Although the contested decision was based only on a novelty objection in view of D1, the Board notes that all other documents listed in the Search Report also refer, at least primarily, to the technical field of "Fluid catalytic cracking". However, at the present stage of the examination proceedings, it is not the Board's task to examine whether a novelty objection might nevertheless arise in view of these documents. On the contrary, it is still incumbent on the examining division to check these facts. Since, furthermore, the questions of admissibility of the amendments (Article 123(2) EPC) and inventive step (Article 56 EPC) have not been dealt with in the decision under appeal, and in order to preserve the possibility of a two-instance decision on these issues, the Board uses its power under Article 111(1) EPC to remit the case to the first instance for further prosecution of the examination procedure.

4. The claims according to the main request have been restricted to the general technical field of thermal cracking according to the fluidised bed technique (Int. Cl. C10G 9/32). It is therefore for consideration whether the now claimed subject-matter has actually been searched.

5. The circumstances of the case do not justify a reimbursement of the appeal fee. In the present case, where the benefit of an interlocutory revision in accordance with Article 109(1) EPC has not been granted by the first instance and where the appeal is allowable in the sense of being successful, reimbursement of the appeal fee can nevertheless only be ordered if it is equitable by reason of a substantial procedural violation (Rule 67 EPC). In the present case, as set out above under point 2, the refusal of the application is based on an interpretation of the prior art document on the one hand and the claims on the other hand. According to consistent jurisprudence, such an interpretation is, however, a substantive issue, but not a violation of procedural law. For this reason, the request for reimbursement of the appeal fee must be rejected.

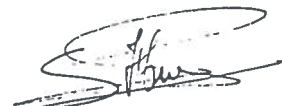
6. In view of the preceding considerations it was not necessary to summon for Oral Proceedings.

Order

For these reasons it is decided that:

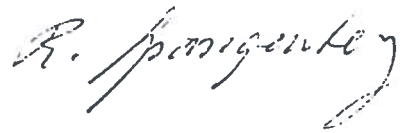
1. The decision under appeal is set aside.
2. The case is remitted to the first instance for prosecution of the examination procedure.
3. The request for reimbursement of the appeal fee is rejected.

The Registrar:



S. Hue

The Chairman:



R. Spangenberg

