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D E C I S I O N
of 23 September 2002

Case Number: W 0009/02 - 3.2.3
Application Number: PCT/EP01/04641
Publication Number: WO 01/81715
IPC: E21B 43/24, E21B 43/30,
E21B 36/04

Language of the proceedings: EN

Title of invention:

Method and system for treating a hydrocarbon containing formation

Applicant:

SHELL INTERNATIONALE RESEARCH MAATSCHAPPIJ B.V.

Opponent:

-

Headword:

-

Relevant legal provisions:

PCT Art. 17(2) (a), (b)
PCT R. 13.1, 13.2, 40.2(c), (e)

Keyword:

"Unity-protest partially justified (Reimbursement of one additional search fee)"
"Clarity objections to be distinguished from non-unity objections"

Decisions cited:

-

Catchword:

-



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Boards of Appeal

Chambres de recours

Case Number: W 0009/02 - 3.2.3
International Application No. PCT/EP01/04641

D E C I S I O N
of the Technical Board of Appeal 3.2.3
of 23 September 2001

Applicant: SHELL INTERNATIONALE
RESEARCH MAATSCHAPPIJ B.V.

Representative: -

Subject of the Decision: Protest according to Rule 40.2(c) of the Patent Cooperation Treaty made by the applicants against the invitation (payment of additional fees) of the European Patent Office (International Searching Authority) dated 5 September 2001.

Composition of the Board:

Chairman: C. T. Wilson
Members: U. Krause
B. Schachenmann

Summary of Facts and Submissions

- I. International patent application PCT/EP01/04641 was filed on 24 April 2001 with independent claims 1 and 6 relating to a method for treating a hydrocarbon containing formation in situ and producing a hydrocarbon fluid from the formation, claim 17 relating to a method for producing synthesis gas, claim 21 relating to a system for use in the method according to independent claims 1 and 6, and claim 39 relating to a pyrolysis product.

The method of claim 1 is defined by comprising "pyrolysing hydrocarbons present in the formation during the production of the hydrocarbon fluid from the formation with the application of a pressure/temperature control such that the pressure is at least the pressure which can be calculated for a selected temperature, or the temperature is at most the temperature which can be calculated for a selected pressure from the equation

$$p = 0.07 * e^{(-A/(T + 273) + B)}$$

wherein P is pressure (bar absolute), T is temperature (°C), and A and B are predetermined parameters which relate to a property which is relevant to the quantity, the composition and/or the quality of the hydrocarbon fluids produced". The same feature is also included in method claims 6 and 17, and in a corresponding manner in system claim 21 for defining pressure control devices adapted to maintain an elevated fluid pressure in a heated part of the formation between one or more heat injection wells and one or more production wells according to the above equation.

The pyrolysis product according to claim 39 is defined by comprising less than 10% by weight of olefins and having an average carbon number less than 35.

II. With a communication dated 5 September 2001 the European Patent Office, in its capacity as International Search Authority (ISA), informed the Applicant that it considered the application to contain three inventions, and issued an invitation to pay two additional search fees within 30 days. The different inventions were identified as follows:

- (1) claims 1-6, 17-29
- (2) claims 30 to 38
- (3) claims 39 to 55

In the reasons the ISA stated that a method as defined in claim 1 was known from document US-A-2 914 309 and that a contribution to this prior art could be found only in the special, but unrelated technical features defined in claims 6, 30 and 39.

The ISA also found, according to part 3 of the invitation and the corresponding reasons given on an extra sheet, claims 7 to 16 to be unsearchable under Article 17(2)(b) PCT for the reasons that it was impossible to compare the parameters A and B employed for defining the relation of the pressure and temperature in claim 1 with the prior art. In this connection, the ISA also stated that "consequently, the search has been restricted to claims 1-6 and 17-29, while leaving out the following text from the claims:

"such that the pressure is at least the pressure which can be calculated for a selected temperature, or the temperature is at most the temperature which can be calculated for a selected pressure from the equation ... (see claim 1 of the application) wherein P is

pressure (bar absolute), T is temperature (degr. C) and A and B are predetermined parameters which relate to a property which is relevant to the quantity, the composition and/or the quality of the hydrocarbon fluids produced."

III. The Applicant paid the two additional search fees under protest on 3 October 2001, arguing that the single general inventive concept was provided by the fact that all claims related to pyrolysis (method, system and products), and that claims 30 to 38 and claims 54,55 were dependent on claims 29 and 1 to 16, respectively, which were not objected to.

He requested that the two additional search fees be reimbursed.

IV. The justification for the invitation to pay additional fees was reviewed in accordance with Rule 40.2(e) PCT by a review panel of the European Patent Office, which on 14 January 2002 held that the invitation was justified, mainly for the reasons that the opinion of the ISA on the different special technical features was correct and that the Applicant failed to provide a sufficiently substantiated statement explaining why the requirements of unity were fulfilled, and invited the Applicant to pay a protest fee in order that the protest be examined by a "special instance" of the ISA or competent higher authority in accordance with Rule 40.2(c) PCT.

V. The protest fee was duly paid on 21 January 2002.

Reasons for the Decision

1. The protest is admissible.
2. According to Rule 13.2 PCT, where a group of inventions is claimed in one and the same international application, the requirement of unity of invention referred to in Rule 13.1 PCT shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features, whereby the expression "special technical features" shall mean those features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.
3. In its invitation to pay additional fees the ISA considered document US-A-2 914 309 to be the pertinent prior art and identified three different inventions by the special technical features involved in claims 6, 30 and 39. Conversely, the Applicant, arguing that the single general inventive concept was provided by the fact that the claims related to a pyrolysis method, a pyrolysis system and pyrolysis products, apparently considers the pyrolysis as being the special technical feature forming the basis for the required technical relationship between the claims.
4. It follows from Rule 13.2 PCT that the special technical features of each of the claimed inventions can only be determined in view of the pertinent prior art.

Document US-A-2 914 309, referred to by the ISA, relates to the recovery of hydrocarbon containing products from tar sands in situ by subjecting the tar sands to heat to pyrolyse the tar in the sands and to

form pyrolysed hydrocarbons which are recovered (see column 1, lines 66 to 70). Thus, it is apparent that hydrocarbon recovery by pyrolysis, being known from this document, cannot be considered as a special technical feature defining a contribution to the prior art and, therefore, cannot form the basis for the required single general inventive concept (Rule 13.1 PCT). The Board cannot, therefore, follow the argument of the Applicant.

5. However, independent claim 1 not only refers to hydrocarbon recovery by pyrolysis in general but also defines a combined pressure/temperature control in accordance with a relation of pressure and temperature as specified in the equation included in these claims. No such relation can be derived from document US-A-2 914 309 which describes a temperature range of 250°C to 400°C for the pyrolysis (see claim 1 and column 7, lines 3 and 4) separately from an undefined "superpressure" created and maintained in the pyrolysis zone (see column 4, lines 16 to 19, or column 7, lines 13 to 15). Thus, the combined pressure/temperature control can be considered as a special technical feature defining a contribution which the invention claimed in claim 1 makes over the prior art.

The same feature is also included in independent claims 6, 17 and 21. Thus, the combined pressure/temperature control is regarded as a special technical feature providing a technical relation between the inventions defined in independent claims 1, 6, 17 and 21, with the consequence that these claims, together with the corresponding dependent claims 2 to 5, 7 to 16, 18 to 20 and 22 to 38, constitute a group of inventions so linked as to form a single general inventive concept.

6. The Board notes that, whilst no reasons were given by the ISA in the part of the invitation to pay additional fees dealing with the issue of unity of invention (parts 1 and 2 of the communication and the corresponding reasons on the first page of the extra sheets) for the statement of the ISA that "the method for treating a hydrocarbon containing formation in situ from claim 1 is known from US 914 309", it was stated in the reasons relating to part 3 of this invitation that the use of the parameters A and B in claims 1 to 29 led to a lack of clarity, whereby claims 7 to 16 have been found unsearchable and the feature defining the combined pressure/temperature control in claims 1 to 6 and 17 to 29 was disregarded.

Hence, it appears that the ISA came to its conclusion on lack of unity of invention by considering only part of the independent claims and, more specifically, disregarding exactly the common feature of independent claims 1, 6, 17 and 21 forming the basis for the technical relationship between these claims, as set out above. This is inconsistent with regard to the consequences of a clarity objection and confuses the requirements of clarity and unity of invention. In fact, the parameters A and B are defined in the independent claims which, therefore, should also have been qualified as unsearchable if the use of these parameters was considered to lead to a serious lack of clarity, rather than disregarding part of the claim. This follows from Article 17(2)(b) PCT stipulating that certain claims, rather than parts of certain claims, may be excluded from the search. Further, a common feature of a group of claims may provide the technical relationship between the claims necessary to meet the requirement of unity of invention, irrespective of whether this feature is clear or not. In other words, an unclear feature may render a meaningful search

impossible but, nevertheless, form a basis for a common inventive concept of a group of inventions.

Thus, if the ISA came to the conclusion that part of the independent claims, for example the use of the parameters A and B in the present independent claims 1, 6, 17 and 21, was so unclear as to render a meaningful search impossible, it should have notified the Applicant, according to Article 17(2)(a) and (b) PCT, that no International Search Report will be established for all the claims including this unclear feature, rather than disregarding solely this feature in the claims and restricting the search and the considerations on unity to the remaining subject-matter of the claims. It would not, therefore, have been necessary to pick out two different inventions from the dependent claims, in this case from claims 6 and 30, without giving reasons for this selection.

7. The third group of claims identified by the ISA includes independent claim 39 and dependent claims 40 to 55. Claim 39 relates to a pyrolysis product which is defined by its composition of having less than 10% by weight of olefins and an average carbon number less than 35. Since this pyrolysis product is not related to the combined pressure/temperature control of the pyrolysis methods and system of claims 1, 6, 17 and 21, the link between the latter claims cannot be extended to include claim 39. Further, the product and composition defined in claim 39 could be obtained by various pyrolysis methods, including the steam cracking of naphta described for example in document GB-A-1 480 860 cited in the Search Report, and there is no indication that the process of claims 1 and 6 inherently results in the product of claim 39. Thus, this product is not uniquely related to the production methods and system of independent claims 1, 6, 17 and

21 so as to form a single general inventive concept in the sense of Rules 13.1 and 13.2 PCT, resulting in a lack of unity.

8. It can be concluded that the application contains two different inventions, one including claims 1 to 38 and the other including claims 39 to 55. Since the Applicant paid two additional search fees for three inventions in total, one search fee, in this case the fee for the second group of claims 30 to 38, was unduly paid and has to be reimbursed. Refund of the protest fee cannot be ordered because the protest was successful only with regard to the first two inventions identified by the ISA and, therefore, not entirely justified (Rule 40.2(e) PCT).

Order

For these reasons it is decided that:

One additional search fee shall be reimbursed.

The Registrar:

The Chairman:

A. Counillon

C. T. Wilson