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**Datasheet for the decision
of 28 July 2022**

Case Number: T 2858/19 - 3.2.01

Application Number: 13876381.8

Publication Number: 2935756

IPC: E21B33/127, E21B7/06

Language of the proceedings: EN

Title of invention:

A MILL DIVERTER HAVING A SWELLABLE MATERIAL FOR PREVENTING
FLUID FLOW PAST THE MATERIAL

Applicant:

Halliburton Energy Services, Inc.

Headword:

Relevant legal provisions:

EPC Art. 56

Keyword:

Inventive step - (yes)

Decisions cited:

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 2858/19 - 3.2.01

D E C I S I O N
of Technical Board of Appeal 3.2.01
of 28 July 2022

Appellant: Halliburton Energy Services, Inc.
(Applicant) 10200 Bellaire Boulevard
Houston, TX 77072 (US)

Representative: Hoffmann Eitle
Patent- und Rechtsanwälte PartmbB
Arabellastraße 30
81925 München (DE)

Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 12 June 2019
refusing European patent application No.
13876381.8 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman G. Pricolo
Members: J. J. de Acha González
O. Loizou

Summary of Facts and Submissions

- I. The appeal of the applicant lies against the decision of the Examining Division to refuse European patent application No. 13876381.8.
- II. In its decision the Examining Division held among others that the subject-matter of claim 1 of the main request did not involve an inventive step over the disclosure of document US 2008/0296029 A (**D1**).
- III. With the statement of grounds of appeal, the appellant requested that the decision under appeal be set aside and a patent be granted on the basis of the main request underlying the contested decision, or, in the alternative, on the basis of the auxiliary request underlying the contested decision.
- IV. Claim 1 of the main request reads as follows:

"A method of preventing fluid flow past a tapered face of a mill diverter in a cased wellbore comprising:

positioning the mill diverter (100) in the cased wellbore (11), wherein the mill diverter comprises :

- (a) a body;*
- (b) the tapered face (101), wherein the tapered face is located at one end of the body;*
- (c) a fishing mechanism (103); and*
- (d) a swellable material (102), wherein the swellable material:*
 - (i) is positioned circumferentially around the body of the mill diverter adjacent to the tapered face and*

disposed between the tapered face and the fishing mechanism;

(ii) swells in the presence of a swelling fluid; and

(iii) prevents substantially all of a fluid from flowing past the swellable material after the swellable material has swelled; and

causing or allowing the swellable material to swell."

Reasons for the Decision

1. Claim 1 of the main request is based on claims 1, 3, 5 and 6 of the application as originally filed. The subject-matter of claim 1 does not therefore extend beyond the content of the application as originally filed (Article 123(2) EPC).
2. The Examining Division took the view that the subject-matter of claim 1 did not involve an inventive step. In particular it considered that the subject-matter of claim 1 differed from the method disclosed in D1 on account of the following features:
 - (i) the mill diverter comprises a fishing mechanism and the swellable material is disposed between the tapered face and the fishing mechanism.

This is not disputed by the appellant and is correct.

3. According to the Examining Division the technical effect of these differences was the possibility of retrieving the mill diverter without it being stuck in the wellbore. The objective technical problem was thus formulated as providing means to reliably retrieve the mill diverter. Since fishing mechanism for mill diverter were obvious for the skilled person, the straightforward placement of the mill diverter starting from the design of D1 shown in figure 4, where the swellable material is placed adjacent to the tapered face, would be that of claim 1, i.e. between the tapered face and the fishing mechanism. Moreover, the Examining Division considered that D1 pointed itself at the solution of also providing the fishing mechanism below the swellable seal so as to avoid the problem of a collection of debris at the fishing mechanism making retrieval difficult because it already arranged the swellable seal circumferentially around the tapered face of the mill diverter in order to prevent drilling debris from accumulating below it that caused retrieval problems of the mill diverter.
4. The reasoning of the Examining Division is based on hindsight even when assuming that the technical effect and the objective technical problem formulated by the Examining Division are correct - this was contested by the appellant - for the following reasons. The skilled person finds no motivation to put the fishing mechanism behind the tapered face and not, as argued by the appellant, on the tapered face for easy accessibility to the fishing tool for pulling out the mill diverter out of the wellbore. D1 is silent on any retrieving mechanism and its placement on the mill diverter. The argument of the Examining Division that considers a pointer present in D1 itself fails since it is based on the assumption that the fishing mechanism

will be placed below the tapered face. If the fishing mechanism were placed below the tapered face, it would certainly be positioned below the swellable material when starting from figure 4 of D1. However, any motivation to locate it below the tapered face is missing since according to D1 the retrieval is directed to the mill diverter as such (to avoid it from being stuck in the wellbore) and not to the accessibility of the fishing tool for retrieval. Furthermore, the invention of the current application clarifies that the accessibility to the fishing tool requires further steps of removing swellable material to gain access to the fishing mechanism (see also in this respect para. 41 of the application). Accordingly, it follows that placing the fishing tool below the swellable material is not necessarily the straightforward solution for the skilled person.

5. The further prior art at hand during the examination proceedings does neither render the subject-matter of claim 1 of the main request obvious.

6. Accordingly, the set of claims of the main request together with the adapted description and the figures as published with the international publication of the application (i.e. those as originally filed) form a suitable basis for the grant of a patent.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the Examining Division with the order to grant a European patent on the basis of the following documents:

- claims: 1 to 13 of the main request filed with letter dated 10 March 2017;
- drawings: sheets 1/4 to 4/4 as published in the international publication of the application; and
- description: pages 1, 2 and 18 filed with letter of 10 March 2017 and pages 3 to 17 as published in the international publication of the application.

The Registrar:

The Chairman:



A. Vottner

G. Pricolo

Decision electronically authenticated