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**Datasheet for the decision
of 11 January 2022**

Case Number: T 1535/17 - 3.2.03

Application Number: 10744715.3

Publication Number: 2464811

IPC: E21B17/10, E21B37/02

Language of the proceedings: EN

Title of invention:

DOWNHOLE DEVICE

Patent Proprietor:

Domain Licenses Limited

Opponent:

MURGITROYD & COMPANY

Headword:

Relevant legal provisions:

EPC Art. 56, 123(2)

RPBA 2020 Art. 13(2)

Keyword:

Amendment after summons - exceptional circumstances (yes) -
taken into account (yes)
Amendments - added subject-matter (no)
Inventive step - (yes)

Decisions cited:

T 0172/17, T 0037/19, J 0014/19

Catchword:



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Case Number: T 1535/17 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 11 January 2022

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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 2 May 2017
revoking European patent No. 2464811 pursuant to
Article 101(3) (b) EPC.**

Composition of the Board:

Chairman N. Obrovski
Members: B. Goers
G. Patton

Summary of Facts and Submissions

- I. European patent No. 2 464 811 (hereinafter: "the patent") relates to a centralizer for downhole devices with two end collars axially separated by spring bows each comprising a convex curved portion.
- II. The opposition division's decision, posted on 2 May 2017 and revoking the patent on the grounds of Article 100(c) EPC and Article 100(a) EPC in conjunction with Articles 54 and 56 EPC, was appealed by the patent proprietor (hereinafter: "the appellant").
- III. With the consent of the parties, oral proceedings before the board were held on 11 January 2022 by videoconference using the Zoom platform. As announced by letter of 29 November 2021, the opponent (hereinafter: "the respondent") did not participate in the oral proceedings. The proceedings were continued without the respondent pursuant to Rule 115(2) EPC and Article 15(3) RPBA 2020.
- IV. At the end of the oral proceedings, the appellant confirmed the following requests:
- to set aside the decision,
 - to grant a patent based on the main request submitted with its letter of 10 December 2021.

With its reply to the grounds of appeal the respondent requested that the appeal be dismissed.

V. The following evidence, which was relied on in the decision under appeal, is relevant for the present decision:

E1: EP 0 196 339 A1;
E2: US 3,575,239 A;
E3: US 6,997,254 B2;
E4: DE 10 2005 040 482 A1;
E7: RU 2 274 744 C1.

VI. Independent claim 1 of the main request reads as follows (feature numbering added by the board, according to the grounds of appeal, in "[]"):

"[1.1] A centralizer (2101) having first and second opposing end collars (210,220),
[1.2] the end collars being axially separated by plural spring bows (240-245),
[1.3] characterised by a first set of bows (241, 2435, 245; 2105) that extend from the first end collar (210) substantially axis-parallel for a first distance before extending via a generally convex curved portion into the second end collar (220),
[1.4] and a second set of bows (240, 242, 244; 2107) that extend via a generally convex curved portion from the first end collar (210) and into a substantially axis-parallel portion at the second end collar (220)
[1.5] such that the curved portions of the first and second sets of bows are longitudinally off-set relative to each other,
[1.6] whereby the centralizer is formed of a single piece,
[1.7] wherein the bows are of equal length,
[1.8] wherein the centralizer is made from a single blank, wherein the blank is formed by cutting or punching from a sheet,

[1.9] wherein the blank is then cold-formed into a generally cylindrical shape,
[1.10] wherein bending operations are performed on the bows."

VII. The appellant's arguments relevant to the present decision can be summarised as follows:

(a) Admission of the main request under Article 13(2) RPBA 2020

The main request was to be admitted into the proceedings. The appellant had submitted the single new main request only in response to the communication under Article 15(1) RPBA 2020. This followed the respondent identifying for the first time in the reply to the grounds of appeal twelve different feature groups which had been omitted thereby allegedly creating added subject-matter. Submitting multiple different requests with various feature permutations as a fallback position before considering the preliminary opinion of the board would not have been in line with procedural efficiency in the present case. By adding features [1.8] to [1.10], the appellant addressed all deficiencies under Article 123(2) EPC of previous auxiliary request 1 which had been raised by the board in its preliminary opinion. The withdrawal of the other requests on file also meant that the proceedings were limited to a single claim request which was *prima facie* compliant with Article 123(2) EPC. Also, the amendments neither shifted the focus of the discussion with respect to the previous claim requests on file, nor gave rise to further objections. In addition, the respondent had not challenged the admittance of the main request, although it had had sufficient time to do so before the oral proceedings. In view of all this,

exceptional circumstances pursuant to Article 13(2) VOBK 2020 existed in the present case.

(b) Main request - Article 123(2) EPC

Claim 1 of the main request complied with the requirements of Article 123(2) EPC. The method steps for producing a centralizer from a single sheet as disclosed on pages 10 to 12 of the A-publication were not solely linked to a single embodiment of Figures 4 and 5. Instead, they were disclosed in the context of a number of other embodiments such as other designs of the collars as in Figures 6 and 7. The features F2 to F7, F10 and F11, referred to by the respondent in its reply to the statement of grounds, related to details of the embodiment of Figure 4. They were not in a clear structural or functional relationship with the method steps. Therefore, the consideration of only feature groups F1, F8, F9 and F12 in claim 1 did not constitute an unallowable intermediate generalisation.

(c) Main request - Inventive step

The subject-matter of claim 1 of the main request involved an inventive step. E3 was the only suitable starting point since it also disclosed a centralizer formed from a single blank. E3 did not disclose an offset of the curved portions of the bows. The objective problem was to adapt the centralizer of E3 such that the insertion into a restricted opening would be facilitated.

E2, E1 and E7 suggested the use of axially offset curved bow portions, but by means of alternative production methods. Since, according to these disclosures, the bows with the convex portions were

pre-formed they could be subsequently mounted to the collars. This simplified the forming of both of the convex portions and also the offset. Due to this substantial difference in producing the centralizer, none of E1, E2 or E7 disclosed or made obvious portions of the bows extending axially from the collars in order to produce the offset. Furthermore, these disclosures did not give any hint to a skilled person concerning how to produce the offset of the bows within the product-by-process features [1.8] to [1.10], wherein the precursor included all bows and collars in a single blank.

VIII. In accordance with Article 15(3) RPBA 2020 the respondent is treated as relying only on its written case. Its arguments against the previous requests as far as still relevant to the present decision can be summarised as follows:

(a) Main request - Article 123(2) EPC

The feature according to which the centralizer is made from a single blank was only disclosed in the context of the embodiment of Figures 4 and 5 of the application as filed. All of feature groups F1 to F12 were portrayed as essential parts of this embodiment. Some of the feature groups such as F1 had, further, a clear structural and functional relationship with the method for forming the centralizer from a single blank. The omission of any of these features thus constituted an unallowable intermediate generalisation.

(b) Main request - Inventive step

The arguments set out below were presented by the respondent in the context of previous auxiliary

requests 1 to 3, but are also relevant for the main request.

E3 already disclosed a centralizer formed from a single blank. E3 did not disclose an offset of the curved portions of the bows. The technical effect was to reduce the insertion forces when introducing the centralizer into a restricted opening. The objective problem was to adapt the centralizer of E3 such that the insertion into a restricted opening was easier.

Such a solution was already known from E2. The solution was described in the abstract and in column 1, lines 44-58 ("some of the spring bows are longitudinally offset from others ... reducing the force required to effect such insertion"). Offsetting the curved portions of the spring bows of E3 in the same way, thereby moving the curved portions alternately towards the first or second collars, was obvious. There was no obstacle to do so, because the bows of E3 were formed in a separate step by cold-forming, after forming the cylinder shape of the centralizer.

The solution was also known from E1 and E7 in the same way.

Reasons for the Decision

1. Main request - Admittance
 - 1.1 The main request is taken into account in the appeal proceedings for the reasons set out below.
 - 1.2 The appellant submitted the main request with its letter dated 10 December 2021 in response to notification of the summons to oral proceedings dated

10 May 2021. Consequently, Article 13(2) RPBA 2020 applies (Article 25(1) and (3) RPBA 2020).

- 1.3 The main request constitutes an amendment to the appellant's appeal case (cf. J 14/19, Reasons 1.5). According to Article 13(2) RPBA 2020 any such amendment made after notification of a summons to oral proceedings shall, in principle, not be taken into account unless there are exceptional circumstances which have been justified with cogent reasons by the party concerned.
- 1.4 During oral proceedings in the opposition proceedings the appellant submitted an auxiliary request which introduced the product-by-process feature "blank cut or punched from a sheet". Its aim was to delimit the subject-matter with respect to prior art disclosures, such as E1 or E2, in which the single-piece centralizers are not formed from a single precursor sheet. In the decision under appeal this auxiliary request was found not to be allowable. The opposition division considered the added feature to be an unallowable intermediate generalisation. It reasoned that it was originally disclosed only in combination with the feature "bows of equal length" (feature group F1, see point 2.2 below). With the notice of appeal the appellant submitted auxiliary requests 1 to 3 with varying amendments of the product-by-process definition in order to overcome this objection, on which the decision under appeal was based.

With its reply to the statement of grounds of appeal, the respondent extended its objection of added matter with respect to the product-by process definition. In addition to feature group F1 it now identified eleven further feature groups (F2 to F12, see point 2.2 below)

which were allegedly only disclosed in combination with feature group F1. It argued that the omission of any of these constituted an unallowable intermediate generalisation.

1.5 In the communication under Article 15(1) RPBA 2020 the board informed the parties of its preliminary view: a combination of features F1, F8, F9 and F12 defined the most general originally disclosed concept to obtain a single-piece centralizer "from a single blank". The board's assessment thus went beyond the opposition division's assessment of added matter for auxiliary request 1 in the decision under appeal. At the same time, the board did not entirely follow the respondent's line of argument either. In particular, the board did not consider the omission of any of feature groups F2-F7 and F10-F11 to constitute an unallowable intermediate generalisation.

1.6 At the third level of the convergent approach, which applies here, the board may also rely on criteria applicable at the second level, such as procedural economy (see document CA/3/19, page 43, explanatory remarks on Article 13(2) RPBA 2020; see also T 172/17, Reasons 5.4).

As explained above, the procedural situation concerning the alleged intermediate generalisation changed due to developments in the appeal proceedings (cf. T 37/19, Reasons 2). After receiving the board's preliminary opinion, the appellant replaced all claim requests on file by a single one. The amendments contained therein were strictly limited to overcoming the outstanding added-matter objection in line with the board's preliminary opinion.

This approach contributes significantly to procedural economy at this stage of the proceedings. Since, in comparison with the previous auxiliary request 3, only a single feature group F9 was added, it is immediately apparent why the added-matter objection is overcome by the new and only claim request (see also the following point 2.). The amendments do not shift the discussion or give rise to new objections. Moreover, the respondent did not object to the admittance of the amended main request.

The board considered the above circumstances to be exceptional and therefore admitted the main request into the appeal proceedings under Article 13(2) RPBA 2020.

2. Main request - No extension of the subject-matter
- 2.1 The main request complies with the requirements of Article 123(2) EPC. In the paragraphs below, reference is made to the passages contained in the A-publication of the patent (WO 2011/018617 A1).
- 2.2 The respondent argued that the feature "blank cut or punched from a sheet" was disclosed in the application as filed only in combination with the following feature groups F1 to F12:
 - F1: the bows are of equal length (page 10, line 31 and 32);
 - F2 to F4: the blank has two transverse web portions spaced apart by six parallel extending longitudinal web portions and generally rectangular and mutually parallel forming five apertures of equal size (page 11, lines 1 to 8);

- F5: the outer longitudinal web portions are inset from the ends of the transverse web portions by around half the width of the apertures (page 11, lines 8 to 10);
- F6 and F7: the web portions form the collars and bows (page 11, lines 17 and 18);
- F8: bending operations are performed on bows (page 11, lines 18 and 19);
- F9: the blank is cold-formed in cylindrical shape (page 12, line 1);
- F10: six bows are separated into two sets of three (page 10, lines 25 to 27);
- F11: the end collars are plain (page 10, lines 19 and 20);
- F12: the blank is formed by cutting or punching from a sheet (page 11, line 27).

2.3 The application as filed relates, *inter alia*, to the aspect of a "one-piece centralizer", embodiments of which are disclosed in the passages of page 10, line 11, to page 13, line 21. The most general statement with respect to a process suitable for producing such a one-piece centralizer is on page 10, lines 31 and 32: "The centralizer of the described embodiment has bows of equal length, and this means it can be made from a single blank" (see feature group F1). It is further stated in the passages referenced above that the blank "is formed" by cutting or punching from a sheet (F12) and "then cold-formed into a generally cylindrical shape" (F9). The convex curved portions are achieved by bending operations on the bows (F8). The skilled person further immediately understands that, starting from a single blank, all of these method steps are inherently necessary to arrive at a centralizer according to features [1.1] to [1.6]. No further alternative methods are described. These method steps are thus disclosed as

compulsory steps for forming a centralizer from a single blank. The method inherently requires that the bows be of equal length. Therefore, within the limits of what a skilled person would derive directly and unambiguously, using common general knowledge, and as seen objectively and relative to the date of filing, feature groups F1, F8, F9 and F12, corresponding to features [1.7] to [1.10] of claim 1, are only disclosed in combination in the application as filed.

- 2.4 The respondent's argument that the passage on page 10, lines 31 and 32 ("single blank"), is solely directed to the embodiment of Figures 4 and 5 and that therefore the method steps are only disclosed together with all technical features of this embodiment is not correct. Figures 4 and 5 do indeed refer to an embodiment with plain end collars formed for cooperation with a "stop collar" (F11). However, it is stated on page 10, lines 21 and 22, that the centralizers according to Figures 7 and 8 are also embodiments of a one-piece centralizer, in which the end and stop collars are formed integrally. It is further outlined here that Figures 4 and 5 relate to a "purely exemplary" blank. Feature groups F2 to F7, F10 and F11 of this specific embodiment (directed, *inter alia*, to number of bows, relative dimensions of parts of the blank, design of collars) are not in a functional relationship with the method features [1.8] to [1.10] of claim 1 since they are not critical to this production method. Therefore, the argument that these feature groups are inextricably linked to the product-by-process features claimed is not convincing.

3. Main request - Inventive step

The subject-matter of claim 1 involves an inventive step for the following reasons.

3.1 Closest prior art

The subject-matter of claim 1 of the main request includes the product-by-process limitation that the centralizer is formed by cutting or punching a single sheet in order to form a single blank which is cold-formed into a general cylindrical shape, and by performing bending operations on the bows (features [1.8] to [1.11]). This limitation distinguishes the centralizer of claim 1 from those disclosed in E1, E2, E4 or E7. A centralizer obtained by joining bows and collars with welding techniques as in E1 or E2, or by mechanically joining multiple parts, as in E7, has joining areas. A centralizer made of fibre-reinforced plastic material, as in E4, cannot be obtained by the product-by-process features claimed either, since it cannot be formed by processing a blank into a cylindrical shape using cold-forming. Since E3 discloses centralizers produced in accordance with features [1.8] to [1.10], it is undisputed that it represents the most promising starting point for the discussion of inventive step.

3.2 It is further common ground between the parties that E3 at least does not disclose feature [1.5] stating that two sets of the curved portions of the bows are longitudinally offset. Feature [1.5] requires ("such that") that the offset be achieved by means of the substantially linear portions of the bows provided at opposite ends of the sets of bows in accordance with features [1.3] and [1.4]. The formation of the

centralizer from a single sheet inherently requires that the axial portions extend from the inner edges of the collars. The provision of the axial portions on the lateral surfaces is thereby excluded.

- 3.3 It is also undisputed that the objective technical problem linked to this distinguishing feature is to adapt the centralizer disclosed in E3 such that its insertion into a bore hole is simplified. That is also the problem identified in the patent. The offset allows for reduction of the maximum insertion force as demonstrated in Figure 6 of the patent. The effect linked to the distinguishing feature [1.5] is that by means of the axial offset of the curved portions of the spring bows a lower, staggered resistance force is established (see also patent, Figures 6 and 21).
- 3.4 Any of E1, E2 and E7 discloses two sets of bows with an offset of the curved portion in order to reduce the insertion force. The effect is described in detail in E1 (page 2, last paragraph) and E2 (column 3, line 74 to column 4, line 3). It can thus be concluded that this principle is known in the art as also acknowledged in the patent in paragraph [0016].
- 3.5 The provision of an offset of the curved portions of the two sets by providing axially extending portions at different ends of the two bow sets is a specific and non-obvious adaptation of the known offset principle for centralizers produced from a single blank according to claim 1.
- 3.6 In E2, the offset of the curved portions is created differently. According to the figures and column 2, lines 38 to 58, the offset of the convex portions results from fixing pre-formed bows of the same shape

laterally on the collar surfaces at offset axial positions. The appellant correctly concluded that E2 does not provide a teaching concerning how the offset of curved portions can be formed within the cold-forming process of the single blank according to E3. In particular, the solution of providing two sets with substantially axial-parallel portions at opposite ends for creating the offset is not apparent from E2.

- 3.7 For the same reasons the solution is not made obvious by E1 either. In E1, two different approaches to create the offset are disclosed which are also not applicable for product-by-process steps [1.8] to [1.10]. Indeed, as in E2, they also rely on fixing pre-formed bows of the same shape on the lateral part of the collars so as to create an offset. Either the bows are fixed in two groups axially offset (Figure 2), or bows with two different angles at the ends of the convex portion are mounted mutually in opposite directions laterally to the collars (Figure 3).
- 3.8 E7 discloses axially offset bearings for the bows. The concept is not compatible with the product-by-process features [1.8] to [1.10].
4. As the main request involves an inventive step and complies with the requirements of Article 123(2) EPC, the appeal is allowable.
5. An adaptation of the description to the main request was not required.

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 with the order to maintain the patent as amended in the following version:
 - Claims 1 to 8 of the new main request filed with the letter dated 10 December 2021
 - Description and drawings of the patent specification

The Registrar:

The Chairman:



C. Spira

N. Obrovski

Decision electronically authenticated