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**Datasheet for the decision
of 12 January 2023**

Case Number: T 0940/21 - 3.2.05

Application Number: 09785373.3

Publication Number: 2304293

IPC: F16L1/20

Language of the proceedings: EN

Title of invention:

Method of spooling a bi-metallic pipe

Patent Proprietor:

Technip France

Opponent:

Subsea 7 Limited

Relevant legal provisions:

EPC Art. 56, 100(a), 100(b)

Keyword:

Grounds for opposition - lack of inventive step (no) -
insufficiency of disclosure (no)

Decisions cited:

T 0142/84



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 0940/21 - 3.2.05

D E C I S I O N
of Technical Board of Appeal 3.2.05
of 12 January 2023

Appellant:
(Opponent)
Subsea 7 Limited
Arnhall Business Park
Prospect Road
Westhill
Aberdeenshire AB32 6FE (GB)

Representative:
Lawrence, Richard Anthony
Keltie LLP
No.1 London Bridge
London SE1 9BA (GB)

Respondent:
(Patent Proprietor)
Technip France
6-8, Allée de l'Arche,
Faubourg de l'Arche,
ZAC Danton
92400 Courbevoie (FR)

Representative:
Murgitroyd & Company
Murgitroyd House
165-169 Scotland Street
Glasgow G5 8PL (GB)

Decision under appeal: **Decision of the Opposition Division of the European Patent Office posted on 8 April 2021 rejecting the opposition filed against European patent No. 2304293 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman P. Lanz
Members: M. Holz
 C. Brandt

Summary of Facts and Submissions

- I. The present appeal by the opponent is against the opposition division's decision posted on 8 April 2021 rejecting the opposition against European patent No. 2 304 293 (hereinafter: the "patent").
- II. The following documents submitted in the first-instance proceedings are relevant to this decision.
- D1: WO 2008/072970 A1
D2: US 2006/0210361 A1
D3: GB 1 517 955
- III. Oral proceedings before the board were held on 12 January 2023.
- IV. Final requests

The appellant (opponent) requested that the decision under appeal be set aside and that the patent be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed (main request) or, as an auxiliary measure, that the decision under appeal be set aside and that the patent be maintained as amended based on the claims according to the 6th or 7th auxiliary request (both filed on 21 December 2018), the 1st or 2nd auxiliary request (both filed on 18 November 2015), the 4th or 8th auxiliary request (both filed on 21 December 2018), the 3rd auxiliary request (filed on 18 November 2015) or the 5th auxiliary request (filed on 21 December 2018).

V. Claim 1 as granted reads (the feature identification employed by the board is included in square brackets):

"[1] A method of spooling a marine pipeline (90) comprising a plurality of bi-metallic pipe sections (10, 66) onto a reel (60) comprising at least the steps of:

[2] (a) filling a first pipe section (10) with a fluid (12), and pressurising the fluid (12) in the first pipe section (10);

[3] (b) spooling the first pipe section onto the reel;

[4] (c) filling a second pipe section (66) with a fluid (78), and pressurising the fluid (78) in the second pipe section (66);

[5] (d) joining the first pipe section with the second pipe section wherein at least one of the first and second pipe sections maintains the pressurised fluid therein; and

[6] (e) spooling the second pipe section onto the reel."

VI. The parties' submissions relevant to this decision can be summarised as follows.

(a) *Ground for opposition under Article 100(b) EPC*

(i) *Appellant*

The opposition division concluded in point 2.3.2 of the Reasons for the decision under appeal that the skilled person "will know how to provide the integrity of the layer either with or without access to the interior region of the pipes to be connected" and "[t]his is known in the field concerned and would not confront the skilled person with an undue burden when looking for such a method". This assessment was incorrect as the

skilled person would not automatically know how to do this. When welding pipeline sections together, it was complicated to maintain the integrity of the liner. Normally, welding had to be done from the outside and from the inside. There was no teaching in the patent on how to maintain the integrity of the liner during joining when one or both pipe sections were pressurised.

The patent itself gave no guidance as to what plugs were suitable for reeling. The plugs mentioned in the patent appeared to be the same as those of document D3. Consequently, if it was accepted as true that the list of devices mentioned in document D1 and the plugs of document D3 were not suitable for reeling, this would expose a sufficiency issue in the patent.

Consequently, the ground for opposition under Article 100(b) EPC prejudiced the maintenance of the patent as granted.

(ii) *Respondent*

The appellant had not provided any evidence for what a "normal" welding process entailed, i.e. what the skilled person's tool kit included. It was not apparent that claim 1 required anything outside the skilled person's normal tool kit.

The appellant addressed the nature of the "plugs" mentioned in documents D1 and D3 without substantiating any of its allegations with verifiable facts. The question to ask when assessing sufficiency was if the application as filed disclosed the invention in sufficient detail to render it apparent to the skilled person how to put the invention into practice. A

discussion of plugs in document D1 or D3 was not part of this assessment.

The ground for opposition under Article 100(b) EPC thus did not prejudice the maintenance of the patent as granted.

(b) Ground for opposition under Article 100(a) EPC in conjunction with Article 56 EPC

(i) Appellant

The method disclosed on page 2 of document D1 was the prior art closest to the subject-matter of claim 1 as granted. The distinguishing feature was feature 5. The subject-matter of claim 1 did not involve an inventive step in view of the method disclosed on page 2 of document D1 alone or combined with the disclosure on page 4 of document D1 or with document D2 or D3. The objective technical problem was how to simplify and shorten the time for the method disclosed on page 2 of document D1.

In view of this objective technical problem, the skilled person knew that they must change something about the method of page 2 of document D1. That method did not comprise many steps. There were thus not many options for improvement. The alternative solutions suggested by the respondent required significant changes and were not indicated in document D1. However, it was a fundamental principle of process design that a process could be most obviously and easily simplified and shortened by omitting steps that were obviously unnecessary. In document D1, the pressure relief and repressurisation steps were obviously unnecessary. On

reading document D1, the skilled person would immediately question why the pressure was relieved and reapplied. No reason was given for this in document D1. The skilled person would obviously identify this as a time-consuming but unnecessary step that could simply be omitted. The passage on page 4 of document D1 as well as document D2 taught the skilled person how to perform the method while omitting these steps, i.e. to join the pipe sections together under pressure. These steps were not described as essential or mandatory in document D1. The core teaching of document D2 was that overpressure was beneficial since it avoided wrinkling. There was thus no need to relieve the overpressure. There were no technical obstacles to omitting the pressure relief step. If a special technical teaching was necessary to connect pipeline segments under pressure, this would also apply to the patent. In that case, the invention would be insufficiently disclosed.

The skilled person knew from reading page 4, lines 12 to 20 of document D1 that overpressure could also be maintained during joining of pipe sections. It would be immediately obvious to the skilled person that time could be saved very easily and the process made simpler by maintaining the overpressure during joining as hinted at by page 4, as well as during mechanical movement, so that it was not necessary to carry out the depressurising and repressurising steps. While page 4 of document D1 did not provide a solution to the objective technical problem, it showed the skilled person a way to implement the solution that they had already identified when considering omitting the unnecessary step of relieving the pressure.

Document D2 gave the skilled person the solution to the above objective technical problem of maintaining

overpressure during joining. Document D2 envisaged that multiple pipe sections were joined together to make a pipeline (see, for example, abstract and paragraph [0044] of document D2) and that these sections may be joined together when pressurised (see, for example, paragraph [0012]). Paragraph [0054] disclosed that the fabrication of pipeline segments could be performed at sea or on land and that fabrication onshore involved connecting the joints into long strings that could be wound onto a reel for unreeling and installation offshore and/or that could be towed to the offshore site. In paragraph [0049], document D2 recognised that pressurising pipe sections in this way saved time and cost, giving the skilled person a clear indication that the objective technical problem could be solved by pressurising the pipe sections and continuously maintaining that pressure. According to paragraph [0047] of document D2, the pipeline segments, once manufactured, were maintained under a constant pressure to neutralise or minimise the effect of the external pressure head and prevent wall collapse. While this was not the same as the above objective technical problem, it showed that the skilled person knew that pipeline segments could be kept under pressure during the joining. A different use of a known measure could not establish inventive step (see decision T 142/84, Reason 8.1).

Document D3 also gave the skilled person the solution to the above objective technical problem of maintaining overpressure during joining. This was presented in document D3 as standard process during joining of pressurised pipes. The skilled person knew that document D3, and the joining methods described, were readily applicable to the process of joining pipe sections for spooling.

The ground for opposition under Article 100(a) EPC in conjunction with Article 56 EPC thus prejudiced the maintenance of the patent as granted.

(ii) *Respondent*

The method disclosed on page 2 of document D1 represented the closest prior art. Feature 5 of claim 1 as granted was not disclosed in the context of that method. The objective technical problem was how to simplify and shorten the time for the method disclosed on page 2 of document D1. The solution of claim 1 was not suggested by the disclosure on pages 2 or 4 of document D1 or document D2 or D3.

Document D1 did not prompt the skilled person to omit step b) on page 2. The appellant had not set out why the skilled person would be motivated to do so. In trying to solve the above objective technical problem, the skilled person would have considered other solutions such as using longer pipe sections or larger reels, rotating the drum faster, or using a faster laying barge.

The embodiment disclosed on page 4 of document D1 related to issues concerning laying pipeline from a multiple of drums on a lay barge onto the seabed offshore. This tied in with step e) on page 2 of document D1. There was no incentive for the skilled person to modify step b) on page 2 with anything from the passage on page 4 because the skilled person was specifically taught by document D1 that the passage on page 4 related to step e) on page 2. The "overpressure" in the passage on page 4, lines 12 to 20 was the "overpressure" in step e) on page 2. Even assuming that

the skilled person knew that overpressure could be maintained during joining, this would not render this feature obvious in view of the method disclosed on page 2 of document D1.

In document D2, the overpressure was applied for submerging the pipeline segments. This tied in with the disclosure on page 4 of document D1. Paragraph [0054] of document D2 did not provide any details on the reeling. Document D2 was about speeding up the laying but not the spooling process.

The appellant had not provided any facts or evidence able to support the view that the skilled person knew that document D3 and the joining methods described were readily applicable to the process of joining pipe sections for spooling. The appellant's arguments were only based on suggesting that the skilled person was aware of joining methods in the oil and gas industry, without substantiating any allegation or proposition made.

Consequently, the ground for opposition under Article 100(a) EPC in conjunction with Article 56 EPC did not prejudice the maintenance of the patent as granted.

Reasons for the Decision

1. Ground for opposition under Article 100(b) EPC

1.1 The appellant explains that the skilled person did not know how to maintain the integrity of the liner during joining when one or both pipe sections were pressurised.

Under established case law, a successful objection of lack of sufficiency of disclosure presupposes that there are serious doubts substantiated by verifiable facts. To establish insufficiency of disclosure in *inter partes* proceedings, the burden of proof initially lies with the opponent, which must establish, on the balance of probabilities, that a skilled person reading the patent, using common general knowledge, would be unable to carry out the invention (see "Case Law of the Boards of Appeal of the European Patent Office", Tenth Edition, July 2022 - hereinafter: "Case Law" -, II.C. 9).

The mere statement that the appellant disagrees with the opposition division's finding does not meet these requirements. The assertion that there was no teaching in the patent on how to maintain the integrity of the liner during joining when one or both pipe sections were pressurised is not sufficient either as it does not consider the skilled person's common general knowledge. The appellant has not convincingly demonstrated, on the balance of probabilities, that the skilled person, using common general knowledge, would not be able to join the pipe sections together while one or both of the pipe sections are pressurised.

- 1.2 The appellant submits that if it was accepted as true that the list of devices mentioned in document D1 and the plugs of document D3 were not suitable for reeling, this would expose a sufficiency issue in the patent.

The appellant, however, has not set out why, using the common general knowledge, the skilled person would be unable to carry out the invention. It has not been convincingly shown that documents D1 and D3 demonstrate

the skilled person's common general knowledge in this regard, let alone that this common general knowledge would be limited to the content of these documents. For the discussion of Article 100(b) EPC in hand, it is therefore not relevant if the plugs or devices disclosed in document D1 or D3 are suitable for reeling or not.

- 1.3 Consequently, the appellant's submissions do not give rise to serious doubts, substantiated by verifiable facts, that the skilled person reading the patent, using their common general knowledge, would be unable to carry out the invention.

The ground for opposition under Article 100(b) EPC thus does not prejudice the maintenance of the patent as granted.

2. *Ground for opposition under Article 100(a) EPC in conjunction with Article 56 EPC*

According to the appellant, the ground for opposition under Article 100(a) EPC in conjunction with Article 56 EPC prejudices the maintenance of the patent as granted. It is common ground between the parties that the method disclosed on page 2 of document D1 represents the prior art closest to the subject-matter of claim 1 as granted and that feature 5 is not disclosed in document D1 in the context of this method. The parties consider the objective technical problem to be how to simplify and shorten the time for the method disclosed on page 2 of document D1. The board shares these views.

2.1 *Disclosure on page 2 of document D1 alone*

The appellant submits that the skilled person would obviously identify the pressure relief and repressurisation steps in the method disclosed on page 2 of document D1 as time-consuming but obviously unnecessary steps that could simply be omitted.

However, even assuming that it was obvious to the skilled person to "simply omit" "obviously unnecessary" steps, the board does not share the appellant's conclusion for the following reasons.

The skilled person understands from document D1 that relieving the overpressure (see page 2, lines 19 to 22) has the technical effect of ensuring that the pipeline sections can be joined together in a state in which they are not pressurised. The step of relieving the overpressure thus has technical consequences for the implementation options for joining the pipeline sections together. The board therefore does not share the appellant's view that the skilled person would consider relieving the pressure "obviously unnecessary". This also applies in view of the appellant's submissions that this feature was not described as essential in document D1 and that the skilled person knew how to join pipe sections together that were under pressure (see comments below).

The skilled person would not consider the step of relieving the pressure to be something that "could simply be omitted" either. If the pipeline section reeled onto the pipeline laying drum was pressurised during the joining step, this would imply that the pipeline sections must be joined together using a

method suitable for joining together pressurised pipeline sections. Measures would need to be implemented to ensure that the pipeline section(s) remained pressurised during the joining step. The step of relieving the pressure in the reeled pipeline section could thus not be "simply" omitted.

The skilled person trying to solve the above objective technical problem - even if seeking to simply omit obviously unnecessary steps, as suggested by the appellant - would thus not have arrived at the subject-matter of claim 1 in an obvious manner.

Since there was no prompt in the method disclosed on page 2 of document D1 to omit the step of relieving the pressure in the reeled pipeline section, the question of whether the skilled person would know how to carry out such a modification of the disclosed method or not does not arise. Even if the skilled person knew how to modify the method disclosed on page 2 of document D1 as suggested by the appellant, this in itself would not make the modification obvious. For the same reasons, it cannot be concluded from the absence of serious doubts that the skilled person was able to carry out the method of claim 1 (see point 1. above) that the claimed method was obvious to the skilled person.

The above findings are further independent of whether the skilled person would have considered (alternative) solutions to the above objective technical problem other than the one defined in claim 1.

Consequently, the subject-matter of claim 1 as granted involves an inventive step in view of the disclosure on page 2 of document D1 alone.

2.2 *Combination of the disclosure on pages 2 and 4 of document D1*

The appellant submits that the skilled person knew from page 4 of document D1 that overpressure could also be maintained during joining of pipe sections. It was immediately obvious to the skilled person that time could be saved very easily and the process made simpler by maintaining the overpressure during joining as hinted at by page 4, so that it was not necessary to carry out the depressurising and repressurising steps.

It is undisputed that the passage on page 4, lines 12 to 20 of document D1 does not address the above objective technical problem of how to simplify and shorten the time for the method disclosed on page 2 of document D1. In contrast, the passage on page 4, lines 16 to 19 addresses a situation where the entire pipeline cannot be reeled onto one pipe laying drum (see page 4, lines 12 and 13). For solving this technical problem, it is suggested that the overpressure be maintained by installing an ice plug on either one or both sides of the joint. Page 4 of document D1 therefore does not suggest maintaining overpressure during joining for solving the above objective technical problem. The skilled person trying to solve the above objective technical problem would thus not have arrived at the solution of claim 1 in view of the cited passage on page 4.

The passage on page 4, lines 12 to 20 relates to laying the pipeline offshore (similarly to step e) on page 2 of document D1) and not to joining together pipeline sections when reeling the pipeline (see steps a) to d) on page 2). There was no motivation for the skilled person to isolate and excise the feature of maintaining

overpressure during joining and implement it for reeling the pipeline. The appellant's view is thus based on an unallowable *ex post facto* analysis. The above feature is disclosed on page 4 only for laying the pipe offshore to solve a different technical problem that does not arise in the reeling process.

The appellant's assertion that the skilled person knew (for example, from page 4 of document D1) that overpressure could also be maintained during joining of pipe sections does not imply that implementing such a feature was obvious in the context of the method disclosed on page 2 of document D1. The could-would approach employed by the boards, in contrast, means asking not whether the skilled person could have carried out the invention, but whether they would have done so in the expectation of solving the underlying technical problem or in the expectation of some improvement or advantage (see also "Case Law", I.D.5.).

In view of the could-would approach, the mere knowledge that pipeline sections can be joined together under pressure does not make this procedure obvious to the skilled person when starting from page 2 of document D2 and trying to solve the above objective technical problem.

Consequently, the person skilled in the art would not have arrived at the subject-matter of claim 1 in an obvious manner in view of a combination of the disclosure on pages 2 and 4 of document D1.

2.3 *Combination of the disclosure on page 2 of document D1 and document D2*

The appellant sets out that document D2 gave the skilled person the solution to the above objective technical problem of maintaining overpressure during joining. Document D2 envisaged that multiple pipe sections were joined together to make a pipeline (see, for example, abstract and paragraph [0044] of document D2) and that these sections may be joined together when pressurised (see, for example, paragraph [0012]). In paragraph [0049], document D2 recognised that pressurising pipe sections in this way saved time and cost, giving the skilled person a clear indication that the objective technical problem could be solved by pressurising the pipe sections and continuously maintaining that pressure.

The board does not share this view. Paragraph [0044] of document D2 discloses that multiple pipeline segments can be connected in series, where each pipeline segment has the independent ability to maintain a minimum internal pressure to prevent wall collapse of the respective main pipe section. According to paragraph [0012] of document D2, a method of manufacturing a pipeline using thin-walled pipeline segments can include assembling a plurality of pipe segments, pressurising the pipeline segments, submerging the pressurised pipeline segments and sequentially connecting the pipeline segments together to form a pipeline.

These passages, however, do not relate to the steps performed for reeling pipeline sections discussed in steps a) to d) on page 2 of document D1. The skilled

person reading these passages would not have found any prompt to modify the reeling process.

Paragraph [0054] of document D2 discloses that the fabrication of pipeline segments can be performed at sea or on land and that fabrication onshore involves connecting the joints into long strings that can be wound onto a reel for unreeling and installation offshore or that can be towed to the offshore site. However, this does not imply that the pipeline segments are joined together under pressure while or before being wound on a reel.

Paragraph [0049] of document D2 discloses that the commercial advantages of the continuous internal pressurised pipeline (CIPP) segments include cost savings on pipe materials and increased speed and reduced cost of installation. This paragraph does not, however, suggest modifying the reeling process, i.e. steps a) to d) on page 2 of document D1. Even if the skilled person, upon reading document D2, had been prompted to implement CIPP to increase speed and reduce the cost of installation, they would not find any prompt in document D2 to join a first pipe section with a second pipe section, wherein at least one of the pipe sections is under pressure, and to spool the second pipe section onto the reel (on which the first pipe section has already been spooled), as defined in claim 1. The skilled person would possibly have been prompted by document D2 to modify step e) disclosed on page 2 of document D1 (relating to laying the pipeline). This, however, would point the skilled person away from the solution defined in claim 1 as granted.

The appellant refers to paragraph [0047] of document D2 stating that in a pipeline installation method, the

pipeline segments, once manufactured, are maintained under a constant pressure to neutralise or minimise the effect of the external pressure head and to prevent wall collapse. Once pressurised, the pipeline segment will have a continuous internal pressure.

This passage, however, does not address the above objective technical problem suggested by the appellant, i.e. how to simplify and shorten the time for the method disclosed on page 2 of document D1. Instead, this passage discloses that the pipeline segments are maintained under a constant pressure for solving a different problem of neutralising or minimising the effect of the external pressure head and to prevent wall collapse. The problem-solution approach entails considering whether or not the claimed solution, starting from the closest prior art and the objective technical problem, would have been obvious to the skilled person (see also "Case Law", I.D.2.). Applying the problem-solution approach, the board does not find that the claimed solution would be obvious to the skilled person in view of paragraph [0047] (or the other passages of document D2 cited by the appellant) when starting from the above objective technical problem.

In the board's view, this finding is consistent with decision T 142/84 cited by the appellant. In line with point 8.1 of the Reasons of decision T 142/84, when a characterising feature is known from a document in the same specialised field, and solves the same problem, the fact that the skilled person would not encounter insurmountable difficulties in applying this known feature to a known apparatus from a second document demonstrates that the documents are not conflicting and that an inventive step is lacking; the problem solved

does not have to be stated *expressis verbis* in the prior art.

Decision T 142/84 thus concerns a case in which a feature is known from a document in the same specialised field and solves the same problem. However, in the case in hand, the latter does not apply for feature 5 in view of document D2. As set out above, according to paragraph [0047] of document D2, the pipeline segments are maintained under a constant pressure not for solving the above objective technical problem of simplifying and shortening the time for a method for laying a pipeline on a seabed as disclosed on page 2 of document D1, but for solving the technical problem of neutralising or minimising the effect of the external pressure head and to prevent wall collapse.

In the board's preliminary view, the skilled person would thus not have arrived at the subject-matter of claim 1 in an obvious manner in view of a combination of the disclosure on page 2 of document D1 and document D2.

2.4 *Combination of the disclosure on page 2 of document D1 and document D3*

According to the appellant, document D3 gave the skilled person the solution to the above objective technical problem of maintaining overpressure during joining. This was presented in document D3 as standard process during joining of pressurised pipes.

In the appeal proceedings, the appellant has not cited any specific passages of document D3. In the board's view, document D3 does not relate to a method in which several pipe sections are joined together when reeling

them onto a pipe laying drum as defined in steps a) to d) on page 2 of document D1. The method of document D3 differs considerably from the one disclosed on page 2 of document D1. Even more importantly, document D3 does not address the above objective technical problem of simplifying and shortening the time of the method disclosed on page 2 of document D1.

It is thus not apparent why the skilled person would have consulted document D3 when looking for a solution to the above objective technical problem.

Moreover, even if the skilled person had consulted document D3, they would not have arrived at the claimed solution in an obvious manner for the following reasons. As indicated above, document D3 does not relate to a reeling process. The skilled person would not have found any reference in document D3 to a change in the reeling process of steps a) to d) on page 2 of document D1. Document D3 does not suggest maintaining overpressure in the pipe sections to solve the problem of simplifying and shortening the time for the method disclosed on page 2 of document D1.

The appellant has not provided any support for its assertion that maintaining overpressure during joining was presented in document D3 as standard process during joining of pressurised pipes either. However, even if it was known to the skilled person that overpressure could be maintained during joining, as set out above, this knowledge in itself would not make the subject-matter of claim 1 obvious in the context of the disclosure on page 2 of document D1 as the closest prior art.

The skilled person would thus not have arrived at the subject-matter of claim 1 in an obvious manner in view of a combination of the disclosure on page 2 of document D1 and document D3.

2.5 *Conclusion on the ground for opposition under Article 100(a) in conjunction with Article 56 EPC*

The ground for opposition under Article 100(a) in conjunction with Article 56 EPC does not prejudice the maintenance of the patent as granted.

3. *Conclusion*

Since the grounds for opposition raised by the appellant do not prejudice the maintenance of the patent, the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



N. Schneider

P. Lanz

Decision electronically authenticated