

Date: 20081126

Docket: A-577-07

Citation: 2008 FCA 369

**CORAM: LINDEN J.A.
RYER J.A.
TRUDEL J.A.**

BETWEEN:

JOHN RUSSELL MCKAY

Appellant

and

**WEATHERFORD CANADA LTD.,
WEATHERFORD ARTIFICIAL LIFT SYSTEMS INC.,
WEATHERFORD CANADA PARTNERSHIP**

Respondents

Heard at Edmonton, Alberta, on November 24, 2008.

Judgment delivered at Calgary, Alberta, on November 26, 2008.

REASONS FOR JUDGMENT BY:

TRUDEL J.A.

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REASONS FOR JUDGMENT

TRUDEL J.A.

[1] This is an appeal from a decision of Mr. Justice Campbell (the judge), 2007 FC 1233, dated November 23, 2007, dismissing the appellant's claim that the respondents infringed the appellant's patent and dismissing the respondents' counter-claim that the appellant's patent was invalid for obviousness as defined in section 28.3 of the *Patent Act*, R.S.C. 1985, c. P-4 (the Act). The dismissal of the counter-claim is not challenged on this appeal.

[2] The appellant's Canadian Patent 2,371,155 (McKay Patent) granted on June 10, 2003 claims a method of removing stators from tubular stator housings, involving subjecting a tubular stator housing having an interior surface to which a worn stator is adhered by adhesive to cryogenic refrigeration until the stator shrinks and pulls away from the interior surface of the tubular stator housing (reasons for judgment, Appendix A, page 38). This method is said to provide an alternative to the use of hydraulic or mechanical rams to break the bond of the adhesive and push the worn stator (or elastomer) out of its housing (*Ibid.* at page 37).

[3] Weatherford also uses refrigeration to remove elastomers from stator housings, but states that the temperatures applied are not those claimed in the McKay Patent as Weatherford subjects a stator to cooling below the glass transition temperature of the elastomer liner rendering the liner brittle followed by the application of significant force to chip out the brittle elastomer from the metal housing (respondents' memorandum of fact and law, at sub-paragraph 2(d)).

FEDERAL COURT DECISION

[4] The construction of a patent claim being antecedent to the inquiry into infringement, the judge first applied himself to that task and then moved on to the allegations of infringement.

[5] The embodiments of the invention in which protection is claimed are defined in the appellant's patent disclosure as follows :

1. A method of removing stators from tubular stator housings comprising:

Subjecting a tubular stator housing having an interior surface to which a worn elastomer stator is adhered by adhesive to cryogenic refrigeration until the elastomer stator

shrinks and pulls away from the interior surface of the tubular metal stator housing, the temperature of the tubular metal stator housing being gradually lowered to cryogenic levels and then gradually raised to ambient temperature in order to have the tubular metal stator housing and elastomer stator shrink at substantially the same rate and avoid thermal shock.

2. The method as defined in Claim 1, the tubular metal stator housing being subjected to temperatures between minus 150 degrees Celsius and minus 200 degrees Celsius (AB, Vol. 1, Tab 3 at page 42).

[emphasis added]

[6] At the end of the trial, the judge constructed the patent claims as follows:

[10] Therefore, the words of Claim 1 state that patent protection is afforded to three essential features of the invention:

(1) subjecting a stator housing having an interior surface to which a worn elastomer is adhered by adhesive to cryogenic refrigeration until the elastomer shrinks and pulls away from the interior surface of the stator housing [emphasis added],

and

to avoid thermal shock,

(2) the temperature of the stator housing being gradually lowered to cryogenic levels,

and

(3) then gradually raised to ambient temperature.

...

[11] Claim 2 is a dependent claim since it specifies, as essential, “the method as defined in Claim 1” and, thereby, includes all the essential features of Claim 1. However, Claim 2 limits the protection of the temperature to which the stator housing is to be subjected. Therefore, a reasonable and fair construction of Claim 2 is as follows:

(a) subjecting a stator housing having an interior surface to which a worn elastomer is adhered by adhesive to cryogenic refrigeration of between minus 150 degrees Celsius and minus 200 degrees Celsius until the elastomer shrinks and pulls away from the interior surface of the stator housing;

and

(b) the temperature of the stator housing being gradually lowered to the cryogenic levels of between minus 150 degrees Celsius and minus 200 degrees Celsius and then gradually raised to ambient temperature to avoid thermal shock (Reasons at paragraphs 10-11) [emphasis in the original].

[7] Based on his construction of the claims, he dismissed the appellant's allegations of infringement. Hence the within appeal.

ANALYSIS

1. The Standard of review

[8] The construction of patent claims being a question of law (*Whirlpool Corp. v. Camco Inc.*, 2000 SCC 67 at paragraph 61; *Canamould Extrusions Ltd. v. Driangle Inc.*, 2004 FCA 63 at paragraph 3), the construction of Claim 1 and Claim 2 by the judge is reviewable on the standard of correctness (*Housen v. Nikolaisen*, 2002 SCC 33 at paragraph 8).

[9] Infringement of a patent is a question of mixed fact and law (*Whirlpool, supra* at paragraph 75; *Canamould, supra* at paragraph 3). The trial judge's interpretation and application of expert evidence and his consideration of evidence of the respondents' demonstrations that led him to conclude that the patent had not been infringed will not be set aside absent a palpable and overriding error (*Housen v. Nikolaisen, supra* at paragraph 36).

2. Claim Construction

[10] The construction of the claims turns around two major themes: cryogenic refrigeration and thermal shock. A principal point of contention concerns the "cryogenic refrigeration" aspect of Claims 1 and 2.

[11] On that aspect, the appellant agrees with the judge's construction of Claim 1 where, with respect to the cooling and warming essentials of Claim 1, "cryogenic refrigeration" was found to mean a range of temperatures beginning at -50°C and below.

[12] However, McKay takes issue with the construction of Claim 2. He argues that contrary to what the judge found, "Claim 2 does not require that the housing temperature be reduced to between -150°C and -200°C, only that the housing "be subjected to" that temperature range" (appellant's memorandum of fact and law, at paragraph 16).

[13] The judge disagreed with McKay's construction of the cryogenic refrigeration aspect of Claims 1 and 2 because the premise upon which it was based did not appear in the words of the claims concerned (reasons for judgment, at paragraphs 12-13).

[14] Ultimately, the judge opined that McKay's argument raised an ambiguity and referred to the *Detailed Description of the Preferred Embodiment* feature of the specifications where the narrower temperature range can be found.

[15] The appellant further submits that the judge erred "in finding that it was an essential element of each of the Patent Claims that the temperature of the stator housing be lowered and then raised at a rate of 2.5°C per minute" (appellant's memorandum of fact and law, at paragraph 18).

[16] I note that in construing the claims, more particularly the thermal shock aspect, the judge did not incorporate this information which can also be found in the *Detailed Description of the Preferred Embodiment*. As argued by the respondents, the judge referred to this specification only as an aid in the context of assessing infringement. We are then left with McKay's arguments regarding cryogenic refrigeration.

[17] When construing a patent claim, the task of a trial judge is to separate and to distinguish those elements of the claim that "are essential if the devices are to work as contemplated and claimed by the inventor" and the non-essential elements that "may be substituted or omitted without having a material effect on either the structure or the operation of the invention described in the claims" in order to define the boundaries of legal protection to which the patent is entitled (*Free World Trust v. Électro Santé Inc. et al.*, 2000 SCC 66 at paragraphs 15 and 20).

[18] In construing the patent claims, "regard may be had to the whole of the specification, including the drawings and the disclosure.... The onus is on the patentee to show that, to a skilled reader, a claimed feature of the invention was obviously substitutable" (*Canamould, supra* at paragraphs 27-28). If the patent holder fails to discharge the onus, "the descriptive word or

expression in the claim will be considered essential unless the context of the claims language otherwise dictates” (*Free World Trust, supra* at paragraph 57).

[19] The appellant has failed to show how the judge’s decision on the construction of the patent claims was in error or not made in a fair and reasonable fashion, that is:

“... in the sense the inventor is presumed to have intended, and in a way that is sympathetic to accomplishment of the inventor’s purpose as expressed or implicit in the claims” (*Free World Trust v. Électro Santé Inc.*, [2000] 2 S.C.R. 1024, at paragraph 51).

[20] More particularly, the appellant has not shown why it was necessary to disturb the temperature range selected by the judge. While the cryogenic refrigeration range in Claim 1 was found to begin at -50°C, the demonstrations presented by the appellant at trial would lead an ordinary worker skilled in the art to inescapably conclude that the stator housing at the bond line had to be subjected to significantly lower temperatures in order for the patented process to work as it was intended by the inventor (Appeal Book, Appendix 1, at pages 199, 216, and 246-247 and 280).

[21] Having found that the judge made no error in construing the Patent Claims, I move on to the grounds of appeal regarding McKay’s infringement allegations.

The Infringement Allegations

[22] The judge agreed with the respondents that Weatherford’s process depends on a different principle for removal of a stator than that protected by the patent. This being said, the judge

reviewed the evidence regarding each essential of the claims, reminding himself that “the primary infringement issue is whether, in the exercise of the principle, [Weatherford] takes each essential of the patent” (reasons for judgment, at paragraph 34).

[23] As a reminder, the essential elements at issue are (1) the cryogenic refrigeration, that is reaching a temperature cold enough to cause the stator to shrink and pull away from the interior surface of the metal housing; (2) the temperature of the stator housing being gradually lowered to cryogenic levels; and (3) gradually raised to ambient temperature.

[24] Having heard from two experts who commented on the recorded demonstrations of the methods used by the appellant and the respondents, respectively, and other witnesses, the judge concluded that since the respondent do not take any of the essentials of Claim 1, and Claim 2 is dependent on Claim 1, ... the Weatherford process does not infringe the McKay Patent.

[25] I now turn my attention to the judge’s findings on the first essential element. To succeed on the cryogenic refrigeration essential, McKay had to prove that Weatherford had applied a temperature below -50°C to a certain stator housing until the elastomer shrunk and pulled away from the stator housing. (Reasons for judgment, at paragraph 36).

[26] To prove the taking of the cryogenic refrigeration essential by the respondent, McKay took support on expert evidence and technical demonstration discussed by the judge under two main headings:

- a) The McKay demonstrations attempting to show the temperature at which the bond is broken (reasons for judgment at paragraphs 37 and following);
- and
- b) The Weatherford demonstrations to prove the taking of the cryogenic refrigeration essential by Weatherford (reasons for judgment at paragraphs 40 and following).

[27] Following the McKay demonstrations, the judge noted that "neither expert ha(d) a verifiable rationale to support the opinion offered" (reasons for judgment at paragraph 39) and, therefore, did not accord them sufficient weight to prove, on a balance of probabilities, the temperature at which the elastomer shrinks and pulls away from the stator housing.

[28] Having so concluded, the judge commented on the Weatherford demonstration mindful of McKay's construction position throughout the trial and argument that the respondents' application of any temperature below -50°C, in and itself, constitutes the taking of an essential element of the Patent.

[29] After a careful review of the record, I come to the conclusion that the appellant has failed to show that the judge made a palpable and overriding error in interpreting and applying the evidence.

[30] There was ample support on record allowing the judge to conclude that

"... it is not enough to suggest that if this stator had been subjected to a certain temperature an infringement would have occurred. Rather, there must be evidence that it actually did occur in a specific instance on the application of a temperature, below -50 C, to a certain stator until the certain event occurs."

[31] That certain events occur when the elastomer shrinks and pulls away from the stator housing.

[32] Based on the evidence, the judge was entitled to conclude that the McKay Patent teaches separation of elastomer from metal at very cold temperatures due to differential shrinkage whereas the respondents' process relies on making the elastomer brittle and then applying force to remove it from the metal housing.

[33] Since the judge made no palpable and overriding error in dismissing the allegations of infringement with respect to the first essential element of Claim 1, it becomes unnecessary for this Court to consider further arguments put forth by the parties.

[34] Therefore, I would dismiss the appeal with costs.

"Johanne Trudel"

J.A.

"I agree
A.M. Linden J.A."

"I agree
C. Michael Ryer J.A."

FEDERAL COURT OF APPEAL

NAMES OF COUNSEL AND SOLICITORS OF RECORD

DOCKET: A-577-07

**(APPEAL FROM A JUDGMENT OR ORDER OF THE FEDERAL COURT DATED
NOVEMBER 23, 2007 IN FEDERAL COURT FILE No. T-1707-03)**

STYLE OF CAUSE: JOHN RUSSELL MCKAY v.
WEATHERFORD CANADA
LTD ET AL

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REASONS FOR JUDGMENT BY: TRUDEL J.A.

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RYER J.A.

DATED: November 26, 2008

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