

Federal Court of Appeal



Cour d'appel fédérale

Date: 20190424

Docket: A-31-18

Citation: 2019 FCA 96

**CORAM: BOIVIN J.A.
GLEASON J.A.
RIVOALEN J.A.**

BETWEEN:

**PACKERS PLUS ENERGY SERVICES INC.
and RAPID COMPLETIONS LLC**

Appellants

and

**ESSENTIAL ENERGY SERVICES LTD.,
TRYTON TOOL SERVICES LIMITED
PARTNERSHIP, BAKER HUGHES CANADA
COMPANY, WEATHERFORD
INTERNATIONAL PLC, WEATHERFORD
CANADA LTD., WEATHERFORD CANADA
PARTNERSHIP, HARVEST OPERATIONS
CORP., RESOURCE WELL COMPLETION
TECHNOLOGIES INC. and RESOURCE
COMPLETION SYSTEMS INC.**

Respondents

Heard at Ottawa, Ontario, on February 6, 2019.

Judgment delivered at Ottawa, Ontario, on April 24, 2019.

REASONS FOR JUDGMENT BY:

GLEASON J.A.

CONCURRED IN BY:

BOIVIN J.A.
RIVOALEN J.A.

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REASONS FOR JUDGMENT

GLEASON J.A.

[1] The appellants appeal from the judgment of the Federal Court in *Packers Plus Energy Services Inc. v. Essential Energy Services Ltd.*, 2017 FC 1111 (*per* O'Reilly J.) in which the Federal Court dismissed the claim of the appellant, Packers Plus Energy Services Inc. (Packers), that the respondents, Essential Energy Services Ltd. and Tryton Tool Services Ltd., had infringed Packers' Canadian Patent No. 2,412,072 (the 072 patent) and granted the respondents' counterclaim for invalidity, finding the 072 patent invalid for anticipation and obviousness.

[2] In this appeal, the appellants challenge the Federal Court's findings in respect of infringement, anticipation and obviousness. In order to have the Federal Court's judgment set aside, both appellants must succeed on both grounds of invalidity and Packers must also succeed on the issue of infringement.

[3] For the reasons set out below, I do not believe that the Federal Court erred in its obviousness analysis, and I would therefore dismiss this appeal with costs. In light of this determination, it is unnecessary to address the arguments regarding anticipation and infringement, other than to note that these Reasons should not be viewed as endorsing the Federal Court's findings or Reasons in respect of these issues.

I. The 072 Patent

[4] It is useful to commence by reviewing the relevant background and the relevant portions of the 072 patent.

[5] Entitled “Method and Apparatus for Wellbore Fluid Treatment”, the 072 patent was filed on November 19, 2002, opened to public inspection on May 19, 2003 and issued on June 19, 2012. It discloses a method and apparatus, used in hydraulic fracturing (or fracking), for selectively sending fluids to specific parts of a wellbore by means of a tubing string (a tube or pipe run into the hole) that includes a series of packers (materials outside the tubing string that hold it into place) and ports (openings), equipped with sliding sleeves. As the Federal Court noted at paragraph 8 of its Reasons, “[e]ach port is opened by way of a plug or ball sent down the tubing string to land on a seat connected to a sliding sleeve that pushes open the port”. Adopting the parties’ nomenclature, the Federal Court termed this the “ball-drop method”. According to the 072 patent, the claimed method and apparatus can be used in different types of wellbores, including open, cased, vertical, straight, deviated and horizontal holes.

[6] The claims in issue, claims 96 to 111, claim a method. The principal claim is claim 96, and claims 97 to 111 depend on it. The Federal Court described claim 96 of the 072 patent as follows at paragraph 13 of its Reasons:

It claims [...] a means for fracturing a hydrocarbon-containing formation in an open hole using a tubing string essentially consisting of a series of packers, ports, and sliding sleeves. The claim provides more details of the various components and actions that make up the method of the invention including:

- A first port that creates an opening in the tubing string wall;

- A second port, further downhole from the first, that also makes an opening in the tubing string wall;
- A first sliding sleeve of a diameter that, when the first port is closed, allows fluid to pass down the tubing string, and when the first port is open, allows fluid to pass through the port to the wellbore;
- A second sliding sleeve with a diameter smaller than the first, which operates similarly to the first sleeve;
- A first solid-body packer mounted on the tubing string uphole from the first port and capable of making a seal between the tubing string and the wellbore;
- A second solid-body packer mounted on the tubing string between the first and second ports and also capable of making a seal between the tubing string and the wellbore;
- A third solid-body packer mounted on the tubing string on the opposite side of the second port from the second packer;
- A tubing string runs into the wellbore with the packers in an unset position;
- The three packers expanding outward and creating seals against the wellbore wall in an open hole, securing the tubing string in place. The packers create annular spaces between the tubing string and the wellbore wall and do not permit fluids to move between the annular spaces, but do allow fluids to communicate with the formation within those annular spaces; and
- Sending a fluid-conveyed sealing device down the tubing string, passing through the first sliding sleeve and landing on the seat of the second sliding sleeve, moving the second port to the open position and allowing fracturing fluids to flow through that port into the annular space defined by the packers.

[7] The parties agreed that the apparatus used in the method described in the foregoing claims was previously known and had been utilized in cased holes, where a casing is held into place by an adhesive like cement. The apparatus, however, had not previously been used in an open hole (i.e. one without a casing) before it was successfully tried by the inventors of the 072 patent.

II. The Federal Court's Reasons on Obviousness

[8] With this background in mind, I turn now to summarize the relevant portions of the Federal Court's Reasons.

[9] It commenced its obviousness analysis at paragraph 124 by stating that it was tracking the approach to obviousness set out in *Apotex Inc. v. Sanofi-Synthelabo Canada Inc.*, 2008 SCC 61, [2008] 3 S.C.R. 265 (*Sanofi*). In *Sanofi*, the Supreme Court set out at paragraph 67 the following four-part test for assessing obviousness: (1) one must identify the notional person skilled in the art to whom the patent is addressed and the relevant common general knowledge of that person; (2) one must identify the inventive concept of the claim(s) in issue, construing them if necessary; (3) one must identify what, if any, differences exist between the matter cited as forming part of the state of the art and the inventive concept of the claim(s) as construed; and (4) one must determine whether, when viewed without any knowledge of the alleged invention as claimed, those differences constitute steps which would have been obvious to the person skilled in the art or whether they require any degree of invention. In *Sanofi* at paragraph 68, the Supreme Court went on to note that in areas, like pharmaceuticals, where “advances are often won by experimentation”, obviousness may be assessed by the “obvious to try” test, which examines a number of factors, including whether it is more or less self-evident that what is being tried ought to work.

[10] Following the approach prescribed by *Sanofi*, the Federal Court first reiterated the conclusion that it had reached earlier in its Reasons that the person of ordinary skill in the art is

“a petroleum or mechanical engineer, having between two and five years’ field experience”:

Reasons at para. 127.

[11] The Federal Court then reviewed the competing expert evidence concerning the common general knowledge that such a person would have possessed on November 19, 2001, which was the relevant date for assessing obviousness: Reasons at para. 126. At this point in its Reasons, the Federal Court did not make specific findings regarding the content of that common general knowledge, but, as is detailed below, it did go on to make specific findings about such knowledge later on in its Reasons with respect to the specific points in dispute.

[12] After detailing the expert evidence on common general knowledge, the Federal Court considered the expert evidence concerning the inventive concept and accepted Packers’ view that the 072 patent’s inventive concept was “the use of the ball-drop method in an open-hole wellbore”: Reasons at para. 147. The appellants do not challenge this finding on appeal.

[13] The Federal Court next considered the state of the art and accepted expert evidence that the same was reflected in six papers and a patent, all of which the Federal Court concluded a person of ordinary skill in the art would have found through a reasonably diligent search: Reasons at paras. 151, 154-158, 170, 172-177, 184.

[14] The Federal Court then went on to compare the state of the art and the inventive concept and concluded that neither the ball-drop method nor its use in an open hole wellbore were inventive. More specifically, the Federal Court found that the ball-drop method was disclosed in

the Thomson paper, one of the six papers that it determined formed part of the prior art, and that its use in an open hole would have been obvious to a person of ordinary skill in the art: Reasons at paras. 186-189, 191-192. On the latter point, the Federal Court noted that the appellants had conceded that the prior art disclosed all of the following: the ball-drop method, what types of packers were suitable for withstanding fracturing pressures in an open hole and the benefits of fracking using open as opposed to cased holes. The Federal Court also stated that the skilled person would have known which packers would have been suitable for open hole fracturing: Reasons at paras. 186-187. The Court continued by discussing the relatively little effort expended by the inventors to develop the ball-drop method that was claimed in the 072 patent.

[15] The Federal Court then stated at paras. 191-192 of its Reasons that:

191. [...] The packers available and known to the skilled persons at the time were capable of creating seals under high pressure in open-hole environments. If the formation was not sufficiently competent, the skilled person would realize that the wellbore might have to be cased and cemented, and would choose the appropriate tools for doing so. Again, that person would know the features of the formation in which fracturing was to occur and would choose the appropriate tools; the patent provides no guidance on that subject.

192. [The plaintiff] places heavy reliance on the problems that a skilled person would have foreseen with respect to using the ball-drop system in the open hole to suggest that the invention was not obvious. [...] these included creating longitudinal fractures, fracturing at the point of contact between the packer and the wellbore, the inability to fracture at a precise location, and fracturing around the packer, resulting in a loss of zonal isolation. Some of these potential issues a skilled person could address in various ways – by choosing the appropriate packer, setting it at the right pressure, and possibly perforating the wellbore. [...] The likelihood of success was a function of the [geological] formation, not the methodology.

[16] The Federal Court next considered that commercial success – which can serve as a secondary indicator of inventiveness – did not immediately follow the making of the claimed

invention. The Federal Court held that success rather occurred by reason of the shale formation in which the method was employed and rising commodity prices which made fracking in shale formations more commonplace: Reasons at paras. 193-194.

[17] In light of the foregoing, the Federal Court concluded that the inventive concept of the relevant claims in the 072 patent did not represent an advance over the state of the art at the relevant time and thus held that the claimed invention was obvious.

[18] The Federal Court then moved to discuss the obvious to try test from *Sanofi*, expressing doubt that it is applicable in the oil and gas industry, as it thought it unlikely that advances in this industry could be said to be won by experimentation: Reasons at para. 196. Subject to that qualification, the Federal Court went on to apply the obvious to try test described in *Sanofi* and concluded that each of its elements supported the conclusion that the invention was obvious: Reasons at paras. 198-200.

[19] The Federal Court therefore concluded that the claims in suit were invalid for obviousness.

III. The Appellants' Arguments

[20] In terms of obviousness, the appellants raise the following arguments.

[21] First, they submit that the Federal Court erred in law in failing to determine the common general knowledge of the skilled person, which they assert is an essential step in the obviousness

analysis mandated by *Sanofi*, as was recently underscored by this Court in *AFD Petroleum Ltd. v. Frac Shack Inc.*, 2018 FCA 140 at para. 43 (*Frac Shack*). In support of this contention, the appellants point to paragraph 139 of the Federal Court's Reasons, where the Court noted the difference between the evidence from the parties' experts on the extent of the common general knowledge of the person skilled in the art to whom the 072 patent is addressed, but concluded that the significance of such difference "diminishes when one considers the state of the actual art at the relevant time". The appellants contend that the Federal Court erred in law in making the foregoing comments, asserting that the Court was required under the first step of the *Sanofi* analysis to instead identify the common general knowledge of the person skilled in the art to whom the patent is addressed at the outset of its consideration of the obviousness issue.

[22] Second, they further say that, in the instant case, the common general knowledge of the skilled person included cased and cemented wellbores, but excluded the prior art accepted by the Federal Court, intimating that such art was therefore somehow irrelevant to the obviousness analysis.

[23] Third, the appellants submit that the Federal Court applied the incorrect test for obviousness by requiring that the invention be "truly new, useful and unobvious", pointing to comments made at paragraphs 61, 124 and 202 of the Reasons. The former two paragraphs are contained in introductory portions of the Reasons and the latter in the section of the Reasons dealing with utility. The appellants say that in making these comments the Federal Court fell into error and required a higher degree of inventiveness than is mandated by the relevant authorities, including *The King v. Uhlemann Optical Co.*, [1952] 1 S.C.R. 143, 15 C.P.R. 99 (*Uhlemann*);

Beloit Canada Ltd. v. Valmet Oy (1986), 64 N.R. 287, 8 C.P.R. (3d) 289 at p. 294 (FCA) (cited to C.P.R.) (*Beloit*); and *Sanofi* at para. 65; and *Pfizer Canada Inc. v. Apotex Inc.*, 2009 FCA 8, [2009] 4 F.C.R. 223 at para. 29.

[24] Fourth, the appellants contend that the Federal Court erred in ignoring the prior art and objective facts which they claim point away from obviousness and say that, when properly considered, the evidence indicates that the claimed invention was not obvious. In support of this contention, the appellants cite several portions of the evidence, which they submit reinforce their position. In essence, they are inviting this Court to reassess the evidence and reach a conclusion opposite to that reached by the Federal Court.

[25] Fifth, the appellants claim that the Federal Court erred in failing to adequately answer the question from *Beloit* at p. 295 as to why, if the invention was so obvious, no one had previously invented the method claimed in claims 96 to 111 of the 072 patent. They add that the Federal Court fell into hindsight bias and erred in ignoring the fact that skilled persons, when confronted with the same problem as the inventors, did not develop the claimed method.

[26] Sixth, the appellants say that the Federal Court erred in ignoring the fact the 072 patent disclosed a combination invention – use of the ball-drop method in an open hole – and that it was this combination that made the claimed invention non-obvious. They rely on the decisions in *Canamould Extrusions Ltd. v. Driangle Inc.*, 2003 FCT 244, aff'd on other grounds 2004 FCA 63, 317 N.R. 91 (*Canamould*) and *Uhlemann*, which they suggest should lead this Court to overturn the Federal Court's finding on obviousness.

[27] Finally, although not pursued in their oral submissions, the appellants in their memorandum of fact and law submitted that the Federal Court erred in conducting an obvious to try analysis since experimentation is rare in the oil and gas industry. They add that even if it were permissible to undertake the obvious to try analysis, the Federal Court applied the incorrect legal test, lowering the bar to a step that might work, rather than a step that ought to work, and in failing to take into account how the inventors' experience and knowledge might have made it much easier for them to take the necessary steps than it would have been for a person of ordinary skill in the art.

IV. Analysis

[28] Prior to addressing the foregoing arguments, it is worthwhile to first underscore a few fundamental points.

[29] First, it is well-settled that, absent an extricable error of law, obviousness findings are findings of mixed fact and law and are accordingly reviewable only if they disclose a palpable and overriding error. As was recently noted by this Court in *Teva Canada Limited v. Pfizer Canada Inc.*, 2019 FCA 15 at para. 23 (*Teva v. Pfizer*), “[o]bviousness is a factual inquiry which involves questions of mixed fact and law. Hence, each case will turn on its own facts, and it is ultimately the role of the judge to apply the law to these facts. Absent an extricable legal error, the Federal Court’s [...] application of the law to the facts is subject to the deferential standard of palpable and overriding error”; see also *Teva Canada Limited v. Novartis Pharmaceuticals Canada Inc.*, 2013 FCA 244 at paras. 10-12, 451 N.R. 246; *Alcon Canada Inc. v. Actavis Pharma Company*, 2015 FCA 191 at para. 11.

[30] Second, this Court has similarly held that determinations as to the state of the art and as to the nature and extent of the skilled person's common general knowledge are likewise findings of mixed fact and law, reviewable only if they disclose a palpable and overriding error: *Apotex Inc. v. Allergan Inc.*, 2015 FCA 137 at para. 7; *Frac Shack* at para. 38.

[31] Third, the palpable and overriding error standard is a deferential one. As this Court explained in a passage in *Canada v. South Yukon Forest Corporation*, 2012 FCA 165 at para. 46, 431 N.R. 286 (*South Yukon Forest*) that the Supreme Court quoted with approval in *Benhaim v. St-Germain*, 2016 SCC 48, [2016] 2 S.C.R. 352 at para. 38 (*Benhaim*), “[p]alpable and overriding error is a highly deferential standard of review ‘Palpable’ means an error that is obvious. ‘Overriding’ means an error that goes to the very core of the outcome of the case.” As the Supreme Court recently put it in *Salomon v. Matte-Thompson*, 2019 SCC 14 at para. 33 (*Salomon*), citing both *Benhaim* and *South Yukon Forest*, “[w]here the deferential standard of palpable and overriding error applies, an appellate court can intervene only if there is an obvious error in the trial decision that is determinative of the outcome of the case”.

[32] Fourth, the requisite comparison for assessing obviousness mandated by *Sanofi* is between the claim(s)' inventive concept and the state of the art. The skilled person's common general knowledge may be used to understand or augment the relevant prior art in assessing the gap between it and the invention claimed where such knowledge encompasses information that is not specifically mentioned in the prior art, but would have been known to the skilled person at the relevant date. As this Court explained in *Bristol-Myers Squibb Canada Co. v. Teva Canada Limited*, 2017 FCA 76 at para. 65, 146 C.P.R. (4th) 216, if “the distance between [the prior art

and the inventive concept] can be bridged by the [s]killed [p]erson using only the common general knowledge available to such a person”, the inventive concept is “obvious”: see also *Ciba Specialty Chemicals Water Treatments Limited v. SNF Inc.*, 2017 FCA 225 at para. 62 (*Ciba*).

[33] Finally, it is not the task of this Court in appellate review to sift through and reweigh the evidence germane to obviousness findings. As was noted in *Teva v. Pfizer* at para. 31, this Court’s task is not to reweigh and reassess the evidence; that is the province of the Federal Court: see also *Eli Lilly and Company v. Apotex Inc.*, 2010 FCA 240 at para. 8, 409 N.R. 173; *E. Mishan & Sons, Inc. v. Supertek Canada Inc.*, 2015 FCA 163 at para. 25, 134 C.P.R. (4th) 207. As the Supreme Court recently underscored in *Salomon* at para. 33, citing *Nelson (City) v. Mowatt*, 2017 SCC 8, [2017] 1 S.C.R. 138 at para. 38, “[t]he fact that an alternative factual finding could be reached based on a different ascription of weight [to evidence] does not mean a palpable and overriding error has been made”.

[34] Most of the appellants’ arguments run afoul of these well-established principles.

[35] Insofar as concerns the appellants’ first and second alleged errors, contrary to what they say, the Federal Court did in fact make the requisite findings as to the content of the skilled person’s common general knowledge and made the appropriate comparison between the inventive concept of the claims in suit and the state of the art.

[36] As was discussed above, the Federal Court found that the prior art, itself, disclosed most of what was claimed by the appellants to be inventive, namely, the ball-drop method, which

types of packers were suitable for withstanding fracturing pressures in an open hole and the benefits of fracking using open as opposed to cased holes. To this, the common knowledge of the skilled person added one element, namely identification of which specific packers were suitable for use with the ball-drop method in an open hole – a matter concerning which the 072 patent provided no information. Based on the elements of the prior art that the Federal Court found would have been located by a skilled person in a reasonably diligent search and that were within the skilled person's general knowledge, the Federal Court found that there was nothing inventive in the claims in suit: Reasons at paras. 187, 191. The Federal Court, therefore, did in fact make the requisite findings in terms of common general knowledge and thus did not commit the first error the appellants allege.

[37] Moreover, in alleging the second error, the appellants are conflating the concepts of common general knowledge and the state of the art. As already noted, obviousness requires comparison of the inventive concept of the claim(s) at issue and the relevant prior art, as augmented by or understood through the prism of the skilled person's common general knowledge. The Federal Court performed precisely this sort of exercise and thus the second alleged error is without merit.

[38] Turning to the third alleged error, I agree with the appellants that the use of the words "truly new" might be infelicitous, but on reading the Reasons of the Federal Court as a whole, I believe that it applied the correct test for inventiveness as set out in *Sanofi* and *Ciba*. More specifically, the Federal Court asked itself the right question, namely, whether there was any

difference between the state of the art and the inventive concept of the claims in suit and determined that there was none.

[39] The fourth and fifth alleged errors are nothing more than disagreements with the Federal Court's factual conclusions or conclusion of mixed fact and law concerning the prior art and the objective facts relied upon by the appellants and afford no basis for intervention. The appellants have not suggested that the Federal Court made a palpable and overriding error of fact in reaching the conclusions it did nor would such a contention have any merit as there was more than ample evidence, including evidence given by the respondents' experts, to support the conclusion that the claims at issue were invalid for obviousness.

[40] In addition, while it is not necessary that a court specifically ask and answer the question posed by *Beloit* as to why the invention was not made earlier, the Federal Court did in fact address this question and determined that there was no prior need for the invention, which only functioned in shale formations that were not previously being exploited to a similar degree: Reasons at para. 194.

[41] Insofar as concerns the sixth alleged error, contrary to what the appellants intimate, it is not simply because an invention is a combination invention that it will necessarily be inventive. Rather, in each case, the inquiry is an inherently factual one and involves assessing what is claimed to be inventive as compared to what was previously known. The cases of *Canamould* and *Uhlemann* on which the appellants rely are merely situations where the trial judges found the

particular combination to be inventive. For the reasons already noted, the Federal Court did not commit a reviewable error in reaching the opposite conclusion.

[42] Finally, as concerns the Federal Court's comments on the obvious to try test, its discussion of the issue was non-binding *obiter dicta* and thus affords no basis for intervention. The Federal Court's decision rather stands or falls on its primary reasons offered for its obviousness conclusion, which, for the reasons noted, discloses no reviewable error. At a more fundamental level, appeals are taken against judgments, not the reasons (and *a fortiori*, not the *obiter* comments that those reasons may contain): *Ratiopharm Inc. v. Pfizer Canada Inc.*, 2007 FCA 261 at para. 6, 367 N.R. 103; *Konecny v. Ontario Power Generation*, 2010 FCA 340 at para. 7.

[43] Thus, none of the appellants' arguments in respect of obviousness has merit and there is accordingly no basis to overturn the Federal Court's obviousness finding. This determination means that this appeal must be dismissed.

V. Proposed Disposition

[44] I would therefore dismiss this appeal with costs.

"Mary J.L. Gleason"

J.A.

"I agree.
Richard Boivin J.A."

"I agree.
Marianne Rivoalen J.A."

FEDERAL COURT OF APPEAL

NAMES OF COUNSEL AND SOLICITORS OF RECORD

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