

Federal Court



Cour fédérale

Date: 20200821

Docket: T-1404-19

Citation: 2020 FC 837

Ottawa, Ontario, August 21, 2020

PRESENT: The Honourable Mr. Justice Zinn

BETWEEN:

YVES CHOUEIFATY

Appellant

and

ATTORNEY GENERAL OF CANADA

Respondent

JUDGMENT AND REASONS

[1] This is an appeal from a decision of the Commissioner of Patents refusing Mr. Choueifaty's patent application on the ground that the essential elements of the claimed patent fall outside the definition of 'invention' in section 2 of the *Patent Act*, RSC 1985, c P-4.

[2] This appeal turns on whether the Commissioner applied the proper test when construing the essential claims of the patent application. I agree with the Appellant that she did not. This appeal must be allowed.

Background

[3] Mr. Yves Choueifaty is founder, Chief Executive Officer, and Chief Investment Officer of the investment management firm TOBAM. On June 19, 2008, Patent Application No. 2,635,393 entitled “Method and Systems for Provision of an Anti-Benchmark Portfolio” [the 393 Application], listing Mr. Choueifaty as inventor, was filed with the Canadian Intellectual Property Office [CIPO].

[4] The Commissioner considered independent claim 1 as being representative for all of the claims in the 393 Application. It reads as follows:

A computer-implemented method for providing an anti-benchmark portfolio, the method comprising: acquiring, using a computer system, data regarding a first group of securities in a first portfolio, wherein the computer system comprises a computer processor and memory coupled to said processor, identifying, using a computer system, a second group of securities to be included in a second portfolio based on said data and on risk characteristics of said second group of securities, and providing, using a computer system, the individual weightings for each of the securities in said second portfolio according to one or more portfolio optimization procedures that maximizes the anti-benchmark ratio for the second portfolio wherein the anti-benchmark ratio is represented by the quotient of: a numerator comprising an inner product of a row vector of holdings in said second portfolio and a column vector of a risk characteristic of return associated with said holdings in said second portfolio; and a denominator comprising the square root of a scalar formed by an inner product of said row vector of said holdings in said second portfolio and a product of a covariance matrix and a column vector of said holdings of said second portfolio.

In brief, the Appellant claims an invention of a computer implementation of a new method for selecting and weighing investment portfolio assets that minimizes risk without impacting returns.

[5] In the 2008 filing, the 393 Application consisted of 27 claims.

[6] On January 28, 2016, a patent examiner rejected the 393 Application and issued a Final Action. The Examiner found that the subject matter of the claims lay outside the definition of ‘invention’ provided in section 2 of the *Patent Act*. That same day, the Appellant submitted an amended set of the 27 proposed claims [First Proposed Claims].

[7] The Examiner again found that the First Proposed Claims did not fall within the statutory definition of ‘invention’. On October 11, 2016, she forwarded the 393 Application to the Patent Appeal Board along with a Summary of Reasons explaining the basis for rejection.

[8] A panel of three Board members was struck [the Panel] to review the 393 Application and make a recommendation to the Commissioner. Upon preliminary review, the Panel agreed with the examiner’s findings.

[9] On October 1, 2018, the Appellant responded to the Panel’s preliminary review and he also submitted a second set of 63 proposed claims [Second Proposed Claims] as well as a declaration by Mr. Tristan Froidure, Head of Research at TOBAM, attesting to the common general knowledge of a person skilled in the relevant art.

[10] On October 4, 2018, the Appellant made oral submissions at a hearing.

[11] On February 27, 2019, the Commissioner refused the 393 Application. She concurred with the Panel's recommendation that the 27 claims on file, as well as the 63 claims in the Second Proposed Claims did not comply with section 2 of the *Patent Act* as they did not disclose an 'invention'.

[12] In response to the Appellant's submissions and Froidure Affidavit, the Panel revised its preliminary characterisations of the person of ordinary skill in the art and common general knowledge. Neither are at issue in this appeal.

[13] The Panel construed the patent claims to determine the essential elements of the First Proposed Claims and the Second Proposed Claims. In so doing, it used the problem-solution approach set out in CIPO's *Manual of Patent Office Practice* (June 2015) [MOPOP]. In this approach, the essential elements of a claim are those that are necessary to achieve the disclosed solution to an identified problem. The problem-solution approach is set out in section 13.05.02c of the 2015 MOPOP (now section 12.02.02e) and is reproduced in full at Appendix A.

[14] The Panel identified the problem raised by the First Proposed Claims of the 393

Application as:

[...] a financial portfolio engineering and investing problem to reduce the volatility of an investor's portfolio in comparison to the market and return to risk ratio.

[15] The Panel identified the disclosed solution as:

[...] the construction of an anti-benchmark portfolio, wherein the weighting of each security within the portfolio is calculated according to an anti-benchmark ratio such that the portfolio of

securities maximizes diversification using a scalable long-only approach within a given universe of securities.

[16] The Panel found that the essential elements of the claims were “directed to a scheme or rules involving mere calculations” for weighing securities. The Panel found no discernible physical effect to satisfy the definition of ‘invention’. The Panel concluded:

When a claim’s essential elements are only the rules and steps of an abstract algorithm, however, that claim is non-statutory. This is the present situation for the claims on file [...].

[17] The Panel next addressed the Appellant’s Second Proposed Claims and his submission that they constituted an improvement in computer processing. This, he submitted, would make a ‘computer’ an essential element of the claims. Citing CIPO’s “Examination Practice Respecting Computer-Implemented Inventions - PN 2013-03”, the Panel acknowledged that where a computer is an essential element of a claim, its subject matter will generally be found to comply with section 2 of the *Patent Act*.

[18] The Panel found that a computer was not an essential element in the Second Proposed Claims. The claims reflected an “optimization procedure” and not a “computer implementation” that improved processing speed. The Panel concluded that the Second Proposed Claims had the same essential elements as the First Proposed Claims and therefore had the same subject matter defect.

A Preliminary Issue

[19] The Attorney General submits that The Commissioner of Patents is improperly named as a responding party to the appeal. It is submitted that the Commissioner is neither a party in the first instance nor adverse in interest to the Appellant pursuant to Rule 338(1)(a) of the *Federal Courts Rules*, SOR/98-106. Additionally, there is no requirement in the *Patent Act* to name the Commissioner as a party. The Attorney General therefore sought an order removing the Commissioner as a party.

[20] The Appellant took no position on this objection. The Court agrees with the Attorney General and an order will issue, having immediate effect, striking The Commissioner of Patents as a respondent.

Standard of Review

[21] The Appellant took a different view as to the applicable standard to be applied on this appeal; however, he noted at the hearing that his memorandum was filed prior to the decision of the Supreme Court of Canada in *Canada (Minister of Citizenship and Immigration) v Vavilov*, 2019 SCC 65. Consequently, the Appellant now agrees with the Respondent's submissions on the appropriate standard to be applied by this Court in this appeal.

[22] The appellate standard applies to a statutory appeal, such as this. The Court must apply the palpable and overriding error to questions of fact and mixed fact and law. Correctness is to be applied to questions of law, including questions of statutory interpretation.

Issues on Appeal

[23] The Appellant submits that there are two issues before the Court, either of which, if found in his favour, is dispositive of the appeal. First, he submits that the Commissioner erred in applying the problem-solution approach when determining the essential elements of the claimed invention. He submits that is the wrong test. This question is to be analyzed on the correctness standard. Second, he submits that Commissioner, in construing the problem-solution approach, erred in not concluding that the essential elements included a computer element. This is reviewable based on palpable and overriding error.

Did the Commissioner Apply the Wrong Test When Construing the Claims?

[24] The Commissioner adopted the problem-solution approach outlined in section 13.05.02c of the MOPOP. That approach states that the “identification of the essential elements of a claim cannot be performed without having first properly identified the proposed solution to the disclosed problem” [emphasis added].

[25] The Respondent submits that the problem-solution approach is the correct legal test for determining the essential elements of a patent claim and is consistent with leading case law, particularly the Federal Court of Appeal’s decisions in *Canada (Attorney General) v Amazon.com, Inc*, 2011 FCA 328 [*Amazon*] and *Schlumberger Canada Limited v Commissioner of Patents* (1981), 56 CPR (2d) 204 (FCA). In oral submissions, it was also asserted that the problem-solution approach is consistent with the leading cases on claims construction from the

Supreme Court of Canada; namely, *Free World Trust v Électro Santé Inc*, 2000 SCC 66 [*Free World Trust*] and *Whirlpool Corp v Camco Inc*, 2000 SCC 67 [*Whirlpool*].

[26] The Respondent submits that the Commissioner, in construing the claims for the purpose of assessing whether an application discloses a patentable invention, is not engaged in the type of exercise that a court is when determining whether a patent is valid (as in *Whirlpool*) or is infringed (as in *Free World Trust*).

[27] The Respondent submits that CIPO's problem-solution approach arises logically from purposive claims construction. It is submitted that as the purpose of a claimed invention is to provide an operable solution to a practical problem, a purposive construction of that claim – and the determination of its essential elements – is necessarily informed by its disclosed problem and solution.

[28] The Appellant submits that the established test for determining the essential elements is set out by the Supreme Court of Canada in *Free World Trust*. He submits that the test asks whether, on a purposive construction of the language of the claim, a particular element was intended by the inventor to be essential, and whether that element could be substituted or removed without materially affecting function. The Appellant notes that this description of the test accords with the decision of the Federal Court of Appeal in *Halford v Seed Hawk Inc*, 2006 FCA 275, wherein at paragraph 13, the Court of Appeal stated:

In the process of construing the claims of a patent, a court will identify some elements of the invention as essential. The determination of which elements are essential depends upon the language of the claims, read purposively, and informed by

evidence as to how persons skilled in the art would understand the claims (*Whirlpool* at paragraph 45). An element may be found to be essential on the basis of the intent of the inventor as expressed or inferred from the claims, or on the basis of evidence as to whether it would have been obvious to a skilled worker at the time the patent was published that a variant of a particular element would make a difference to the way in which the invention works (*Free World* at paragraphs 31 and 55). [emphasis added]

[29] The Appellant also points to the Supreme Court of Canada's instruction in *Free World* to interpret claims in a way that is sympathetic to the accomplishment of the inventor's purpose. In addition, he cites Justice de Montigny's reasons in *Distrimed Inc v Dispill Inc*, 2013 FC 1043 at para 201 for the principle that everything claimed in a patent application is presumed essential, unless it is established otherwise or is contrary to the language used in the claim.

[30] The Appellant submits that had the Commissioner applied the correct legal test for determining the essential elements of the claim, she would have reached a different conclusion on patentability.

Analysis

[31] It is evident on a reading of the MOPOP that the Commissioner, notwithstanding stating that the patent claims are to be construed in a purposive manner, does not intend or direct patent examiners to follow the teachings of *Free World Trust* and *Whirlpool*.

[32] Section 13.05 of MOPOP discusses the requirement that the patent be construed in a purposive manner:

In *Canada (Attorney General) v Amazon.com Inc*, the Federal Court of Appeal observed that, during examination, Supreme Court jurisprudence “requires the Commissioner’s identification of the actual invention to be grounded in a purposive construction of the patent claims”.

The application of the principles of purposive construction to the examination of a patent application must take into account the role of the patent examiner and the purpose and context of examination.

In *Free World Trust* and *Whirlpool*, the Supreme Court outlined that purposive construction is performed by the court to objectively determine what the person skilled in the art would, as of the date of publication of the patent application and on the basis of the particular words or phrases used in the claim, have understood the applicant to have intended to be the scope of protection sought for the disclosed invention.

Once a claim has been purposively construed, that construction is used to determine whether the claim complies with the *Patent Act* and *Patent Rules*. Where there is no disagreement as to the construction of a claim, the examiner may choose not to provide the detailed purposive construction analysis in a report. [emphasis added]

[33] However, footnote 126 placed at the end of the second paragraph above, distinguishes the purposive construction in *Whirlpool* and *Free World Trust* from that to be used by patent examiners. It reads as follows:

Purposive construction is performed by the court to objectively determine what the person skilled in the art would, as of the date of publication of the patent application and on the basis of the particular words or phrases used in the claim, have understood the applicant to have intended to be the scope of protection sought for the disclosed invention (see *Free World Trust v. Électro Santé Inc.*, 2000 SCC 66 at paragraph 50; and *Whirlpool Corp. v. Camco Inc.*, 2000 SCC 67 at paragraph 48).

Free World Trust and *Whirlpool* continue to guide the courts, with the benefit of expert testimony and cross-examination, to construe the claim in accordance with the principles of purposive construction outlined therein. (For an enumeration of the principles, see *Free World Trust* at paragraph 31).

However, *Whirlpool* was an impeachment proceeding that was not directed “to patent examiners in the course of examinations to determine whether applications for patents should be granted.” (see *Genencor International Inc. v. Canada (Commissioner of Patents)*, 2008 FC 608 [*Genencor*] at paragraphs 62 and 70). [emphasis added]

It should be recognized that the language of patent claims construed by judges is fixed, is the result of a negotiation with the Patent Office, was “accepted by the Commissioner of Patents as a correct statement of a monopoly that can properly be derived from the invention disclosed in the specification” (see *Whirlpool* at paragraph 49) and benefits from the presumption of validity accorded by subsection 43(2) of the *Patent Act*. In contrast, during examination of an application the language of the claim may change from that initially proposed by the applicant for a number of reasons (see *Genencor* at paragraphs 62 and 70 and *Amazon FCA* at paragraph 73).

[34] Paragraph 62 of *Genencor International Inc v Canada (Commissioner of Patents)*, 2008 FC 608 [*Genencor*] is relied on by the Commissioner for its holding that the *Whirlpool* test is not applicable to patent examiners. It reads as follows:

Whirlpool was, of course, an impeachment proceeding. It was not a re-examination proceeding and I am satisfied that the foregoing, in all its implications, was directed to trial judges and to judges of courts of appeal and not to patent examiners in the course of examinations to determine whether applications for patents should be granted or in the course of re-examinations as here.

[35] *Genencor* is not binding on me, and in my view, is no longer good law. It was made prior to the Federal Court of Appeal decision in *Amazon*. *Amazon*, like the present appeal, dealt with the Commissioner’s refusal to grant a patent. At paragraph 43, the Federal Court of Appeal finds that the Commissioner is required to employ the purposive construction test set out in *Whirlpool* and *Free World Trust*:

However, it seems to me that the jurisprudence of the Supreme Court of Canada, in particular *Free World Trust* and *Whirlpool*, requires the Commissioner's identification of the actual invention to be grounded in a purposive construction of the patent claims. It cannot be determined solely on the basis of a literal reading of the patent claims, or a determination of the "substance of the invention" within the meaning of that phrase as used by Justice Binnie, writing for the Supreme Court of Canada in *Free World Trust*, at paragraph 46. [emphasis added]

[36] This, in part, is because the job of the Commissioner, like a judge at trial, is to determine validity. This is explained at paragraphs 32 to 34 of *Amazon*:

The language of subsection 27(1) indicates that the Commissioner, when considering a patent application, must determine a number of questions. Some are procedural (for example, whether the application "is filed in accordance with this Act" – no procedural questions are in issue in this case). Others are questions of law and questions of mixed fact and law, captured by the phrase "all other requirements for the issuance of a patent under this Act".

In a certain sense, when the Commissioner is assessing a patent application under subsection 27(1) to determine whether all of the statutory requirements for a patent are met, the Commissioner is determining validity. That is, the Commissioner is essentially determining whether, if the patent application is granted for the patent claims as set out in the patent application, the resulting patent would be valid.

In the context of considering the validity of the patent if granted, the Commissioner must consider the definition of "invention" in section 2, as well as section 27 and any provisions to which section 27 refers expressly or by necessary implication (including sections 28.2 and 28.3). The key issues are novelty, utility, obviousness, and patentable subject matter.

[37] The Appellant submits, and I agree, that using the problem-solution approach to claims construction is akin to using the "substance of the invention" approach discredited by the Supreme Court of Canada in *Free World Trust* at para 46.

[38] As noted earlier, in *Free World Trust* at para 55 the Supreme Court of Canada set out the principles to apply when determining whether a claim element is essential or non-essential. That test asks the following separate questions:

1. Would it be obvious to a skilled reader that varying a particular element would not effect the way the invention works? If modifying or substituting the element changes the way the invention works, then that element is essential.
2. Is it the intention of the inventor, considering the express language of the claim, or inferred from it, that the element was intended to be essential? If so, then it is an essential element.

[39] As Justice Locke, then of this Court, noted in *Shire Canada Inc v Apotex Inc*, 2016 FC 382 at paras 134-143, in order “to establish that a claim element is non-essential, it must show both (i) that on a purposive construction of the words of the claim it was clearly not intended to be essential, and (ii) that at the date of publication of the patent, the skilled addressees would have appreciated that a particular element could be substituted without affecting the working of the invention” [emphasis in original]. The problem-solution approach to claims construction focuses only on the second aspect above, it fails to respond, as taught in *Free World Trust*, to the issue of the inventor’s intention. Regarding the inventor’s intention, para 51 of *Free World Trust* states: “The words chosen by the inventor will be read in the sense the inventor is presumed to have intended, and in a way that is sympathetic to accomplishment of the inventor's purpose expressed or implicit in the text of the claims.”

[40] For these reasons, I find that the Commissioner erred in determining the essential elements of the claimed invention by using the problem-solution approach, rather than the approach *Whirlpool* directs be used.

[41] In light of this determination it is not necessary to analyze the second issue on the appeal. Nevertheless, I offer the following observations regarding the Appellant's Second Proposed Claims.

[42] The Appellant submits that the Commissioner mischaracterised the purpose (or solution) of the claimed invention to be simply the creation of a new financial portfolio. However, he notes that another purpose of the invention was to improve computer processing. The Commissioner failed to address this adequately in her decision. Specifically, she found that the problem and solution of the claims centred on financial management (yielding a new financial product), but did not explain why she excluded computer processing as a solution. This aspect of the invention requires closer examination.

Conclusion

[43] The Appellant asked that the Court issue a declaration that the 393 Application discloses an 'invention' as defined in the *Patent Act*. I am not prepared to do so; that would usurp the role and function of the Commissioner. The decision will be set aside with instructions to the Commissioner to do a fresh assessment of the 393 Application based on the Second Proposed Claims, and in accordance with these reasons. There will be no order as to costs.

JUDGMENT IN T-1404-19

THIS COURT'S JUDGMENT is that style of cause is amended with immediate effect to remove as a respondent The Commissioner of Patents, the appeal is allowed, without costs, the decision of the Commissioner of Patents is set aside, and she is directed to consider the 393 Application afresh based on the Second Proposed Claims submitted by the Appellant and in accordance with these reasons.

"Russel W. Zinn"

Judge

APPENDIX A

13.05.02c Determine which elements of the claim solve the identified problem.

One aspect of purposive construction is the identification of the essential elements of the claim. The identification of the essential elements of a claim cannot be performed without having first properly identified the proposed solution to the disclosed problem. Without having first considered the problem and solution, the identification of essential elements would be circular - it would begin and end with the language of the claim, contrary to *Free World Trust* which recognizes that elements can be found to be non-essential if at the date of publication of the patent, the skilled addressee would have appreciated that a particular element could be substituted or omitted without affecting the working of the invention.^[136]

Ultimately, some element or combination of elements defined in the claim must provide the solution. One must, however, approach each claim with an understanding that not every element that has a material effect on the operation of a given embodiment is necessarily essential to the solution. Some elements of a claim define the context or the environment of a specific working embodiment, but do not actually change the nature of the solution to the problem.^[137]

Note that while the identification of the essential elements is performed in light of the knowledge of the art at the date of the publication of the patent specification,^[138] this does not mean that one can simply conclude that the essential elements of the invention are those that distinguish the claimed subject-matter from the prior art.^[139] That is, an element is not necessarily essential merely by the fact that it is not found in the prior art. Likewise, an element cannot necessarily be deemed non-essential merely because it is part of the CGK. An element is essential if it is required to provide the solution to the problem, regardless of whether or not it is known.

Having identified the problem and solution, and defined the essential elements in the claims, an examiner may conclude that the claim either omits an essential element or includes non-essential elements.

Where it appears, having considered a claim in light of a fair reading of the description, that an element essential to the operation of the solution has not been defined in the claim, the claim may be defective for over breadth (*i.e.* lack of support) and/or for lack of utility.

In certain cases, an examiner may consider elements included in a claim of an application to be superfluous (non-essential) to the solution to a given problem. The mere presence of a superfluous limitation is not a defect as such, although the inclusion of such an element could render a claim defective (for example if its presence results in ambiguity).

It must be recognized that while the Office considers superfluous elements to be non-essential and not relevant to the determination of a claim's patentability during examination, if an applicant maintains such an element in the claim through to grant a court might later construe it to be essential when applying the "self-inflicted wound" factors of purposive construction as identified in *Free World Trust* and *Whirlpool*.^[140]

An invention is an element or a combination of elements that provides a solution to a problem. Where a claim includes solutions to more than one problem it includes more than one invention.^[141]

If a claim includes solutions to more than one problem, examination should focus on one solution to a problem in performing the purposive construction. The initial choice of solution should be guided by the description, selecting the solution given the greatest emphasis by the inventors. If it becomes necessary to consider a different solution, the analysis should be undertaken anew.

On occasion it may be the case that elements or sets of elements in a claim do not interact with each other to achieve a unitary result; this may reflect an “aggregation” rather than a combination.^[142] A consideration of the problem and solution emphasized by the inventor in the description may assist the examiner to select only the element or set of elements that work together in the claim that provide the operable solution.

[136] *Free World Trust v. Électro Santé Inc.*, 2000 SCC 66 at paragraph 55

[137] *Canada (Attorney General) v. Amazon.com Inc.*, 2011 FCA 328 at paragraphs 59 to 63; following the reasoning of the court, the existence of a practical embodiment does not automatically imply that the elements of the embodiment are essential elements of the invention.

[138] *Free World Trust v. **Error! Bookmark not defined.***, 2000 SCC 66 at paragraph 52

[139] *Halford v Seed Hawk Inc.*, 2006 FCA 275 at paragraph 14

[140] The Office does not consider the “self-inflicted wound” factor to be relevant during examination.

[141] Examiners should be mindful that, in this context, the identification of multiple problems and solutions within a single claim is not to be confused with lack of unity of invention within the meaning of section 36 of the *Patent Rules* (which emphasizes that the subject matter defined by the claims are to be linked by a single general inventive concept).

[142] *Re Application for Patent of Prince Corp.*, 1982, 2 C.P.R. (3d) 223 (CD 942); and *Shmuel Hershkovitz v. Tyco Safety Products Canada Ltd.*, 2009 FC 256 at paragraph 148.

FEDERAL COURT

SOLICITORS OF RECORD

DOCKET: T-1404-19

STYLE OF CAUSE: YVES CHOUEIFATY v ATTORNEY GENERAL OF CANADA

PLACE OF HEARING: HELD BY VIDEOCONFERENCE AT OTTAWA, ONTARIO

DATE OF HEARING: JULY 30, 2020

JUDGMENT AND REASONS: ZINN J.

DATED: AUGUST 21, 2020

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