Commissioner's Decision #1417

Décision du Commissaire #1417

TOPICS: J-00 Meaning of Art
            J-50 Mere Plan

SUJETS: J-00 Signification de la technique
            J-50 Simple Plan

Application No.: 2,624,223

Demande n°.: 2,624,223

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2,624,223 having been rejected under subsection 30(3) of the *Patent Rules*, has subsequently been reviewed in accordance with paragraph 30(6)(*c*) of the *Patent Rules*. The recommendation of the Patent Appeal Board and the decision of the Commissioner are to refuse the application.

Agent for the Applicant:

OSLER, HOSKIN & HARCOURT LLP
1900- 340 Albert Street
OTTAWA Ontario
K1R 7Y6

INTRODUCTION

[1]   This recommendation concerns the review of rejected patent application number 2,624,223, which is entitled "Central Pricing System and Method" and is owned by Barclays Capital, Inc. The outstanding defect to be addressed is whether the claims on file define statutory subject matter as required by section 2 of the *Patent Act*. A review of the rejected application has been conducted by the Patent Appeal Board pursuant to paragraph 30(6)(*c*) of the *Patent Rules*. As explained in more detail below, our recommendation is that the application be refused.

BACKGROUND

The Application

[2]   Patent application 2,624,223 was filed in Canada on October 20, 2005 and published on April 12, 2007.

[3]   The application relates to the field of securities and commodities pricing. The application pertains to methods for determining more accurate and consistent prices for a security throughout the trading day, based on pricing information obtained from different sources and from other similar securities.

Prosecution history

[4]   On October 8, 2014, a Final Action ("FA") was written pursuant to subsection 30(4) of the *Patent Rules*. The FA states that the application is defective on the grounds that claims 1-16 ("claims on file") do not comply with section 2 of the *Patent Act*.

[5]   In an April 7, 2015 response to the Final Action ("R-FA"), the Applicant submitted a set of amended claims 1-16 (the "proposed claims") and provided arguments as to why the application complied with the Act. In particular, the Applicant argued that

the claims defined essential tangible computer components which were physical, and thus comprised statutory subject matter as required under section 2 of the *Patent Act*.

[6] As the Examiner considered the application not to comply with the *Patent Act*, pursuant to subsection 30(6) of the *Patent Rules*, the application was forwarded to the Patent Appeal Board ("the Board") for review on May 22, 2015, along with an explanation outlined in a Summary of Reasons ("SOR"). The SOR maintains the position that the claims on file do not define statutory subject matter.

[7] In a letter dated July 27, 2015, (the "Acknowledgement Letter") the Board forwarded the Applicant a copy of the SOR and offered the Applicant the opportunity to make further written submissions and/or attend an oral hearing. In a response dated October 27, 2015, the Applicant declined the offer to attend a hearing and instead asked that the review by the Board proceed based on the written record.

[8] The present Panel was formed to review the application under paragraph 30(6)(*c*) of the *Patent Rules* and make a recommendation to the Commissioner as to its disposition. In a letter dated July 25, 2016 (the "Panel Letter"), we set out our preliminary analysis and rationale as to why, based on the record before us, the subject matter of the claims on file and the proposed claims did not comply with section 2 of the *Patent Act*.

[9] On October 14, 2016 the Applicant provided a written reply to the Panel Letter (the "Reply Letter"), maintaining the position that the application was compliant with the Act and Rules, and providing further arguments in support of that position.

ISSUE

[10] The only issue to be addressed by this review is whether or not claims 1-16 define statutory subject matter as required by section 2 of the *Patent Act*.

LEGISLATION AND LEGAL PRINCIPLES

Purposive construction

[11] In accordance with *Free World Trust v. Électro Santé Inc*, 2000 SCC 66 [*Free World Trust*] essential elements are identified through a purposive construction of the claims done by considering the whole of the disclosure, including the specification and drawings. (see also *Whirlpool Corp v. Camco Inc*, 2000 SCC 67 at paragraphs 49(f) and (g) and 52 [*Whirlpool*]). In accordance with the *Manual of Patent Office Practice*, §13.05 revised June 2015 ("MOPOP"), the first step of purposive claim construction is to identify the person skilled in the art and their relevant common general knowledge ("CGK"). The next step is to identify the problem addressed by the inventors and the solution put forth in the application. Essential elements can then be identified as those required to achieve the disclosed solution as claimed.

Statutory subject matter

[12] The definition of invention is set out in section 2 of the *Patent Act*:

> "invention" means any new and useful art, process, machine, manufacture or composition of matter, or any new and useful improvement in any art, process, machine, manufacture or composition of matter.

[13] The Office examination memo PN2013-03 entitled "*Examination Practice Respecting Computer-Implemented Inventions*" clarifies examination practice with respect to the Office's approach to computer implemented inventions.

[14] As stated in PN 2013-03, Office practice considers that where a computer is found to be an essential element of a construed claim, the claimed subject matter will generally be statutory. Where, on the other hand, it is determined that the essential elements of a construed claim are limited to matter excluded from the definition of invention (for example, fine arts, methods of medical treatment, features lacking in physicality, or claims where the subject matter is a mere idea, scheme, rule or set of rules), the claim will not be compliant with section 2 of the Act.

ANALYSIS

1. Claim Construction

The person skilled in the art and the common general knowledge

[15] In the Panel Letter, the person skilled in the art was identified to be skilled in the fields of securities trading and the pricing of such securities, and in general purpose computing technologies and programming techniques.

[16] The Panel Letter outlined the CGK of the person skilled in the art, based on a reading of the specification (notably paragraphs 1, 2, 18, 19, 20, 23, 24 and 57), as follows:

   a) Knowledge of conventional electronic trading systems, equipment and industry processes relating to securities and commodities markets;

   b) Knowledge of such conventional concepts as current price, intra-day price, marks, spreads, bench, size, options, etc.;

   c) Knowledge of the need for pricing information on securities and issues, including commonly available sources of pricing information; and

   d) Knowledge of general purpose computing devices and appropriate programming techniques including common computer hardware and software components.

[17] The Applicant's Reply Letter did not dispute these aspects of the Panel's analysis.

The problem to be solved

[18] The Panel Letter indicated that the skilled person reading the specification (particularly paragraphs 1 and 2) would understand that "given the differing prices available from different sources and the changes in prices throughout the trading day, the problem to be solved is the need for improving the accuracy and consistency of pricing information given to clients."

[19] In its Reply Letter (bottom page 2), the Applicant argues that the specification is addressed to problems "specifically arising in the realm of computer networks – as manifested by electronic trading". Further, the Applicant states that "…the problem addressed by the subject application (and the purpose thereof) was to enable the desired electronic result of automated securities pricing specifically within a computerized and networked electronic trading system."

[20] While the Panel agrees with the Applicant that the context of the problem exists in the "realm of computer networks", we are not persuaded that the problem being addressed is a computer network problem. The skilled person has common knowledge of such conventional computer networks and electronic trading systems, and of the ability of such systems to provide real-time pricing information and bypass certain activities of human traders. As set out in the Panel letter (page 3), the skilled person, reading the specification, would not understand that the application is addressing any specific problem in the technology of the trading system itself (i.e. not a problem in the computers, databases, data processing methods, or the computer implementations thereof). Instead, the skilled person would recognize that the problem being addressed is one of users of the trading system obtaining accurate pricing data in light of various data sources. As explicitly stated in the specification at paragraph 2, the problem is "a need for systems and methods for efficiently providing improved accuracy and consistency of pricing information given to clients". This is the problem statement used in the preliminary review, and after having considered the Applicant's submissions, the Panel maintains the identified problem for the purposes of this review.

The solution proposed

[21] As stated in the Panel Letter, the skilled person would understand that given the above problem, the solution disclosed by the application is "the use of certain combinations of different pricing sources and rules to determine the best price to provide" a user of a trading system. The Panel Letter further stated that the solution pertains to "the rules and calculations that are used to arrive at the pricing

information", namely the determination of the most accurate and consistent (best) price of the security or commodity issue.

[22] Although not specifically objecting to the Panel's solution statement, the Applicant's Reply Letter did submit that the specification defines "a claimed patentable solution that is necessarily rooted in computer technology…". Again, although rooted in computer technology, the skilled person, in determining the specific solution being disclosed, would consider that the specification teaches methods for determining the best price using different sources of price information and certain rules, in the context of computerized trading systems. The necessity of the computer components used in delivering this solution will be addressed below.

The essential elements

[23] The claims on file comprise 16 independent claims, all pertaining to a computer-readable medium having instructions for carrying out the steps of the solution identified above.

[24] As stated in the Panel Letter, the analysis of the essential elements will focus on the features defined in claim 1. This is consistent with the approach taken in the earlier prosecution. The Applicant did not object to this approach in its Reply Letter.

[25] For ease of reference, independent claim 1 provides as follows:

> 1. A computer-readable medium having instructions thereon for execution by a computer to carry out a method for pricing securities and commodities, comprising:
>> receiving a pricing inquiry for an issue at a processor;
>> receiving and storing a database of intraday prices for said issue, wherein said intraday prices are provided for said issue for a current day by at least two data sources;
>> estimating a current price for the issue based on said intraday prices;
>> determining that a beginning-of-day price for said issue is available but no intraday prices for said issue for a current day are available;
>> accessing an average percentage change in option adjusted spread that is based on at least one other issue which has sector, quality, and maturity duration in common with said issue;
>> determining an estimated intraday price for said issue based on said beginning-of-day price for said issue and said average percentage change in option adjusted spread for said at least one other issue; and

applying said estimated current price as the current price for said issue when intraday prices are not available.

[26] As set out in the Panel Letter, claim 1 defines a series of steps for improving the pricing of securities and commodities issues, where an estimated price of an issue is calculated from both a beginning-of-day price for that issue, and an average percentage change in option adjusted spread for at least one similar issue. Although claim 1 defines various conventional computer components (computer-readable medium, certain computer instructions, and a database), the Panel Letter stated that the skilled person would consider these components to be the working environment in which the invention operates, performing the calculations set out in the claim language, in a manner in which they are conventionally designed to do.

[27] Accordingly, the essential elements of claim 1, as set out in the FA and Panel Letter are :

- receiving a pricing inquiry for an issue;
- receiving intraday prices for said issue, wherein said intraday prices are provided for said issue for a current day by at least two data sources;
- estimating a current price for the issue based on said intraday prices (if available for this issue);
- determining that a beginning-of-day price for said issue is available but no intraday prices for said issue for a current day are available;
- accessing an average percentage change in option adjusted spread that is based on at least one other issue which has sector, quality, and maturity duration in common with said issue;
- determining an estimated intraday price for said issue based on said beginning-of-day price for said issue and said average percentage change in option adjusted spread for said at least one other issue; and
- applying said estimated current price as the current price for said issue when intraday prices are not available.

[28] Regarding claims 2-16 on file, we set out in the Panel Letter that these claims define variations on the rules for determining the pricing information being sought. As with claim 1, the skilled person would not consider any of the computer components of claims 2-16 to be essential elements. The Applicant did not provide any specific arguments to differentiate the essential elements of claims 2-16 from those of claim 1.

Applicant's arguments regarding claim construction

[29] In response to the claim construction presented in the FA and by the Panel, the Applicant raised several concerns in its R-FA and Reply Letter. We address the substantive points made by the Applicant in the following paragraphs.

[30] First, in the R-FA, the Applicant appears to generally disagree with the Office approach to purposive construction. In particular, the Applicant argues that the Office guidelines for claim construction (now embodied in MOPOP, §13.05) fail to adhere to Canadian legal principles, in particular, the Federal Court of Appeal's reasoning in *Canada (Attorney General) v. Amazon.com Inc.*, 2011 FCA 328 [*Amazon.com*]. The Applicant suggests that various tangible computer elements recited in the claims cannot be "erroneously disregarded".

[31] In reply, the Panel Letter notes that the purposive construction guidelines set out in MOPOP (applied in the FA and the Panel's preliminary review) were specifically adopted by the Commissioner of Patents in response to the *Amazon.com* decision. The guidelines recognize the application of the principles of purposive construction used in the Courts to the examination of a patent application, taking into account the role of the patent examiner and the purpose and context of examination. Purposive construction thus ensures that the claim analysis will be "alive to the possibility that a patent application claim may be expressed in language that is deliberately or inadvertently deceptive" and allows the Commissioner to determine "what the inventor has actually invented, or what the inventor claims to have invented." (*Amazon.com*, at paragraphs 44 and 42, respectively). Further, MOPOP acknowledges the importance of both *Whirlpool* and *Free World Trust* as the basis of purposive construction, but also acknowledges the recognition in *Free World Trust* (paragraph 58) of the need to avoid "the pitfalls of language" so as to ensure the inventor receives "protection for that which he has actually in good faith invented" .

[32] In our view, MOPOP clearly establishes the steps to follow in a purposive construction of claims of a patent application following the decision of the Federal Court of Appeal in *Amazon.com*. As we noted in the Panel Letter, in our view we see no error in the FA in the application of the Office Practice in regards to the construction of the claims and the identification of the essential elements in this case.

[33] Second, in the R-FA and repeated in the Reply Letter, the Applicant appears to assert that the presence of the tangible computer components in the claims (e.g., the electronic trading system, the database, and the computer readable medium) necessitates that these features are essential. Here, the Panel understands that the Applicant is emphasizing the need to recognize the intent of the inventor, as expressed in the claim language, while undertaking a purposive construction of claims.

[34] However, as stated in the Panel Letter and MOPOP, while purposive construction during examination recognizes the primacy of the claim language and promotes an adherence to the language of the claims, it also recognizes that claim construction "cannot be determined solely on the basis of a literal reading" of the claims. A properly informed purposive construction must consider the application as a whole (see MOPOP, §13.05.02b). The intent of the inventor, and the form of the claim language chosen by the inventor to express that intent, cannot override all other considerations during a purposive construction of the claims.

[35] Finally, in both the R-FA and the Reply Letter, the Applicant argues that the claims define various computer components, which are not merely the operating environment or context to the invention, but instead, are essential for the invention to operate. On page 3 of the Reply Letter, the Applicant states that "…the power and ability of electronic trading is realized primarily due to computer technology…", and that the skilled person "…would indeed consider the use of a computing device or database to be essential for providing the solution of calculating the issue price as claimed".

[36] However, as we have stated, in our view the skilled person reading the specification, would readily understand that the problem and solution addressed by the application is the provision of improved accuracy and consistency of pricing information of commodity or income issues, by applying certain rules and calculations to determine the best price of those issues. Looking through the specification, from paragraphs 24 through 49, the skilled person would read of the various price estimations, validation rules, pricing models and numerous financial terms, all of which are discussed in relation to the solution of determining a best price of an issue. While some disclosure of conventional computer system components is provided in the specification, it is only in the context or realm of the known electronic trading systems. The skilled person would not consider the disclosure of these conventional components to belong to the problem being solved. Furthermore, the Applicant has not pointed to any statements in the description that would indicate that the invention is related to a computer problem or a problem implementing the best price determination rules to the conventional trading systems. This reinforces the Panel's view that the essential elements of the claims are those elements pertaining to the issue price determination solution, not the computer components that comprise the conventional trading systems.

[37] Therefore, the view of the Panel is that the essential elements of claims 1-16 on file as construed, are the particular calculations, steps and rules for determining a current, estimated, or best price of an issue. The recited computer components (including computer-readable medium, computer instructions, and databases) are considered to be non-essential elements. Having thus completed the identification of the essential elements of the claims, the review can now address the one substantive issue before the Panel.

2. Subject-Matter

[38] In the FA, the Examiner applied PN 2013-03 and concluded that the essential elements the claims are directed to a mere calculations and therefore do not relate to a

patentable category of invention under section 2 of the *Patent Act*. In its R-FA, the Applicant disagreed with this assessment, and provided several reasons why.

[39] Having regard to section 2 of the *Patent Act* and the PN 2013-03, we agree with the Examiner that the essential elements of the claims do not relate to patentable subject-matter.

[40] As we stated in the Panel Letter, in our view, claims 1-16 on file define calculations or rules for determining more accurate pricing information for securities or commodities issues. The steps defining the calculations or rules to determine the improved pricing information are abstract, and thus do not define subject matter that contains something with physical existence or something that manifests a discernible effect or change (see *Amazon.com* at paragraph 66).

[41] Furthermore, the skilled person would consider that the output representation of the claims (the estimated issue price, for example) is also simply information or numerical data, which is abstract, and not tangible, as argued by the Applicant. Thus, the claims on file fail to define any physical essential features.

Applicant's arguments regarding subject matter

[42] At page 4 of its R-FA, the Applicant states: "In Canada, therefore, claims of computer-readable medium and/or computer related business methods that involve computer-related processing may be considered to be patentable, as long as they recite a tangible component." The Reply Letter also submitted similar arguments.

[43] On this point, the Panel notes that the mere inclusion in a claim of a physical or tangible feature does not automatically render the claim statutory. We note that the Federal Court of Appeal in *Amazon.com* (at paragraph 69), in disagreeing with the Federal Court's assessment of the physicality of the claims at issue in that case, stated (with reference to *Schlumberger Canada Ltd. v. Canada (Commissioner of Patents)*, [1982] 1 F.C. 845 (C.A.) [*Schlumberger*]):

However, if it is meant to suggest that this "physicality requirement" can be met merely by the fact that the claimed invention has a practical application, then I do not agree. The issue, in my view, is similar to the issue raised in the context of the patentability of business methods in that it requires consideration of Schlumberger. The claims in Schlumberger were not saved by the fact that they contemplated the use of a physical tool, a computer, to give the novel mathematical formula a practical application. As explained above, the claims in issue in this case may or may not be distinguishable from the claims in Schlumberger, depending upon how they are construed.

[44] The Court in *Amazon.com* (at paragraph 47) established that "the Commissioner's determination of statutory subject matter must be based on a purposive construction of the patent claims." As we previously noted, the Court also cautioned that the Commissioner must be "…alive to the possibility that a patent claim may be expressed in language that is deliberately or inadvertently deceptive… what appears on its face to be a claim for an 'art' or a 'process' may, on a proper construction, be a claim for a mathematical formula and therefore not patentable subject matter…" (at paragraph 44).

[45] Based on a purposive construction of the claims in accordance with Office practice, the contemplated use of a computer related medium, computer-related processing and a database defined in the present claims 1-16 on file have been found to be non-essential, and therefore cannot be used or identified as meeting the physicality requirement as required under section 2. Instead, the essential features of the claims appear to be rules relating to abstract "mathematical formula", which are not, therefore, considered to be "patentable subject matter".

[46] At page 6 of the R-FA, the Applicant states that "(a)ccording to *Amazon.com* to be a patentable art, there is a physicality 'requirement'. It is asserted patentable subject matter must be something with a physical existence or something that manifests a discernible effect or change. It is respectfully submitted that amended claims 1 to 16 satisfy this requirement in particular, a physicality 'requirement'." The Reply Letter submitted similar arguments on this same point.

[47] In regards to the first part of this passage, the Panel agrees that *Amazon.com* sets out a physicality requirement, based on a physical existence or discernible effect or change as a necessary component of a statutory claim.

[48] However, in regards to second part of this passage, that claims 1-16 on file satisfy this physicality requirement, the Panel is not persuaded. None of the essential features of the purposively construed claims are physical. Instead, the essential elements define steps for determining or calculating a price of a security using certain data and mathematical rules. As in the case of *Schlumberger,* and as cautioned in *Amazon.com*, despite appearing on their face to define tangible features, claims 1-16 on file as purposively construed are nevertheless considered to define the rules and mathematical formula for determining the price of a security issue.

[49] Therefore, claims 1-16 on file do not define statutory subject matter, and thus do not comply with section 2 of the *Patent Act*.

3. Claims submitted in response to the Final Action ("Proposed Claims")

[50] Proposed claims 1-16 were submitted by the Applicant in response to the FA. In accordance with paragraph 30(6)(*b*) of the *Patent Rules*, they have not been entered as an amendment. However, in accordance with subsection 30(6.3) of the *Patent Rules*, if, after review of a rejected application, the Commissioner determines that an application does not comply with the *Patent Act* or the *Patent Rules*, but that specific amendments are necessary, the Commissioner shall notify the Applicant to make these amendments.

[51] The proposed claims primarily differ from the claims on file by the addition to each claim of the feature of "generating and transmitting an inquiry response including the estimated current price".

[52] On page 4 of its Reply Letter, the Applicant submits that said features of "generating and transmitting an inquiry response including the estimated current price" are

essential as they "pertain to the technical arrangement and combination of means necessary in order to operate the computer-readable medium having instructions thereon for execution by a computer to carry out the recited method for pricing securities and commodities." The Applicant argues these features impart something with physical existence or something that manifests a discernible effect or change, and thus the claims define statutory subject matter.

[53]   However, in the Panel's view, steps of "generating" an inquiry response and then "transmitting" the response are not essential to the identified solution of determining more accurate pricing information. Further, these steps are akin to the computer elements in the claims, namely, they provide the context of the trading system in which the solution operates. We consider that the problem did not relate to the generation of a response and the transmission of that response to the client. Therefore, the skilled person would not consider these additional steps essential, but instead, would consider that they amount to steps for providing some post-solution activity or functionality.

[54]   As the added feature is considered to be non-essential to the identified solution of determining more accurate pricing information as construed, the analysis of the Panel with regards to the non-statutory nature of the claims on file would not change if the proposed claims were adopted. Therefore, the Panel does not consider that the proposed claims meet the requirements of a "necessary" amendment under subsection 30(6.3) of the *Patent Rules*.

CONCLUSIONS

[55]   We have determined that claims 1-16 on file do not comply with section 2 of the *Patent Act.*

[56]   We have also determined that proposed claims 1-16 do not overcome this defect, and thus do not comply with the *Patent Act*.

RECOMMENDATION OF THE PANEL

[57] The Panel recommends that the application be refused because claims 1-16 on file do not comply with section 2 of the *Patent Act*.

[58] Further, proposed claims 1-16 do not overcome this defect and therefore do not constitute a specific amendment that is "necessary" under subsection 30(6.3) of the *Patent Rules*.

Andrew Strong   Marcel Brisebois   Leigh Matheson
Member   Member   Member

COMMISSIONER'S DECISION

[59] I concur with the findings and the recommendation of the Board and its recommendation that the application should be refused because the claims on file do not comply with section 2 of the *Patent Act*.

[60] Accordingly, I refuse to grant a patent on this application. Under section 41 of the *Patent Act*, the Applicant has six months within which to appeal my decision to the Federal Court of Canada.

Johanne Bélisle

Commissioner of Patents

Dated at Gatineau, Quebec,

this 24th day of February, 2017