

Commissioner's Decision # 1400
Décision du commissaire # 1400

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

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

Application No: 2,240,382
Demande no: 2,240,382

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application 2,240,382, having been rejected under subsection 30(3) of the *Patent Rules*, has consequently been reviewed in accordance with paragraph 30(6)(c) of the *Patent Rules*. The recommendation of the Board and the decision of the Commissioner follow.

Agent for the Applicant:

SMART & BIGGAR

55 Metcalfe St. Suite 900

P.O. Box 2999 Station D

Ottawa, ON K1P 5Y6

INTRODUCTION

- [1] This recommendation concerns a review of the rejection of Canadian patent application no. 2,240,382, filed May 19, 2006, entitled “*Electronic Trading System Including an Auto-Arbitrage Feature or Name Switching Feature*”. The Applicant is Reuters Limited.
- [2] For the reasons that follow, we recommend that the application be refused.

BACKGROUND

- [3] This application relates to an electronic trading system having functionality to provide the automatic detection of an arbitrage scenario based on credit discrepancies between different trading entities. Arbitrage trading involves scenarios wherein one party utilizes short term price discrepancies in the market in order to make a profit, for example, by buying from one party and selling to another. Once an arbitrage opportunity is identified based on certain credit-related parameters, the claimed invention provides for the temporary locking of the contingent trades so as to minimize the risk to the trading party that would occur if the arbitrage conditions were to change before all contingent trades can be completed.
- [4] A Final Action dated July 17, 2013 rejected the application based on obviousness and insufficient description. The Applicant’s written response of January 15, 2014 amended the description and claims 1-20, and provided written arguments in favour of their allowance.
- [5] The rejected application was forwarded to the Patent Appeal Board (“the Board”) accompanied by a Summary of Reasons (SOR) explaining why the amended application was considered not to comply with the *Patent Act* and the *Patent Rules* based on the previous grounds of obviousness and insufficient description. An additional defect was raised in the SOR regarding insufficient background of the invention.
- [6] In a letter dated March 4, 2015, this panel invited the Applicant to respond to preliminary observations regarding claim construction and obviousness. The Panel also raised an

issue regarding non-statutory subject matter. An opportunity for a hearing was also offered to the Applicant.

- [7] In a letter dated April 20, 2015, the Applicant confirmed that a hearing was not required, and that no further written submissions or amendments would be provided. The Applicant did not provide any response to the panel's preliminary observations.

ISSUES

- [8] There are four issues to be addressed by this review:
- do the claims define non-statutory subject matter?
 - are the claims obvious?
 - is the description insufficient? and
 - does the description fail to describe the background prior art?
- [9] Of these four issues, our analysis in the following paragraphs has determined that the claims do not define any statutory subject matter, and therefore, our determination regarding the first issue is sufficient to dispose of this review. We also provide brief comments on the three additional issues at the conclusion of our analysis.

LEGAL PRINCIPLES

Claim Construction

- [10] 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 [*Whirlpool*] at paras 49(f) and (g) and 52). In accordance with the *Manual of Patent Office Practice* §13.05 [revised June 2015], 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

[11] 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.

[12] Following the Federal Court of Appeal decision in *Canada (Attorney General) v Amazon.com Inc.*, 2011 FCA 328 [*Amazon*], the Office released an examination memo PN2013-03 entitled “*Examination Practice Respecting Computer-Implemented Inventions*” that clarified examination practice with respect to the Office’s approach to computer implemented inventions. This memo was cited in our letter of March 4, 2015.

[13] 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 considered to 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

Claim Construction

[14] The Applicant, in its response dated April 20, 2015, did not dispute the panel’s characterization of the person skilled in the art and the common general knowledge of that person, as we set out in our letter of March 4, 2015:

Person skilled in the art

[15] The person skilled in the art is skilled in the fields of trading, in particular electronic trading, and in general purpose computing technologies and relevant programming techniques.

The common general knowledge of this person

- [16] The relevant common general knowledge (CGK) of the person skilled in the art includes:
- a) Knowledge of electronic trading systems which enable trading entities to enter credit limits, and display the best available offer and bid prices to market makers;
 - b) Knowledge of systems having a plurality of trader terminals for receiving credit parameter data for use in determining whether to permit or deny a trade and for receiving and displaying trading data, including bid and offer data;
 - c) Knowledge of general purpose computing devices and appropriate programming techniques;
 - d) Knowledge of networked computer systems connected to trader terminals for matching or denying trades using said credit parameter data;
 - e) Knowledge of arbitrage — the nearly simultaneous purchase and sale of securities or foreign exchange in different markets in order to profit from price discrepancies and credit-related discrepancies;
 - f) Knowledge that a third party or an entity with sufficient bilateral credit with two trading entities can conduct arbitrage by buying from one entity at a low price and selling to the other at a higher price; and
 - g) Knowledge that trading and arbitrage were performed manually by a broker.

Problem and solution

- [17] The Final Action states that the problem solved by the present invention is how to automate known prior art arbitrage transactions. However, the Applicant's response (page 3) disagreed with this problem statement and instead argued that the subject matter of the independent claims is "*directed to methods and systems for performing electronic trading which go well beyond the mere automation of prior art systems*".
- [18] Our letter provided a problem and solution statement in light of the Applicant's response. Since the Applicant did not provide any comments, we use this problem and solution in this review.
- [19] As stated in our letter, the application addresses problems in conducting arbitrage trading operations based on credit-related discrepancies in a market using an electronic trading

system. In particular, one problem is that known trading systems do not provide any means of ensuring that all trades needed to successfully complete the arbitrage transaction will occur prior to executing any of the trades. The known systems entail a financial risk for the trading entity attempting the arbitrage opportunity.

- [20] The skilled person would understand that the problem being addressed by the application pertains to the financial risk in performing credit-based arbitrage trading. At the same time, the skilled person reading the application would find neither a disclosure of any challenging problem relating to the computer implementation of such a credit based arbitrage trading system, nor a disclosure of any other apparent technical problem in the implementation of such a system. This supports an understanding of the problem as being related to the procedures or rules for arbitrage trading, and the risks involved in completing such trades, and not a problem related to the computer implementation of such rules.
- [21] As stated in our letter, the skilled person would understand that the solution disclosed by the application is a change to the rules used in conventional electronic trading to permit the identification and execution of arbitrage opportunities created by credit discrepancies in the market, by providing a set of rules for a locking procedure, and to permit arbitrage transactions to occur while minimizing the risk that the arbitrage conditions may change or expire before all transactions can be completed.

Meaning and essential elements of the claims

- [22] Claim 1 is illustrative of the invention:

An electronic trading system for traders, the system comprising:

- a plurality of trader terminals for receiving credit parameter data for use in determining whether to permit a trade, for receiving from traders trading data including at least one of bid and offer information, and for receiving arbitrage parameter data from the traders comprising at least one of a minimum spread parameter, an average spread parameter, a minimum size parameter, and a maximum size parameter, said plurality of trader terminals including a first trader terminal, a

second trader terminal and a third trader terminal;

- a communications network in communication with the plurality of trader terminals;
- a computer in communication with said plurality of trader terminals via said communications network, said computer matching trades using said credit parameter data;

- a detector for automatically detecting potential related trades, said related trades being treated as contingent trades between said first trader terminal and said second trader terminal and between said first trader terminal and said third trader terminal, for creating an arbitrage opportunity based on credit-related discrepancies within a market where a direct trade between said second trader terminal and said third trader terminal would be unavailable and based on monitoring said trading data, said credit parameter data and said arbitrage parameter data; and

- an executing circuit for executing all the detected contingent trades, the executing circuit including a locking circuit for locking trading data for all said contingent trades so as to lock all said contingent trades prior to execution of any of said contingent trades to ensure that said all contingent trades remain available during the execution of said contingent trades;

wherein said executing circuit only executes all the detected contingent trades if the trading data for all the detected contingent trades is locked.

[23] The skilled person reading the claims in light of the CGK and the specification would not have any difficulty in understanding the meaning or scope of most terms and expressions found in the independent claims. However, the terms “*executing circuit*” and “*locking circuit*” merit further consideration.

[24] The application does not disclose any specific physical circuit means, apparatus, logic, or arrangement of electronic or mechanical features that would constitute a circuit for the “executing circuit” or the “locking circuit” features of claim 1. Therefore, the term “circuit” would be read by the person skilled in the art as describing any broad means or process to achieve the functionality of executing contingent trades, or as describing any broad means or process to achieve the functionality of locking any contingent trades. The skilled person would not construe the term “circuit” as limited to a specific implementation. We also note that the skilled person understands that “locking” is used to mean temporarily holding, or “freezing” the contingent trades in time, so that they will

not change or disappear while the arbitrage trade is being processed.

- [25] Similarly, as the description has no specific limitations to the implementation for the “detector” element of claim 1, this feature also would be understood by the skilled person to be any broad means or process for detecting a potential credit-based arbitrage opportunity.

Essential elements of claim 1

- [26] Our letter stated that the person skilled in the art would understand that electronic trading systems (comprising computer components) are inherently capable of performing the transactions of the type described in the instant application, for example, identifying bid/ask matches, including those bid/asks having credit discrepancies. The skilled person would recognize these components as relating to the context or the environment of the working embodiment.
- [27] Further, once given the particular arbitrage rules, including rules for identifying an arbitrage trading opportunity and rules for executing the trade by locking any contingent trades, the skilled person would readily implement such rules in a conventional electronic trading system, using their common general knowledge. The application does not disclose any particular technological improvement in relation to such a conventional electronic trading system, or to the manner of implementing the rules. As stated in our discussion of the problem, the claims do not appear to address a solution to a computer problem; instead, they address a solution to a financial risk problem.
- [28] Given these considerations, our letter stated that the skilled person would view the following features as being non-essential elements: a plurality of trader terminals for receiving trading data; a communication network; a computer for matching trades; a detector for detecting potential related trades; and an executing circuit including a locking circuit. Although these features provide the working environment required for the claimed embodiment to function and process the data in a timely matter, they are nevertheless not essential features of the above stated solution. The skilled person would understand these components as having no material effect on the rules for identifying and enabling a credit-based arbitrage trade, or on the rules for a locking procedure.

[29] Accordingly, the skilled person would identify the following features from claim 1 to be the essential elements necessary to provide the solution to the identified problem:

- a) detecting potential related trades, said related trades being treated as contingent trades between said first trader terminal and said second trader terminal and between said first trader terminal and said third trader terminal, for creating an arbitrage opportunity based on credit-related discrepancies within a market where a direct trade between said second trader terminal and said third trader terminal would be unavailable and based on monitoring said trading data, said credit parameter data and said arbitrage parameter data;
- b) locking trading data for all said contingent trades so as to lock all said contingent trades prior to execution of any of said contingent trades to ensure that said all contingent trades remain available during the execution of said contingent trades; and
- c) executing all the detected contingent trades, but only if the trading data for all the detected contingent trades is locked.

Essential elements of the remaining claims

[30] Independent claims 8 and 15 define, respectively, a method for electronic trading and a computer for use in an electronic trading system. The essential features of these two claims are consistent with those of the system of independent claim 1.

[31] Dependant claims 2-7, 9-14 and 16-20 set forth additional features. The skilled person would consider the following additional features from the dependent claims as essential:

- Claims 2, 9 and 16: define features of notifying a user that a contingent trade has been detected and executed;
- Claims 3, 10 and 17: define features of an alert to a trader of a contingent trade, and an input for a trader to indicate a desire to execute the trade;
- Claims 4, 11, 12, 13 and 18: define known features of credit limits between parties, including different limits between parties;

- Claims 5, 14 and 19: define features to detect contingent trades based on known credit parameters (minimum spread, average spread, minimum size, and maximum size);
- Claims 6, and 20: define features to detect contingent trades between a second and third trader when a direct trade between the second and third is unavailable, but credit between a first trader and the second and third traders is sufficient; and
- Claim 7: defines a name switch feature, where a direct trade between the second and third is unavailable due to insufficient credit parameter data, but allows the trade via the first trader based on sufficient credit parameter data.

Do claims 1-20 define subject matter that is outside the statutory definition of an invention under Section 2 of the *Patent Act*?

- [32] In our letter to the Applicant March 4, 2015, we expressed the preliminary view that the application is defective for failing to comply with section 2 of the *Patent Act*. We invited the Applicant to address compliance with section 2 in a written submission or hearing, but no submission was provided.
- [33] Having undertaken a full and complete review of the present application, we are of the view that the application is deficient for failing to comply with section 2 of the *Patent Act*.
- [34] The skilled person, having regard to the essential elements of claim 1, 8 and 15 which provide the solution to the problem, would realize that these elements do not define subject matter that contains “something with physical existence, or something that manifests a discernible effect or change” (*Amazon*, at paragraph 66).
- [35] Instead, the essential elements define abstract and disembodied rules, and are considered equivalent to mental steps. Detecting a suitable arbitrage opportunity based on certain credit-based parameters, and then locking that opportunity until all of the contingent trades can be executed, in order to minimize the financial risk that would occur if some of the contingent trades are not completed together are features which define a particular set of rules for financial trading. These rules

interact to produce an abstract outcome, namely, realizing a potential increase in wealth while obtaining a reduction in financial risk. Such rules, their operation, and their outcome, do not define something with a physical existence, nor do they define something that manifests a discernible effect or change.

- [36] We also note that in this case, executing the rules for locking contingent trades on a computer, for reasons of speed and efficiency, does not change the otherwise abstract nature of the essential rules. As stated above under Purposive Construction, the computers and other physical computer hardware defined in the claims form part of the context or working environment for the invention but are not part of the solution to the problem. Even though it may be contemplated by the inventor that the rules be implemented by using computers for the timely and efficient processing of certain calculations, the inclusion of such a physical feature in the claims cannot change the nature of the subject matter of the claims if, after having performed a purposive construction, said physical features were found to be otherwise non-essential.
- [37] Therefore the subject matter of independent claims 1, 8 and 15 pertains to an abstract scheme or set of rules, which is considered equivalent to mental steps, and is therefore abstract. The dependent claims 2-7, 9-174 and 16-20, which define further rules based on credit parameters and possible arbitrage trade conditions, also fail to define any essential elements which are not abstract.
- [38] Accordingly, claims 1-20 do not comply with section 2 of the *Patent Act*.

ADDITIONAL ISSUES RAISED IN SOR

- [39] Having found that none of the claims on file define any statutory subject matter, our recommendation is that the application may be refused on this single ground. However, for completeness, the panel provides the following additional information on the issues of obviousness, insufficient description, and failure to disclose the background art.

Are claims 1-20 on file obvious, in contravention of section 28.3 of the *Patent Act*?

- [40] The SOR maintained the position that the claims are obvious for two reasons:
- a. the claims are obvious in view of the prior art cited in the Final Action; and
 - b. the claims define an obvious mere automation.
- [41] With respect to the position that the claims would be obvious from D5, in view of the other cited art, we see no basis to disagree with the premise set out in the SOR that the claims are obvious.
- [42] In our letter of March 4, 2015, the panel stated that in our understanding, the Applicant believes the locking procedure to be the main difference over the cited art. However, as explained in the Final Action, several prior art documents (labelled as D2, D3, D4, or D6 in the Final Action) teach the idea of using a locking mechanism or locking feature in auctions, other trading or financial systems, or data processing applications. The Final Action (page 6) further explains that prior art document D5 discloses a variant of arbitrage trading, and that the skilled person would apply a similar method of D5 to solve any problem arising in an arbitrage scenario, including the known scenarios based on credit discrepancies. Therefore, as the Final Action and SOR concluded, the idea of combining known locking mechanisms or procedures to reduce financial risk in a credit based arbitrage scenario would not involve any inventive ingenuity. Furthermore, the implementation of such an arrangement would be left to the skill and CGK of the skilled person, and would not be inventive. Therefore, the independent claims would be considered to lack inventive ingenuity.
- [43] We see no further limitations in any of the dependent claims that would overcome the lack of inventive ingenuity in the independent claims. The Applicant, in response to the Final Action, and in response to our letter asking for an identification of any further differences over the prior art, did not identify any further inventive limitations in the dependent claims.

- [44] With respect to the position in the SOR that the claims define an obvious automation, our purposive construction determined that the computer components were non-essential. Therefore, the claims would not be considered to define an obvious automation.

Is the description insufficient and does it fail to disclose the background art?

- [45] In light of our discussion on obviousness, above, the skilled person would have no difficulty in the implementation of the rules or calculations to lock an arbitrage opportunity. Therefore, the description would not be considered insufficient.
- [46] With regards to the amendment which moved the background art to another section of the description, as we stated in our letter of March 4, 2015, the amendment did not change the understanding of the common general knowledge of the skilled person. Therefore, the description would appear to adequately disclose the background art.

RECOMMENDATION OF THE BOARD

- [47] The panel recommends that the application be refused on the grounds that claims 1-20 do not define statutory subject matter, and therefore do not comply with section 2 of the *Patent Act*. The panel is also of the view that the application would nevertheless fail to comply with section 28.3 of the *Patent Act*, as claims 1-20 lack inventive ingenuity.

Andrew Strong
Member

Paul Sabharwal
Member

Michael O'Hare
Member

DECISION

- [48] I concur with the findings and the recommendation of the Board and in accordance with section 40 of the *Patent Act*, I refuse to grant a patent on this application.
- [49] 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 2nd day of June, 2016