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Commissioner's Decision #1624  
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TOPIC: B-00 Indefiniteness  
J-00 Meaning of Art  
J-50 Mere Plan

SUJET: B-00 Caractère  
indéfini  
J-00 Signification de  
la technique  
J-50 Simple plan

Application No. 2618347  
Demande n° 2618347

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2618347, having been rejected under subsection 30(3) of the *Patent Rules* (SOR/96–423) as they read immediately before October 30, 2019, has subsequently been reviewed in accordance with paragraph 199(3)(c) of the *Patent Rules* (SOR/2019–251). The recommendation of the Patent Appeal Board and the decision of the Commissioner are to refuse the application.

Agent for the Applicant:

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## INTRODUCTION

- [1] This recommendation concerns the review of rejected patent application number 2618347, which is entitled “System and method for managing discretion trading orders” and is owned by BGC Partners, LP. The outstanding defects indicated by the Final Action (FA) are unpatentable subject matter and indefinite claims. The Patent Appeal Board (the Board) has reviewed the rejected application pursuant to paragraph 199(3)(c) of the *Patent Rules* (SOR/2019–251). As explained below, my recommendation is to refuse the application.<sup>3</sup>

## BACKGROUND

### The application

- [2] Canadian patent application 2618347 was filed on January 4, 2008 and has been open to public inspection since July 16, 2008.
- [3] The invention concerns the management of discretion trading orders in an electronic trading system.

### Prosecution history

- [4] On March 27, 2018, an FA was issued pursuant to subsection 30(4) of the *Patent Rules* (SOR/96–423) as they read immediately before October 30, 2019 (the former *Rules*). The FA indicated the application to be defective on the ground that claims 1 to 96 (i.e. all claims on file) are not directed to a patentable category of invention under section 2 of the *Patent Act*. The FA also indicated claims 49, 63 and 80 on file to be indefinite, contrary to subsection 27(4) of the *Patent Act*.
- [5] In its September 25, 2019 response to the FA (RFA), the Applicant proposed an amended set of 96 claims (the proposed claims) and submitted arguments for allowance. The Examiner was unpersuaded by the arguments that either the claims on file or the proposed claims were allowable (although the proposed claims did remedy the indefiniteness defects).

- [6] Therefore, pursuant to subsection 30(6) of the former *Rules*, the application was forwarded to the Board for review on behalf of the Commissioner of Patents. On April 9, 2020, the Board forwarded to the Applicant a copy of the Examiner's Summary of Reasons along with a letter acknowledging the rejection.
- [7] The undersigned was assigned to review the rejected application and make a recommendation to the Commissioner as to its disposition. Following a preliminary review, a letter was sent on April 6, 2022 (the PR letter) explaining why, based on the record before me, I considered the claims on file to define unpatentable subject matter, falling outside section 2 of the *Patent Act* and prohibited by subsection 27(8) of the *Patent Act*. It also explained why I considered several claims to be indefinite and contravene subsection 27(4) of the *Patent Act*. In addition, the PR letter explained why I considered the proposed claims to also define unpatentable subject matter. The PR letter also invited the Applicant to make submissions in response to the letter, and to indicate if they wanted a hearing.
- [8] The Applicant indicated on May 5, 2022 that they did not want a hearing and that they did not intend to make any written submissions. Accordingly, I undertook the final review based on the written record. As nothing has changed in the record since the mailing of the PR letter, I have maintained the rationale provided in that letter.

### **THE ISSUES ARE PATENTABLE SUBJECT MATTER AND INDEFINITENESS**

- [9] This review first addresses the issue of whether the claims on file define subject matter falling outside the definition of invention in section 2 of the *Patent Act* and prohibited by subsection 27(8) of the *Patent Act*. To do this, the claims on file are purposively construed to determine their essential elements.
- [10] Next, this review addresses the issue of whether claims 49, 63 and 80 on file are indefinite, contravening subsection 27(4) of the *Patent Act*.
- [11] Finally, the review addresses whether the proposed claims would constitute a necessary amendment under subsection 86(11) of the *Patent Rules*.

## **THE CLAIMED ELEMENTS ARE PRESUMED TO BE ESSENTIAL**

- [12] In accordance with *Free World Trust v Électro Santé Inc*, 2000 SCC 66 and *Whirlpool Corp v Camco Inc*, 2000 SCC 67, purposive construction is performed from the point of view of the person skilled in the art in light of the relevant common general knowledge (CGK), considering the whole of the disclosure including the specification and drawings. In addition to interpreting the meaning of the terms of a claim, purposive construction distinguishes the essential elements of the claim from the non-essential elements. Whether or not an element is essential depends on the intent expressed in or inferred from the claim, and on whether it would have been obvious to the skilled person that a variant has a material effect upon the way the invention works.
- [13] “Patentable Subject-Matter under the *Patent Act*” (CIPO, November 2020) [PN2020–04] also discusses the application of these principles, pointing out that all claimed elements are presumed essential unless it is established otherwise, or such presumption is contrary to the claim language.

## **The skilled person and the relevant CGK**

- [14] The PR letter characterized the notional skilled person as a team comprising one or more trading professionals. The team also comprises programmers and other technologists experienced with developing and providing the software, tools and infrastructure conventionally used to support the activities and designs of such professionals.
- [15] The PR letter identified the relevant CGK as including:
- arbitrage, trading schemes and strategies, including those involving discretion trading orders;
  - the conventional operations involved in making discretion trading orders;
  - the desirability of market liquidity;
  - the use of “percentage in points” or “price interest points” in foreign exchange markets;

- the design, implementation, operation and maintenance of computer systems, networks and software, including:
  - host exchanges and electronic trading systems, including those capable of providing anonymous two-way computerized transactional capability and continuously updated market information to trading terminals;
  - general purpose and special purpose computers, computing devices, processors and user interfaces; and
  - computer network and internet technologies and protocols.

[16] This identification is based on the definition of the skilled person above. It is also supported by what the present application (page 2) describes as generally known or conventionally done in the field. As noted in the PR letter, the final four points concerning computer technologies are also supported by the low amount of detail in the application (e.g. pages 6, 7, 9, 12, 13, 15, 19 and 20; figure 1) concerning implementation of the trading system and its hardware, software and networks. The limited detail suggests such implementation must be within the grasp of the skilled person and thus not needing further explanation.

[17] The Applicant did not dispute the identification of the skilled person or the consequent identification of their CGK. Accordingly, I adopt the above definitions of these concepts here.

## **Essential elements**

[18] The independent claims on file are directed to the management of trading orders. Claims 1 and 49 are in the form of apparatuses, claims 15 and 63 are in the form of methods and claims 32 and 80 are in the form of software. Claim 15 on file is representative of the invention:

Claim 15. A method for managing trading orders, comprising:

receiving a first order associated with a first discretion range via a first server interface of an electronic trading platform on a computer system;

storing the first order into an order book in at least one memory device of the computer system;

providing information about the order book to a market data server in substantially real-time through a communications interface of the computer system that is in communication with the market data server for the generation of the market data from an analysis of the order book;

receiving by the first server a counterorder associated with a second discretion range, wherein the first discretion range intersects the second discretion range;

examining the order book to identify that the first order matches the counterorder at the processor of the computer system;

determining by the server a midpoint price based at least in part on the intersection of the first and second discretion ranges if the first order matches the second order; and

executing by the server a trade at the determined midpoint price.

- [19] Independent claims 1 and 32 are directed to different forms of the same subject matter as claim 15. Independent claims 49, 63 and 80 are directed to subject matter very similar to that of claims 1, 15 and 32. However, they also refer to the storage of the counterorder in a counterorder book, the generation and provision of market data from an analysis of the order and counterorder books, and the examination of both books to identify matching orders and counterorders.
- [20] Dependent claims 2 to 5, 16 to 21, 33 to 39, 50 to 53, 64 to 70 and 81 to 87 recite more details about the discretion ranges, midpoint price determination, and what data is disclosed. Dependent claims 6 to 14, 22 to 31, 40 to 48, 54 to 62, 71 to 79 and 88 to 96 recite rules for handling additional orders.
- [21] *PN2020-04* says claimed elements are presumed essential. As remarked in the PR letter, I see nothing in the claim language or on the record here clearly showing any claimed elements to be non-essential.



## THE CLAIMED INVENTION IS NOT PATENTABLE SUBJECT MATTER

[22] Invention is defined 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.

[23] Subsection 27(8) of the *Patent Act* also prescribes that:

No patent shall be granted for any mere scientific principle or abstract theorem.

[24] In *Canada (Attorney General) v Amazon.com Inc*, 2011 FCA 328 at paras 61–63, 69 [*Amazon.com*], the Federal Court of Appeal explained that simply realizing an abstract business method by programming it into a computer by means of a formula or algorithm does not necessarily meet the physicality requirement for patentable subject matter. *Amazon.com* referred to *Schlumberger Canada Ltd v Commissioner of Patents* (1981), [1982] 1 FC 845 (CA) [*Schlumberger*] as an example:

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...

[25] *PN2020–04* describes the Patent Office’s approach to determining when a claim defines patentable subject matter:

To be both patentable subject-matter and not be prohibited under subsection 27(8) of the *Patent Act*, the subject-matter defined by a claim must be limited to or narrower than an actual invention that either has physical existence or manifests a discernible physical effect or change and that relates to the manual or productive arts, meaning those arts involving or concerned with applied and industrial sciences as distinguished in particular from the fine arts or works of art that are inventive only in an artistic or aesthetic sense.

[26] It also further describes the approach to determining when a specifically computer-related invention is patentable subject matter. For example, the mere fact that a computer is among the essential elements of the claimed invention does not necessarily mean that the claimed invention is patentable subject

matter. An algorithm itself is abstract and unpatentable subject matter. A computer programmed to merely process one in a well-known manner without solving any problem in the functioning of the computer will not make the algorithm patentable subject matter. On the other hand, if processing the algorithm improves the functioning of the computer, then the claimed subject matter would be patentable.

- [27] The FA submitted that the essential elements of the claims on file are directed to a scheme of managing trading orders and not to a patentable category of invention under section 2. The Applicant disagreed in the RFA, contending that since the computer system is essential, the claims comply with section 2.
- [28] As explained above, all the elements in claim 15 are preliminarily taken as essential. However, the inclusion of computer elements among a set of essential elements does not automatically make the subject matter patentable.
- [29] As observed in the PR letter, the application (pages 2 to 4, 22 and 23) explains that traditional electronic trading systems may permit traders to make discretion orders. A discretion order includes both a desired base price and a discretion value (or price tolerance value). The desired base price and the discretion value form the ends of a range of prices acceptable to the trader. An issue can arise, says the application, when the trading system matches one such discretion order with another discretion order. The system may execute the trade at a price that unfairly disadvantages one of the traders, discouraging traders from making discretion orders and thus decreasing liquidity. Therefore, the application proposes to execute such trades at the midpoint of the intersecting portion of the two discretion ranges.
- [30] The RFA submitted that this improvement to the trading rules is not the only problem the invention addresses:
- [31] According to the RFA, at least one of the problems solved by the present claims is the need to improve computer performance by managing trading orders in an electronic trading system over a network. The present claims provide for techniques that may help control activity over the network and control computer

workload including computer resources such as memory resources, processor resources and network resources such as network bandwidth.

- [32] As remarked in the PR letter, though, the application does not discuss the improvement of computer performance or the management of computer workload, computer or memory resources, or network bandwidth. This is not the focus of the specification or drawings. The application (pages 6, 7, 9, 12, 13, 15, 19 and 20; figure 1) suggests the use of any suitable combination of computer and network technology and personnel. It does not suggest any particular configuration of hardware and software as significant. Nor does it suggest any challenges in using such technologies to implement the proposed trading rules. As noted above, the CGK includes electronic trading systems and their supporting infrastructure (e.g. means for executing trades and communicating data to external servers in real time.)
- [33] The RFA submitted that the patent application does not need to disclose any challenging or apparent technical problems in the computer implementation of the trading rules. Nor does it need to disclose or claim the advantages or effects of the invention.
- [34] Nonetheless, as explained in the PR letter, what an application does—and does not—disclose and claim determines how an invention will be understood and assessed. This application does not seem to address the improvement of computer functioning. It addresses the improvement of the procedure or rules for setting a trading price when matching discretion orders.
- [35] The claimed invention thus involves a computer system processing these abstract trading rules or this algorithm in a well-established manner, without solving any problem in the functioning of the computer system. The actual invention is the set of rules or algorithm. As shown above, in the discussion of *Amazon.com* and *PN2020-04*, processing that abstract algorithm on a computer system in the claimed manner does not furnish “a practical application” satisfying the physicality requirement. This is analogous to the situation in *Schlumberger*.
- [36] Accordingly, representative claim 15 is directed to unpatentable subject matter. Independent claims 1 and 32 define the same subject matter in different forms

and are similarly unpatentable. Further, I see no differences in the essential elements of claims 2 to 14, 16 to 31 or 33 to 96 affecting the above reasoning. For example, these claims recite further details, but which pertain to the rules and calculations involved in matching discretion orders, determining a midpoint price and determining information to be disclosed.

- [37] Therefore, my view is that claims 1 to 96 on file define unpatentable subject matter, falling outside section 2 of the *Patent Act* and prohibited by subsection 27(8) of the *Patent Act*.

### **CLAIMS ARE INDEFINITE**

- [38] Subsection 27(4) of the *Patent Act* requires claims to distinctly and explicitly define subject matter:

The specification must end with a claim or claims defining distinctly and in explicit terms the subject-matter of the invention for which an exclusive privilege or property is claimed.

- [39] The FA submitted that the expression “the counterorder book” lacked an antecedent in claims 49, 63 and 80.
- [40] The Applicant did not submit arguments in the RFA but proposed amendments to these claims.
- [41] As the PR letter explained, my view is that the lack of an antecedent for these expressions in claims 49, 63 and 80 does make these claims unclear. The claims depending on these claims inherit their lack of clarity.
- [42] Therefore, claims 49 to 96 on file are indefinite and do not comply with subsection 27(4) of the *Patent Act*.

### **THE PROPOSED CLAIMS DO NOT REMEDY ALL THE DEFECTS**

- [43] As stated above, the Applicant proposed an amended set of 96 claims with the RFA. Claims 49, 63 and 80 were amended to address the clarity defects

identified in the FA. All the independent claims were amended to emphasize the involvement of communicated data, computing devices and a network.

[44] As the PR letter remarked, my view is that the proposed changes to the claims would fix their clarity defects. The proposed changes would not make the claimed subject matter patentable, however. As explained above, the subject matter of the claims on file was already considered to involve computers.

[45] It follows that proposed claims 1 to 96 are not considered a necessary amendment under subsection 86(11) of the *Patent Rules*.

## **RECOMMENDATION OF THE BOARD**

[46] In view of the above, I recommend that the application be refused on the basis that:

- claims 1 to 96 on file define unpatentable subject matter, falling outside section 2 of the *Patent Act* and prohibited by subsection 27(8) of the *Patent Act*; and
- claims 49 to 96 on file are indefinite and do not comply with subsection 27(4) of the *Patent Act*.

Member

## **DECISION OF THE COMMISSIONER**

[47] I agree with the Board's findings and its recommendation to refuse the application on the basis that:

- the claims on file define unpatentable subject matter, falling outside section 2 of the *Patent Act* and prohibited by subsection 27(8) of the *Patent Act*; and
- claims 49 to 96 on file are indefinite and do not comply with subsection 27(4) of the *Patent Act*.

Virginie Ethier

Assistant Commissioner of Patents

Dated at Gatineau, Quebec

this 3<sup>rd</sup> day of June, 2022