Citation: BGC PARTNERS, INC. (Re), 2021 CACP 24
Commissioner's Decision #1577
Décision du commissaire nº1577
Date: 2021-05-12

TOPIC:	J–00	Meaning of Art
	J–10	Computer Programs
SUJET:	J–00	Signification de la technique
	J–10	Programmes d'ordinateur

Application No. : 2,518,012
Demande nº 2 518 012

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2,518,012, having been rejected under subsection 30(3) of the *Patent Rules* (SOR/96-423) as they read immediately before October 30, 2019 ("*former Rules*") has consequently been reviewed in accordance with paragraph 199(3)(c) of the *Patent Rules* (SOR/2019-251) ("*Patent Rules*"). The recommendation of the Board and the decision of the Commissioner are to withdraw the rejection and allow the application.

Agent for the Applicant:

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INTRODUCTION

[1] This recommendation concerns the review of rejected Canadian patent application number 2,518,012, which is entitled "SYSTEMS AND METHODS FOR PROTECTING AGAINST ERRONEOUS PRICE ENTRIES IN THE ELECTRONIC TRADING OF FINANCIAL AND OTHER INSTRUMENTS" and is owned by BGC PARTNERS, INC. ("the Applicant"). A review of the rejected application has been conducted by the Patent Appeal Board ("the Board") pursuant to paragraph 199(3)(c) of the *Patent Rules*. As explained in more detail below, my recommendation is that the Commissioner of Patents withdraw the rejection and that the application be allowed.

BACKGROUND

The Application

[2] The application was filed in Canada on August 30, 2005 and was laid open to public inspection on September 24, 2006.

[3] The application relates to a computer-implemented method and system for protecting users from erroneous price entries in electronic trading. As a market price changes quickly, manual entry of bids on a trading computer can have excessive delay compared to the fast-moving market, resulting in erroneous bid entries. The invention seeks to overcome this defect by allowing a user an opportunity to submit, modify or cancel their bid entry when it is determined that the price has changed by a predetermined amount, or when the price change has occurred within a predetermined period of time.

Prosecution History

[4] On April 10, 2017, a Final Action ("FA") was written pursuant to subsection 30(4) of the *former Rules*. The FA stated that the application is defective on the ground that all claims 1-136 on file at the time of the FA ("claims on file") are directed to an abstract scheme or mental process and therefore do not comply with section 2 of the *Patent Act*.

[5] On October 5, 2017, in a response to the FA ("RFA"), the Applicant provided arguments in favour of the patentability of the claims on file and also submitted a set of proposed claims 1-136 ("proposed claims") for the Examiner to consider. The proposed claims differ from the claims on file only by the addition of the term "electronic trading system" throughout the claims.

[6] As the Examiner considered the application not to comply with the *Patent Act*, pursuant to paragraph 30(6)(c) of the *former Rules*, the application was forwarded to the Board for review along with an explanation outlined in a Summary of Reasons ("SOR"). The SOR set out the position that the claims on file and the proposed claims were still considered to be defective as being directed to non-patentable subject matter and are therefore non-compliant with section 2 of the *Patent Act*.

[7] In a letter dated February 22, 2018, the Board forwarded to the Applicant a copy of the SOR and requested that the Applicant confirm its continued interest in having the application reviewed: the Applicant confirmed this in a response dated May 17, 2018.

[8] In a preliminary review letter dated July 17, 2020 (the "PR" letter), I presented my preliminary analysis and rationale as to why the claims on file do not comply with section 2 of the *Patent Act*, and why the proposed claims are not considered a "necessary" amendment under subsection 86(11) of the *Patent Rules*, based on the jurisprudence and Office practice at the time. The PR letter also offered the Applicant the opportunities to make written submissions and to attend an oral hearing.

[9] In a response to the PR letter dated August 11, 2020 (the "RPR" letter), the Applicant declined the offer to attend a hearing, provided further arguments as to the patentability of claims on file, and requested that the Board consider the proposed claims submitted in the RFA.

[10] Following the decision of the Federal Court of Canada in *Choueifaty v Canada (Attorney General)* 2020 FC 837 [*Choueifaty*], the Patent Office issued "Patentable Subject-Matter under the *Patent Act*" (CIPO, November 2020) [*PN2020-04*]. This notice addressed the Office's current approach to both claim construction and to the determination of patentable subject matter.

[11] This recommendation now reconsiders the rejection of the application set out in the FA in view of the latest guidance from *Choueifaty* and *PN2020*-04.

ISSUE

[12] The single issue to be addressed by the present review is whether claims 1-136 on file are directed to patentable subject matter as required by section 2 of the *Patent Act*. The proposed set of claims will only be considered if the claims on file are found to be

defective in this regard.

LEGAL PRINCIPLES AND OFFICE PRACTICE

Purposive construction

[13] 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.

[14] *PN2020–04* also discusses the application of these principles, pointing out that all elements set out in a claim are presumed essential unless it is established otherwise or such presumption is contrary to the claim language.

Patentable subject matter

[15] 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.

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

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

[17] *PN2020-04* describes the Patent Office's approach to determining if a claim is 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.

[18] *PN2020–04* further describes the Office's approach to determining if a 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 the algorithm in a well-known manner without solving any problem in the functioning of the computer will not make it patentable subject matter because the computer and the algorithm do not form part of a single actual invention that solves a problem related to the manual or productive arts. On the other hand, if processing the algorithm improves the functionality of the computer, then the computer and the algorithm would together form a single actual invention that solves a problem related to the manual or productive arts and the subject matter defined by the claim would be patentable.

ANALYSIS

Purposive construction

The person skilled in the art

[19] Based on the application and on statements in the FA, the PR letter characterized the person skilled in the art as being:

> a team comprising computer technicians and business professionals, skilled in general purpose computing, electronic trading systems and financial market trading processes.

[20] In neither the RFA nor the RPR did the Applicant dispute the above characterization, and I adopt it for the purpose of this review.

The relevant common general knowledge

[21] In the PR letter, the relevant CGK of the skilled person was set out, based on the background section of the application and the characterization in the FA:

> The CGK of the skilled person includes:
>
> - Knowledge of conventional financial and auction trading methods including market conditions, making trade commands, placing bids/offers, lot sizes, price increments, and

> the various dynamic market forces affecting prices (Background of the Invention, and para [0017]); and
>
> - Knowledge of conventional electronic trading systems, including conventional computer components, network components, conventional trade data input/output devices or methods, and programming that can be configured to implement trading systems and processes (paras [0034] through [0043]).

[22] Again, in neither the RFA nor the RPR did the Applicant dispute the above characterization, and I adopt it for the purpose of this review.

The essential elements of the claims

[23] The application includes 16 independent claims. Claim 1 defines a computer-implemented method to prevent erroneous bid entries, and is reproduced here as representative of the invention for the purposes of this review:

> 1. A method for protecting against the occurrence of erroneous price entries, the method comprising:
>
> displaying by a computing device on a user interface a plurality of bid and ask prices;
>
> receiving by the computing device a trade command from a user to hit or lift at least one price from the plurality of bid and ask prices;
>
> determining by the computing device whether the at least one price has changed by at least a predetermined number of increments from a first price to a second price; and
>
> if the at least one price has changed by at least the predetermined number of increments, presenting the user by the computing device with the opportunity to submit at least a portion of the trade command at the second price or cancel the trade command.

[24] Considering the remaining independent claims, claim 17 adds to the method of claim 1 the determination of price changes occurring within a predetermined amount of time; claims 34 and 50 define systems for claims 1 and 17 respectively; claims 67, 76, 86 and 95 define similar methods and systems as previous claims but define "bid or offer" versus "lift or hit" orders; and claims 105, 109, 113, 117, 121, 125, 129 and 133 define similar independent claims but the final step is to cancel the trade without an option to modify a portion of the trade.

[25] The FA and PR letters presented an analysis of the purposive construction of the claims on file in accordance with the guidance set out in the *Manual of Patent Office Practice,* revised June 2015 (CIPO) at §12.02. As this approach has now been superseded by *PN2020-04,* I undertake anew the identification of the essential elements of the claims on

file.

[26] First, I note that there have been no issues raised during the prosecution of the application in regard to the meaning or scope of any of the terms used in the claims on file, and I consider that all terms would be readily understood by the skilled person.

[27] Second, I consider that the skilled person would understand that there is no use of language in any of the claims indicating that any of the elements in each claim are optional, a preferred embodiment or one of a list of alternatives; the skilled person would understand that no claimed element was intended to be non-essential.

[28] Therefore, following the guidance of *PN2020-04*, all the elements of the claims on file are determined to be essential, including the computer implementation steps and the computer-related components.

Patentable subject matter

[29] Given the revised guidance as to the assessment of patentable subject matter set out in *PN2020-04*, and in consideration of the essential elements identified above, I now consider what the skilled person would appreciate to be the subject matter of the claims on file.

[30] Reading representative claim 1, the skilled person would understand that the claim defines a set of steps or rules for conducting financial trading using a trading computing device or electronic trading system. The steps in claim 1 provide an opportunity for a user to modify their trade command if a bid or ask price has changed by a predetermined number of increments, reflecting a change between when the price was displayed and when the command was entered into the computer.

[31] Having read and understood the specification as a whole, in light of their CGK and in the context of electronic trading systems and methods, the skilled person would understand that the steps of claim 1 are directed to a specific trading computer deficiency. This deficiency was identified in the description as originally filed, for example, at para [0004]:

> [0004] As electronic trading becomes more popular, an increasing number of traders are in need of new systems and methods to enter trade commands in a quick, efficient and accurate manner. This is especially true given that market conditions change quickly as trades are executed at a fast pace. Price positions may therefore change rapidly and sometimes almost simultaneously. Users of such systems therefore face the risk of entering trade commands at erroneous price levels by, for example, using a mouse pointer to select a price that may have

> changed by the time the command is registered by the system. Such erroneous entries can lead to highly undesirable results in a rapidly changing market. Many such users are traders that track more than one active market by typically looking at multiple windows, interfaces or screens simultaneously, thereby increasing the likelihood that such erroneous entries occur. [emphasis added]

[32] The skilled person would, therefore, understand that the claimed method is addressing shortcomings in the user interface of the trading computer. As disclosed, a user's action to enter trade commands, such as clicking with a mouse or typing into a keyboard, requires a manual or physical execution. As a result, by the time the trade command is actually registered by the system, a given price will have changed to something other than what the user expected. Although the steps of the claimed subject matter appear to merely define a trading rule or algorithm, the effect of said algorithm running on the trading computer is to enhance or improve the data entry functionality of the trading computer. In this context, the matter of the claimed invention is addressing a technical limitation in the electronic trading system, one of latency between the display of information and the ability of a user to enter a response before said information has changed. The specific steps in claim 1 of determining the degree of change (e.g., the price increment) and permitting a data entry correction (e.g., trade at a second price or cancel the trade command) address this technical shortcoming.

[33] In the RPR, addressing patentable subject matter under the previous Office practice, the Applicant provided a summary of the invention relevant to the current analysis:

> In this application, a problem in the way users interact with electronic trading systems was recognized: existing computer user interfaces for electronic trading are prone to specific kinds of errors. The invention was made to improve the user interface of a computing device implicated in electronic trading so that, when a user interfaced with it, fewer errors in trading might manifest.
>
> As was explained, the problem itself arose because computers are used in order to enter trade commands, with hopes of enabling them to be entered in a quick, efficient and accurate manner. Given that market conditions change quickly as computer-based trades are executed at a fast pace, there is a higher risk of entering trade commands at erroneous price levels.
>
> …

[34] I agree with the Applicant's summary. It is evident from claim 1 and the specification as a whole that, for the skilled person, this is an example where the claimed method steps are not defining a computer processing an algorithm in a well-known manner, but rather steps which operate to improve the functionality of the trading computer by reducing or

eliminating erroneous data entry caused by the computer's user interface.

[35] Accordingly, in the words of *PN2020-04*, running the trading algorithm of claim 1 improves the functioning of the computer it is running on. The computer and the algorithm together thus form a single actual invention that solves a problem relating to the manual or productive arts and that is not prohibited subject matter under subsection 27(8) of the *Patent Act*. Furthermore, the actual invention is subject matter comprising a computer and algorithm that together define something with physical existence, or something that manifests a discernable effect or change, and therefore claim 1 defines patentable subject matter as required by section 2 of the *Patent Act*.

[36] Turning to the remaining 15 independent claims, each claim defines a variation of the steps defined in claim 1, in computer-implemented method and computer system embodiments. As in claim 1, each independent claim comprises an actual invention that manifests a discernible effect or change, relates to the manual or productive arts and is not prohibited subject matter under subsection 27(8) of the *Patent Act*. Accordingly, claims 17, 34, 50, 67, 76, 86, 95, 105, 109, 113, 117, 121, 125, 129 and 133 are also directed to patentable subject matter.

[37] As the dependent claims all refer directly or indirectly to independent claims that are directed to patentable subject matter, they are likewise directed to patentable subject-matter.

CONCLUSION

[38] In light of the above, I conclude that claims 1-136 on file are directed to patentable subject matter and are therefore compliant with section 2 of the *Patent Act*.

[39] Having determined that the claims on file are directed to patentable subject matter, I need not assess the proposed claims, and therefore, I make no recommendation as to their suitability as a "necessary" amendment under subsection 86(11) of the *Patent Rules*.

RECOMMENDATION OF THE BOARD

[40] For the reasons above, I am of the view that the rejection is not justified on the basis of the defect indicated in the Final Action in view of current Office practice, and I have reasonable grounds to believe that the application complies with the *Patent Act* and the *Patent Rules*. I recommend that the Applicant be notified in accordance with subsection

86(10) of the *Patent Rules* that the rejection of the application is withdrawn and that the application has been found allowable.

Andrew Strong

Member

DECISION OF THE COMMISSIONER

[41] I concur with the conclusion and recommendation of the Board. In accordance with subsection 86(10) of the *Patent Rules*, I hereby notify the Applicant that the rejection of the application is withdrawn, the application has been found allowable and I will direct my officials to issue a Notice of Allowance in due course.

Virginie Ethier
Assistant Commissioner of Patents

Dated at Gatineau, Quebec

this 12th day of May, 2021