TOPIC: J–00   Meaning of Art
             J–50   Mere Plan

SUJET: J–00   Signification de la
                   technique
             J–50   Simple plan

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2461768, 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.

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INTRODUCTION

[1]   This recommendation concerns the review of rejected patent application number 2461768, which is entitled "Systems and methods for trading at a price within a spread market" and is owned by BGC Partners, Inc. The outstanding defect indicated by the Final Action (FA) is that the claims do not define statutory subject matter, contrary to section 2 of the *Patent Act*. 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.

BACKGROUND

The application

[2]   Canadian patent application 2461768 was filed on March 23, 2004 and has been open to public inspection since September 24, 2004.

[3]   The invention relates to methods for trading within a spread market for an item at the mid-price of the market.

Prosecution history

[4]   On May 16, 2017, 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 108 (i.e. all claims on file) are not directed to a patentable category of invention under section 2 of the *Patent Act*.

[5]   In its November 16, 2018 response to the FA (RFA), the Applicant proposed an amended set of 69 claims (the first proposed claims) and submitted arguments for their allowance. The Examiner did not consider the amendments to remedy the defect.

[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

May 6, 2019, 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 September 10, 2021 (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*. In accordance with subsection 86(9) of the *Patent Rules*, the PR letter also explained why I considered the description to contravene subsection 57(1) of the *Patent Rules*; these "incorporation by reference" defects were observed during the preliminary review. In addition, the PR letter explained why I considered the first 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 participate in a hearing.

[8]   The Applicant indicated on September 24, 2021 that they were not going to participate in an oral hearing, and requested that the Board's review of the application be carried out by a panel of multiple Board members. The Applicant responded further to the PR letter on October 8, 2021 with a letter (RPR), reiterating their request for the application to be reviewed by a panel of multiple Board members, proposing a new set of amended claims (the second proposed claims), and providing arguments for patentability. The RPR requested reconsideration of the claims on file and, if they were not found to be patentable, then the first proposed claims and, if *they* were not found to be patentable, then the second proposed claims. On November 8, 2021, the Applicant sent an additional letter proposing an amendment to the description to address the incorporations by reference.

ISSUES

[9]   First addressed are the preliminary issues of who should complete the review of this application and which set(s) of claims should be considered.

[10] Next, this review 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*.

[11] The review then addresses the issue of incorporation by reference.

[12] Finally, the review addresses whether the second proposed claims and the proposed description would constitute necessary amendments under subsection 86(11) of the *Patent Rules*.

LEGAL PRINCIPLES AND PATENT OFFICE PRACTICE

Review of rejected applications

[13] Regarding the review of rejected patent applications, subsection 30(6) of the former *Rules* states:

> If the applicant amends the application or provides arguments within the time referred to in subsection (4) but, after the expiration of that time, the examiner does not have reasonable grounds to believe that the application complies with the Act and these Rules,
>
> > (a)   the Commissioner shall notify the applicant that the rejection has not been withdrawn;
> >
> > (b)   any amendments made within the time referred to in subsection (4) shall be considered not to have been made; and
> >
> > (c)   the rejected application shall be reviewed by the Commissioner.

[14] To explore a means of increasing the efficiency of the review process, a pilot project was recently started and communicated via emails on January 15, 2020 and January 25, 2021. For example, the latter email explained:

> As mentioned in section 26.07.01 of the Manual of Patent Office Practice, a panel of 3 members from the PAB typically assists the Commissioner of Patents in reviewing rejected applications. However, for the duration of the pilot, all rejected electrical patent applications that are referred to the PAB for review will be assigned to a single member of the PAB if they contain, at the time of rejection, only 1 ground of defect related to non-conformity to section

2 of the *Patent Act* (non-statutory subject matter or definition of "invention").
All other procedures at the PAB will remain unchanged.

Purposive construction

[15]   In accordance with *Free World Trust v Électro Santé Inc*, 2000 SCC 66 [*Free World Trust*] and *Whirlpool Corp v Camco Inc*, 2000 SCC 67 [*Whirlpool*], 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.

[16]   *Choueifaty v Canada (Attorney General)*, 2020 FC 837 [*Choueifaty*] issued in August 2020, prompting a review of Patent Office practice and the subsequent issuance of "Patentable Subject-Matter under the *Patent Act*" (CIPO, November 2020) [*PN2020–04*]. In particular, *Choueifaty* (at paras 13, 23–40) discussed purposive construction and described how the principles set out in *Free World Trust* and *Whirlpool* should be followed. Following the direction of *Choueifaty*, *PN2020–04* elaborates 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

[17]   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.

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

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

[19] In *Canada (Attorney General) v Amazon.com Inc*, 2011 FCA 328 at paras 61–62, 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 make it patentable subject matter:

[61] [It does not necessarily follow] that a business method that is not itself patentable subject matter because it is an abstract idea becomes patentable subject matter merely because it has a practical embodiment or a practical application. In my view, this cannot be a distinguishing test, because it is axiomatic that a business method always has or is intended to have a practical application. And in this case, the difficulty with a bare "practical application" test for distinguishing patentable from unpatentable business methods is highlighted because the particular business method—itself an abstract idea—is realized by programming it into the computer by means of a formula or algorithm, which is also an abstract idea.

[62] *Schlumberger* exemplifies an unsuccessful attempt to patent a method of collecting, recording and analyzing seismic data using a computer programmed according to a mathematical formula. That use of the computer was a practical application, and the resulting information was useful. But the patent application failed for want of patentable subject matter because the Court concluded that the only novel aspect of the claimed invention was the mathematical formula which, as a "mere scientific principle or abstract theorem", cannot be the subject of a patent because of the prohibition in subsection 27(8).

…

[69] [I do not agree that] this "physicality requirement" can be met merely by the fact that the claimed invention has a practical application … 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…

[20] *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.

[21] In particular, *PN2020–04* further describes the Patent 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.

Specification

[22] Subsection 57(1) of the *Patent Rules* states that "[t]he description must not incorporate any document by reference."

ANALYSIS

Review of rejected applications

[23] As noted above, following the PR letter, the Applicant requested that the application be reviewed by a panel of multiple Board members, not by a single member. The Applicant stated that while they appreciated the rationale behind

the pilot programme (by which a single Board member was assigned to review this application), they desired "this application to be considered by a panel because the set of issues to be contended with has now grown."

[24] Although the Commissioner is typically assisted in their review of rejected patent applications by a panel of three Board members, this assistance does not need to be bound to such a structure. According to the recently implemented pilot project, rejected applications meeting certain criteria are reviewed by a single Board member instead of three.

[25] The present application met that criteria, so the preliminary review was performed by a single Board member and the results were communicated in the PR letter to the Applicant, inviting their response. There is no avenue to enlarge the panel to three Board members now, which would amount to abandonment of the current review process and initiation of a second review process.

[26] Regarding the three claim sets mentioned above, the RPR requested that all three be considered, if necessary.

[27] Where the claims on file in a rejected application have been reviewed and concluded to be defective, and an Applicant has proposed multiple alternative claim sets to remedy the defect, our practice is to consider only the latest proposal. In the present case, the PR letter explained why the claims on file and the first proposed claims were preliminarily considered to be defective, and invited the Applicant to propose a further amendment addressing the identified issues. The Applicant did so in the RPR; accordingly, the second proposed claims will be considered here.

Purposive construction

The skilled person and the relevant CGK

[28] The PR letter cited the following references as relevant to the determination of the CGK. The Examiner had cited both during prosecution:

- D1: US 2003/0004852 January 2, 2003 Burns
- D2: US 2002/0156719 October 24, 2002 Finebaum et al.

[29] The PR letter characterized the notional skilled person as a team comprising one or more trading professionals, as well as 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.

[30] Based on the above identification of the skilled person, and supported by what the present description (paragraphs 2 to 6, 36, 61, 64 and 82), D1 (paragraphs 4 to 6 and 27) and D2 (paragraphs 2 to 12) describe as generally known or conventionally done in the field, the PR letter identified the relevant CGK as including:

- trading schemes and strategies, including those involving trading within a market spread;

- the conventional operations involved in trading in a market spread;

- the design, implementation, operation and maintenance of computer systems, networks and software, including:

    o host exchanges and electronic trading systems, including those capable of providing anonymous two-way computerized transactional capability and continuously updated market information;

    o general purpose and special purpose computers, computing devices, processors and user interfaces; and

    o computer network and internet technologies and protocols.

[31] As noted in the PR letter, the small amount of detail in the present description (e.g. paragraphs 31 to 33 and 45; figure 1) concerning the implementation of the trading system and its hardware, software and networks also suggests that such implementation must be within the grasp of the skilled person, and thus not in need of further explanation.

[32] 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.

The essential elements

[33] Independent claims 1, 21 and 73 on file are directed to methods, independent
claims 11 and 31 on file are directed to systems, independent claim 41 on file is
directed to an apparatus, and independent claims 57, 89 and 99 on file are
directed to non-transitory machine-readable media (software). Claims 1 and 21
are included below as representative of the invention:

  Claim 1.   A method for trading an item within a spread market for said item,
  said method being implemented on an electronic trading system, said method
  comprising:

  receiving from a first user of the electronic trading system an order to buy or
  sell said item conditioned on a price of the item when the order is executed
  being within said spread market;

  calculating using at least one computing device a weighted average price
  based at least on a best bid price and a best offer price for the item, and at
  least one of a buy side weight and a sell side weight, in which the calculated
  weighted average price is not equal to the mathematical average of the best
  bid price and the best offer price; and

  executing a trade for at least a portion of the order from the first user against
  a counter side order from a second user at the weighted average price.

  Claim 21.   A method for trading an item within a spread market for the item,
  the method being implemented on an electronic trading system, the method
  comprising:

  communicating, by at least one processor, a plurality of orders for the item to
  a plurality of market participants, each order comprising a buy/sell orientation
  defining whether such order is a bid to purchase the item or an offer to sell the
  item, such that the buy/sell orientation of the plurality of orders is disclosed to
  the plurality of market participants in such a way that the plurality of market
  participants are made aware of whether each of the plurality of orders is an
  order to buy the item or an order to sell the item, in which the plurality of
  orders comprises a best bid having a best bid price and a best offer having a
  best offer price that is greater than the best bid price;

receiving, by at least one processor, from a first user of the electronic trading system a first midprice order to buy or sell the item conditioned on an execution price of the first midprice order being greater than the best bid price and less than the best offer price, in which the first midprice order to buy or sell the item comprises a buy/sell orientation defining whether the first midprice order is a bid to purchase the item or an offer to sell the item;

communicating, by the at least one processor, the first midprice order to a plurality of market participants such that the buy/sell orientation of the midprice order is not disclosed to the plurality of market participants, such that the plurality of market participants are not made aware whether the order is an order to buy the item or an order to sell the item;

receiving, by the at least one processor, from a second user of the electronic trading system a second midprice order to buy or sell the item conditioned on an execution price of the second midprice order being within a spread market for the item, in which the second midprice order to buy or sell the item comprises a buy/sell orientation that is contra to the buy/sell orientation of the first midprice order;

matching, by the at least one processor, at least a portion of the first midprice order with at least a portion of the second midprice order;

calculating, by the at least one processor, an execution midprice based at least in part on a current best bid price for the item and a current best offer price for the item; and

executing a trade for at least a portion of the first midprice order against the second midprice order at the calculated execution midprice.

[34]   Claim 73 is similar to claim 21 but less detailed: it only recites the receipt and communication of orders at the mid-price (not at the best bid or best offer prices), and it states that the trade is executed "at a price between a best bid price and a best offer price," but not that the "execution midprice" is calculated "based at least in part on a current best bid price … and a current best offer price." The system and software of claims 11 and 89 correspond to the method of claim 1, the system, apparatus and software of claims 31, 41 and 99 correspond to the method of claim 21, and the software of claim 57 corresponds to the method of claim 73.

[35] The dependent claims add further details concerning the rules and calculations by which the trading scheme is carried out, and the meaning of information input or received by users.

[36] Applying the practice as it was then, the FA identified the essential elements of the claims on file as the steps of a trading scheme; no computer elements were considered to be among the essential elements. The Applicant disagreed in the RFA, submitting that the claims are directed to computer implementation, and that the computer elements are essential.

[37] As stated in the PR letter, the claimed elements are presumed essential according to the guidance of PN2020–04, developed following *Choueifaty*; there is nothing in the claim language or on the record leading to a determination of any claimed elements being non-essential.

Patentable subject matter

[38] It was submitted in the FA that the essential elements of the claims on file are directed to a trading scheme and not to a patentable category of invention under section 2. The Applicant disagreed in the RFA, contending that since the computer elements were essential, the claims defined patent-eligible subject matter.

[39] As explained above, all the claimed elements are taken as essential, but the inclusion of computer elements among a set of essential elements does not automatically confer patentability.

[40] As observed in the PR letter, the application (paragraphs 4 to 5) explains that although conventional electronic trading systems permit traders to make bids or offers within a market spread, they require the traders to respect minimum allowable increments when doing so. The application (paragraphs 7 to 10) proposes to enable market participants to trade at the "mid-price" of the market spread, thereby providing an incentive to deal and thus increase market liquidity. The mid-price may be the actual midpoint price between the best bid and the best offer prices, or it may be a calculated mid-price weighted towards either the best bid or the best offer depending on certain factors. The application also

proposes that when a mid-price order is received, the system communicates this occurrence to the market, but not whether the order is a bid or offer.

[41] The PR letter explained:

> The specification and drawings (paragraphs 31 to 45; figures 1 to 2) suggest the use of any suitable computer and network technologies, and, beyond discussion of the appearance and dialogue presented by the graphical user interface (GUI) of the workstations, do not suggest any particular configuration of these technologies as significant. Nor do they suggest any challenges in using them to implement the proposed trading rules. As noted above, the CGK includes electronic trading systems and their supporting infrastructure. The application does not preliminarily seem to be addressing a computer problem or an improvement to the functioning of a computer so much as an improvement to the procedure or rules for trading when there is a market spread.
>
> It is thus not preliminarily clear how the use of such systems to carry out trading according to the rules in the independent claims represents anything more than a computer system processing this particular algorithm or these abstract trading rules 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, and as shown above, in the discussion of *Amazon.com* and *PN2020–04*, processing it on a computer system in the claimed manner does not furnish "a practical application" that satisfies the physicality requirement.

[42] The Applicant expressed concerns in the RPR with such reasoning:

> In addition, regarding the "without solving any problem" concern set out on page 9 of the Preliminary Review, for completeness we wish to state that the reasons given by the Federal Court in the *Choueifaty (2020)* decision included the observation that the problem/solution approach to claim construction fails to respond to the issue of the inventor's intention in choosing words for a patent claim. The issue of the inventor's intention is important to proper claim construction in Canada, as explained in the *Whirlpool (2000)* and *Free World Trust (2000)* decisions by the Supreme Court of Canada. Following *Choueifaty (2020)*, the CIPO has changed its practice guidance: it has been agreed that the problem/solution approach to claim construction in Canada is not valid. We acknowledge that the problem/solution approach has not been

explicitly endorsed in the Preliminary Review, but we wish to point out that it does nevertheless appear to be manifesting itself.

[43] *PN2020–04* factors in the direction provided by *Choueifaty*, *Whirlpool* and *Free World Trust*, as well as that provided by *Amazon.com* and other jurisprudence. The reasoning of the PR letter applies the guidance of *PN2020–04* and of these cases.

[44] Accordingly, the above observation of the PR letter that the computer in the current invention is merely processing an algorithm in a well-known manner without solving any problem in the functioning of the computer does not concern purposive construction. As noted above, the claims have already been purposively construed and all the claimed elements are being taken as essential. Instead, the above observation is part of the reasoning needed to determine if those purposively construed claims are directed to patentable subject matter. The mere presence of computerized components or steps among the essential elements does not automatically confer patentability, as explained above with reference to *PN2020–04* and *Amazon.com*.

[45] the Applicant submitted in the RPR that the claimed invention would reasonably be regarded as improving market liquidity, and asked that the application be allowed; *Re Chicago Mercantile Exchange's Patent Application 2661337*, 2021 CACP 14 (Pat App Bd & Pat Commr) [*CD 1567*] was referred to for support:

> In paragraph [0048] of the application, it is stated that the invention enables traders to deal an item at the midpoint of a spread market. The description in that paragraph proceeds to explain that midprice trading advantageously provides a trading option that may facilitate liquidity of certain markets and enable traders to trade on items inside regular price increments.

> Regarding liquidity in particular, we have found Canadian Patent Appeal Board Decision No. 1567 dated March 25, 2021 to be instructive. In that decision, the Chicago Mercantile Exchange's method, as set out in Canadian Patent Application No. 2,661,337, for improving liquidity by matching trading orders using trade templates, was found to be patentable. The Common General Knowledge (CGK) set out in that case was very similar to that put forward in the present case. In the reasons given in decision 1567, the Board

member—who in rendering the opinion reconsidered and reversed his own negative Preliminary Review—specifically focused on this issue of liquidity.

…

In the present application, were the definition of market liquidity set forth by the Board in decision 1567 to be referred to, it would be very reasonable to recognize that the invention in Claimsets A and B achieve improvements in market liquidity by providing methods in an electronic trading system that permit execution of trades within the spread market. It would be reasonable to regard this as going specifically to an improvement in at least <u>immediacy</u> or to one or more of the other characteristics of market liquidity referred to by the Board member in decision 1567. [Emphasis in the RPR.]

[46]   Although *CD 1567* does indeed discuss market liquidity, it is apparent that the claimed invention there was perceived as a computer system with improved functionality:

> [33]   For the claimed invention, the computer in an electronic trading system of an exchange utilizes trade templates to pre-match parts of existing spread orders, determines needed orders to complete the trade templates, matches incoming orders with needed orders, and executes matched trades. Since the legs of existing spread orders are not compared and matched separately with each incoming trading order, and some of the legs in existing spread orders are pre-matched before comparing with incoming orders individually, market liquidity is improved on both efficiency and speed. Therefore, it is my view that <u>the claimed method comprising an order matching algorithm improves the order matching functionality of the computerized trading system.</u> Consequently, in my view, the computerized trading system and the order matching algorithm form a single actual invention that addresses the known market liquidity limitations of existing trading platforms due to inefficient order matching algorithms, as noted in the CGK section. Therefore, the claimed subject-matter is physical, solves a problem related to the manual or productive arts, and is not prohibited under subsection 27(8) of the *Patent Act*.
>
> …
>
> [35]   For completeness, the present case is also considered in view of *Schlumberger Canada Ltd v Commissioner of Patents*, [1982] 1 FC 845 (CA) [*Schlumberger*], which concerns computer-implemented algorithms. In *Schlumberger*, the Federal Court of Appeal explained that a mental process of

making certain calculations according to certain mathematical formulae is not patentable subject-matter, and that merely prescribing the calculations be made by a computer cannot transform it into patentable subject-matter. However, the actual invention of the claims on file can be considered to distinguish from those of *Schlumberger*, in that <u>the computerized steps here are not merely for yielding information, but for permitting the computer inside the electronic trading system to carry out the order matching procedures with higher efficiency and faster speed, which improves the functioning of the computerized trading system</u> for achieving better market liquidity. Therefore, in my view, claims 1 to 17 on file define patentable subject-matter and thus comply with section 2 of the *Patent Act*. [Emphasis added.]

[47] In contrast, the computerized trading system of the present invention processes, in a well-known manner, the proposed algorithm or rules for trading within a market spread without solving any problem in the functionality of the computer. In the language of *Amazon.com* [para 61], it is only the realization of an abstract business method by its being programmed into a computer by means of an algorithm. Accordingly, the computer in this case cannot provide the algorithm with the "practical application" needed for patentability.

[48] The Applicant submitted in the RPR that patentable computer-related inventions are not limited to those involving hardware performance improvements or problems in the functioning of a computer isolated from the functional context or practical environment of the computer:

We do not accept the view that the sole criterion to be focused on, when assessing patentable subject-matter, is whether a particular claim solves some problem in the functioning of a particular computer when taken in isolation, outside of the functional context in which it is meant to operate. We do not accept the narrow view that, in order to be patentable in Canada, a claim may only be directed to an improvement that resonates in only the computer-science or pure hardware performance senses, abstracted from the actual practical environment in which it is to be put to work. This appears to have been the view set out on Page 9 of the Preliminary Review. However, our view is that the impact the claimed invention has on the system in which it is to operate is to be carefully considered as well.

[49] It is true that patentable computer-related inventions are not confined to those involving improvements of computer architecture, abstracted from any working

environment. However, as *PN2020–04* explains, patentable subject matter is that which has physical existence or manifests a discernible physical effect or change, and which relates to the manual or productive arts. An abstract set of rules for trading within a market spread, intended to encourage trading, does not meet these requirements. Furthermore, as *PN2020–04* and *Amazon.com* show, programming a computer to take the steps necessary to follow those rules in a well-known manner does not make them patentable.

[50]   Accordingly, representative claims 1 and 21 are directed to unpatentable subject matter. Furthermore, I see no differences in the essential elements of claims 2 to 20 and 22 to 108 on file that would affect the above reasoning. For example, dependent claims specify further details but which pertain to the rules and calculations by which the trading is carried out, or to the meaning of information input or received by users.

[51]   Therefore, my view is that claims 1 to 108 on file define unpatentable subject matter, falling outside section 2 of the *Patent Act* and prohibited by subsection 27(8) of the *Patent Act*.

Specification

[52]   The description on file (paragraphs 61 and 82) incorporates by reference three United States patent documents, contravening subsection 57(1) of the *Patent Rules*.

Proposed specification

[53]   As remarked above, the Applicant proposed a second set of claims with the RPR. Of these 16 claims, claims 1 and 16 are independent; both are generally directed to the same subject matter, but the first is in the form of an apparatus and the latter is in the form of a method. Compared to the independent claims on file, the second proposed independent claims emphasize the occurrence of network communications and the display of the GUI. In addition, the second proposed independent claims now recite the implementation of a delay between a change in the mid-point price and the subsequent acceptance of any new trade order. The second proposed dependent claims recite further details concerning the

rules by which the trading scheme is carried out, and the meaning of the communicated information.

[54] Second proposed claim 16 is included here as a reference:

Claim 16.   A method comprising: controlling, by at least one processor:

causing, over a communication network, automatic display of a dialog window on a first graphical user interface of a first communication device of a first user of an electronic trading system, in which the dialog window includes a first selectable virtual button of a plurality of virtual buttons to submit a first parameter of a first midprice order to buy or sell an item conditioned on an execution price of the first midprice order being between a best bid price and a best offer price for the item, in which a second selectable virtual button of the plurality of virtual buttons to submit a second parameter of the first midprice order is included in the dialog window based on whether the electronic trading system is in a system controlled method of trading;

receiving, over the communication network, from the first communication device, the first parameter of the first midprice order, based on selection of the first selectable virtual button at the first communication device;

communicating, over the communication network, information about the first midprice order to a plurality of market participants to cause display on a given graphical user interface of each of a given communication device of the plurality of market participants, simultaneously with display of the best bid price and the best offer price for the item, the information about the first midprice order without disclosing the buy/sell orientation of the first midprice order to the plurality of market participants, such that the plurality of market participants are not made aware whether the first midprice order is an order to buy the item or an order to sell the item, the plurality of market participants comprising the first user and a second user;

receiving, over the communication network, from the second user of the electronic trading system a second midprice order to buy or sell the item conditioned on an execution price of the second midprice order being between a best bid price and a best offer price for the item, in which the second midprice order to buy or sell the item comprises a buy/sell

orientation that is contra to the buy/sell orientation of the first midprice order;

responsive to receiving the second midprice order, matching at least a portion of the first midprice order with at least a portion of the second midprice order;

receiving, over the communication network from a remote computing device, current market information indicating a current best bid price and a current best offer price for the item; and

responsive to a determination of a predetermined change in a midpoint of a spread market for the item indicated by the current market information,

timing a predetermined period of time as a temporary delay in executing a trade for the at least a portion of the first midprice order against the at least a portion of the second midprice order,

causing the electronic trading system to delay accepting an order for a trade for the at least a portion of the first midprice order against the at least a portion of the second midprice order until the predetermined period of time being timed is elapsed, and

when the predetermined period of time is determined to be elapsed,

calculating a calculated execution midprice for the item based on the current market information, and

causing, to be accepted and executed, a trade for the at least a portion of the first midprice order against the at least a portion of the second midprice order at the calculated execution midprice for the item.

[55] The second proposed claims would not comply with the *Patent Act* and *Patent Rules*—the independent claims are indefinite and contradict the description.

[56] In the language of the description and drawings (paragraphs 9, 17, 62, 63, 68 and 77 to 79; figure 8), conventional or normal trading requires trade orders to be submitted and received, then orders are matched and filled (where possible), then matched orders are traded (i.e. a trade is executed). The second proposed

independent claims recite the submission and receipt of trade orders, the matching of orders, a delay before trade execution, *then* a delay before accepting the trade order. Since the trade orders have already been received and matched, and since a delay between the matching of orders and the execution of a trade has already been recited, this subsequent recitation of a delay contradicts the rest of the claim and makes the claims unclear.

[57] Furthermore, paragraph 79 of the description—the only part of the description and drawings to refer to this delay—describes the delay as occurring after the mid-point changes and before a submission of a new trade order is accepted. This contradicts the portion of the second proposed independent claims suggesting that trade orders are accepted and matched, and that a delay occurs before the trades are executed.

[58] Even if the second proposed claims were clear and supported by the description, however, their additional details would not alter the outcome of the above reasoning concerning patentable subject matter. These claims also depict the functioning of a computer system processing an abstract algorithm or set of rules in a well-established manner, not an improvement to the functioning of the computer system.

[59] For example, network communications were already considered to be involved in the electronic trading system of the claims on file, and it is CGK for electronic trading systems to employ network communications.

[60] GUIs and their dialogue boxes and virtual buttons were also considered to be part of the electronic trading system of the claims on file and of the CGK. As noted in the description (paragraph 36), GUIs conventionally use dialogue boxes and virtual buttons; the information displayed by the GUI, regardless of its meaning or significance to a trader, represents a generic data output.

[61] As for the delay, the Applicant submitted in the RPR that this was a further technical aspect, one which goes "even further to the concept of exercising tangible/physical control and/or influence over an electronic trading system…"

[62] Even if the second proposed independent claims were to clearly reflect the operation referenced by paragraph 79, there is nothing in the specification or

drawings to point to this as anything more than a change in trading rules. This does not appear intended to overcome a shortcoming in the user interface or a technical limitation in the electronic trading system, or to improve data entry functionality.

[63] The delay operation appears intended to address the occurrence of a change in market position after a trader submitted a trade order, potentially causing them difficulties if that trade order were now matched and executed. The issue being addressed is a product of the market and the trading rules, not of the electronic trading system.

[64] The subject matter of the second proposed claims involves computers programmed to process algorithms or rules in a well-established manner, and these claims are thus also directed to unpatentable subject matter.

[65] It follows that, even though the proposed amendment to the description would remedy the incorporations by reference, the second proposed claims are not considered a necessary amendment under subsection 86(11) of the *Patent Rules*.

RECOMMENDATION OF THE BOARD

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

- claims 1 to 108 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

- the description on file incorporates other documents by reference, contravening subsection 57(1) of the *Patent Rules*.

Leigh Matheson

Member

DECISION OF THE COMMISSIONER

[67]   I concur with the findings of the Board 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*;

- the description on file incorporates another document by reference, contravening subsection 57(1) of the *Patent Rules*.

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

Virginie Ethier

Assistant Commissioner of Patents
Dated at Gatineau, Quebec
this 3rd day of December, 2021