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Commissioner's Decision # 1623  
Décision du Commissaire n° 1623  
Date: 2022-05-30

TOPIC: J00 Meaning of Art

J10 Computer  
Programs

SUJET: J00 Signification de  
la technique

J10 Programmes  
d'ordinateur

Application No. : 2,849,090  
Demande n° 2 849 090

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2,849,090, 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 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 Canadian patent application number 2,849,090 (“the instant application”), which is entitled “METHOD OF CREATING AND MAINTAINING MULTI-MANAGER EXCHANGE TRADED FUNDS” and is owned by RUSSELL INVESTMENTS GROUP, LLC (“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, the Board’s recommendation is that the Commissioner of Patents refuse the application.

## **BACKGROUND**

### **The Application**

- [2] The instant application was filed under the Patent Cooperation Treaty and has an effective filing date in Canada of September 19, 2012. It was laid open to public inspection on March 28, 2013.
- [3] The instant application relates to systems and methods for creating and maintaining multi-manager exchange traded funds. Multiple investment portfolios defined by multiple portfolio managers are received and used to create a combined portfolio composition file that defines the assets that may be used to form a creation unit (similar to a share) of the multi-manager exchange traded fund. When a new portfolio composition file is created it is transmitted to both the entity managing the exchange traded fund and authorized participants (parties that may exchange the set of assets that form the portfolio composition file for a creation unit and trade such units on the regular stock exchange). The portfolio composition file is transmitted when the stock market is closed on the first trading day, or on the second trading day and is only effective on the third or later trading day. This delayed effective date allows both the exchange traded fund entity and authorized participants to adjust their assets to match the new portfolio composition file that defines the new creation unit assets.

### **Prosecution History**

- [4] On February 8, 2019, a Final Action (“FA”) was written pursuant to subsection

30(4) of the former *Rules*. The FA stated that the instant application is defective on the ground that all of the claims 1-23 on file at the time of the FA (“claims on file”) encompass subject-matter that lies outside of the definition of “invention” and does not comply with section 2 of the *Patent Act*.

- [5] In an August 7, 2019 response to the FA (“R-FA”), the Applicant submitted a proposed claim set 1-23 (“proposed claims”) and arguments in favour of patentability of both the claims on file and proposed claims.
- [6] As the Examiner considered the application not to comply with the *Patent Act*, pursuant to subsection 30(6) of the *former Rules*, the application was forwarded to the Board for review on October 8, 2019 along with an explanation outlined in a Summary of Reasons (“SOR”). The SOR set out the position that the claims on file were still considered to be defective as being directed to non-patentable subject-matter. The SOR also indicated that the proposed claims did not overcome the non-patentable subject-matter defect.
- [7] In a letter dated October 10, 2019, 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.
- [8] In a response dated December 24, 2019, the Applicant indicated its desire for the Board to proceed with a review of the application.
- [9] The undersigned was assigned to review the instant application under paragraph 199(3)(c) of the *Patent Rules* and to make a recommendation to the Commissioner of Patents as to its disposition.
- [10] In a preliminary review letter (“PR letter”) dated February 3, 2022, I set out my preliminary analysis of the patentable subject-matter issue with respect to the claims on file and the proposed claims, based on the revised guidance set out in “Patentable Subject-Matter under the Patent Act” (CIPO, November 2020) [PN2020-04]. With respect to the claims on file, I was of the preliminary view that claims 1-23 on file are directed to non-patentable subject-matter, are therefore non-compliant with section 2 of the *Patent Act*, and are prohibited by subsection 27(8) of the *Patent Act*. I was also of the preliminary view that the proposed claims were directed to non-patentable subject-matter.

- [11] The PR letter provided the Applicant with an opportunity to make oral and/or written submissions.
- [12] The Applicant provided written submissions on April 5, 2022, including a set of proposed claims that are the same as those proposed in the R-FA.
- [13] An oral hearing was held via videoconference on April 19, 2022.
- [14] I have reviewed the instant application in accordance with paragraph 199(3)(c) of the *Patent Rules* and provide my analysis below.

## **ISSUE**

- [15] The issue to be addressed by the present review is whether the claims on file are directed to patentable subject-matter.
- [16] After considering the claims on file, I review the proposed claims to determine if they are considered a necessary amendment under subsection 86(11) of the *Patent Rules*.

## **LEGAL PRINCIPLES AND OFFICE PRACTICE**

### **Purposive Construction**

- [17] In accordance with *Free World Trust v Électro Santé Inc*, 2000 SCC 66 [*FreeWorldTrust*] 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.
- [18] *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

[19] 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.

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

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

[21] *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.

[22] *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.

[23] In *Schlumberger Canada Ltd v Commissioner of Patents*, [1982] 1 FC 845 (CA) [*Schlumberger*], the court concluded that, although computers were necessary for the invention to be put into practice, the use of a computer was not determinative

of the issue of patentable subject matter; the computer was merely being used to make the kind of calculations it was invented to make and in that case did not lend patentability to the abstract calculations.

## **ANALYSIS**

### **Purposive Construction**

#### *The person skilled in the art*

[24] In the PR letter at page 4, I preliminarily accepted the characterization of the person skilled in the art as set out in the FA and as undisputed by the Applicant in the R-FA, with one qualification:

In the FA at page 2, the identification of the person skilled in the art was set out:

[portion omitted] the person skilled in the art, who may be a team of people, is skilled in the field of investment, and more particularly exchange traded funds (see page 1, lines 8 to 10).

While the Applicant did not dispute the above identification, given that the application relates to a computer-implemented trading method and corresponding systems, it is my preliminary view that the person or team skilled in the art would also be skilled in electronic trading computer systems and networks.

[25] The Applicant did not dispute the above in the R-PR or at the oral hearing and I adopt it for the purpose of this review.

#### *The relevant common general knowledge*

[26] In the PR letter at page 4, I preliminarily adopted the characterization of the relevant common general knowledge set out in the FA:

In the FA at page 2, the relevant CGK was identified:

The creation and trading of shares of an exchange traded fund (ETF) as per pages 1 to 4 of the description is considered to be part of the common general knowledge in the art, as are multi-manager investment strategies (see pages 3 to 4). In addition, the computing devices and network are also considered to form part of the common general knowledge. This is reinforced by pages 19 to 24, as well as



the lack of detail within the description regarding how the computing devices are to operate.

None of the above was disputed by the Applicant in the R-FA and I preliminarily adopt it for the purpose of this review.

[27] The above was not disputed by the Applicant in the R-PR or at the oral hearing and I adopt it for the purpose of this review.

*The claims on file*

[28] In the PR letter at pages 5-6, I took independent claim 1 to be representative of the subject-matter of the independent claims. I also set out the preliminary position that the meaning and scope of the terms used in the claims was clear:

The instant application contains two independent claims 1 and 23, directed to a computer-implemented method for stock trading on a stock exchange and a system for doing the same, respectively. I preliminarily take independent claim 1 as representative since the functions of independent system claim 23 are very similar to the steps of method claim 1:

1. A computer-implemented method for use with a stock exchange,  
investors, a plurality of portfolio managers, and an exchange traded fund, the exchange traded fund holding a set of fund assets and having a plurality of authorized participants, the plurality of authorized participants being different from the investors, the method being performed by at least one computing device, the method comprising:
  - receiving, by the at least one computing device, a plurality of model portfolios on a first trading day, each model portfolio having been created by a different one of a plurality of portfolio managers and received from a different computing device, each model portfolio identifying a plurality of assets traded on a stock exchange;
  - combining, by the at least one computing device, at least a portion of the model portfolios into a combined portfolio;
  - creating, by the at least one computing device, a portfolio composition file based at least in part on the combined portfolio, the portfolio composition file identifying a set of constituent assets traded on the stock exchange, the exchange traded fund trading a creation unit comprising at least one share of an exchange traded fund for the set of constituent assets, only the plurality of authorized participants being authorized to trade the set of constituent assets for the creation unit of the exchange traded fund, the at least one share of the

creation unit being tradable on the stock exchange by both the plurality of authorized participants and the investors, wherein the plurality of authorized participants are different from the investors; and

transmitting, by the at least one computing device, the portfolio composition file over a network to a plurality of other computing devices operated by the plurality of authorized participants at a time when the stock exchange is closed on the first trading day or on a second trading day that immediately follows the first trading day, the portfolio composition file having an effective date that is at least a day after the second trading day; and

transmitting, by the at least one computing device, the portfolio composition file over the network to a computing system operated by an exchange traded fund (ETF) entity at a time when the stock exchange is closed on the first trading day or on the second trading day, the ETF entity operating the exchange traded fund and performing one or more trades on the stock exchange before the effective date, to modify the set of fund assets to correspond to the set of constituent assets when the set of fund assets differs from the set of constituent assets.

I note that there have been no issues raised during the prosecution of the instant application in regard to the meaning or scope of any of the terms used in the claims on file. I proceed below on the basis that the meaning and scope of the claims would have been clear to the skilled person

[29] None of the above was disputed in the R-PR or at the oral hearing and I proceed on this basis.

### *The essential elements*

[30] In the PR letter at page 6, I set out my preliminary view that all the elements of the claims on file are considered to be essential:

The FA presented at pages 2-4 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.

*PN2020-04* states in respect of the identification of essential/non-essential elements that:

In carrying out this identification of essential and non-essential elements, all elements set out in a claim are presumed essential,

unless it is established otherwise or is contrary to the language used in the claim.

With respect to the claims on file, while some dependent claims set out alternative embodiments, in my preliminary view the person skilled in the art would understand that each alternative or combination of alternatives, when chosen, is then an essential feature of the claims.

In my preliminary view, all the elements of the claims on file are considered to be essential, including the computer implementation and computer-related components. This also applies to the individual alternative embodiments of the dependent claims.

[31] The above position was not disputed in the R-PR or at the oral hearing and I therefore proceed on the basis that all elements of the claims on file are essential.

### **Patentable Subject-Matter**

[32] At pages 6-9 of the PR letter, I set out my preliminary view that claims 1-23 on file are directed to non-patentable subject matter:

Claim 1 sets out a computer-implemented method that involves the reception of model investment portfolios created by different portfolio managers. These portfolios are then combined to form a combined portfolio that is then used to create a portfolio composition file ("PCF") that sets out the financial assets that make up the PCF. A share of the exchange traded fund ("ETF") or "creation unit" is composed of the combination of assets that form the PCF.

With the creation of a new PCF, this information is transmitted to authorized participants, the entities that may trade creation units with the ETF. Other investors may invest in creation units through the authorized participants, providing they have the collection of assets that make up a creation unit.

Claim 1 specifies that the new PCF is transmitted to the authorized participants as well as the ETF entity after the stock exchange is closed or on the following trading day. This allows the ETF entity to modify the ETF assets to match the new PCF assets before the new PCF takes effect (on an effective date that is at least a day after the second trading day) and for the authorized participants to value and/or price the ETF shares in the market.

In my preliminary view, claim 1 sets out a series of data analysis and stock trading steps, as well as generic input, data processing and output steps. There is no suggestion in claim 1 or the rest of the specification that the inputs/outputs and data processing associated with the electronic trading system are anything more than the well-known generic reception of data and output of the results of well-known data processing. As set out in respect of Figures 2 and 6 of the instant application, as well as the accompanying descriptions at pages 7 and 19-24, the input/output

devices, processing devices and network arrangements used are generic in nature. Likewise, the transmission of new PCFs over a computer network represents the transmission of information by means of generic computer networks in an expected manner.

In accordance with *PN2020-04* and the illustrative examples attached to it, the question then becomes whether or not the computer forms part of the actual invention, the actual invention being the subject-matter against which patentable subject-matter is determined. As indicated in *PN2020-04*, if the processing of an algorithm on a computer improves the functioning of the computer, then the computer and the algorithm 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 is patentable.

Upon review of the specification as a whole, in my preliminary view there is no evidence that the particular data analysis and trading steps effect any improvement in the functioning of the electronic trading system. For example, there is no evidence that the claimed steps effect any reduction in the steps of processing the data or in performing the trading steps that occur, such that the computer components cooperate with the data analysis and/or trading steps to effect any improvement that would constitute something with physical existence or that manifests a patentable physical effect or change (*Canada (Attorney General) v Amazon.com Inc*, 2011 FCA 328 [*Amazon*] at paragraph 66).

In the R-FA at pages 5-6, the Applicant contends that there has been an improvement to computer-implemented trading methods, the alleged improvement being control of the timing of a PCF file transmission through a computer network, such that an ETF entity and not an authorized participant performs trades with the stock exchange to modify the ETF assets to conform to the new PC[F] specification. Further, the Applicant states that because of this timing the PCF effective date is moved to the third trading day, which is a discernable effect or change.

In my preliminary view, such points are not sufficient to render the subject-matter of claim 1 on file patentable. Controlling the timing of the transmission of information is a business rule imposed by the trading method and does not result in any effect other than a change in the method, this method being implemented using the generic functions of a generic computer system. In accordance with *PN2020-04*, there is no cooperation such that the operation of the computer system is improved by the steps of the new algorithm that implements the data analysis and trading steps.

Further, the movement of the effective date of the PCF to the third trading day is simply an effect of timing the effective date and constitutes mere abstract information for investors who may or may not act on such information. In my preliminary view, there is no physical discernable effect or change that occurs as a result of the change in trading steps. While the Applicant rightly states that *Amazon* refers to a “discernable effect or change”, rather than more specifically a “physical” one, this language is used in the context of discussing the broader “physicality requirement” introduced at paragraph 65 of *Amazon*. As such, in my preliminary

view, the “physical” limitation applies to both the existence and discernable effect or change criteria.

Regarding the point that the ETF entity rather than the authorized participants perform trades with the stock exchange to conform to the new PCF file, this is another abstract trading rule that does not improve the functioning of the electronic trading system.

For the reasons given above, it is my preliminary view that the actual invention of claim 1 is the collection of abstract data analyses and trading rules that form the trading algorithm. Therefore, it is my preliminary view that the actual invention of claim 1 on file is directed to subject-matter that is not “something with physical existence, or something that manifests a discernable effect or change” (*Amazon* at paragraph 66).

Dependent claims 2-5, 7-11 and 17-22 all relate to further features of the abstract trading algorithm and do not render the claimed subject-matter patentable.

Dependent claims 6 and 12-16 relate to the reception and transmission of further information by means of generic input/output computer elements/networks and as such also do not render the claimed subject-matter patentable.

As stated earlier, independent system claim 23 is similar in scope to independent claim 1, the difference being that claim 23 is directed to the system per se and claim 1 is to the method implemented on such a system. Claim 23 therefore comprises the same actual invention as that of claim 1, taking into account the generic computer elements used.

In light of the above, the actual inventions of claims 1-23 on file are directed to subject-matter that is not “something with physical existence, or something that manifests a discernable effect or change” (*Amazon* at paragraph 66). Therefore they are directed to non-patentable subject-matter, are non-compliant with section 2 of the *Patent Act* and, being abstract, are non-compliant with subsection 27(8) of the *Patent Act*.

Further, in my preliminary view the present situation is akin to the one dealt with in *Schlumberger*. The computer/computer network in this case is being used to process an abstract trading algorithm in an expected well-known manner and like *Schlumberger*, such elements and their well-known functions do not lend patentability to the claims.

- [33] The submissions in the R-PR and at the oral hearing focussed on two points: the determination of an “actual invention” as set out in *PN2020-04* is incorrect at law; and even assuming that *PN2020-04* is correct at law, the PR letter has mischaracterized the actual invention. I review the submissions in relation to both points below.

*Submissions with respect to the validity of PN2020-04*

- [34] The Applicant contended in both the written submissions and at the oral hearing that it is impermissible to require a determination of the actual invention subsequent to purposively construing the claims, which actual invention is then assessed for patentable subject-matter. According to the Applicant, the Federal Court of Appeal in *Amazon*, while requiring the Commissioner's identification of an actual invention to be grounded in a purposive construction of the claims, did not suggest that an element identified as essential is not part of the actual invention. The Applicant suggests that the identification of an actual invention is akin to returning to a "substance of the invention" approach, which was denounced in *Amazon*.
- [35] The Applicant also suggested at the oral hearing that the previous problem/solution approach set out in the *Manual of Patent Office Practice*, revised June 2015 (CIPO) at §12.02, was reintroduced by means of the discussion in *PN2020-04* relating to solving a problem in the functioning of a computer, in the context of assessing patentable subject-matter.
- [36] In response to the Federal Court of Canada decision in *Choueifaty v Canada (AG)* 2020 FC 837, the Patent Office released guidance in assessing patentable subject-matter under section 2 of the *Patent Act*, set out on *PN2020-04*.
- [37] *PN2020-04* states that the determination of the actual invention must be grounded in a purposive construction of the claims and, as stated by the Applicant in the R-PR, cannot be a determination of the "substance of the invention" as prohibited by *FreeWorldTrust*:

For each claim, the identification of the actual invention must be grounded in a purposive construction of the claim and cannot be determined solely on the basis of a literal reading of the claim, or a determination, not anchored in the language of the claim, of the "substance of the invention" within the meaning of that phrase as used by the Supreme Court of Canada in paragraph 46 of *Free World Trust v Électro Santé Inc.*, 2000 SCC 66. [citations omitted]

- [38] Even though elements may be taken as essential elements of a claim, this does not mean that the presence or use of such tangible elements automatically bestows patentability on a claim. As the Federal Court of Appeal acknowledged in *Amazon* at paragraph 69, the claims in *Schlumberger* were not saved by the fact

that abstract calculations were performed by a computer. A bare “practical application” test that is satisfied by merely giving an abstract idea a practical application, is not sufficient (*Amazon* at paragraph 61). The Federal Court of Appeal set out these principles after reviewing the lower Federal Court decision that pointed to *Shell Oil Co. of Canada v. Canada (Commissioner of Patents)*, [1982] 2 S.C.R. 536 (referred to by the Applicant at the oral hearing in support of the patentability of the practical application set out in the claims) and the practical application requirement discussed therein.

- [39] I further note that although *PN2020-04* does refer to solving a problem in the functioning of a computer, this is in the context of evaluating whether a computer and an algorithm form a single actual invention that solves a problem related to the manual or productive arts, not whether certain elements of the claims are essential or non-essential.
- [40] In light of the above, it is my view that, as set out in the PR letter, the processing of the trading algorithm in a well-known manner by means of generic computer systems and generic input/output means does not make such tangible computer equipment part of the actual invention in this case.
- [41] The Applicant further contends that the transmission of the PCF to a plurality of authorized participants and to the ETF, within a computer-implemented ETF trading environment between computing devices over a computer network, means that the claims on file are directed to patentable subject-matter.
- [42] However, as previously set out in the PR letter and discussed above, the use of generic computer systems to accomplish such transmission does not make the claims on file patentable. These generic computer systems and their generic inputs/outputs, along with the expected benefits of using such systems (fast and accurate communications, ability to interact with other computer systems, as set out at the bottom of page 3 and top of page 4 of the R-PR) do not form part of the actual invention and therefore cannot transform the abstract trading algorithm into patentable subject-matter.

*Applicant's position that the actual invention is mischaracterized*

- [43] In the R-PR at pages 4-5, the Applicant submitted that the actual invention was

incorrectly characterized in the PR letter. The Applicant contended that the prior art problem that was solved was that a conventional multi-manager investment strategy cannot be implemented for ETFs. According to the Applicant, in the prior art the authorized participants (“APs”) performed two roles:

(1) creating and redeeming ETF shares that may be bought and sold to public investors (Fig. 1 nos. 101, 103, 105, 107, 109) on the stock exchange, and

(2) buying assets (over the stock exchange) to provide to the ETF entity and selling assets (over the stock exchange) received from the ETF entity so that the constituents assets held by the ETF correspond to those listed in the PCF.

- [44] The Applicant contends that in transmitting the PCF to both the ETF entity and the APs and providing a timing restriction on the APs (the effective date), the second role of the APs (referred to at the oral hearing as the “re-balancing step”) is transferred to the ETF entity. The ETF entity may then directly perform trades on the stock exchange before the effective date to ensure that its assets conform to the new PCF.
- [45] It is the transmission of the PCF over a computer network to two different systems (ETF entity and APs) to perform two different operations that the Applicant believes to represent a discernable effect or change sufficient to satisfy the requirement set out in *Amazon*.
- [46] As discussed above in relation to the submissions in respect of *PN2020-04*, the transmission of information such as a PCF using generic computer systems and generic output functions of such systems is not sufficient to make these generic systems and their generic functions part of the actual invention and therefore does not alter the outcome of the assessment of patentable subject-matter.
- [47] Further, the problem set out by the Applicant (the limitation on ETF trading ability on the stock market) is, in my view, a problem imposed by the business rules associated with ETF entities and not a technical limitation of the computer systems, which simply process whatever trading algorithm is implemented on them. The implementation of a timing restriction in the form of an effective date for the PCF is, as discussed in the PR letter, also a business rule limitation and abstract information that is not an improvement in the computer systems themselves such that they would form part of the actual invention.



### *Conclusions on patentable subject-matter*

[48] Having considered the Applicant's submissions in the R-PR and at the oral hearing, I conclude that claims 1-23 on file are directed to non-patentable subject-matter and are therefore non-compliant with section 2 of the *Patent Act*. Further, as the actual invention of the claims on file is abstract, the claims are prohibited by subsection 27(8) of the *Patent Act*.

### **Proposed Claims**

[49] With the R-PR, the Applicant submitted proposed claims identical to those submitted with the R-FA.

[50] I expressed my preliminary view as to the patentability of the proposed claims in the PR letter, it being that the proposed claims would not overcome the patentable subject-matter defect:

With the R-FA, the Applicant submitted proposed claims 1-23 in which independent claim 1 was amended to specify that as well as the ETF entity modifying its assets to conform to the new PCF, the authorized participants that trade with the ETF entity create new creation units of the ETF with the ETF entity and sell these on the stock exchange. A minor amendment was made to independent claim 23 to clarify that an ETF entity buys or sells stocks on the stock exchange when the assets of the new PCF are different from the previously existing one.

Given that the proposed amendments relate to further steps of the abstract trading algorithm, it is my preliminary view that the actual inventions of proposed claims 1-23 are also directed to non-patentable subject-matter and are non-compliant with section 2 and subsection 27(8) of the *Patent Act*.

[51] Having considered the Applicant's submissions in the R-PR and at the oral hearing, I conclude, for the reasons set out earlier in relation to the claims on file and for those from the PR letter quoted above, that the proposed claims would not overcome the patentable subject-matter defect and therefore are not considered a "necessary" amendment for compliance with the *Patent Act* and *Patent Rules*, as required by subsection 86(11) of the *Patent Rules*.

### **CONCLUSIONS**

[52] I have determined that claims 1-23 on file are directed to non-patentable subject-

matter, are non-compliant with section 2 of the *Patent Act* and are prohibited subject-matter under subsection 27(8) of the *Patent Act*.

[53] In my view, the proposed claims would not overcome the patentable subject-matter defect and are therefore not considered a “necessary” amendment for compliance with the *Patent Act* and *Patent Rules* as required by subsection 86(11) of the *Patent Rules*.

## **RECOMMENDATION OF THE BOARD**

[54] In view of the above, the undersigned recommends that the application be refused on the ground that:

- Claims 1-23 on file are directed to non-patentable subject-matter and are non-compliant with section 2 and subsection 27(8) of the *Patent Act*.

Stephen MacNeil  
Member

## **DECISION OF THE COMMISSIONER**

[55] I concur with the conclusions and recommendation of the Board that the application be refused on the ground that:

- Claims 1-23 on file are directed to non-patentable subject-matter and are non-compliant with section 2 and subsection 27(8) of the *Patent Act*.

[56] Therefore, in accordance with section 40 of the *Patent Act*, I refuse to grant a patent on this application. Under section 41 of the *Patent Act*, the Applicant has six months within which to appeal my decision to the Federal Court of Canada.

Virginie Ethier  
Assistant Commissioner of Patents

Dated at Gatineau, Quebec

this 30<sup>th</sup> day of May, 2022