

Citation: PEPSICO, INC. (Re), 2021 CACP 49
Commissioner's Decision #1602
Décision du Commissaire n° 1602
Date: 2021-12-07

TOPIC: J00 Meaning of Art
O00 Obviousness
C00 Adequacy or Deficiency of Description
G00 Utility
B00 Indefiniteness
SUJET: J00 Signification de la technique
O00 Évidence
C00 Caractère adéquat ou inadéquat de la description
G00 Utilité
B00 Indéfini

Application No. : 2,864,508

Demande n° 2 864 508

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2,864,508, having been rejected under subsection 30(3) of the *Patent Rules* (SOR/96-423) as they read immediately before October 30, 2019, has consequently been reviewed in accordance with paragraph 199(3)(c) of the *Patent Rules* (SOR/2019-251). The recommendation of the 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 Canadian patent application number 2,864,508, which is entitled “METHOD OF MANAGING FUEL INTAKE IN INDIVIDUALS TO ENHANCE ATHLETIC PERFORMANCE” and is owned by PEPSICO, INC. (“the Applicant”).
- [2] 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* (SOR/2019-251) (“the *Patent Rules*”). As explained in more detail below, our recommendation to the Commissioner of Patents is to refuse the application.

BACKGROUND

The application

- [3] Canadian patent application 2,864,508, based on a previously filed *Patent Cooperation Treaty* application, with a claimed priority date of February 17, 2012, has a filing date of February 15, 2013 and was laid open to public inspection on August 22, 2013.
- [4] The application relates to a method of managing an individual’s fuel consumption at different points throughout training or competition to achieve enhanced athletic performance.
- [5] The application has 14 claims on file, which were received at the Patent Office on January 31, 2018 (“claims on file”).

Prosecution history

- [6] On September 25, 2018, a Final Action (“FA”) rejecting the claims on file, was issued pursuant to subsection 30(4) of the *Patent Rules* (SOR/96–423) as they read immediately before October 30, 2019. The FA stated that the present application had the following defects:
- claims 1 to 14 on file encompass subject-matter that lies outside the definition of “invention” and thus do not comply with section 2 of the *Patent Act*;

- claims 1 to 14 on file encompass subject-matter that lacks utility and thus do not comply with section 2 of the *Patent Act*;
- claims 1 to 14 on file are directed to subject-matter that would have been obvious and thus do not comply with section 28.3 of the *Patent Act*; and
- claims 1, 6, and 14 on file are indefinite and thus do not comply with subsection 27(4) of the *Patent Act*.

[7] On December 12, 2018, a response to the FA (“R-FA”) was filed by the Applicant. In the R-FA, the Applicant submitted a proposed set of claims 1 to 15 (“proposed claims”) and argued that the claims complied with section 2, section 28.3, and subsection 27(4) of the *Patent Act*.

[8] Since the Examiner maintained the position that the application did not comply with section 2, section 28.3, and subsection 27(4) of the *Patent Act* after considering the R-FA, the application was forwarded to the Board, along with a Summary of Reasons (“SOR”).

[9] The SOR was forwarded to the Applicant on April 17, 2019.

[10] The present panel (“the Panel”) was formed to review the application under paragraph 199(3)(c) of the *Patent Rules*.

[11] In a preliminary review letter dated September 28, 2021 (“PR letter”), the Panel presented its preliminary analysis and rationale, and was of the preliminary view that:

- claims 1 to 14 on file define patentable subject-matter, comply with section 2 of the *Patent Act*, and are not prohibited under subsection 27(8) of the *Patent Act*;
- claims 1 to 14 on file define subject-matter that does not lack utility and thus comply with section 2 of the *Patent Act*;
- the specification of the present application would not enable the skilled person to practise the claimed invention and thus does not comply with paragraph 27(3)(b) of the *Patent Act*;
- claims 1 to 14 on file would have been obvious and do not comply with paragraph 28.3(b) of the *Patent Act*;
- claims 1 and 6 on file are not indefinite and comply with subsection 27(4) of

the *Patent Act*;

- claim 14 on file is indefinite and does not comply with subsection 27(4) of the *Patent Act*; and
- the proposed claims cannot be considered a “necessary” amendment under subsection 86(11) of the *Patent Rules*.

[12] The PR letter also offered the Applicant the opportunities to make written submissions and to attend an oral hearing.

[13] On November 4, 2021, the Applicant indicated that they did not plan to attend the oral hearing.

[14] No further written submission has been received.

ISSUE

[15] This review addresses the following issue:

- whether claims 1 to 14 on file define patentable subject-matter, as required by section 2 of the *Patent Act*;
- whether claims 1 to 14 on file define subject-matter that has utility, as required by section 2 of the *Patent Act*;
- whether the specification enables the skilled person to practise the claimed invention, as required by paragraph 27(3)(b) of the *Patent Act*;
- whether claims 1 to 14 on file would have been unobvious, as required by section 28.3 of the *Patent Act*; and
- whether claims 1, 6, and 14 are not indefinite, as required by subsection 27(4) of the *Patent Act*.

[16] We first consider the above issues. We then consider whether the proposed claims constitute amendments necessary for compliance with the *Patent Act* and *Patent Rules*.

LEGAL PRINCIPLES AND OFFICE PRACTICE

Purposive construction

- [17] 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.
- [18] “Patentable Subject-Matter under the *Patent Act*” (CIPO, November 2020) [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.

Utility

[22] The statutory basis for the utility requirement is section 2 of the *Patent Act*, as recited above. In *AstraZeneca Canada Inc v Apotex Inc*, 2017 SCC 36 at paras 54 and 55, the Supreme Court of Canada stated that:

[54] To determine whether a patent discloses an invention with sufficient utility under s. 2, courts should undertake the following analysis. First, courts must identify the subject-matter of the invention as claimed in the patent. Second, courts must ask whether that subject-matter is useful - is it capable of a practical purpose (i.e. an actual result)?

[55] The Act does not prescribe the degree or quantum of usefulness required, or that every potential use be realized - a scintilla of utility will do. A single use related to the nature of the subject-matter is sufficient, and the utility must be established by either demonstration or sound prediction as of the filing date (AZT, at para. 56).

[23] Therefore, utility must be established either by demonstration or sound prediction as of the Canadian filing date. Utility cannot be supported by information and expertise that only became available after the filing date: *Apotex Inc v Wellcome Foundation Ltd*, 2002 SCC 77 at para. 56 [AZT], cited in the passage above.

[24] Where the utility of an invention is to be established by demonstration, the demonstration must have occurred as of the filing date but need not have been included in the description (*Eli Lilly Canada Inc v Apotex Inc*, 2015 FC 1016, at paras 138 to 142).

[25] The doctrine of sound prediction allows establishing asserted utility even where that utility had not been fully verified as of the filing date. However, a patent application must provide a “solid teaching” of the claimed invention as opposed to “mere speculation” (AZT, at para. 69).

[26] The soundness of a prediction is a question of fact (AZT, at para. 71). A sound prediction analysis should consider three elements (AZT, at para. 70):

1. There must be a factual basis for the prediction;
2. The inventor must have at the date of the patent application an articulable and “sound” line of reasoning from which the desired result can be inferred from the factual basis; and
3. There must be proper disclosure of the factual basis and line of reasoning.

Enablement

[27] Paragraph 27(3)(b) of the *Patent Act* states that the specification of an invention must:

set out clearly the various steps in a process, or the method of constructing, making, compounding or using a machine, manufacture or composition of matter, in such full, clear, concise and exact terms as to enable any person skilled in the art or science to which it pertains, or with which it is most closely connected, to make, construct, compound or use it[.]

[28] A positive determination that the specification complies with paragraph 27(3)(b) of the *Patent Act* requires that, having only the specification, the person of skill in the art be able to practise the invention using only the instructions contained in the disclosure (*Teva Canada Ltd v Novartis AG*, 2013 FC 141, citing *Teva Canada Ltd v Pfizer Canada Inc*, 2012 SCC 60 and *Consolboard Inc v MacMillan Bloedel (Sask) Ltd* (1981), 56 CPR (2d) 145 (SCC)). Although the CGK can be relied upon, the person of skill in the art should not be called upon to display inventive ingenuity or undertake undue experimentation.

Obviousness

[29] The *Patent Act* requires that the subject-matter of a claim not be obvious. Section 28.3 of the *Patent Act* states:

The subject-matter defined by a claim in an application for a patent in Canada must be subject-matter that would not have been obvious on the claim date to a person skilled in the art or science to which it pertains, having regard to

- (a) information disclosed before the one-year period immediately preceding the filing date or, if the claim date is before that period, before the claim date by the applicant, or by a person who obtained knowledge, directly or indirectly, from the applicant in such a manner

that the information became available to the public in Canada or elsewhere; and

- (b) information disclosed before the claim date by a person not mentioned in paragraph (a) in such a manner that the information became available to the public in Canada or elsewhere.

[30] In *Apotex Inc v Sanofi-Synthelabo Canada Inc*, 2008 SCC 61, at para. 67, the Supreme Court of Canada stated that it is useful in an obviousness inquiry to follow the following four-step approach:

- (1)(a) Identify the notional “person skilled in the art”;
- (1)(b) Identify the relevant common general knowledge of that person;
- (2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;
- (3) Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed;
- (4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

Indefiniteness

[31] Subsection 27(4) of the *Patent Act* requires that a claim distinctly and explicitly define subject-matter:

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

[32] In *Minerals Separation North American Corp v Noranda Mines Ltd*, [1947] Ex CR 306, 12 CPR 99, at page 146, the Court emphasized both the obligation of an applicant to make clear in the claims the ambit of the monopoly sought and the requirement that the terms used in the claims be clear and precise:

By his claims the inventor puts fences around the fields of his monopoly and warns the public against trespassing on his property. His fences must be clearly placed in order to give the necessary warning and he must not fence in any property that is not his own. The terms of a claim must be free from avoidable ambiguity or obscurity and must not be flexible; they must be clear and precise so that the public will be able to

know not only where it must not trespass but also where it may safely go.

ANALYSIS

Purposive construction

The person skilled in the art and their common general knowledge (CGK)

[33] The PR letter provided our preliminary identifications of the skilled person and their CGK. The Applicant did not dispute or comment on these identifications and we adopt them in this review.

The FA (page 2) identified the skilled person:

In view of statements in the description such as in paragraph [0003], the POSITA [person of skill in the art] to whom the application is directed can be characterized as a team of healthcare nutritionists, fitness professionals, personal trainers or sport scientists who are familiar with providing tailored nutrition plans and programs to athletes for their competition and training activities.

The Applicant has not disputed this identification. Since the application is directed to a computerized method of managing fuel intake of an individual with conventional computer elements, it is our preliminary view that the skilled person should also include IT professionals who are experienced with developing and providing the software, tools, and infrastructure conventionally used to support the activities and designs of computerized athletic training systems, in addition to the identification above.

In the FA, the following documents are provided as relevant documents in determining the CGK:

- D1: US2008/0071794A1 March 20, 2008 Barnard
- D2: US 6,740,007 B2 May 25,2004 Gordon et al.

The FA (page 3) identified the CGK of the skilled person as:

- *“Accurate, up-to-date information on training, fitness, nutrition and health/safety is only one part of the problem; the other is usually: one training program or diet plan is not a one-size-fits-all solution. These two have to be designed with age, weight, health, gender, height and other variables (such as body type) in mind—in the foreseeable future genetic typing may be useful as well to accurately match a specific individual’s biological requirements. Creating these manually is time consuming,*

requires the expertise of a personal trainer or other fitness professional at the very least” (see D1, paragraph [0003]); and

- “Therefore, due to the elements currently missing in the field, there is a need for an efficient process which offers customized exercise programs to a particular user body or body part or to condition the user for a particular sport, and that may optionally include a nutrition plan while still providing a great amount of flexibility and convenience to the user” (see D2, column 1, lines 39–45).

In the field of physical training and exercising, it is also considered to be within the CGK of the POSITA to use computer components, such as servers, databases and user interface devices with displaying capabilities to collect data regarding a physical activity and in response provide customized nutrition plans (see D1, paragraphs [0004]—[0006], [0021], [0025] and [0026]; and D2, column 2, lines 17–20 and 31–35, and column 9, lines 15–20 and 41–51).

The Applicant has not disputed the identification above. Further, in the R-FA (pages 14 to 16) the Applicant also considered the following knowledge as CGK:

- “those of ordinary skill in the art should know of the existence of wearable sensors capable of determining a moment of sweat”;
- “a sweat sensor would be known to a person of skill in the art”;
- “those having ordinary skill in the art would realize that a baseline level of perspiration can be determined so that the moment of sweat caused by more vigorous activity can be easily identified. Furthermore, a sensor worn on the wrist as shown in Appendix 6 would be expected to be able to determine a ‘moment of sweat’ since most people do not sweat from the wrist when resting”;
- “a skilled person in the art, such as a nutritionist, would be able to appropriately modify the fuel plan”; and
- “the concept of feedback loops for improving results.”

Therefore, based on the “BACKGROUND” section of the present application, certain points from D1 and D2, and the applicant’s arguments in the R-FA, we preliminarily consider the following knowledge as CGK:

- Knowledge regarding design, implementation, operation, and maintenance of a computerized fitness management system;
- Knowledge of various body sensors, including wearable sensors capable of monitoring the information of an individual regarding energy level at a moment of sweat;
- Knowledge of modifying fueling plans according to an individual’s information;

- Knowledge of utilizing feedback loops to improve algorithm results in a fitness management system; and
- Knowledge that a customized fueling plan may contribute to enhance athletic performance during training activities or competitions.

Essential Elements

[34] There are 14 claims in the claims on file, including independent claims 1 and 6, and dependent claims 2 to 5 and 7 to 14.

[35] Independent claim 1 reads:

1. A method of managing fuel intake of an individual in preparation for, during and subsequent to an athletic event, the method performed by a computer system for managing fuel intake, comprising a plurality of components interconnected with a network, including a server, a first computer, which interacts with the individual and a second computer, which is carried by the individual, the method comprising:
 - a. collecting by the first computer information regarding the athletic event from the individual, including type of athletic event, duration, and intensity and storing the information in the server;
 - b. creating by the server a fueling plan for the individual including appropriate nutrients to consume before, during, and after the athletic event, based on the information;
 - c. monitoring the information of the individual regarding energy level at a moment of sweat through a biological or activity sensor that transmits the information regarding energy level at a moment of sweat to the server;
 - d. modifying the fueling plan using the individual's information regarding energy level at the moment of sweat; and
 - e. providing feedback by sending the modified fueling plan to the second computer.

[36] Independent claim 6 recites similar features as claim 1. Dependent claims 2 to 5 and 7 to 14 define further limitations relating to fueling plan contents (claims 2, 3, 5, and 8 to 10), information collected from the individual (claim 4), athletic event information (claim 7), and input/output means (claims 11 to 14).

[37] As explained in the PR letter, according to *PN2020-04*, purposive construction is conducted by considering where the skilled person would have understood the

Applicant to have intended to place the fences around the monopoly being claimed.

- [38] Considering the whole of the specification, the skilled person would understand that there is no use of language in the claims indicating that any of the elements are optional, a preferred embodiment, one of a list of alternatives, or otherwise non-essential. Therefore, all elements recited in each of the claims are presumed to be essential.

Patentable subject-matter

- [39] The PR letter explained why the Panel preliminarily determined that the claims on file define patentable subject-matter. The Applicant did not dispute or comment on this analysis and we adopt it in this review.

The FA (pages 3 to 4) determined that the present application is directed to a scheme, plan, or set of rules that manipulate data, and thus did not comply with section 2 of the *Patent Act*, based on a previous Office Practice.

The R-FA (pages 10 to 14) disagreed and argued that the sensor and computing hardware are required elements for the practice of the invention, and that the sensor and computer elements provide physicality to the application, and thus the application is directed to patentable subject-matter.

In view of the latest guidance from *PN2020-04*, the subject-matter issue of the present application has been reconsidered.

Having considered that all the claimed elements are essential, it is necessary to determine whether these elements form a single actual invention that either has physical existence or manifests a discernible physical effect or change.

In our preliminary view, the step of monitoring an individual's information regarding energy level through a biological or activity sensor, which is present in both claim 1 and claim 6 on file, is part of the actual invention since the fueling plan as claimed cannot be customized for the individual without utilizing the monitoring data. In this case, the energy level measuring step imparts the required physicality to the claimed subject-matter. Therefore, the single invention, which includes the cooperating step of measuring the individual's energy level at a moment of sweat with a biological or activity sensor, is directed to "something with physical existence, or something that manifests a discernible effect of change" (*Canada (AG) v Amazon.com*, 2011 FCA 328, at para. 66). Hence, we are of the preliminary view that 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*.

Therefore, it is our preliminary view that claims 1 and 6 on file define patentable subject-matter, comply with section 2 of the *Patent Act*, and are not prohibited under subsection 27(8) of the *Patent Act*. Dependent claims 2 to 5 and 7 to 14 also define patentable subject-matter based on their dependency on the independent claims.

[40] We therefore conclude that claims 1 to 14 on file define patentable subject-matter, comply with section 2 of the *Patent Act*, and are not prohibited under subsection 27(8) of the *Patent Act*.

Utility

[41] The PR letter explained why the Panel considered that the subject-matter of the claims on file does not lack utility. The Applicant did not dispute or comment on this analysis and we adopt it in this review.

To determine whether the present application lacks utility, as required by courts, we need to identify the subject-matter of the invention as claimed in the patent. Then we need to determine whether that subject-matter is useful. As explained earlier, utility can be established by either demonstration or sound prediction.

Subject-matter as claimed

In our preliminary view, the subject-matter of the claims on file is a method of managing fuel consumption of individuals for training or competition, which comprises the essential features as identified under the Purposive Construction analysis. The use related to the subject-matter is evident from, e.g., claim 1 itself, namely to manage fuel intake of an individual in preparation for, during and subsequent to an athletic event.

Demonstration

There is no evidence from the application as filed or from subsequently filed submissions that as of the filing date the Applicant had demonstrated or tested the claimed method of managing fueling plans for individuals. Therefore, we preliminarily consider that the utility of the claimed invention has not been established based on demonstration.

Sound prediction

As explained earlier, to establish utility based on sound prediction, we need to determine the factual basis, the line of reasoning, and the level of disclosure required.

Factual basis

The FA (pages 9 to 10) stated that the present application did not provide facts regarding:

- (1) the step of monitoring the information of the individual regarding energy level at a moment of sweat through a biological or activity sensor;
- (2) the definition of the expression “energy level at a moment of sweat”; and
- (3) the step of modifying the fueling plan using the individual’s information regarding energy level at the moment of sweat.

The FA stated that the description did not provide details regarding these features, which leads to a lack of factual basis. In the R-FA (pages 14 to 16), the Applicant argued that these features were within the CGK of the skilled person.

For feature (1), it is our preliminary view that it is supported by a factual basis since it is part of the CGK of the skilled person. For feature (2), a factual basis necessarily follows since it is part of feature (1).

For feature (3), as stated by the Applicant in the R-FA, it is possible that an individual’s information may be used to modify a fueling plan, and one type of well-known measurable information of an individual is their energy level at a moment of sweat (see CGK section). Therefore, in our preliminary view, there is a factual basis for each of these points, separately.

Line of reasoning

Given that it is part of the relevant CGK that a fueling plan may be modified based on an individual’s performance parameters, one of which *may be* energy level at a moment of sweat, it is our preliminary view that there is a sound line of reasoning that modifying a fuelling plan *may be* based on an individual’s energy level at a moment of sweat. Combining this feature with the other method steps of claim 1 would lead to the management of fuel intake to enhance athletic performance.

It is also well-known in the art that customizing fuel intake during training of competition could contribute to enhanced athletic performance (see CGK section).

Level of disclosure

Given that the factual basis for the predicted utility is part of the relevant CGK and that the sound line of reasoning would, in our preliminary view, be evident to the skilled person, the disclosure is sufficient for the purpose of utility.

Therefore, in our preliminary view, we consider that the subject-matter of the claims on file does not lack utility since the utility can be established by sound prediction, and therefore complies with section 2 of the *Patent Act*.

[42] We conclude that the subject-matter of the claims on file does not lack utility and therefore complies with section 2 of the *Patent Act*.

Enablement

[43] The PR letter explained why the Panel preliminarily considered that specification of the present application did not enable the skilled person to practise the claimed invention. The Applicant did not dispute or comment on this analysis and we adopt it in this review.

In our preliminary view, the specification of the present application, does not provide sufficient information for the skilled person to make or practise the claimed invention, regarding the following claimed features:

- (1) creating by the server a fueling plan for the individual including appropriate nutrients to consume before, during, and after the athletic event, based on collected athletic event information; and
- (2) modifying the fueling plan using the individual's information regarding energy level at the moment of sweat.

Although it is our preliminary view that the skilled person would understand that a fueling plan may be created and modified based on individual sensor monitoring data to provide more efficient fuel intake of the individual and to enhance athletic performance, the specification does not provide details regarding how the fueling plan is created and how it is modified based on sensor data.

With respect to feature 1, although the description recites some fueling plan examples, the present application does not provide any details regarding how these fueling plans are created based on the collected athletic event information. In paragraph [017] and [018], the description recites that:

The first level comprises gathering information and performing calculations to generate a plan that identifies in detail which fuel nutrients (e.g., carbohydrates, proteins and electrolytes) the individual should consume and at what times.

...

In another aspect of the instant application, the second level of the system or method comprises generating information that may be

provided to the individual regarding specific types and amounts of the nutrients identified in level one, including without limitation the specific types of carbohydrates selected from the group consisting of glucose, fructose, sucrose, maltodextrin and others, that should be consumed at specific times before, during and after the specified athletic event [emphases added].

Nowhere does the specification provide any further details regarding how the “calculations” are performed and how the two levels of fueling plan information are “generated”.

With respect to feature 2, the only place that the specification mentions using a sensor to monitor the individual is in paragraph [016]:

[016] In another embodiment, various sensors may collect information regarding the individual and transmit such information to fuel plan server 103. The sensor may include various biological and activity sensors.

Even considering the collection of sensor data at the moment of sweat being CGK, the skilled person would still not be able to understand how the collected sensor data is used to “modify the fuel plan using the individual’s information regarding energy level at the moment of sweat.”

Accordingly, it is our preliminary view that the skilled person would not be able to make or practise the claimed invention without displaying inventive ingenuity or undertaking undue experimentation. Therefore, we preliminarily consider that the specification of the present application does not comply with paragraph 27(3)(b) of the *Patent Act*.

[44] We therefore conclude that the specification of the present application does not comply with paragraph 27(3)(b) of the *Patent Act*.

Obviousness

(1) Identify the notional “person skilled in the art” and their relevant CGK

[45] The person skilled in the art and their relevant CGK have been identified above under purposive construction.

(2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it

[46] In the PR letter, the inventive concepts of the claims were identified as the construed claims, and all of the claimed elements were considered in the analysis. The Applicant did not dispute or comment on this identification and we adopt it in

this review.

(3) Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed

[47] The PR letter set out the differences between the state of the art and the inventive concept of the independent claims. The Applicant did not dispute or comment on this identification and we adopt it in this review.

In the FA, the following documents are cited to support the obviousness defect under subsection 28.3 of the *Patent Act*:

- D3: US 7,295,889 B2 Nov. 13, 2007 Lähteenmäki
- D4: US 2010/0040695A1 Feb. 18, 2010 Feuvrier-Roy et al.

D3 discloses a nutrition dispenser and a method for producing nutrition doses, the dispenser being arranged to define the optimal dose of nutrition and/or medication intended for the person consuming the dose, and its ingredients, amounts and proportions of ingredients with the help of database arrangement.

D4 discloses a method of providing nutrition to an athlete, comprising providing a bite-size protein-based product and providing personalized guidelines for consuming the bite-size protein-based product.

We preliminarily consider that D3 is the closest prior art.

Regarding claims 1 and 6, D3 discloses the following elements:

- a method of managing fuel intake of an individual regarding an athletic event, the method performed by a computer system for managing fuel intake (column 10, lines 38 to 57), comprising a plurality of components interconnected with a network, including a server, a first computer, which interacts with the individual and a second computer, which is carried by the individual (Fig. 7; column 22, line 36, to column 23, line 17; “server,” “data transmission connection,” “data terminal equipment”);
- collecting by the first computer information regarding the athletic event from the individual, including type of athletic event, duration, and intensity and storing the information in the server (column 13, lines 21 to 25, “The user can feed information ... about environmental conditions, such as... type, level of difficulty and duration of a sports performance”; column 15, lines 22 to 31; column 16, lines 7 to 11);
- creating by the server a fueling plan for the individual including appropriate nutrients to consume for athletic events, based on the information (column 11, lines 39, to 46; column 13, lines 35 to 39);

- monitoring the information of the individual regarding energy level through a biological or activity sensor and transmitting the information to the server (column 10, lines 51 to 63);
- modifying the fueling plan based on monitored information of the individual (column 11, lines 39 to 46; column 10, lines 51 to 63); and
- providing feedback to the second computer in the form of a modified fueling plan (column 11, lines 18 to 30; column 10, lines 51 to 63).

There are three apparent differences between the prior art and the inventive concept of claims 1 and 6:

- (1) the fuel intake being managed is in preparation for, during and subsequent to an athletic event;
- (2) the monitoring individual information step is specifically at a “moment of sweat”; and
- (3) modifying the fueling plan is based on the individual’s information regarding energy level at the moment of sweat.

[48] The dependent claims will be addressed in step (4).

(4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

[49] The PR letter explained why the Panel preliminarily considered that the claims on file would have been obvious to the skilled person, after identifying the aforementioned differences. The Applicant did not dispute or comment on this analysis and we adopt it in this review.

Independent claims 1 and 6

In the R-FA (pages 17 to 18), the Applicant argued that “none of the cited references, individually or in combination, actually teaches or suggests ‘modifying the fueling plan using the data regarding energy level at the moment of sweat’” and:

D3 teaches that data is being captured during a performance; however, D3 fails to disclose use of data captured at that particular point in time to modify a meal plan at that particular point in time. Absent any teaching or suggestion that a particular data point could be used to modify a meal plan, much less that specific data point, D3 does not render Applicant’s claim obvious.

With respect to difference (1), although D3 does not explicitly disclose that the fuel intake management is for preparation, during and subsequent to an athletic event, D3 discloses that the fueling plan is defined based on information “such as sports performance, and deliver the information about the nutrients and/or medical substances to be used for the dose, their amounts and proportions to the nutrition dispenser for preparing the dose of nutrition and/or medication to be personified for the user” (column 11, lines 39 to 46). In our preliminary view, the skilled person would have understood that managing fuel intake before, during, and after an athletic event would be an obvious goal in managing athletic performance and does not involve an inventive step.

With respect to differences (2) and (3), we note that the only place the present application mentions “sensor” is in paragraph [016] of the present application, as recited above.

As explained in the CGK section, and stated by the Applicant in the R-FA (pages 15 to 16):

While Applicant has not specifically described how sensors can determine the moment of sweat, those of ordinary skill in the art should know of the existence of wearable sensors capable of determining a moment of sweat... While the specification does not provide any explicit definition for the phrase “energy level,” the term should be construed broadly enough based on the context of Applicant’s Written Description as well as what is known in Common General Knowledge (CGK)...

A person of skill in the art would select the appropriate sensor to measure the appropriate metric for the desired fuel plan. Sensors for measuring, for example, blood pressure, respiration rate, rate of caloric expenditure are known in the art.

Applicant respectfully submits that a skilled person in the art, such as a nutritionist, would be able to appropriately modify the fuel plan. The point of the present invention does not reside in the manner in which the fuel plan is modified or a particular algorithm for modification thereof.

Since the features of monitoring an individual at a moment of sweat with a sensor and modifying a fueling plan based on individual information are considered to be part of the CGK, we are of the preliminary view that the skilled person, with the teaching of D3 regarding monitoring an individual’s body conditions and using the monitored data to develop a fueling plan (column 10, lines 37 to 63), combined with the skilled person’s knowledge that energy level at a moment of sweat is one well-known measurable body condition, would not have considered these differences as involving an inventive step.

Accordingly, in our preliminary view, differences (1) to (3), when considered alone or in combination with other claimed elements, do not involve an inventive step and would have been obvious to the skilled person. Our preliminary view is therefore that claims 1 and 6 would have been obvious to the skilled person in view of D3 and the CGK, and thus do not comply with paragraph 28.3(b) of the *Patent Act*.

Dependent claims 2 to 5 and 7 to 14

Claims 2 to 5 and 7 to 14 recite further limitations.

Claim 2 recites that the nutrients comprise carbohydrate energy, fluid, protein and electrolytes. D3 discloses this feature in column 3, lines 60 to 67.

Claim 3 recites that the amounts of carbohydrate energy, fluid, protein and electrolytes to achieve enhanced athletic performance in the athletic event are included in the fueling plan. D3 discloses this feature in column 3, line 60, to column 4, line 39, in association with the nutrients that may be controlled as part of a nutrition dose for an individual.

Claim 4 recites that the information collected from the individual further includes a time of day that the individual will perform an athletic activity, a type of level of athlete, and an overall objective or goal of the individual with respect to the athletic event. D3 discloses that the information could include “duration,” “quantity,” and “level of difficulty” (column 20, lines 49 to 67). Further, this information is considered to be typical training/competition information within CGK of the skilled person. Therefore, it is our preliminary view that the feature of claim 4 does not involve an inventive step.

Claim 5 recites that the fueling plan includes at least two levels, wherein the first level comprises providing the individual with the carbohydrate energy, fluid, protein and electrolytes, and the second level comprises providing the individual with specific types and amounts of carbohydrates, proteins, fluid and electrolytes needed. D3 discloses information regarding specific types and amounts of nutrients in Fig. 6, column 3, lines 60 to 67, column 1, lines 45 to 53, and column 4, lines 31 to 39. Therefore, it is our preliminary view that these features, which provide for the option of less detailed information being provided to a user, would have been obvious to the skilled person in view of the teaching of D3 and CGK.

Claim 7 recites that the athletic event is selected from the group consisting of sprint or high intensity, strength training, team event, endurance, cardio or cross-training, and two-a-day training. These are considered typical physical activities within the knowledge of the skilled person. D3 (column 20, lines 49 to 51) discloses that the physical performance could include activities such as walking, jogging, gym, and

swimming. Therefore, it is our preliminary view that the feature of claim 7 does not involve an inventive step.

Claim 8 recites identifying specific foods that relate to the carbohydrate energy, fluid, protein and electrolytes to consume before, after and during the athletic event. D3 discloses specifying amounts and proportions of personalized nutrients based on an individual's environmental conditions such as sports performance. It is our preliminary view that that the use of foods containing equivalent amounts of the nutrients would have been a straightforward option for a skilled person, which includes a nutritionist.

Claim 9 recites that the fueling plan identifies specific times when the carbohydrate energy, fluid, protein and electrolytes should be consumed by the individual. It is considered to have been obvious to the skilled person that a customized fuelling plan would necessarily specify times at which nutrients should be consumed.

Claim 10 recites storing in the server the information regarding a number and type of carbohydrate energy, fluid, protein and electrolytes to be consumed by the individual. D3 discloses the storage of such information on a server in column 22, lines 36 to 53, and column 5, lines 21 to 26.

Claim 11 recites that the information is input into the first computer using a web-based browser. D3 discloses that the server may be accessed using the Internet, and that user interface may be XML-based and is accessible by a user's home computer or mobile station (column 9, lines 38 to 46; column 22, lines 48 to 53). Therefore, it is our preliminary view that using a web-based browser to perform the claimed feature would have been obvious to the skilled person.

Claim 12 recites that the second computer is a mobile device. D3 discloses this feature in column 10, lines 58 to 63.

Claim 13 recites that the fueling plan is provided to the individual in the form of a report. D3 discloses this feature in column 11, lines 4 to 16.

Claim 14 recites that the report includes a compilation of all athletic activity of the individual over a set period of time. Since D3 discloses personalizing a fueling plan based on an individual's sports performance needs (column 11, lines 39 to 44) and providing a report to the individual with personalized nutrient information (column 11, lines 4 to 16), it is our preliminary view that athletic activity information would have been obvious report contents to the skilled person.

All of claims 2 to 5 and 7 to 14 are dependent on claims 1 and 6, directly or indirectly, and thus the features of these claims have been considered in combination with the claims to which they refer. Our preliminary view

is that the subject-matter of these claims would have been obvious in view of D3 and the CGK.

Consequently, in our preliminary view, the claims on file would have been obvious to the skilled person and do not comply with paragraph 28.3(b) of the *Patent Act*.

[50] We conclude that the claims on file would have been obvious to the skilled person and do not comply with paragraph 28.3(b) of the *Patent Act*.

Indefiniteness

[51] The PR letter also considered the indefiniteness defect raised in the FA regarding claims 1, 6, and 14 on file, and preliminarily determined that claims 1 and 6 on file were not indefinite and claim 14 on file was indefinite. The Applicant did not dispute or comment on this analysis and we adopt it in this review.

The FA (pages 13 to 14) identified the following indefiniteness defects:

Claims 1 and 6 are indefinite and do not comply with subsection 27(4) of the *Patent Act*. The expression “monitoring the information of the individual regarding energy level at a moment of sweat through a biological or activity sensor” is vague. This expression does not relate to any clear technical characteristics, leaving the skilled person in doubt as to what it may refer to.

Claim 1 is indefinite and does not comply with subsection 27(4) of the *Patent Act*. The expression “the information of the individual” line 12, has no antecedent.

Claim 14 is indefinite and does not comply with subsection 27(4) of the *Patent Act*. The expression “The report of claim 13” is confusing since claim 13 sets forth a method. The preamble of a dependent claim should be consistent with the preamble of the claim or claims to which it refers.

The Applicant has not disputed the above defects.

For the feature of “monitoring the information of the individual regarding energy level at a moment of sweat through a biological or activity sensor”, as explained above, we preliminarily consider this feature as within the CGK of the skilled person. Therefore, this feature is not indefinite.

For the antecedent issue identified by the FA, we are of the preliminary view that it is not indefinite since the skilled person would understand that “the information” refers to “information of the individual regarding energy level at a movement of sweat” as recited in claim 1.

Regarding the defect of claim 14 identified in the FA, claims 13 and 14 on file recite:

13. The method of claim 1 or 6 wherein the fueling plan is provided to the individual in the form of a report.

14. The report of claim 13 wherein the report includes a compilation of all athletic activity of the individual over a set period of time.

Since claim 13 is a method claim and claim 14 is dependent upon claim 13, the language of claim 14 reciting “[t]he report of claim 13” causes a lack of clarity.

Therefore, claim 14 on file is indefinite and does not comply with subsection 27(4) of the *Patent Act*.

[52] We conclude that claims 1 and 6 on file are not indefinite and comply with subsection 27(4) of the *Patent Act*. We also conclude that claim 14 on file is indefinite and does not comply with subsection 27(4) of the *Patent Act*.

Proposed claims

[53] For the proposed claims, the PR letter considered that they would not overcome the obviousness, lack of enablement, and indefiniteness defects, and cannot be considered to be a “necessary” amendment under subsection 86(11) of the *Patent Rules*.

In the proposed claims, the following changes have been added to steps c to e of claims 1 and 6, and new claim 15 has been added (underlining texts were added):

c. ~~monitoring the information of the individual regarding energy level at a moment of sweat~~ through a biological or activity sensor to collect biological or activity information regarding the individual and transmit the biological or activity information to the server that transmits the information regarding energy level at a moment of sweat to the server;

d. receiving data at the server regarding energy level at a moment of sweat

from the second computer;

e. modifying the fueling plan at the server using at least the individual's information biological or activity information and data ~~information regarding energy level at the moment of sweat;~~ and

f. providing feedback by sending the modified fueling plan from the server to the second computer.

...

15. A fuel plan processing system for managing fuel intake comprising:

a server;

a first computer for collecting information regarding an athletic event from an individual, including type of athletic event, duration, and intensity, the first computer interconnected over a network to the server, the first computer storing the information in the server;

a second computer carried by the individual and interconnected over the network to the server;

a sensor worn by the individual, the sensor adapted to monitor the individual to collect biological or activity information regarding the individual and transmit the biological or activity information to the server;

wherein the individual provides data regarding energy level at a moment of sweat to the server via the second computer;

wherein the server is adapted to modify the fueling plan using at least the data and biological or activity information; and

wherein the second computer receives feedback from the server over the network regarding the modified fueling plan for the individual.

As indicated by the R-FA (page 19), the changes introduced by the proposed claims were added “in order to address the objection thereto under subsection 27(4) of the *Patent Act*.” Claim 15 of the proposed claims recites a system performing similar features as claim 1.

Since there is no use of language indicating that any one of these features is optional, a preferred embodiment, one of a list of alternatives, or non-essential, these features are preliminarily considered to be essential to the proposed claims.

Patentable subject-matter

It is our preliminary view that the proposed claims would not change the identification of the skilled person and the CGK. Regarding the actual invention, since the newly introduced features still use a sensor to collect biological or activity information of the individual, the monitoring step is still considered to be part of the actual invention as explained above. Therefore, the measuring step would provide physicality to the claimed subject-matter. Accordingly, the proposed claims are considered physical and not prohibited under subsection 27(8) of the *Patent Act*. Hence it is our preliminary view that the proposed claims define patentable subject-matter and comply with section 2 of the *Patent Act*.

Utility

Since the proposed changes were introduced to overcome the indefiniteness objection, we maintain our identification of the subject-matter as claimed, and our analysis regarding demonstrated utility and sound prediction. Accordingly, it is our preliminary view that the claimed subject-matter of the proposed claims has utility and complies with section 2 of the *Patent Act*.

Enablement

In the proposed claims, the feature of “modifying the fueling plan using the individual’s information regarding energy level at the moment of sweat” has been changed to “modifying the fueling plan at the server using at least the biological or activity information and data.” The feature of “creating by the server a fueling plan for the individual including appropriate nutrients to consume before, during, and after the athletic event, based on collected athletic event information” has not been changed.

As explained above, we are of the preliminary view that how the fueling plan is created or modified to suit individual’s performance enhancement needs based on the monitored data could not be practised by the skilled person without displaying inventive ingenuity or undertaking undue experimentation. Accordingly, the proposed claims would not change our view that the specification of the application does not comply with paragraph 27(3)(b) of the *Patent Act*.

Obviousness

In the proposed claims, the only new feature compared with claim 1 on file is “collect[ing] biological or activity information regarding the individual and transmit the biological or activity information to the server.” This feature is disclosed by D1 in column 10, line 37 to column 11, line 3.

Therefore, in our preliminary view, the skilled person would consider that there is no inventive step involved in the additional features introduced in the proposed claims in view of D3 and the CGK, when considered individually or in combination with the other claimed features. Consequently, it is our preliminary view that these claims would have been obvious to the skilled person.

Indefiniteness

In the proposed claims, claim 14 has not been changed. Therefore, the indefiniteness defect for this claim, as identified above, still presents.

Further, in our preliminary view, the proposed claims introduce new indefiniteness defects. More specifically, the step of “receiving data at the server regarding energy level at a moment of sweat from the second computer” (claims 1, 6, and 15) has no interaction with other claimed

elements. It is not clear how this data is obtained and what it is used for. Since all dependent claims are dependent upon claims 1 and 6, directly or indirectly, it is our preliminary view that the proposed claims 1 to 15 are indefinite and thus do not comply with subsection 27(4) of the *Patent Act*.

Summary

It is our preliminary view that the proposed claims cannot be considered to be a “necessary” amendment under subsection 86(11) of the *Patent Rules* because they would have been obvious to the skilled person and thus do not comply with paragraph 28.3(b) of the *Patent Act*, they would not overcome the enablement defect under paragraph 27(3)(b) of the *Patent Act*, and they are indefinite and thus do not comply with subsection 27(4) of the *Patent Act*.

[54] The Applicant did not dispute or comment on the above preliminary analysis. We conclude that the proposed claims do not overcome the obviousness, enablement, and indefiniteness defects and therefore cannot be considered to be a “necessary” amendment under subsection 86(11) of the *Patent Rules*.

CONCLUSIONS

[55] We are of the view that:

- Claims 1 to 14 on file define patentable subject-matter, comply with section 2 of the *Patent Act*, and are not prohibited under subsection 27(8) of the *Patent Act*;
- Claims 1 to 14 on file define subject-matter that does not lack utility and thus comply with section 2 of the *Patent Act*;
- The specification of the present application would not enable the skilled person to practise the claimed invention and thus does not comply with paragraph 27(3)(b) of the *Patent Act*;
- Claims 1 to 14 on file would have been obvious and do not comply with paragraph 28.3(b) of the *Patent Act*;
- Claim 14 on file is indefinite and does not comply with subsection 27(4) of the *Patent Act*; and
- The proposed claims cannot be considered a “necessary” amendment under subsection 86(11) of the *Patent Rules*.

RECOMMENDATION OF THE BOARD

- [56] In view of the above, we recommend that the application be refused on the ground that claims 1 to 14 on file would have been obvious and thus do not comply with paragraph 28.3(b) of the *Patent Act*, that the specification of the present application would not enable the skilled person to practise the claimed invention and thus does not comply with paragraph 27(3)(b) of the *Patent Act*, and that claim 14 on file is indefinite and thus does not comply with subsection 27(4) of the *Patent Act*.
- [57] Further, the proposed claims do not overcome the obviousness, lack of enablement, and indefiniteness defects and therefore the introduction of these claims does not constitute a “necessary” amendment pursuant to subsection 86(11) of the *Patent Rules*.

Liang Ji

Stephen MacNeil

Robilyn Vanos

Member

Member

Member

DECISION OF THE COMMISSIONER

[58] I concur with the findings of the Board and its recommendation that the application be refused because claims 1 to 14 on file would have been obvious and do not comply with paragraph 28.3(b) of the *Patent Act*, that the specification of the present application would not enable the skilled person to practise the claimed invention and does not comply with paragraph 27(3)(b) of the *Patent Act*, and that claim 14 on file is indefinite and does not comply with subsection 27(4) of the *Patent Act*.

[59] Therefore, in accordance with section 40 of the *Patent Act*, 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 7th day of December 2021