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Application No. : **3,137,161**
Owner : THALER, STEPHEN L.
Title : **FOOD CONTAINER AND DEVICES AND METHODS FOR
ATTRACTING ENHANCED ATTENTION**
Classification : B65D 6/02 (2006.01)
Your File No. : **93150003**
Our File No. : FA 2270M

PRELIMINARY REVIEW

The above-mentioned application has been referred to the Patent Appeal Board for review by the Acting Commissioner of Patents in a letter dated August 15, 2024. A Panel of the Patent Appeal Board has been established to perform the review on behalf of the Commissioner of Patents. The Panel consists of the following members:

Stephen MacNeil

Lewis Robart

Cara Weir

PRESENT DISPOSITION

We have conducted a review of the record, including the Patent Office Compliance Notice of November 8, 2021 (“2021 Notice”) and the response dated July 22, 2022 to the 2021 Notice (“2022 Response”).

This review concerns whether or not this application has a valid “inventor”, which necessarily calls into question the standing of the application and whether or not it has a valid “applicant”. Nevertheless, for the purposes of our review we will refer to the presently named applicant, Mr. Stephen L. Thaler, as “the Applicant.”

A preliminary analysis is provided below for the Applicant’s consideration.

In brief, we are presently inclined to recommend to the Commissioner of Patents that the application be refused on the grounds that:

- The term “inventor” as used in the *Patent Act* and *Patent Rules* is limited to a natural person or persons and does not include an artificial intelligence system;
- The application does not name a natural person or persons as the inventor and therefore there can be no valid “inventor” or “inventor’s legal representative” that filed the application in accordance with subsection 27(2) of the *Patent Act*; and
- Since no valid “inventor” can be identified, the requirements of subsection 54(1) of the *Patent Rules* also cannot be met.

INVITATION TO ATTEND HEARING, PROVIDE WRITTEN SUBMISSIONS

Per subsection 86(13) of the *Patent Rules*, an oral hearing via video conference (Microsoft Teams) has been scheduled for **January 16, 2025 at 10:00 am (ET)**.

The Applicant is requested to address the following:

By December 5, 2024: Confirm the suitability of the above date and time for the hearing, propose an alternative date that is no later than February 17, 2025 (please contact the undersigned to arrange a mutually convenient time) or indicate that a hearing is not required. Please also indicate if a hearing via teleconference is preferable.

By December 19, 2024: Provide written submissions addressing the outstanding issues, including any other observations the Applicant considers relevant, or indicate that no written submissions will be provided.

If the Applicant does not respond by the above dates, or if they indicate that they do not wish to participate in a hearing or make written submissions, the review will be completed based on the written record and a recommendation will be provided to the Commissioner of Patents without further communication.

THE APPLICATION

The instant application relates to both a food and beverage container and an enhanced signalling device. The container and device were devised by the artificial intelligence system known as DABUS (Device for Autonomous Bootstrapping of Unified Sentience) a system created and owned by Stephen L. Thaler.

ISSUES

The letter from the Acting Commissioner of Patents dated August 15, 2024, indicated that only a natural person can be considered to be an inventor for the purposes of the *Patent Act* and so:

- the instant application would be non-compliant with subsection 27(2) of the *Patent Act* since the application has not been filed by a valid inventor or a legal representative of such an inventor; and
- the instant application would be non-compliant with subsection 54(1) of the *Patent Rules* since a valid inventor has not been identified.

To be clear, the determinative issue here is whether the term “inventor” as used in the *Patent Act* and *Patent Rules* includes an artificial intelligence system. If it does not, then the application does not comply with subsection 27(2) of the *Patent Act* and subsection 54(1) of the *Patent Rules*.

THE MEANING OF “INVENTOR”

Subsection 27(2) of the *Patent Act* and subsection 54(1) of the *Patent Rules*

Subsection 27(2) of the *Patent Act* sets out the requirements for filing a patent application, including that it must be filed by the inventor or the inventor’s legal representative [Emphasis added]:

Application requirements

(2) The prescribed application fee must be paid and the application must be filed in accordance with the regulations by the inventor or the inventor’s legal representative and the application must contain a petition and a specification of the invention.

The term “inventor” is defined neither in the *Patent Act*, nor in the *Patent Rules*.

In respect of the other requirements of subsection 27(2), there is no dispute that the listed Applicant, Mr. Thaler, paid the prescribed application fee or that the application included a petition and specification of the invention.

If the artificial intelligence system known as DABUS cannot be considered an inventor under the *Patent Act*, then subsection 27(2) cannot be complied with, since there is no valid inventor or legal representative of such an inventor that could file an application.

Subsection 54(1) of the *Patent Rules* sets out the relevant inventor information that must be provided in an application:

Information on inventors

54 (1) The application must indicate the name and postal address of each inventor of the subject-matter of the invention for which an exclusive privilege or property is claimed.

As is the case for subsection 27(2) of the *Patent Act*, if DABUS cannot be considered as an “inventor” then the requirements of subsection 54(1) of the *Patent Rules* cannot be met.

The Commissioner of Patents has no discretion to grant or refuse a patent. Subsection 27(1) of the *Patent Act* provides that the Commissioner shall grant a patent to an inventor or their legal representative where it is filed in accordance with the *Patent Act* and all other requirements under the Act are met. Section 40 requires the Commissioner to refuse a patent application when the applicant is not by law entitled to be granted a patent.

In order to determine whether or not “inventor” encompasses an artificial intelligence system such as DABUS and whether by law a patent may be granted, we undertake below a preliminary interpretation of “inventor” as it is used in the *Patent Act* and *Patent Rules*. We first review the principles of statutory interpretation that we will follow in doing so.

The principles of statutory interpretation

The Supreme Court of Canada in *Canada (Minister of Citizenship and Immigration) v Vavilov*, 2019 SCC 65 [Vavilov] at paras 117-118 reaffirmed the “modern principle” of statutory interpretation, requiring administrative decision makers to interpret legislation in a manner consistent with this principle [Emphasis added]:

[117] A court interpreting a statutory provision does so by applying the “modern principle” of statutory interpretation, that is, that the words of a statute must be read “in their entire context and in their grammatical and ordinary sense harmoniously with the scheme of the Act, the object of the Act, and the intention of Parliament”: *Rizzo & Rizzo Shoes Ltd., Re*, [1998] 1 S.C.R. 27, at para. 21, and *Bell ExpressVu Limited Partnership v. Rex*, 2002 SCC 42, [2002] 2 S.C.R. 559, at para. 26, both quoting E. Driedger, *Construction of Statutes* (2nd ed. 1983), at p. 87. Parliament and the provincial legislatures have also provided guidance by way of statutory rules that explicitly govern the interpretation of statutes and regulations: see, e.g., *Interpretation Act*, R.S.C. 1985, c. I-21.

[118] This Court has adopted the “modern principle” as the proper approach to statutory interpretation, because legislative intent can be understood only by reading the language chosen by the legislature in light of the purpose of the provision and the entire relevant context: Sullivan, at pp. 7-8. Those who draft and enact statutes expect that questions about their meaning will be resolved by an analysis that has regard to the text, context and purpose, regardless of whether the entity tasked with interpreting the law is a court or an administrative decision maker. An approach to reasonableness review that respects

legislative intent must therefore assume that those who interpret the law — whether courts or administrative decision makers — will do so in a manner consistent with this principle of interpretation.

The Supreme Court in *Vavilov* also acknowledged that a statutory interpretation exercise undertaken by an administrative decision maker may look different than that done by a Court and that the administrative decision maker's specialized expertise and experience may bring different considerations to the exercise:

[119] Administrative decision makers are not required to engage in a formalistic statutory interpretation exercise in every case. As discussed above, formal reasons for a decision will not always be necessary and may, where required, take different forms. And even where the interpretive exercise conducted by the administrative decision maker is set out in written reasons, it may look quite different from that of a court. The specialized expertise and experience of administrative decision makers may sometimes lead them to rely, in interpreting a provision, on considerations that a court would not have thought to employ but that actually enrich and elevate the interpretive exercise.

The Supreme Court cautioned however that, whatever the form of the analysis, the interpretation must be consistent with the accepted statutory interpretation principles:

[120] But whatever form the interpretive exercise takes, the merits of an administrative decision maker's interpretation of a statutory provision must be consistent with the text, context and purpose of the provision. In this sense, the usual principles of statutory interpretation apply equally when an administrative decision maker interprets a provision. Where, for example, the words used are "precise and unequivocal", their ordinary meaning will usually play a more significant role in the interpretive exercise: *Canada Trustco Mortgage Co. v. Canada*, 2005 SCC 54, [2005] 2 S.C.R. 601, at para. 10. Where the meaning of a statutory provision is disputed in administrative proceedings, the decision maker must demonstrate in its reasons that it was alive to these essential elements.

Since this review involves consideration of compliance with subsection 54(1) of the *Patent Rules*, the Court's views on how regulations are to be interpreted are also relevant. In *Bristol-Myers Squibb Co v Canada (Attorney General)*, 2005 SCC 26 at para 38, the Supreme Court referred to *Driedger* as cited in *Rizzo Shoes* (as cited in *Vavilov*, above) for how the scope of a regulation is constrained by its enabling statute:

38 The same edition of *Driedger* adds that in the case of regulations, attention must be paid to the terms of the enabling statute:

It is not enough to ascertain the meaning of a regulation when read in light of its own object and the facts surrounding its making; it is also necessary to read the words conferring the power in the whole context of the authorizing statute. The intent of the statute transcends and governs the intent of the regulation. (Elmer A. Driedger, *Construction of Statutes* (2nd ed.1983), at p. 247)

This point is significant. The scope of the regulation is constrained by its enabling legislation. Thus, one cannot simply interpret a regulation the same way one would a statutory

provision.

Analysis: Statutory interpretation of “inventor”

The grammatical and ordinary sense of the term “inventor”

Despite not being defined in either the *Patent Act* or *Patent Rules*, “inventor” is a term well-known to those both inside and outside the patent realm.

In *Harvard College v. Canada (Commissioner of Patents)*, 2002 SCC 76 [*Harvard*] at paras 159, 162 and 163, in interpreting the terms “manufacture” and “composition of matter”, the Court looked to dictionary definitions of the terms to provide clues as to their meaning in the *Patent Act*.

According to *The Oxford English Dictionary*, (2nd ed 1989) (“*Oxford*”), vol VIII, at page 41, an inventor is:

One who finds out, a discoverer (whether by chance, or by investigation and effort)...One who devises or contrives...One who devises or produces something new (as an instrument, an art, etc.) by original contrivance; the originator of a previously unknown method or means of doing something...

The *Oxford English Dictionary*, s.v. “inventor (*n.*), sense 3,” June 2024, <https://doi.org/10.1093/OED/7396985539>, similarly identifies “inventor” as:

One who devises or produces something new (as an instrument, an art, etc.) by original contrivance; the originator of a previously unknown method or means of doing something; ‘the first finder-out’.

In the above interpretations “one” is used in the sense of an indefinite pronoun, denoting a person in the general sense, as opposed to a particular or specific person, but nonetheless, a person [Emphasis added]:

a person or being whose identity is left undefined; some one, a certain one, an individual, a person (*Oxford*, vol X at page 805).

The *Canadian Oxford Dictionary* ((2004). inventor. In Barber, K. (Ed.), *The Canadian Oxford Dictionary*. : Oxford University Press. Retrieved 24 Oct. 2024, from https://www.oxfordreference.com/view/10.1093/acref/9780195418163.001.0001/m_en_ca0035611.2nd ed 2005) considers an inventor to be [Emphasis added]:

a person who invents things, esp. as an occupation.

Similarly, *Le Grand Robert de la langue française*, (2nd ed 2001), vol IV, at page 349 defines “inventeur, trice” as [Emphasis added]:

Personne qui invente, qui a inventé...L'inventeur d'une machine, d'un art..., d'un procédé, d'une science...

These references indicate that the grammatical and ordinary sense of “inventor” is generally understood as connoting a person rather than an artificial intelligence system such as DABUS.

The context surrounding the term “inventor”

The context of “inventor” in the Patent Act

The first occurrence of the term inventor in the *Patent Act* is in the definition of “applicant” in section 2 [Emphasis added]:

includes an inventor and the legal representatives of an applicant or inventor; (*demandeur*).

Similarly, the French equivalent “demandeur” is defined as:

Sont assimilés à un demandeur un inventeur et les représentants légaux d'un demandeur ou d'un inventeur. (*applicant*)

“Legal representatives” is defined in that same section as a group that [Emphasis added]:

includes heirs, executors, administrators of the estate, liquidators of the succession, guardians, curators, tutors, transferees and all other persons claiming through applicants for patents and patentees of inventions or through holders of certificates of supplementary protection; (*représentants légaux*).

and in the French version as [Emphasis added]:

Sont assimilés aux représentants légaux les héritiers, exécuteurs testamentaires, administrateurs successoraux, liquidateurs de la succession, curateurs, tuteurs, cessionnaires, ainsi que toutes autres personnes réclamant par l'intermédiaire de demandeurs et de titulaires de brevets ou de certificats de protection supplémentaire. (*legal representatives*)

The use of “other persons” at the end of the lists in the English and French definitions indicates that this group is in addition to the “persons” previously identified. In this manner, “legal representatives” suggests a person or group of persons.

Before proceeding we note that “applicant” or “legal representatives” under the *Patent Act* as set out above includes a non-natural person, since it is common that patent rights are assigned to a corporation. In this respect, the *Patent Act* in section 2 defines “patentee” as “the person for the time being entitled to the benefit of a patent; (breveté ou titulaire d'un brevet).” Importantly, this is consistent with how “person” is defined in subsection 35(1) of the *Interpretations Act* (R.S.C, 1985, c. I-21), “person, or any word or expression descriptive of a person, includes a corporation; (personne). The French equivalent is

“Personne physique ou morale; l’une et l’autre notions sont visées dans des formulations générales, impersonnelles ou comportant des pronoms ou adjectifs indéfinis. (person)”. As such, a patentee can be a legal person or personne morale rather than a natural person or personne physique, compared to the general connotation of “inventor” as a natural person or personne physique. Unless a contrary intention appears, the definitions provided in the *Interpretations Act* apply to the interpretation of statutes and regulations, and so it is appropriate to consider how this applies to “applicant”, “legal representative” and other words descriptive of persons at this point. However, the fact that “person” in general within the *Patent Act* may not be limited to a natural person does not mean that “inventor” is not so limited, as we further explore below.

At para 161 of *Harvard*, the Court accepted as a well-known principle of statutory interpretation that the meaning of questionable words or phrases in a statute may be ascertained by reference to the meaning of the words or phrases associated with them (citing P.-A. Côté, *The Interpretation of Legislation in Canada* (3rd ed. 2000) at pages 313-314, see also *Sullivan on the Construction of Statutes*, 6th ed./Ruth Sullivan, LexisNexis Canada Inc, 2014 (“*Sullivan*”) at pages 230-234). Since “legal representatives” suggests a person or persons and is seemingly directed to a larger group than “inventor” as discussed above, it is logical that “inventor” is also limited to a person or persons.

“Inventor” shows up again in subsection 7(2) of the *Patent Act*, this time dissociated from any “legal representatives.” There is a restriction on Patent Office employees in dealing in patents in subsection 7(1), the exception being under subsection 7(2) and defined as an employee who is an original inventor or who acquired patent rights “under the last will, or by the intestacy, of a deceased person.” An “officer or employee of the Patent Office” (subsection 7(1)) is certainly a “person” and any original inventor or acquired rights by such an officer or employee would therefore involve a “person”. We further note that in this context any officer or employee of the Patent Office or deceased person involved would be natural persons, rather than a person represented by a legal entity. The French version of subsection 7(1) similarly refers to “personnel du Bureau des brevets.”

The same is true of section 20 of the *Patent Act*, which deals with Crown officers, servants or employees that invent any instruments or munitions of war in subsection 20(1), where such individuals are described as a “person” in subsection 20(2) and as an “inventor” in subsection 20(3). Similarly, the French version of 20(1) refers to “Tout membre de l’administration publique fédérale ou du personnel d’une personne morale qui est un agent ou au service de la Couronne”, with 20(2) and 20(3) referring to “personne” as well as “inventeur” [Emphasis added]:

Assignment to Minister of National Defence

20 (1) Any officer, servant or employee of the Crown or of a corporation that is an agent or servant of the Crown, who, acting within the scope of his duties and employment, invents any invention in instruments or munitions of war shall, if so required by the Minister of National Defence, assign to that Minister on behalf of Her Majesty all the benefits of the

invention and of any patent obtained or to be obtained for the invention.

Idem

(2) Any person other than a person described in subsection (1) who invents an invention described in that subsection may assign to the Minister of National Defence on behalf of Her Majesty all the benefits of the invention and of any patent obtained or to be obtained for the invention.

Inventor entitled to compensation

(3) An inventor described in subsection (2) is entitled to compensation for an assignment to the Minister of National Defence under this Act and in the event that the consideration to be paid for the assignment is not agreed on, it is the duty of the Commissioner to determine the amount of the consideration, which decision is subject to appeal to the Federal Court.

Cession au ministre de la Défense nationale

20 (1) Tout membre de l'administration publique fédérale ou du personnel d'une personne morale qui est un agent ou au service de la Couronne, qui, dans l'exercice de ses fonctions ou dans le cadre de son emploi, réalise une invention portant sur des instruments ou munitions de guerre, est tenu, s'il en est requis par le ministre de la Défense nationale, de céder à celui-ci, pour le compte de Sa Majesté, le plein bénéfice de l'invention et de tout brevet obtenu ou à obtenir pour celle-ci.

Idem

(2) Toute autre personne qui est l'auteur d'une telle invention peut céder au ministre de la Défense nationale, pour le compte de Sa Majesté, le plein bénéfice de l'invention et de tout brevet obtenu ou à obtenir pour celle-ci.

L'inventeur a droit à une indemnité

(3) L'inventeur visé au paragraphe (2) a droit à une indemnité pour une cession au ministre de la Défense nationale prévue dans la présente loi. S'il n'a pas été convenu de la considération à verser pour une telle cession, le commissaire en détermine le montant, mais il peut être interjeté appel de sa décision à la Cour fédérale.

A term used in a piece of legislation is generally taken to have the same meaning throughout the legislation (*Sullivan* at pages 217-218). Therefore if "inventor" clearly connotes a natural person in some provisions, such as 7(1), 7(2) and 20(1)-20(3), above, such a meaning is to be attributed to the term in general, unless there is a clear conflict with the manner in which it is used elsewhere, which is not the case here.

Subsection 27(1) of the *Patent Act* specifies that the Commissioner of Patents shall grant a patent to "the inventor or the inventor's legal representative" [Emphasis added] ("l'inventeur ou à son représentant légal" in French) if an application filed in accordance with the *Patent Act* and all other requirements (including those set out in the *Patent Rules*, per subsection 27(2) of the *Patent Act*). In this respect, "legal representative" would take

on the same connotation as set out above, namely being directed to a person or persons.

Section 31 of the *Patent Act* deals with joint patent applications. Subsection 31(1) deals with situations where one of two or more inventors refuses to proceed with a patent application or “his whereabouts cannot be ascertained after diligent inquiry.” In such a case, the other inventors or their legal representatives may proceed with an application and be granted a patent. The idea of an inventor refusing to proceed with a patent application does not align with a situation where an artificial intelligence system is an inventor. Further, reference to “his whereabouts” not being known (the gender usage reflective of past drafting practices) suggests inventors as individuals or natural persons, rather than a legal person or corporation. The whereabouts of an inventor not being known is also not aligned with “inventor” encompassing an artificial intelligence system, corporation or anything other than a natural person. Equivalent language is provided in the French version.

There are other references in the *Patent Act* to “inventor” (e.g., subsection 27(3), section 48), but they do not provide any further clarification on the scope of the term.

The context of “inventor” in the Patent Rules

Subsection 27(2) of the *Patent Rules* specifies the conditions under which a patent agent must be appointed to represent the interests of an applicant, patentee or other person before the Patent Office. The first condition is if the application is filed by “a person other than the inventor” [Emphasis added]. This language also characterizes an inventor as a person. Equivalent language is provided in the French version.

Subsection 54(1) of the *Patent Rules*, which is one of the provisions identified in the 2021 Notice, requires that “[t]he application must indicate the name and postal address of each inventor...” (equivalent language being provided in the French version). While DABUS may be identified by its acronym and the computer system on which it operates could be located at an address, it is difficult to imagine that those who drafted the *Patent Rules* contemplated the name and postal address requirements as applying to an artificial intelligence system.

There are other references in the *Patent Rules* to inventor. However, in our preliminary view, the context does not provide any further clarification on the scope of the term.

Summary of context of “inventor” in the Patent Act and Patent Rules

Based on the above review of relevant provisions of the *Patent Act*, it is our preliminary view that “inventor” and “inventeur” as used in the *Patent Act* connotes a natural person, rather than a legal person (e.g., corporation) or an artificial intelligence system, such as DABUS.

Further, keeping in mind that the scope of regulations is constrained by the enabling

statute, we have reviewed the regulation making authority set out in section 12 of the *Patent Act* and find no provision for ascribing a different meaning to terms such as inventor. There is also no suggestion in the relevant provisions of the *Patent Rules* that ascribe a different meaning or context regarding the term “inventor” than that of the *Patent Act*.

Further context for “inventor”

The term “patentee” is defined in section 2 of the *Patent Act* as “the person for the time being entitled to the benefit of a patent; (*breveté ou titulaire d’un brevet*).” [Emphasis added] If an inventor does not assign the rights to another party and a patent is granted, they become the patentee. In this way, the definition of patentee implies that inventors must also be a person or persons.

Section 28.2 of the *Patent Act*, which deals with the novelty requirement, specifies that the subject-matter defined by a claim in an application must not have been disclosed “...before the claim date by the applicant, or by a person who obtained knowledge, directly or indirectly, from the applicant...”, “...before the claim date by a person...” or “in an application for a patent that is filed in Canada by a person other than the applicant...” [Emphasis added]. Prior disclosures that may invalidate a claim are those made by the applicant or by another person, the implication being that an applicant is a “person” as well. Since “applicant” includes “inventor” in section 2 of the *Patent Act*, then an inventor must also be a person. Similar language is used in section 28.3 in respect of obviousness. The French versions of 28.2 and 28.3 similarly refer to “personne.”

Section 32 of the *Patent Act* refers to rights accorded to patents for “improvements”, specifying that:

[a]ny person who has invented any improvement on any patented invention may obtain a patent for the improvement, but he does not thereby obtain the right of making, vending or using the original invention...

The French version refers to “Quiconque est l’auteur d’un perfectionnement à une invention brevetée...” and “Il n’obtient pas de ce fait le droit de...”.

There is a clear link in this provision between a person and an inventor, with the use of the singular pronoun indicating again that the person who may have invented the improvement is an individual or natural person rather than a legal person such as a corporation.

Other references to person(s) include: who may file prior art with the Commissioner (section 34.1); who may request examination of a patent (section 35); who may appeal to the Federal Court from a refusal to grant a patent (section 41, “celui” in the French version); who may request re-examination of a patent (subsection 48.1(1)); who is liable for infringement of a patent (subsection 55(1) “Quiconque” in the French version); what actions do not constitute infringement (subsections 55.2(1) and 56(1)); who may initiate

impeachment proceedings against a granted patent (subsection 60(1) “any interested person”, “un intéressé” in the French version); and who may make an application alleging abuse of patent rights (subsection 65(1) “any person interested”, “tout intéressé” in the French version). All of these provisions specify actions by a “person” in relation to securing patent rights, being affected by them and challenging them (or clearly connote a person in the French equivalents).

We have considered the context of the provisions of the *Patent Act* and *Patent Rules* above and in our preliminary view there is a clear inference that patent rights were intended to be awarded to, and transferred between, natural or legal persons. It would seem inconsistent with that intent if the creations which led to those rights could be conceived of and given a practical form by an entity other than a person.

The Object and Scheme of the *Patent Act*

In *Harvard* at para 185 the Supreme Court referred to *Free Word Trust v Électro Santé Inc*, 2000 SCC 66 at para 42 to identify two of the central objects of the *Patent Act* as “to advance research and development and to encourage broader economic activity.” The Court in *Harvard* in the same paragraph also spoke of the necessity of incentives to engage in inventive activity, further specifying that a product of human ingenuity must fall within the terms of the *Patent Act* in order for it to be patentable.

The scheme of the Act and Rules embodies the above objects in that a patent for an invention will be granted to the inventor (or their legal representative) as long as the inventor (or their legal representative) files an application that complies with all of the filing requirements that are set out in the Act and Rules, including identifying the inventor(s), their name(s) and postal address(es), and that all other requirements for the issuance of a patent under the *Patent Act* are met.

The scheme of the *Patent Act* provides a *quid pro quo*: an inventor must fully disclose an invention in exchange for a patent giving the inventor the right to exclude others from making, using, importing, or selling the invention for a limited time period. Patents are generally recognized as a form of reward for inventive activity.

The goal of incentivising innovation would not seem to apply to an innovator that is an artificial intelligence system. Artificial intelligence systems such as the DABUS system do not need incentives and would not benefit in any way from the reward of a granted patent. An artificial intelligence system does not need encouragement nor does it have a need to enforce exclusivity of an innovation. Rather, such a system simply operates based on programming and algorithms.

In our preliminary view, the accepted objects and scheme of the patent system do not fit with the idea of an artificial intelligence system being an inventor.

Relevant caselaw

The Canadian courts have also spoken on what is meant by inventor, albeit not in the context of whether or not an artificial intelligence system fits within its definition. Nevertheless, their views seem clear. In *Sarnoff Corporation v The Attorney General of Canada*, 2008 FC 712 [*Sarnoff*] at para 9, the Federal Court stated that “inventor” is assumed to be limited to a natural person, pointing to the Supreme Court decision in *Apotex Inc v Wellcome Foundation Ltd*, [2002] 4 SCR 153 [*Apotex*] at paras 94 to 109 [Emphasis added]:

In Canada, the language of the jurisprudence assumes that an “inventor” is a natural person as opposed to a juridical person such as a corporation. A good example is the decision of the Supreme Court of Canada in *Apotex Inc. v. Wellcome Foundation Ltd.*, [2002] 4 S.C.R. 153 at paras. 94 to 109. I repeat paragraph 95 of that decision to show that a natural person is clearly contemplated:

95 *Inventors come in all shapes and sizes. As long ago as 1831, the London Journal of Arts and Sciences commented (with gender assumptions no doubt common at the time):*

Useful inventors are of three classes; the first are men of genius, capable of producing important inventions that involve the entire projecting of new machines, or remodelling of existing ones, and the organization of new or complicated processes and systems of working. These are very few.

The second are men who have not so extensive a scope of imagination and intellect as to project new systems or great changes, and to organize the means of effecting them, but who are capable of making marked improvements upon existing systems and machinery, or partial changes in them. This class is considerable.

The third class is made up of men of small imagination, who are not capable of any great originality of thought, but who have a certain ingenuity which they can apply to the things that come within the range of their observation, and possess a tact for correctly and accurately executing that which they conceive.

... Happily this class is immense, being spread thickly over the whole body of mechanics, from the manufacturer and engineer down to the lowest workman. Such men constitute expert mechanics, who are never at a loss for expedients for overcoming the practical difficulties of detail that occur in their

business, and are perpetually making trifling inventions which they require for immediate application.

(Quoted in Godson on Patents (2nd ed. 1851), at pp. 33-34.)

The Court in *Sarnoff* also noted in the same paragraph that:

some European applications for patents are filed naming corporate entities as the inventor. Not so in Canada or the United States.

The Supreme Court in *Apotex* at para 96 also made clear their inference that an inventor is a person [Emphasis added]:

Inventorship is not defined in the Act, and it must therefore be inferred from various sections. From the definition of “invention” in s. 2, for example, we infer that the inventor is the person or persons who conceived of the “new and useful” art, process, machine, manufacture or composition of matter, or any “new and useful” improvement thereto. The ultimate question must therefore be: who is responsible for the inventive concept?

From the above passages, in the Canadian Courts’ view, juridical or legal persons under subsection 35(1) of the *Interpretations Act* (R.S.C, 1985, c. I-21), such as corporations, cannot be named as an inventor, the reason being that inventor is assumed to be limited to comprising natural persons. This view reinforces our preliminary impression of the meaning of inventor and is consistent with *Harvard* at para 185 referred to earlier indicating that invention in terms of the *Patent Act* is the product of human ingenuity.

The Applicant’s submissions

The 2021 Notice identified the instant application as defective under subsection 27(2) of the *Patent Act* and section 54 of the *Patent Rules*, the issue being that an application must be filed by an inventor or the legal representative of an inventor, that the inventor must be identified, and that the Applicant (Mr. Thaler in this case) file a statement of entitlement. According to the 2021 Notice, since the inventor was identified as the DABUS system, these requirements were not met because DABUS is an artificial intelligence system and it did not appear possible for such a system to have rights under Canadian law or to transfer those rights to a human. However, the 2021 Notice stated that the Applicant may attempt to comply by submitting a statement on behalf of DABUS and identify himself as its legal representative.

Since our preliminary view is that “inventor” as used in the *Patent Act* and *Patent Rules* is limited to a natural person, rather than a legal one or an artificial intelligence system such as DABUS, no valid inventor or legal representative of an inventor may be identified. Therefore the affidavit submitted with the 2022 Response by the Applicant in which he considered himself to be the legal representative of DABUS does not overcome the identified defects in the application. In the absence of a valid inventor, our preliminary

view is that the rights that would normally be accorded to a valid inventor can neither be assigned (by the DABUS system) nor assumed (by Mr. Thaler).

We address below the Applicant's other submissions in reply to the 2021 Notice.

Ownership by Accession

In the 2022 Response, the Applicant contended that he derives entitlement to file an application by his ownership of DABUS. According to the Applicant, his ownership derives from the ancient principle under Roman law known as "accession" where the owner of a thing is, by default, the owner of the fruits of such a thing. The Applicant cited the Supreme Court of Canada's decision in *Banque Canadienne Nationale v Tencha*, [1928] SCR 26 at 36 [*Tencha*] and the following passage [Emphasis added by Applicant]:

The doctrine of property arising from accession is also grounded on the right of occupancy. By the Roman Law, if any given corporeal substance received afterwards an accession by natural or by artificial means, as by the growth of vegetables, the pregnancy of animals, the embroidering of cloth, or the conversion of wood or metal into vessels and utensils, the original owner of the thing was entitled by his right of possession to the property of it under such its state of improvement ...

The Applicant noted that essentially the same language is used in the decision of the Saskatchewan Court of Appeal in *Regina Chevrolet Sales Ltd v Riddell*, [1942] SJ No 49 at para 16 [*Riddell*] and by the Ontario Court of Queen's Bench in *Dillaree v. Doyle*, [1878] O.J. No. 109 at para 24.

The Applicant also pointed to a passage from *Riddell* at para 15 defining "accession" [Emphasis added by Applicant]:

"Accession is defined generally as increase by something added; that which is added; addition, increase, augmentation. As a legal term, it is defined as the right to all that which one's own property produces ..."

The *Tencha* case dealt with a transfer of farmland and a question of to whom crops produced on such land belonged. The Roman principles cited therein can be seen as relevant to such situations given the examples of what kind of accession or addition was contemplated by those principles, namely additions such as growth of vegetable, pregnancy of animals, etc.

However, the principles cited in *Tencha* do not suggest that what is produced by a corporeal substance and received by accession may itself be non-corporeal or intangible, such as the conception and description of an invention. It is hard to imagine that such a situation was envisioned for such principles. We also note that though the Applicant has emphasized language from *Riddell* that on its face appears very broad regarding what kinds of accessions are protected, the quoted language from *Riddell* was used in conjunction with the same principles set out in *Tencha*.

We note that the Applicant also asserted the principle of accession in pursuit of his application before the UK Supreme Court, the Court rejecting its applicability to the present situation (*Thaler v Comptroller-General of Patents, Designs and Trade Marks* [2023] UKSC 49):

87. In particular, Dr Thaler's reliance on the doctrine of accession in this context is misguided. The doctrine concerns new tangible property produced by existing tangible property. Dr Thaler contends that, upon the application of this doctrine, the owner of the existing property also owns the new property. In this way, the farmer owns the cow and the calf. By analogy, Dr Thaler continues, he, as owner of DABUS, is the owner of all rights in all developments made by DABUS.

88. We are not concerned here with a new item of tangible property produced by an existing item of tangible property, however. We are concerned with what appear (and which for present purposes we must assume) to be concepts for new and non-obvious devices and methods, and descriptions of ways to put them to into practice, all of which, so Dr Thaler maintains, have been generated autonomously by DABUS. There is no principled basis for applying the doctrine of accession in these circumstances.

In the present case, the DABUS system is said to have created a design for a type of food and beverage container as well as an enhanced signalling device and these have been described in the instant application. But the fruits of the DABUS system that are sought to be protected are intellectual property, an intangible asset, rather than physical property. In our preliminary view, the principle of accession, as it has been used, does not fit with such a situation and the Applicant has not provided any references that support the expansion of this principle.

Entitlement to file an application

In the 2022 Response, the Applicant contended that due to his ownership of DABUS, he was therefore entitled to file a patent application for the alleged invention produced by DABUS.

As we have discussed above, it is our preliminary view that the principle of accession does not apply to the alleged invention produced by DABUS. Therefore this principle cannot be used for the Applicant to claim ownership.

The Applicant also attempted to assert caselaw regarding a situation where an employee has a legal duty to assign rights to an invention to an employer. Viewing DABUS as an employee is not easily reconciled with the Applicant's earlier position that DABUS is a piece of property owned by the Applicant and that any property that results from it flows to the Applicant by the principle of accession. DABUS and Mr. Thaler do not have an employee/employer relationship and so the cases cited do not fit with the present situation. Further, the caselaw relates to employee-inventors that are natural persons and the Applicant has provided no references supporting the extension of the legal duty to assign rights to an artificial intelligence system such as DABUS.

The Applicant's Policy Considerations arguments

The 2022 Response at page 3-4 set out policy considerations that in the Applicant's view were relevant to the question of whether DABUS could be an inventor and whether the Applicant was therefore entitled to file a patent application.

The Applicant contended that by denying the instant application, no one could obtain a valid patent for an invention developed by artificial intelligence. Such policy considerations do not serve as the basis of our analysis, which is instead grounded in an interpretation of the meaning of inventor as contemplated by the legislation, the associated regulations and the relevant caselaw.

The Applicant also noted that if one attempted to avoid the issue of artificial intelligence as an inventor, one may list the human creator of the artificial intelligence as inventor instead. The Applicant noted that this could be considered as an untrue material allegation in a patent application petition under subsection 53(1) of the *Patent Act* and that such a false representation could have serious consequences under Section 76 of the *Patent Act*. While what the Applicant asserts may be true, these issues are not before us.

Conclusion as to the scope and meaning of "inventor"

In view of the above, it is our preliminary view that "inventor" as used in the *Patent Act* and *Patent Rules* is limited to natural persons, as opposed to legal or juridical persons (e.g., a corporation) or an artificial intelligence system such as DABUS.

Further since DABUS is an artificial intelligence system, it cannot be listed as an inventor on the patent application and therefore the application cannot be filed by "the inventor or the inventor's legal representative" as required by subsection 27(2) of the *Patent Act*. In addition, an inventor cannot be identified according to the requirements of subsection 54(1) of the *Patent Rules*.

FURTHER COMMUNICATIONS

Any submissions made in response to this communication should be directed to attention of the **Patent Appeal Board**. Submissions should be made concurrently via email to the undersigned to ensure they are received promptly.

At any time the Applicant may indicate that they no longer have any continuing interest in this application, or otherwise do not wish for a Commissioner's Decision to issue, by withdrawing this application. An application may only be withdrawn by way of a letter addressed to the **Commissioner of Patents** (not the Patent Appeal Board) that clearly indicates the Applicant's intention. To do so, language to the effect that "The Applicant

hereby requests withdrawal of Canadian Patent Application no. 3,137,161” is suggested.

More information on the review process can be found in the *Manual of Patent Appeal Board Procedures for Rejected Patent Applications* (CIPO, December 2023), online: <ised-isde.canada.ca/site/canadian-intellectual-property-office/en/manual-patent-appeal-board-procedures-rejected-patent-applications>, and in the publication “IP roadmap – Your path to a review by the Patent Appeal Board” (CIPO, January 2024), online: <ised-isde.canada.ca/site/canadian-intellectual-property-office/en/ip-roadmap-your-path-review-patent-appeal-board>.

Any other questions or concerns may be directed to the undersigned.

Sincerely,

A handwritten signature in blue ink, appearing to read 'S MacNeil', is positioned above the typed name.

Stephen MacNeil
Member, Patent Appeal Board, for the Panel
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