

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA
Alexandria Division**

Stephen Thaler, an individual

Plaintiff,

v.

Andrei IANCU, in his official capacity as Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office, and United States Patent and Trademark Office

Defendants.

Case No.

**COMPLAINT FOR DECLARATORY AND
INJUNCTIVE RELIEF**

Plaintiff Stephen Thaler (“Dr. Thaler”) hereby complains and alleges against Andrei IANCU (the “Director”), in his official capacity as Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office, and the United States Patent and Trademark Office (“USPTO”) (Director and USPTO collectively, “Defendants”) as follows:

NATURE OF ACTION

1. Plaintiff is in the business of developing and applying advanced artificial intelligence (AI) systems that are capable of generating patentable output under conditions in which no natural person traditionally meets inventorship criteria.

2. One of Plaintiff's AI systems, named DABUS, generated the subject matter of two patent applications submitted to the USPTO. These applications named DABUS as the inventor and Plaintiff as the applicant and prospective owner of any granted patents.

3. Defendants, in a final agency action, denied both patent applications on the basis that they failed to disclose a natural person who invented the subject matter of the applications.

4. The Rejections create a novel substantive requirement for patentability that is contrary to existing law and at odds with the policy underlying the patent system.

5. Defendants' position is anti-intellectual property and anti-business, and it puts American businesses at an international disadvantage compared to businesses in jurisdictions that will choose to grant patents on AI-generated inventions.

6. The Rejections are subject to judicial review under the Administrative Procedure Act (APA), 5 U.S. Code § 704. Plaintiff seeks injunctive and other relief as set forth below.

JURISDICTION AND VENUE

7. This Court has subject matter jurisdiction and is authorized to issue the relief sought under 5 U.S.C. §§ 701-06, 28 U.S.C. §§ 1331, 1338(a), 1361, and 2201-2202.

8. Venue is proper in this district under 28 U.S.C. § 1391(e).

PARTIES

9. Plaintiff Dr. Stephen Thaler is an individual at all times relevant to this complaint residing in the State of Missouri.

10. As described more fully below, Plaintiff is the owner of all right, title, and interest in and to the patent applications as the owner, user, and developer of DABUS.

11. Defendant Andrei Iancu is named in his official capacity as the Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark

Office. Under 35 U.S.C. § 3(a)(1), the powers and duties of the USPTO are vested in the Director.

12. Defendant United States Patent and Trademark Office is a federal agency in the Department of Commerce.

FACTUAL BACKGROUND

History of the Application

13. Plaintiff is in the business of developing advanced AI systems that are capable of generating patentable output in the absence of a person who otherwise meets inventorship criteria. Such inventions are referred to here as “AI-generated inventions”.

14. A number of parties have claimed for decades to be in possession of AI-generated inventions.¹ In 2019, Siemens reported that the company had multiple AI-generated inventions for which they had intended to file for patents but did not do so due to legislative uncertainty.²

15. The present case involves two United States patent applications (the “Applications”) filed by Plaintiff for AI-generated inventions produced by one of Plaintiff’s AI systems, named DABUS. One of these inventions is a light beacon that flashes in a new and inventive manner to attract attention (“Neural Flame”), while the other is a beverage container based on fractal geometry (“Fractal Container”).

16. Plaintiff applied for a patent for the Neural Flame and the Fractal Container, patent application numbers 16/524,350 and 16/524,532, respectively. Both applications were filed on July 29, 2019.

¹ See, e.g., Ryan Abbott, *I Think, Therefore I Invent: Creative Computers and the Future of Patent Law*, 57 B.C. L. REV. 1079 (2016) (describing early instances of “computation invention”).

² Ryan Abbott, *The Reasonable Robot: Artificial Intelligence and the Law* (2020) at 10.

17. Foreign analogs of the Applications were filed in a number of patent offices internationally. While the Applications were not substantively evaluated in the United States, the United Kingdom Intellectual Property Office (UKIPO) evaluated the applications on their merits. Both Applications were found to be patentable to the extent possible prior to their publication.³

18. A “worldwide” international patent application combining the subject matter of both Applications was filed under the Patent Cooperation Treaty. This application was published by the World Intellectual Property Organization on April 23, 2020. WO 2020/079499 A1. It designates Stephen Thaler as the applicant and lists, “DABUS, The invention was autonomously generated by an artificial intelligence”, as the inventor. *Id.*

19. In the United States, the Applications required submission of application data sheets (ADS). These list a single inventor with the given name “[DABUS]” and the family name “(Invention generated by artificial intelligence)”. The ADSs also identify Plaintiff as the Applicant.

20. Patent applications typically require either an oath or declaration by an inventor under 35 U.S.C. § 115(d). However, because the Applications’ inventor was a machine without legal personality and incapable of executing an inventor’s oath or declaration, a substitute statement under 37 CFR 1.64 was filed instead identifying Plaintiff as the legal representative of DABUS and the Applicant.

21. A statement was also filed under 37 CFR 3.73(c) identifying Plaintiff as the assignee of the entire right, title, and interest in the Applications, and an assignment document

³ Application GB1816909.4 had a combined search and examination report on March 29, 2019, with a communication of no further objections on July 12, 2019. Application GB1818161.0 had a combined search and examination report issued on April 30, 2019, with a communication of no further objections on October 9, 2019. In both cases, the examiner could not complete his investigations until at least three months after the application had been published, in accordance with the UKIPO’s standard procedure.

executed by Plaintiff was filed assigning the right to himself on behalf of DABUS. Plaintiff, is entitled to own the output of DABUS as the developer, user, and owner of DABUS, among other things, under the doctrines of accession and first possession.

22. Given the uniqueness of the Applications, and the lack of procedural accommodation for indicating an application is based on an AI-generated invention, an additional “Statement of Inventorship” was filed providing clarifying remarks. This statement explained the invention was conceived by DABUS which, it was proposed, should be named the inventor of the Applications.

23. Both Applications followed a similar procedural pathway at USPTO.

24. Defendants issued a “Notice to File Missing Parts of Nonprovisional Application” for each Application on August 8, 2019. Those notices indicated that the ADS did not identify each inventor by his or her legal name.

25. Plaintiff filed petitions under 37 CFR 1.181 on August 29, 2019, requesting supervisory review of the August 8, 2019 Notices, and to vacate said notices for being unwarranted and/or void.

26. A second Notice to File Missing Parts of Nonprovisional Application was issued for both Applications on December 13, while the petitions of August 29, 2019 were dismissed in a decision issued on December 17, 2019.

27. A second petition under 37 CFR 1.181 was filed on January 20, 2020, requesting reconsideration of the decisions issued December 17, 2019, which decision refused to vacate the August 8, 2019 notices.

28. On April 22, 2020, the USPTO denied the petitions with respect to both Applications. Unusually, USPTO took the step of publishing one of the decisions on the

petition—but only the decision with respect to the Neural Flame (the “Decisions”).⁴ The Decision with respect to the Neural Flame is attached hereto as Exhibit 1.

29. Defendants reasoned that an inventor could only be a natural person based on various statutory references, such as 35 U.S.C Section 101, which states: “Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter... may obtain a patent therefore, subject to the conditions and requirements of this title”. Various other sections of Title 35 similarly refer to individuals in the context of referring to inventors.

30. The Decisions also cite to cases holding that inventors cannot be corporations or sovereigns. *E.g.*, *Univ. of Utah v Max-Planck-Gesellschaft zur Forderung der Wissenschaften e. V.*, 734 F.3d 1315 (Fed. Cir. 2013).

31. In addition, the Decisions refer to judicial language that suggest inventors must be natural persons, *e.g.*, *Beech Aircraft Corp v. EDO Corp.*, 990 F.2d 1237, 1248 (Fed. Cir. 1993) (“only natural persons can be ‘inventors.’”).

32. Finally, the Decisions note that “[c]onception is the touchstone of invention... a mental act...” *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 127–8 (Fed.Cir. 1994).

33. Thus, the Decisions claim that because statutory language refers to individuals as inventors, because corporations and sovereigns cannot be inventors, and because the act of inventorship requires conception (which Defendants claim machines cannot perform), the Applications do not comply with 35 U.S.C. Section 115(a).

34. The Decisions constitute final agency action.

⁴ https://www.uspto.gov/sites/default/files/documents/16524350_22apr2020.pdf

The Decisions Create a New and Unintended Substantive Requirement for Patentability

35. The Decisions effectively prohibit patents on all AI-generated inventions.

36. In the case of the Applications, there is no natural person who meets inventorship criteria and there has been no suggestion by USPTO to the contrary. Therefore, under the Decision's holding, there is no way to remedy the Notices to File Missing Parts and no way to successfully file for patent protection for an AI-generated invention.

37. This means that AI-generated inventions will enter the public domain once disclosed. This is undesirable both as a matter of innovation policy and because there is no evidence that Congress intended to prohibit patents on AI-generated inventions.

38. Alternately, future patent applicants may attempt to circumvent the new standard by inaccurately listing a natural person who does not meet inventorship criteria. While Defendants have not explicitly encouraged future applicants for AI-generated inventions to inaccurately name a natural person as an inventor, as a practical matter this may occur because the USPTO does not contest reported inventorship as a general matter. "The Office presumes that the named inventor or joint inventors in the application are the actual inventor or joint inventors to be named on the patent." Manual of Patent Examining Procedure Section 2109.⁵

39. Had Plaintiff listed himself as the inventor for the Applications he would have two issued patents or be well on his way to that outcome. This, like prohibiting all patents on AI-generated inventions, would be an undesirable outcome because it would involve misrepresentations and individuals claiming credit for work they did not perform. Though, fraudulently listing an inventor is grounds for rejection under 35 U.S.C. section 101 and 35

⁵ https://www.uspto.gov/web/offices/pac/mpep/s2109.html#ch2100_d2c183_22374_28b

U.S.C. 115. Also, deliberately misreporting inventorship may result in criminal punishment. 18 U.S.C. 1001.

Allowing Patents on AI-Generated Inventions is Consistent with the Constitution and the Patent Act

40. Congress is empowered to grant patents on the basis of the Patent and Copyright Clause of the Constitution. U.S. CONST. art. I, § 8, cl. 8. This clause enables Congress “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” *Id.*

41. It also provides an explicit rationale for granting patent and copyright protection, namely to encourage innovation under an incentive theory. The theory goes that people will be more inclined to invent things (i.e., promote the progress of science) if they can receive government-sanctioned monopolies (i.e., patents) to exploit commercial embodiments of their inventions. Having the exclusive right to sell an invention can be tremendously lucrative.⁶ The patent system is also designed to incentivize the disclosure of information, and the commercialization and development of inventions. *See* Ryan Abbott, *I Think, Therefore I Invent: Creative Computers and the Future of Patent Law*, 54 B. C. L. Rev. 1079–1126 (2016).

42. Allowing patents for AI-generated inventions will incentivize the development of AI capable of producing AI-generated inventions (“inventive machines”), which will ultimately promote innovation. This will be particularly important as AI becomes more sophisticated and likely a standard part of future research and development. To the extent that patents also

⁶ *See* John Stuart Mill, *Principles of Political Economy with Some of their Applications to Social Philosophy* 563 (Prometheus Books 2004) (1872) (noting that under a patent system, “the greater the usefulness, the greater the reward”).

incentivize commercialization and disclosure of information, there is no change in this function as between a human and an AI-generated invention.

43. By contrast, denying patent protection for AI-generated inventions threatens to undermine the patent system by failing to encourage the production of socially valuable inventions.

44. Patent law also protects the moral rights of human inventors and acknowledging an AI as an inventor where appropriate would protect these human rights. At present, individuals are claiming inventorship of AI-generated inventions under circumstances in which those persons have not functioned as inventors. See Ryan Abbott, *I Think, Therefore I Invent: Creative Computers and the Future of Patent Law*, 54 B. C. L. Rev. 1079–1126 (2016).

45. Failing to appropriately acknowledge inventive activity by AI weakens moral justifications for patents by allowing individuals to take credit for work they have not done. It is not unfair to machines who have no interest in being acknowledged, but it is unfair to other human inventors because it devalues their accomplishments by altering and diminishing the meaning of inventorship. This could equate the hard work of creative geniuses with those simply asking a machine to solve a problem or submitting a machine's output. By contrast, acknowledging an AI as an inventor would also acknowledge the work of the AI's creators. Finally, listing an AI as an inventor serves to inform the public of an invention's origin.

AI-Generated Inventions Should Be Patentable Under Existing Law

46. There is no statute or case that has found an AI-generated invention cannot be patented, or that holds an AI cannot be listed as an inventor.

47. Further, there is no evidence that Congress ever intended to prohibit patents on AI-generated inventions. It is not disputed that both statutory and judicial language refers to

inventors as individuals, but none of these laws or cases have been in relation to AI-generated inventions.

48. Rather, any discussion of inventors as natural persons has been based on the *assumption* that only a person could invent, or to prevent corporate and sovereign inventorship at the expense of a human inventor.

49. Because cases that refer to inventors as individuals have never done so in relation to an AI-generated invention, they should not be misapplied to support a blanket prohibition on patent rights. *See* Karl F. Milde, Jr., Can a Computer Be an “Author” or an “Inventor”?, 51 J. PAT. OFF. SOC’Y 378, 379 (1969). (“The closest that the Patent Statute comes to requiring that a patentee be an actual person is in the use, in Section 101, of the term ‘whoever.’ Here too, it is clear from the absence of any further qualifying statements that the Congress, in considering the statute in 1952, simply overlooked the possibility that a machine could ever become an inventor.”)

50. Given the absence of statutory law directed to patents on AI-generated inventions, such patents should be permitted under a dynamic interpretation of the law. *See* William N. Eskridge, Jr. & Philip P. Frickey, Statutory Interpretation as Practical Reasoning, 42 STAN. L. REV. 321, 324 (1990). Such an approach would be consistent with the Founders’ intent in enacting the Patent and Copyright Clause, and it would interpret the Patent Act to further that purpose.

51. Nor would such an interpretation run afoul of the chief objection to dynamic statutory interpretation, namely that it interferes with reliance and predictability and the ability of citizens “to be able to read the statute books and know their rights and duties.” *Id.*, at 340. That is because a dynamic interpretation would not upset an existing policy. Permitting patents on AI-

generated inventions would clarify the permissibility of future patent applications rather than retroactively invalidating previously granted patents, and there is naturally less reliance and predictability in patent law than in many other fields given that it is a highly dynamic subject area that struggles to adapt to constantly changing technologies.

52. Other areas of patent law have been the subject of dynamic interpretation.⁷ For example, in the landmark 1980 case of *Diamond v. Chakrabarty*, the Supreme Court was charged with deciding whether genetically modified organisms could be patented. *Diamond v. Chakrabarty*, 447 U. S. 303, 317 (1980). The Court held that a categorical rule denying patent protection for “inventions in areas not contemplated by Congress . . . would frustrate the purposes of the patent law.” *Id* at 315. The Court noted that Congress chose expansive language to protect a broad range of patentable subject matter. *Id* at 316.

53. It would be particularly unwise to prohibit patents on AI-generated inventions on the basis of narrow interpretations of texts written when AI-generated inventions were unforeseeable. If patents on AI-generated inventions are to be prohibited, it should only be on the basis of clear and unambiguous Congressional intent.

54. Drawing an analogy from the copyright context, just as the terms “Writings” and “Authors” have been construed flexibly in interpreting the Patent and Copyright Clause, so too should the term “Inventors” be afforded the flexibility needed to effectuate constitutional

⁷ The Supreme Court has called the section of the U.S. Code relating to patentable subject matter a “dynamic provision designed to encompass new and unforeseen inventions.” *J.E.M. AG Supply, Inc. v. Pioneer Hi-Bred Int’l, Inc.*, 534 U. S. 124, 135 (2001). The Court noted in *Bilski v. Kappos* that “it was once forcefully argued that until recent times, ‘well-established principles of patent law probably would have prevented the issuance of a valid patent on almost any conceivable computer program.’” 561 U.S. 593, 605 (2010) (quoting *Diamond v. Diehr*, 450 U.S. 175, 195 (1981) (Stevens, J., dissenting)). The Court, however, went on to state that “this fact does not mean that unforeseen innovations such as computer programs are always unpatentable.” *Id.* (citing *Diehr*, 450 U.S. at 192–93 (Stevens, J., dissenting)).

purposes.⁸ Indeed, under the work-for-hire doctrine, a corporation can be considered a legal author for copyright purposes. 17 U.S.C. § 101. See, also,

<https://www.copyright.gov/circs/circ30.pdf>.

55. Granting patents on AI-generated inventions may even be required by international treaties ratified by the United States, some of which *require* signatories to issue patents that meet certain substantive criteria. Such treaties do not contain exceptions which would apply to AI-generated inventions. This includes, among others, The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), which in Article 27 states: “Subject to the provisions of paragraphs 2 and 3, patents *shall* be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application.” [Emphasis added]

Conception Does Not Prohibit Artificial Inventors

56. For a person to be an inventor, the person must contribute to an invention’s “conception.” Conception has been defined as “the complete performance of the mental part of the inventive act” and it is “the formation in the mind of the inventor of a definite and permanent idea of the complete and operative invention as it is thereafter to be applied in practice....” *Townsend v. Smith*, 36 F.2d 292, 295, 4 USPQ 269, 271 (CCPA 1929).”

57. The case law on conception should not prevent AI inventorship. Whether or not AI can “conceive” of an invention, “think,” or have something analogous to consciousness should be irrelevant with regards to the existence of patent rights.

⁸ In 1973, the Supreme Court in *Goldstein v. California* noted that the terms “Writings” and “Authors,” have “not been construed in their narrow literal sense but, rather, with the reach necessary to reflect the broad scope of constitutional principles.” 412 U.S. 546, 561 (1973).

58. While judicial language about conception is undeniably eloquent, it is not similarly informative about what is specifically required. It does not establish whether a non-human could conceive of anything, and even with regards to individuals it is not clear what “formation in the mind” *actually* means. Courts associating inventive activity with conception have not been using terms precisely or meaningfully in the context of AI-generated inventions.

59. If conception is required for an invention, it is unclear under existing law whether an AI would have to engage in a process that results in inventive output—which it can do—or whether, and to what extent, it would need to mimic human thought. If the latter, it is unclear what the purpose of such a requirement would be except to exclude nonhumans (for which a convoluted test is unnecessary).

60. Dr. Thaler has argued that his AI’s architecture imitates the architecture of the human brain. See, e.g., Stephen L. Thaler, Synaptic Perturbation and Consciousness, 6 INT’L J. MACHINE CONSCIOUSNESS 75 (2014). There is a slippery slope in determining what constitutes “conception” in an AI even leaving aside deficits in our understanding of the structure and function of the human brain.

61. If DABUS is able to generate patentable output but not to engage in “conception”—would a computer scientist have to design a completely digitized version of the human brain? Even if designing a completely digitized version of the human brain was possible, it might not be the most effective way to structure an inventive machine. On top of that, it would be difficult or impossible for the USPTO and the courts to distinguish between different computers’ architectures.

62. The problem of speaking precisely about concepts such as conception with regards to computers was identified by Alan Turing, one of the founders of computer science,

who in 1950 considered the question, “Can machines think?” See A.M. Turing, Computing Machinery and Intelligence, 59 MIND 433, 433–51 (1950). He found the question to be ambiguous, and the term “think” to be unscientific in its colloquial usage. *Id.*

63. Turing decided the better question to address was whether an individual could tell the difference between responses from a computer and an individual; rather than asking whether machines “think,” he asked whether machines could perform in the same manner as thinking entities. *Id.* Turing’s analysis from more than sixty years ago demonstrates that a test based on machine “conception” would be ambiguous, challenging to administer, and of uncertain utility.

64. Moreover, the primary reason a conception requirement should not prevent AI inventorship is that the patent system should be indifferent to the means by which invention comes about. Congress came to this conclusion in 1952 when it abolished the Flash of Genius doctrine. See 35 U.S.C. § 103 (2012). That doctrine had been used by the Federal Courts as a test for patentability for over a decade. It held that in order to be patentable, a new device, “however useful it may be, must reveal the flash of creative genius, not merely the skill of the calling.” *Cuno Eng’g Corp.*, 314 U.S. at 91. The doctrine was interpreted to mean that an invention must come into the mind of an inventor in a “flash of genius” rather than as a “result of long toil and experimentation.”⁹ As a commentator at the time noted, “the standard of patentable invention

⁹ The Supreme Court later claimed the “Flash of Creative Genius” language was just a rhetorical embellishment and that requirement concerned the device not the manner of invention. *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 15 n.7, 16 n.8 (1966). That was not, however, how the test was interpreted. See P.J. Federico, Origins of Section 103, 5 APLA Q.J. 87, 97 n.5 (1977) (noting the test led to a higher standard of invention in the lower courts). When Congress abolished the test, Congress noted it should be immaterial whether invention was made “from long toil and experimentation or from a flash of genius.” 35 U.S.C. § 103. Further, the Court stated in 1966 in *Graham* that “[t]he second sentence states that patentability as to this requirement is not to be negated by the manner in which the invention was made, that is, it is immaterial whether it resulted from long toil and experimentation or from a flash of genius.” *Graham*, 383 U.S. at 16.

represented by [the Flash of Genius doctrine] is apparently based upon the nature of the mental processes of the patentee-inventor by which he achieved the advancement in the art claimed in his patent, rather than solely upon the objective nature of the advancement itself.” The “Flash of Genius” Standard of Patentable Invention, 13 FORDHAM L. REV. 84, 87 (1944).

65. The Flash of Genius test was an unhelpful doctrine because it was vague, difficult for lower courts to interpret, involved judges making subjective decisions about a patentee’s state of mind, and made it substantially more difficult to obtain a patent. See DePaul College of Law, Patent Law—“Flash of Genius” Test for Invention Rejected, 5 DEPAUL L. REV. 144, 146 (1955). The test was part of a general hostility toward patents exhibited by mid-twentieth century courts, a hostility that caused United States Supreme Court Justice Robert Jackson to note in a dissent that “the only patent that is valid is one which this Court has not been able to get its hands on.” *Jungersen v. Ostby & Barton Co.*, 335 U.S. 560, 572 (1949) (Jackson, J., dissenting).

66. Criticism of this state of affairs led President Roosevelt to establish a National Patent Planning Commission to study the patent system and to make recommendations for its improvement.¹⁰ In 1943, the Commission reported with regard to the Flash of Genius doctrine that “patentability shall be determined objectively by the nature of the contribution to the advancement of the art, and not subjectively by the nature of the process by which the invention may have been accomplished.” The “Flash of Genius” Standard of Patentable Invention, 85 (internal quotation marks omitted). Adopting this recommendation, the Patent Act of 1952 legislatively disavowed the Flash of Genius test. See 35 U.S.C. § 103 (2012).¹¹ In the same

¹⁰ See William Jarratt, U.S. National Patent Planning Commission, 153 NATURE 12, 14 (1944).

¹¹ Further, in *Graham*, the Supreme Court noted that “[i]t . . . seems apparent that Congress intended by the last sentence of § 103 to abolish the test it believed this Court announced in the controversial phrase ‘flash of creative genius,’ used in *Cuno Engineering*.” *Graham*, 383 U.S. at 15.

manner, patentability of AI-generated inventions should be based on the inventiveness of a computer's output rather than on a clumsy anthropomorphism because, like Turing, patent law should be interested in a functionalist solution.

CAUSES OF ACTION

FIRST CAUSE OF ACTION

(APA Violation in Denying Plaintiff's Petition)

67. Plaintiff re-alleges and incorporates herein by reference every allegation contained in all of the preceding paragraphs.

68. For the reasons stated above, requiring a natural person to be listed as an inventor as a condition of patentability is contrary to law.

69. Defendants' Notice to File Missing Parts of Nonprovisional Application on August 8, 2019 and Defendants' denial of Plaintiff's petition under 37 CFR 1.181 were both contrary to law.

70. The agency actions here were arbitrary, capricious, an abuse of discretion and not in accordance with the law; unsupported by substantial evidence, and in excess of Defendants' statutory authority.

71. The Notice to File Missing Parts of Nonprovisional Applications should be set aside and the Applications reinstated.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that the Court:

A. Issue an order compelling Defendants to reinstate the Applications and vacate the prior decision on the petitions filed under 37 CFR 1.181;

- B. A declaration that a patent application for an AI-generated invention should not be rejected on the basis that no natural person is identified as an inventor;
- C. A declaration that a patent application for an AI-generated invention should list an AI where the AI has met inventorship criteria.
- D. Award costs and its reasonable attorneys fees to Plaintiff; and
- E. Grant other or further relief as may be appropriate.

Dated: August 6, 2020

BROWN, NERI, SMITH & KHAN LLP

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EXHIBIT 1



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
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www.uspto.gov

FlashPoint IP Ltd.
Rehov Rabban Gamliel 2
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ISRAEL

In re Application of :
Application No.: 16/524,350 :
Filed: July 29, 2019 : DECISION ON PETITION
Attorney Docket Number: 50567-3-01-US :
For: DEVICES AND METHODS FOR :
ATTRACTING ENHANCED ATTENTION :

This is a decision on the petition filed January 20, 2020 under 37 CFR 1.181, requesting reconsideration of the decision issued December 17, 2019, which decision refused to vacate the August 8, 2019 Notice to File Missing Parts of Nonprovisional Application.¹

The petition to vacate the August 8, 2019 Notice to File Missing Parts of Nonprovisional Application is **DENIED**.

RELEVANT BACKGROUND

The above-identified application was filed on July 29, 2019.

The application papers filed on July 29, 2019 were accompanied by:

- An application data sheet (“ADS”) listing a single inventor with the given name “[DABUS]” and the family name “(Invention generated by artificial intelligence).” The ADS also identifies the Applicant as the Assignee “Stephen L. Thaler.”
- A substitute statement under 37 CFR 1.64 in lieu of declaration under 35 U.S.C. § 115(d) listing “DABUS (the invention was autonomously generated by artificial intelligence)” as the inventor was executed by Stephen L. Thaler, who was identified as both the legal

¹ The instant petition under 37 CFR 1.181 was filed concurrently with a petition under 37 CFR 1.181 requesting expedited processing of the instant petition. The petition to expedite the processing is **dismissed** as moot in view of this decision.

representative of DABUS and the Applicant.

- A statement under 37 CFR 3.73(c) identifying Stephen L. Thaler as the assignee of the entire right, title, and interest in the application.
- An assignment document assigning the entire right, title and interest of “DABUS, the Creativity machine that has produced the...invention” to Stephen L. Thaler. Stephen L. Thaler executed the document on behalf of both DABUS, as legal representative of the assignor, and on behalf of himself as the assignee.²
- A “STATEMENT OF INVENTORSHIP” (“Inventorship Statement”) which provides clarifying remarks on the inventorship of the ‘350 application. Briefly, the letter states the invention was conceived by a “creativity machine” named “DABUS” and it should be named as the inventor in the ‘350 application.

A Notice to File Missing Parts of Nonprovisional Application was issued on August 8, 2019 (“August 8, 2019 Notice”). The August 8, 2019 Notice indicated that the ADS “does not identify each inventor by his or her legal name” and an \$80 surcharge is due for late submission of the inventor’s oath or declaration.

A petition under 37 CFR 1.181 was filed on August 29, 2019, requesting supervisory review of the August 8, 2019 Notice, and to vacate the August 8, 2019 Notice for being unwarranted and/or void.

A second Notice to File Missing Parts of Nonprovisional Application was issued on December 13, 2019 (“December 13, 2019 Notice”), explaining the time period for reply runs from the mail date of the December 13, 2019 Notice.

The petition of August 29, 2019 was dismissed in a decision issued on December 17, 2019.

The instant petition under 37 CFR 1.181 was filed on January 20, 2020, requesting reconsideration of the decision issued December 17, 2019, which decision refused to vacate the August 8, 2019 Notice.

² Petitioner states “It is accepted that an AI system such as DABUS cannot, under current law, own property...there is no law that confers on an AI system any rights to own property.” Reconsideration Petition at 4. Thus, petitioner admits that DABUS cannot own any property including the property rights in inventions the machine itself created. This further calls into question whether the submitted assignment document satisfies the requirements of 37 CFR 3.73(c)(1) and petitioner’s ability to file the above-identified application as applicant under 35 U.S.C. § 118 and 37 CFR 1.46.

STATUTES

35 U.S.C. § 100(f) provides:

The term “inventor” means the individual or, if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention.

35 U.S.C. § 100(g) provides:

The terms “joint inventor” and “coinventor” mean any 1 of the individuals who invented or discovered the subject matter of a joint invention.

35 U.S.C. § 101 provides:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

35 U.S.C. § 115(a) provides:

An application for patent that is filed under section 111(a) or commences the national stage under section 371 shall include, or be amended to include, the name of the inventor for any invention claimed in the application. Except as otherwise provided in this section, each individual who is the inventor or a joint inventor of a claimed invention in an application for patent shall execute an oath or declaration in connection with the application

35 U.S.C. § 115(b) provides, in pertinent part:

An oath or declaration under subsection (a) shall contain statements that...such individual believes himself or herself to be the original inventor or an original joint inventor of a claimed invention in the application.

35 U.S.C. § 115(h)(1) provides, in pertinent part:

Any person making a statement required under this section may withdraw, replace, or otherwise correct the statement at any time.

OPINION

Petitioner asserts the invention of the above-identified application was generated by a machine named “DABUS.”³ According to petitioner, this “creativity machine” is programmed as a series of neural networks that have been trained with general information in the field of endeavor to

³ Inventorship Statement at 2.

independently create the invention.⁴ Petitioner asserts that DABUS was not created to solve any particular problem, and it was not trained on any special data relevant to the instant invention.⁵ Instead, it was the machine, not a person, which recognized the novelty and salience of the instant invention.⁶ Petitioner contends that inventorship should not be limited to natural persons and, therefore, the naming of DABUS as the inventor in the above-identified application is proper.⁷ Petitioner requests that the August 8, 2019 Notice be vacated for being unwarranted and/or void.

Under 35 U.S.C. § 115(a), “[a]n application for patent that is filed under section 111(a)... shall include, or be amended to include, the name of the inventor for any invention claimed in the application.” An “inventor” is defined in 35 U.S.C. § 100(a) as “the individual or, if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention.”⁸

To the extent the petitioner argues that an “inventor” could be construed to cover machines, the patent statutes preclude such a broad interpretation. Title 35 of the United States Code consistently refers to inventors as natural persons. For example, 35 U.S.C. § 101 states “*Whoever* invents or discovers any new and useful process, machine, manufacture, or composition of matter... may obtain a patent therefore, subject to the conditions and requirements of this title” (emphasis added). “Whoever” suggests a natural person.⁹ 35 U.S.C. § 115 similarly refers to individuals and uses pronouns specific to natural persons—“himself” and “herself”—when referring to the “individual” who believes himself or herself to be the original inventor or an original joint inventor of a claimed invention in the application.¹⁰ It further states that the inventor who executes an oath or declaration must be a “person.”¹¹ Other sections of Title 35 take the same approach.¹² Therefore, interpreting “inventor” broadly to encompass machines would contradict the plain reading of the patent statutes that refer to persons and individuals.

In addition, the U.S. Court of Appeals for the Federal Circuit (Federal Circuit) has explained that the patent laws require that an inventor be a natural person. For example, in *Univ. of Utah v.*

⁴ *Id.*

⁵ *Id.*

⁶ *Id.*

⁷ *Id.* at 3.

⁸ See also 35 U.S.C. § 115(a) (“each individual who is an inventor... shall execute an oath or declaration”); 35 U.S.C. § 100(g) (“The terms “joint inventor” and “coinventor” mean any 1 of the individuals who invented or discovered the subject matter of a joint invention”).

⁹ *Merriam-Webster’s Collegiate Dictionary* (10th ed. 2001).

¹⁰ 35 U.S.C. § 115(b) (“An oath or declaration under subsection (a) shall contain statements that... such individual believes himself or herself to be the original inventor or an original joint inventor of a claimed invention in the application.”).

¹¹ 35 U.S.C. § 115(h)(1) (“Any person making a statement required under this section may withdraw, replace, or otherwise correct the statement at any time.”).

¹² See e.g. 35 U.S.C. § 102(a) (“A person shall be entitled to a patent unless...”); 35 U.S.C. § 116(c) (“Whenever through error a person is named in an application for patent as the inventor...”); 35 U.S.C. § 185 (“Notwithstanding any other provisions of law any person, and his successors, assigns, or legal representatives, shall not receive a United States patent for an invention if that person, or his...”); 35 U.S.C. § 256(a) (“Whenever through error a person is named in an issued patent as the inventor...”).

Max-Planck-Gesellschaft zur Forderung der Wissenschaften e.V.,¹³ the Federal Circuit explained that a state could not be an inventor, stating—

The inventors of a patent are “the individual or, if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention.” 35 U.S.C. § 100(f). It is axiomatic, that inventors are the individuals that conceive of the invention:

Conception is the touchstone of inventorship, the completion of the mental part of invention. It is the formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is hereafter to be applied in practice. Conception is complete only when the idea is so clearly defined in the inventor’s mind that only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation. [Conception] is a mental act. . . .

Burroughs Wellcome Co. v. Barr Labs., Inc., 40 F.3d 1223, 1227-28 (Fed.Cir.1994) (internal quotation marks and citations omitted). To perform this mental act, inventors must be natural persons and cannot be corporations or sovereigns.¹⁴

Similarly, when explaining the distinction between inventorship and ownership of an invention by a corporation, the Federal Circuit in an earlier decision, *Beech Aircraft Corp. v. EDO Corp.*, stated that: “only natural persons can be ‘inventors.’”¹⁵

While these Federal Circuit decisions are in the context of states and corporations, respectively, the discussion of conception as being a “formation in the mind of the inventor” and a “mental act” is equally applicable to machines and indicates that conception—the touchstone of inventorship—must be performed by a natural person.

The United States Patent and Trademark Office’s (USPTO’s) understanding of the patent statutes and the Federal Circuit case law concerning inventorship to require that an inventor must be a natural person is reflected in the numerous references to the inventor as a “person” in Title 37 of the Code of Federal Regulations.¹⁶ Furthermore, the Manual of Patent Examining Procedure

¹³ 734 F.3d 1315 (Fed. Cir. 2013).

¹⁴ 734 F.3d at 1323.

¹⁵ 990 F.2d 1237, 1248 (Fed. Cir. 1993).

¹⁶ See e.g. 37 CFR 1.27(a)(1) (“A person, as used in paragraph (c) of this section, means any inventor or other individual”); 37 CFR 1.41(d) (“...the name and residence of each person believed to be an actual inventor should be provided when the application papers pursuant to § 1.53(b) or § 1.53(c) are filed.”); 37 CFR 1.53(d)(4) (“...accompanied by a statement requesting deletion of the name or names of the person or persons who are not inventors of the invention being claimed in the new application”); 37 CFR 1.63(a)(3) (“An oath or declaration under this section must: Include a statement that the person executing the oath or declaration believes...”); 37 CFR 1.324(a) (“Whenever through error a person is named in an issued patent as the inventor...”); 37 CFR 1.324(b)(1) (“...A statement from each person who is being added as an inventor and each person who is currently named as an

(“MPEP”) follows the patent statutes and the Federal Circuit case law concerning inventorship, explaining that the threshold question for inventorship is “conception.”¹⁷ The MPEP defines “conception” as “the complete performance of the mental part of the inventive act” and it is “the formation in the mind of the inventor of a definite and permanent idea of the complete and operative invention as it is thereafter to be applied in practice.”¹⁸ Again, the use of terms such as “mental” and “mind” in the MPEP indicates that conception must be performed by a natural person.

Accordingly, because the above-identified application names a machine, “[DABUS] (Invention generated by artificial intelligence),” as the inventor, and because current statutes, case law, and USPTO regulations and rules limit inventorship to natural persons, the above-identified application does not comply with 35 U.S.C. § 115(a).¹⁹ The USPTO therefore properly issued the August 8, 2019 Notice requiring the inventor to be identified by his or her legal name.

Petitioner argues that the December 17, 2019 petition decision presents a line of reasoning that suggests “the referenced statutes are intended to compel an applicant to name a natural person even where the person does not meet the inventorship criteria.”²⁰ However, petitioner misunderstands the petition decision. The petition decision of December 17, 2019 explains that 35 U.S.C. § 100(f) defines the term “inventor” as the individual who invented or discovered the subject matter of the invention. Identifying a natural person, who did not invent or discover the subject matter of the invention, as the inventor in a patent application would be in conflict with the patent statutes. Accordingly, the petition decision of December 17, 2019 does not suggest that an applicant is compelled to list a natural person as an inventor who does not meet the inventorship criteria.

Petitioner also argues that the USPTO should take into account the position adopted by the European Patent Office (“EPO”) and the UK Intellectual Property Office (“UKIPO”) that DABUS created the invention at issue, but DABUS cannot be named as the inventor.²¹ The above-identified application is currently undergoing review for completeness of the application. The USPTO has not made any determination concerning who or what actually created the invention claimed in the above-identified application.²² Furthermore, the EPO and UKIPO are interpreting and enforcing their own respective laws (i.e., the European Patent Convention and the UK Patents Act 1977) as they apply to the applications before them. U.S. patent law does not permit a machine to be named as the inventor in a patent application.

inventor...”). Note also, the requirement under 37 CFR 1.76(b)(1) that the inventor be identified by their “legal name.”

¹⁷ MPEP 2137.01(II); *Burroughs Wellcome Co. v. Barr Labs., Inc.*, 40 F.3d 1223, 1227-28 (Fed. Cir. 1994).¹⁸ MPEP 2138.04 (citing *Townsend v. Smith*, 36 F.2d 292, 295 (CCPA 1929)).

¹⁸ MPEP 2138.04 (citing *Townsend v. Smith*, 36 F.2d 292, 295 (CCPA 1929)).

¹⁹ Petitioner appears to admit that machines do not qualify as inventors under the patent statutes. For example, petitioner states, “it is noted that...there is no way to meet the requirements of the Statutes. That is, there is no cure for the issued Notice to File Missing Parts, while maintaining proper inventorship according to the Statutes.” Reconsideration Petition at 7.

²⁰ Reconsideration Petition at 3.

²¹ Reconsideration Petition at 6-7.

²² See MPEP 506.

Petitioner further argues that “[i]n refusing to accept the naming of an AI system as an inventor, the USPTO is setting a further test for patentability that is not provided for in law, and contradicts the generally held principle that inventorship should not be a substantial condition for the grant of patents.”²³ Petitioner’s argument is not persuasive. Inventorship has long been a condition for patentability, and 35 U.S.C. § 115(a) expressly requires that an application include, or be amended to include, the name of the inventor for any invention claimed in the application. Before the Leahy-Smith America Invents Act (AIA) revised 35 U.S.C. § 102, improper inventorship was a grounds for rejection under pre-AIA 35 U.S.C. § 102(f).²⁴ Today, under the AIA, naming an incorrect inventor is a grounds for rejection under 35 U.S.C. § 101 and 35 U.S.C. § 115.²⁵

Petitioner also argues that the USPTO has granted patents relating to the DABUS machine and, therefore, implicitly legalized the process by which DABUS arrives at an invention for the above-identified application.²⁶ The USPTO grants a patent if it appears that an applicant is entitled to a patent under the law pursuant to 35 U.S.C. § 151. The granting of a patent under 35 U.S.C. § 151 for an invention that covers a machine does not mean that the patent statutes provide for that machine to be listed as an inventor in another patent application—any more than a patent for a camera allows the camera hold a copyright. As noted above, a machine does not qualify as an inventor under the patent laws.

Lastly, petitioner has outlined numerous policy considerations to support the position that a patent application can name a machine as an inventor. For example, petitioner contends that allowing a machine to be listed as an inventor would incentivize innovation using AI systems,²⁷ reduce the improper naming of persons as inventors who do not qualify as inventors,²⁸ and support the public notice function by informing the public of the actual inventors of an invention.²⁹ These policy considerations notwithstanding, they do not overcome the plain language of the patent laws as passed by the Congress and as interpreted by the courts.³⁰

²³ Reconsideration Petition at 4.

²⁴ “A person shall be entitled to a patent unless...he did not himself invent the subject matter sought to be patented.” See *PerSeptive Biosystems, Inc. v. Pharmacia Biotech, Inc.*, 225 F.3d 1315 (Fed. Cir. 2000) (“Examiners are required to reject applications under 35 U.S.C. § 102(f) on the basis of improper inventorship”).

²⁵ See MPEP 706.03(a)(IV).

²⁶ Reconsideration Petition at 6.

²⁷ Inventorship Statement at 3-4.

²⁸ *Id.* at 4.

²⁹ Reconsideration Petition at 4.

³⁰ *Glaxo Operations UK Ltd. V. Quigg*, 894 F.2d 392, 399-400 (Fed. Cir. 1990) (holding that the USPTO and courts must honor the plain meaning of the patent statutes when Congress has spoken on an issue, as striking policy balances in legislative language is within the province of Congress).

CONCLUSION

For the reasons stated above, the petition is granted to the extent that the decision of December 17, 2019 has been reviewed, but the petition is **DENIED** with respect to vacating the August 8, 2019 Notice.

The time period to reply to the Notice to File Missing Parts of Nonprovisional Application of August 8, 2019 is reset in this decision. Petitioner is given a time period of **two (2) months** from the mailing date of this decision within which to file all required items identified in the December 13, 2019 Notice to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under 37 CFR 1.136(a). Petitioner, however, should expect no additional resetting of the time period for reply to the Notice to File Missing Parts of Nonprovisional Application of August 8, 2019 in the above-identified application or any other stay of proceedings in the above-identified application.

This decision is being published in view of the submission filed in the above-identified application on February 17, 2020 that provides the USPTO with authority under 35 U.S.C. § 122 and 37 CFR 1.14(e) to publish this decision.

This constitutes a final decision on this petition. No further requests for reconsideration will be entertained.

Telephone inquiries concerning this decision should be directed to Charles Kim, Director of the Office of Petitions, at (571) 272-7421.



Robert W. Bahr
Deputy Commissioner for
Patent Examination Policy