

Federal Circuit Confirms ‘Inventor’ Must Be Human, Not AI

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Key Points

- On August 5, 2022, the Federal Circuit held in *Thaler v. Vidal* that the term “inventor” under the United States Patent Act must be a human being.
- This ruling precludes patent protection for inventions where the sole inventor is an AI system.
- Given the rapidly evolving world of AI, this ruling is likely to be the first of many decisions tasked with determining the role of AI within the larger universe of intellectual property.

Background

In July 2019, computer scientist Stephen Thaler submitted two patent applications that named an artificially intelligent (AI) system as the sole inventor. This particular AI system—Device for the Autonomous Bootstrapping of Unified Science (DABUS)—was developed and separately patented by Thaler. Thaler describes DABUS as a collection of source code or programming and a software program that is capable of generating patentable inventions.

In the two patent applications naming DABUS as the sole inventor, Thaler otherwise attempted to comply with the inventorship requirements. Thaler submitted a statement on behalf of DABUS to satisfy the sworn oath or declaration requirement of 35 U.S.C. § 115. Thaler also provided a supplemental “Statement on Inventorship” to explain how DABUS operates as a “Creativity Machine,” and filed a document purporting to assign himself all of DABUS’s rights as an inventor.

During prosecution, the United States Patent and Trademark Office (USPTO) concluded that both applications lacked a valid inventor. Thaler maintained that he did not contribute to the conception of the claimed inventions, and petitioned the USPTO director to vacate the notices of an incomplete application for failing to identify a valid inventor. The USPTO ultimately **denied** the petitions on the ground that “a machine does not qualify as an inventor.” See, e.g., [MPEP § 2109](#) (explaining the inventorship requirement for patent applications and noting that “[u]nless a person contributes to the conception of the invention, he is not an inventor.”).

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Thaler subsequently pursued judicial review of the USPTO's final decisions on his petitions, and the Eastern District of Virginia in *Thaler v. Hirshfeld* confirmed that an "inventor" under the Patent Act must be an "individual," and the plain meaning of "individual" as used in the statute is a natural person. See 35 U.S.C. § 100(f) (defining "inventor"). As such, the Eastern District of Virginia held that Thaler's DABUS AI software system could not be an "inventor" under the current Patent Act.

Federal Circuit's Decision and Its Potential Impact

On appeal from the Virginia district court, the Federal Circuit addressed the limited question of whether an AI software system can be an "inventor" under the Patent Act. As a routine dispute of statutory interpretation, the Federal Circuit looked to the text of the Patent Act and found no ambiguity—inventors must be human beings.

While the Patent Act expressly provides that "inventors" are "individuals," the Act does not define "individual." 35 U.S.C. § 100(f) ("The term 'inventor' means the **individual** . . . who invented or discovered the subject matter of the invention.") (emphasis added). Thaler attempted to advocate for a broad interpretation of "individual" that would include AI software, pointing to the Patent Act's use of "whoever," which encompasses corporations and other non-human entities for the purposes of infringement. See 35 U.S.C. § 271 (defining infringement as "**whoever** without authority makes uses, offers to sell, or sells any patented invention") (emphasis added). Thaler also claimed that protecting inventions generated by AI would further the policy underlying patent law of encouraging innovation and public disclosure. But the Federal Circuit ultimately disagreed with each of Thaler's arguments, finding instead that under the plain meaning of the Patent Act "individuals"—and, thus, "inventors"—are unambiguously natural persons.

Notably, Thaler's legal endeavors to name DABUS as an inventor are not limited to the United States. Thaler has garnered international spotlight by using his DABUS-generated inventions as a test case for the interplay between intellectual property law and the ever-evolving field of AI in jurisdictions all over the world. As of the Federal Circuit's decision, Thaler has only acquired patent protection for a DABUS-devised invention in South Africa; he has received rejections from the United Kingdom, Australia and the European Patent Office. Similarly, Thaler has received a **rejection** from the United States Copyright Office for an AI-generated artwork, finding that such a piece failed the "human authorship requirement."

Not only has Thaler's quest to define AI's place in the world of intellectual property created questions as to inconsistent protections internationally, it has left questions of what can be protected—and how—in the United States. The Federal Circuit's holding clarifies that AI systems cannot be the sole inventor for the purposes of patent protection. However, the holding expressly refrains from addressing "the question of whether inventions made by human beings with the **assistance** of AI are eligible for patent protection." This precise delineation of what constitutes sufficient human contribution to be eligible for patent protection will likely create significant discussion and legal proceedings in the near future.

Further uncertainties arising from the Federal Circuit's decision include finding a place, if any, for AI and AI-generated inventions in intellectual property. If the Patent Act subsequently became inclusive of AI inventors, either through a congressional

amendment or U.S. Supreme Court ruling that reverses the Federal Circuit's decision in *Thaler* or a later case, this could raise questions about how AI inventions affect the person of ordinary skill in the art standard. Similarly, there may be a need for the USPTO or Congress to revisit the scope of undue experimentation in the context of an AI system that is capable of effortless iterative calculations, among other questions fundamental to patent law.

All of these uncertainties suggest that patents are not the best vehicle to protect AI-generated inventions under the current regulatory and legal framework in the United States, and other forms of intellectual property, such as trade secrets, should be considered. Despite these questions, while the technical, regulatory and legal challenges surrounding AI continue to develop and accelerate, the law as it currently stands in the United States does not permit AI to be a named inventor, and therefore inventions made purely by AI are not patentable.

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