

**Keywords:** inventorship; definition of individual

**General:** When a statute unambiguously and directly answers the question, analysis does not stray beyond the plain text. Congress has determined that only a natural person can be an inventor, therefore, AI cannot be. Accordingly, the plain meaning of “inventor” in the Patent Act is limited to natural persons.

*Stephen Thaler v. Katherine K. Vidal, Under Secretary of  
Commerce for IP Director of the USPTO, USPTO*  
United States Court of Appeals for the Federal Circuit  
No. 2021-2347  
Decided: August 5, 2022

## **I. Background & Facts**

Thaler develops and runs AI systems, which he claims generate patentable inventions. One such system is “Device for the Autonomous Bootstrapping of Unified Science,” or “DABUS.” Thaler described DABUS as “a collection of source code or programming and a software program.” In July 2019, Thaler sought patent protection for two of DABUS’ supposed inventions by filing two patent applications with the USPTO. He listed DABUS as the sole inventor on both applications. Thaler maintains that he did not contribute to the conception of these inventions and that any person having skill in the art could have taken DABUS’ output and reduced the ideas in the applications to practice. Specifically, in lieu of an inventor’s last name, Thaler wrote that “the invention [was] generated by artificial intelligence.” He also attached several documents relevant to inventorship. First, to satisfy the requirement that inventors submit a sworn oath or declaration, Thaler submitted a statement on DABUS’ behalf. Second, Thaler provided a supplemental “Statement on Inventorship” explaining that DABUS was “a particular type of connectionist artificial intelligence” called a “Creativity Machine.” Finally, third, Thaler filed a document claiming to assign himself all of DABUS’ rights as an inventor.

The USPTO concluded both applications lacked a valid inventor and were, hence, incomplete. Accordingly, it sent Thaler a “Notice to File Missing Parts” for each application and requested that Thaler identify valid inventors. In response, Thaler petitioned the USPTO director to vacate the Notices based on his Statements of Inventorship. The USPTO denied Thaler’s petitions on the ground that “a machine does not qualify as an inventor.” Thaler sought reconsideration, which the USPTO denied, explaining again that inventors on a patent application must be natural persons. Thaler then pursued judicial review of the USPTO’s final decisions on his petitions, under the Administrative Procedure Act (APA). The parties agreed to have the District Court adjudicate the challenge based on the administrative record made before the USPTO and filed cross-motions for summary judgment. After briefing and oral argument, the District Court granted the USPTO’s

motion for summary judgment and denied Thaler's request to reinstate his applications. The District Court concluded 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. Thaler then appealed.

## **II. Issues**

- 1) The sole issue on appeal is whether an AI software system can be an "inventor" under the Patent Act.

## **III. Discussion**

First, the court looked at the Patent Act which expressly provides that inventors are "individuals." In particular, since 2011, with the passage of the Leahy-Smith America Invents Act, the Patent Act has defined an "inventor" as "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). The Act similarly defines "joint inventor" and "coinventor" as "any 1 of the individuals who invented or discovered the subject matter of a joint invention." § 100(g). In describing the statements required of an inventor when applying for a patent, the statute consistently refers to inventors and co-inventors as "individuals." See § 115. However, the Patent Act does not further define "individual." The court looked to The Supreme Court for the definition of "individual" as used in legislation. In *Mohamad v. Palestinian Auth.* (2012) when used "[a]s a noun, 'individual' ordinarily means a human being, a person." The court further indicated that the Supreme Court's definition is in accord with use of the word in everyday speech. In fact, dictionaries confirm that this is the common understanding of the word. For example, the Oxford English Dictionary gives the first definition of "individual" as "[a] single human being"; Dictionary.com gives a definition of individual as "a single human being, as distinguished from a group". Also, the Dictionary Act, which provides that legislative use of the words "person" and "whoever" broadly includes corporations, companies, associations, firms, partnerships, societies, and joint stock companies, as well as individuals, where the phrase "as well as," marks 'individuals' as distinct from the list of artificial entities that precedes it, showing that Congress understands "individual" to indicate natural persons unless otherwise noted.

In addition, nothing in the Patent Act indicates Congress intended to deviate from the default meaning. On the contrary, the rest of the Patent Act supports the conclusion that "individual" refers to human beings. For instance, the Patent Act uses personal pronouns – "himself" and "herself" – to refer to an "individual;" it does not also use "itself." The Act also requires a submitted oath or declaration from inventor(s) who believe himself or herself to be the original inventor or an original joint inventor of a claimed invention in the application. The court indicated that while it has not currently decided whether an AI system can form beliefs, nothing in the administrative record shows that the AI system, DABUS, can form beliefs, as reflected in the fact that Thaler submitted the required statements himself, allegedly on DABUS' behalf.

The foregoing relates to the court's interpretation of "individual" while the following is a summary of Thaler's main arguments and the court's responses regarding AI systems as an inventor. For his arguments, Thaler directed the court to several provisions of the Patent Act as supposed support for his position that "inventor" should be broadly read to include AI software, but each failed to persuade the court.

First, Thaler pointed to the use of "whoever" in 35 U.S.C. §§ 101 and 271. Section 101 providing that "[w]hoever 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.” However, the court indicated that this very section makes clear that patents must satisfy the “conditions and requirements of” Title 35 of the U.S. Code, including its definition of “inventor.” Section 271, in setting out what constitutes infringement, repeatedly uses “whoever” to include corporations and other non-human entities. However, the court indicated that although non-humans may infringe patents, Section 271 does not tell us anything about whether non-humans may also be inventors of patents.

Thus, the court maintained that the question before them inevitably leads back to the Patent Act’s definition of “inventor,” which uses the word “individual” – and does not use “whoever.” Furthermore, as the court indicated above, the Dictionary Act establishes that Congress uses “whoever” as a much broader term than “individual.”

Second, Thaler contended that AI software programs must qualify as inventors because otherwise patentability would depend on “the manner in which the invention was made,” in contravention of 35 U.S.C. § 103. However, the court indicated that Section 103 is not about inventorship. Instead, it provides that inventions may still be nonobvious even if they are discovered during “routine” testing or experimentation. This statutory provision relates to how an invention is made and does not trump a provision that specifically addresses who may be an inventor.

Third, Thaler emphasized that the term “inventor” must be interpreted with attention to the “context in which that language is used[] and the broader context of the statute as a whole.” *Yates v. United States*, 574 U.S. 528, 537 (2015). However, the court indicated that they have undertaken precisely this task. For their reasons explained above, the Patent Act, when considered in its entirety, confirms that “inventors” must be human beings. Therefore, the court affirmed the decision of the district court.

#### **IV. Conclusion and Takeaways**

1) “inventor” must be a human being and is supported by the court’s own precedent. See *Univ. of Utah v. Max-Planck-Gesellschaft zur Forderung der Wissenschaften E.V.*, 734 F.3d 1315, 1323 (Fed. Cir. 2013) - “[I]nventors must be natural persons and cannot be corporations or sovereigns”; *Beech Aircraft Corp. v. EDO Corp.*, 990 F.2d 1237, 1248 (Fed. Cir. 1993) - “[O]nly natural persons can be ‘inventors’.”

2) While the above opinions addressed different questions – such as concluding that neither corporations nor sovereigns can be inventors – the court’s reasoning did not depend on the fact that institutions are collective entities. The two cases confirm that the plain meaning of “inventor” in the Patent Act is limited to natural persons.

## V. Additional Arguments

1) Thaler argued that inventions generated by AI should be patentable in order to encourage innovation and public disclosure.

The court indicated that Thaler's arguments were speculative and lack a basis in the text of the Patent Act and in the record. Further, the court indicated that the text before them was unambiguous, and they may not "elevate vague invocations of statutory purpose over the words Congress chose." *Sw. Airlines Co. v. Saxon*, 142 S. Ct. 1783, 1792-93 (2022). Moreover, they were not confronted with the question of whether inventions made by human beings with the assistance of AI are eligible for patent protection.

Also, Circuit Judge, Stark, indicated that this case presents the question of who, or what, can be an inventor. Specifically, the court is asked to decide if an artificial intelligence (AI) software system can be listed as the inventor on a patent application. However, Stark indicated that while it might seem that resolving this issue would involve an abstract inquiry into the nature of invention or the rights, if any, of AI systems. In fact, the court did not need to ponder these metaphysical matters. Instead, the court's task begins – and ends – with consideration of the applicable definition in the relevant statute.

2) Thaler invoked the canon of constitutional avoidance. In Thaler's view, permitting AI programs to be inventors would support the constitutional purpose of patents "[t]o promote the progress of science and the useful arts." U.S. Const. art. I, § 8, cl. 8. Thaler continued, that not recognizing AI as an inventor undermines such progress, raising potential constitutional concerns.

However, the court indicated that Thaler is incorrect. The constitutional provision he cited is a grant of legislative power to Congress; Congress has chosen to act pursuant to that power by passing the Patent Act. Therefore, Thaler could not argue that limiting inventorship to human beings is unconstitutional and the canon of constitutional avoidance was inapplicable.

3) Thaler also noted that South Africa has granted patents with DABUS as an inventor.

However, the court indicated that the South African foreign patent office was not interpreting the Patent Act. Therefore, the foreign patent office's determination did not alter the court's conclusion.