

# AI and Patent Law: Balancing Innovation and Inventorship

Skadden

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If you have any questions regarding the matters discussed in this memorandum, please contact the following attorneys or call your regular Skadden contact.

## Douglas R. Nemec

Partner / New York  
212.735.2419  
douglas.nemec@skadden.com

## Laura M. Rann

Law Clerk / New York  
212.735.3754  
laura.rann@skadden.com

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One Manhattan West  
New York, NY 10001  
212.735.3000

## Key Points

- A recent Federal Circuit decision, *Thaler v. Vidal*, made clear that AI cannot be listed as an “inventor” for purposes of obtaining a patent.
- The USPTO has published two notices in the Federal Register seeking comments on the status of the laws governing issues related to AI inventorship.
- Complex issues surrounding AI inventorship present challenges for businesses that are starting to rely more on AI to develop inventions.

A new surge in business innovation has arrived as companies take advantage of the unique efficiencies and benefits of artificial intelligence (AI). Recent news headlines about chatbots like ChatGPT and Bard highlight the explosive growth in this space. From improving processes to enhancing employee productivity, a company’s implementation of AI can significantly impact its operations and revenue.

AI’s increasing ability to devise innovative solutions is testing the boundaries of U.S. patent law in ways that could never have been imagined when the Constitution and Patent Act were drafted. And while AI has unquestionably created novel and nonobvious results, one glaring question remains: Can AI be an “inventor” under U.S. patent law for otherwise patentable inventions, or is this status reserved uniquely to humans?

The U.S. Patent and Trademark Office (USPTO) first considered this question in 2019, publishing a [Request for Comments on Patenting Artificial Intelligence Inventions](#). The notice queried whether current patent laws are adequate to address inventorship for AI-created inventions, which are typically created without human intervention.

The USPTO also sought input on the impact that allowing AI systems to be named as inventors would have on the patent system and on innovation in the AI field. The responses to the USPTO’s request reflected a wide range of opinions on issues of AI patent inventorship, but many commenters agreed that existing laws are not equipped to handle AI-generated inventions and that new policies are needed to ensure such inventions are appropriately recognized and protected.

## One Case Tests the System

As the USPTO explored the policy and legal issues surrounding AI inventorship, it was presented with an opportune test case. In 2019, an AI system named DABUS (short for Device for the Autonomous Bootstrapping of Unified Sentience) was credited as the inventor in two patent applications filed by Stephen Thaler, the developer of the AI system.

The [USPTO rejected the applications](#), finding them incomplete for lack of a valid inventor. The USPTO held that the Patent Act limits inventorship to natural persons, referring to U.S. Court of Appeals for the Federal Circuit opinions reaching similar conclusions in denying inventorship status to states and corporations.

Dr. Thaler sought review of the decision, but the [district court agreed](#) with the USPTO’s conclusion and denied inventorship status to DABUS. The court found “overwhelming evidence” that Congress intended to limit the definition of “inventor” to natural persons. The court also referenced findings from the USPTO’s 2019 Federal Register notice in

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emphasizing that many commentators disagreed with Dr. Thaler's view that AI machines should be recognized as inventors.

In 2022, Dr. Thaler appealed. His case became the first in which the Federal Circuit explicitly addressed whether an AI machine can be an "inventor" under the Patent Act. Dr. Thaler argued that AI authorship would increase innovation, encourage the development of AI capable of inventing, and incentivize the commercialization and disclosure of information for human- and AI-generated inventions.

Much of the [Federal Circuit's August 5, 2022](#), opinion focused on the definition of "individual" in the Patent Act. After engaging various canons of interpretation and looking to U.S. Supreme Court precedent for guidance, the Federal Circuit affirmed the lower court's decision and held that DABUS cannot be an "inventor" under the Patent Act.

The court found Dr. Thaler's policy arguments speculative. It emphasized that there is "no ambiguity" on the question of whether the Patent Act requires that inventors be human beings. In short, the Federal Circuit made clear that, in its view, the invented cannot be the inventor.

The net effect of the court's decision is not just who gets "credit" for the invention, but whether the invention can be patented at all in the absence of human inventors.

## The USPTO Rejoins the Conversation

In February 2023, the USPTO published [another notice in the Federal Register](#) related to AI inventorship. Recognizing the significance of the Federal Circuit's *Thaler* decision and the ever-expanding applications of AI, the USPTO emphasized its desire to "foster increased academic engagement on inventorship and AI-enabled innovation."

To address the uncertainty surrounding AI inventorship, the office is seeking comments by May 15, 2023, related to whether:

- The USPTO should expand its current guidance on inventorship to address situations in which AI significantly contributes to inventions.
- Other countries have effective approaches to AI inventorship issues.

## Where Are We Now?

AI promises a veritable revolution for companies operating in some spaces, such as pharmaceuticals. For example, there are over 135 companies in the AI-driven drug discovery industry in the U.S. alone. With the Federal Circuit's reluctance to extend the definition of "inventor," it remains to be seen whether the USPTO or Congress will implement changes to the existing regulatory and legal framework surrounding patent inventorship.

The USPTO and Federal Circuit's opinions imply that inventions made by human beings with the assistance of AI are eligible for patent protection. However, there is uncertainty and much debate as to how much AI assistance is too much for patentability. And as the law currently stands, inventions purely developed by an AI machine are not eligible for patent protection.

Dr. Thaler filed a petition for a writ of *certiorari* with the Supreme Court in March 2023, giving the justices an opportunity to speak on this issue. But a drastic shift in patent inventorship would require exploration of myriad complex questions, including:

- If AI can be an inventor, what happens to the human-based standards by which innovation is judged when deciding patentability?
- Would an AI inventor be charged with all the knowledge on the internet?
- If that's the case, wouldn't everything become obvious and therefore unpatentable to an AI?

The issue of inventorship in patent law for AI-created inventions remains of particular importance to companies that develop and use AI technology. The ability to obtain a patent on an invention is a critical means for businesses to protect their intellectual property and maintain a competitive edge in the marketplace. But the requirement that an "inventor" be a natural person is at odds with the reality of AI-generated inventions.

As the conversation around AI inventorship unfolds, companies should be aware of alternative ways to protect their AI-generated inventions, such as using trade secrets. [Similar developments in copyright law](#) denying protection for purely AI-developed works only add to the complications that owners face in obtaining adequate IP protections for AI creations.

The potential implications of AI inventorship on the future of innovation and creativity in business are enormous and will be felt by companies that rely on AI technology to drive business operations.