

FLASH OF INSPIRATION: ESCAPING CHOSITAS IN AN AI ENABLED PATENT SYSTEM

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ABSTRACT

Generative artificial intelligence (AI) threatens the viability of the patent system by making all inventions obvious under 35 U.S.C. § 103. As AI engines become increasingly sophisticated at both inventing and evaluating obviousness, a critical question emerges: if a person having ordinary skill in the art (PHOSITA) is redefined to include access to generative AI tools, will the enhanced capabilities make every invention obvious and thus unpatentable?

Generative AI significantly expands what constitutes ordinary skill by enabling comprehensive prior

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art searches across disparate fields, making obscure knowledge accessible, and facilitating the articulation of motivations to combine references. Current AI engines, like Claude, demonstrate near-examiner-level competence in conducting obviousness analyses, suggesting that the traditional PHOSITA standard may need fundamental reconsideration.

The patent system may survive this technological disruption by distinguishing between two modes of invention: methodical experimentation (the “Thomas Edison” approach) versus sudden flashes of insight (the “Nikola Tesla” approach). While AI excels at replicating Edison-style methodical experimentation and can predict outcomes from combining known elements, it cannot replicate genuine flashes of creative insight that arise outside existing knowledge patterns captured in training data.

Inventions resulting from unpredictable flashes of inspiration will remain nonobvious, even in an AI-enhanced PHOSITA framework, as such insights cannot be systematically derived from prior art through logical reasoning or experimentation—whether conducted by humans or machines. This distinction can preserve patent incentives for truly creative breakthroughs while appropriately raising the obviousness bar for routine technological improvements.

TABLE OF CONTENTS

I.	Introduction.....	4
II.	Background.....	11
	A. Overview of Patent Law	11
	1. In General	11
	2. Inventorship	17

*Flash of Inspiration: Escaping CHOSITAs in an AI Enabled
Patent System* 3

3. Obviousness	18
4. Impact of AI.....	19
B. Overview of AI	20
1. What it is.....	20
2. What it can do	20
3. How it works.....	26
III. Centrality of PHOSITA	30
A. Conventional understanding	32
B. What PHOSITAs do	37
C. Order of proof	42
IV. A generative AI world	44
A. Inventorship	45
B. PHOSITAs	50
C. CHOSITAs.....	57
V. Is there room for inventiveness, or is everything obvious?	60
A. Understanding inventiveness	63
B. An AI co-inventor goes to work	70
C. A CHOSITA goes to work.....	75
D. Writing claims around flashes of inspiration	77
VI. What else will save the patent system?.....	79
VII. Conclusion	81
VIII. Appendix	84
A. Claude waterfall obviousness assessment.....	84
B. Claude’s evaluation of obviousness of William Shockley’s transistor ideas.....	90
1. Field effect transistor	90

2. Bipolar junction transistor 94

I. INTRODUCTION

“Have you read a new law review article called *Creative Destruction: The Impact of AI on the Patent System*? Floyd asked, as Turner pulled on the halyard to raise the mainsail on the Catalina 34.

“No,” Turner said. “It sounds interesting. What does it say?”

“It explores the possibility that AI is going to kill the patent system because it is capable of inventing everything, but that capability makes everything obvious and thus not patentable. The world will be flooded with unpatentable inventions.”

Turner laughed, “That wouldn’t be a good thing for either one of us.”

Floyd Wilmer and Turner Adams rent a house in Severn Street in Annapolis, Maryland, not far from Eastport Yacht Club, where they keep their sailboat, the “Inventive Concept.” Floyd holds bachelor’s and master’s degrees in mechanical engineering from Georgia Tech. Turner holds a bachelor’s degree from MIT in Aeronautics and Astronautics and just received his law degree from George Washington University. He is admitted to the Maryland and D.C. bars and became a registered patent attorney, now working for the law firm of Flanders, Harrigan, Fenderson and Golub in Washington. Floyd is working as a design engineer for Chesapeake Autonomous Systems LLC—which Floyd and Turner call “Casslick”—on Kent Island, just across the Chesapeake Bay from Annapolis.

“Ready about!” Floyd called from behind the helm.

“Ready,” Turner said, as he grabbed both jib sheets and un-cleated the one on the port side, looping the starboard one loosely around its winch.

“Hard-a-lee!” Floyd said and quickly spun the helm to the right, bringing the nose of the Catalina 34 through the wind.

Turner flicked the port jib sheet off the winch, turned around, leaned back, and braced his bare foot on the lazarette. He tugged on the starboard sheet with both hands, aggressively pulling it in around the winch, then pulling the winch handle out of the coaming box and using it for the last few winch turns.

“I guess we can forget about spending all the money Casslick spends on patent applications and tighten things up with respect to trade secret protection,” Floyd said.

“Or you and everyone else at Casslick could work harder. Pick up the pace of innovation and use the first mover advantage to stay ahead of the pirates.”

Floyd made an obscene gesture to Turner and laughed. “You guys in your law firm will have a great work-life balance because you won’t have any more patent work to do.”

“If you don’t watch where we’re going, I’m going to have a maritime accident claim to litigate. Maybe I should take the helm. You never did know what you were doing in the sailboat.

“So, tell me more about what this article says,” Turner said, as Floyd relinquished the helm to him.

“It gives examples from several of the author’s inventions and patent applications and argues that generative AI already is capable of inventing almost anything that is requested of it.”

“That seems like more products for you and Casslick, and more patent prosecution work for me and for Flanders Harrigan.”

“That’s only half of it,” Floyd said.

“Ready about!” Turner said.

“Ready,” Floyd said, picking up both sheets and flipping the starboard one off the winch then flipping the port one neatly around the port winch, barely shifting his position as he did so.

“Hard-a-lee!” Turner said and spun the helm.

The wind pulled the foresail across the mast as the bow came through the wind, and Turner had the sheet pulled in and cleated before the wind filled the sail.

“See,” Floyd said, “That’s how it’s supposed to be done. Not with all the flopping around that you do.” Turner leaned back against the fiberglass and stretched both his bare feet up on the bench across from him.

“Ready about!” Turner said, immediately.

“What? Ready!”

“Hard-a-lee.”

Then, just as soon as the boat was settled on the new tack, Turner said, “Ready about!” again and then again, as they zigzagged out of Annapolis harbor, as quickly as the two of them could tack the boat.

“Good Lord!” Floyd said. “Stop that. What the hell are you doing?”

“Giving you a chance to show off your perfection is a crew member. Surely you don’t find it taxing, as smoothly as you claim to do it.”

Floyd looked out ahead. “We’re headed out into the bay, and there’s absolutely no reason to tack again for a good half hour. Surely you know enough to keep the wind in the sails and navigate a straight course. If you stop this foolishness, I will go below and make us some sandwiches.”

Turner leaned back and put his bare foot on the bottom of the helm, steering with it.

Floyd emerged from the cabin with sandwiches and potato chips on two paper plates and handed one to Turner.

“I want to tell you about the other half of the law review article’s prediction.”

“All right,” Turner said.

“AI will be capable of inventing everything, but at the same time, a PHOSITA will be redefined to have the same knowledge as a good AI engine. That means everything AI invents will be obvious, for the same reason everything can be invented. That’s what’s going to wipe out the patent system. Nothing will qualify for a patent under Section 103.”

“Well, I don’t know about that,” Turner said. “Actually, I *do* know. *You* may not be any more creative than a computer running neural networks and transformers but lots of our clients are. And I don’t think their innovativeness is threatened at all by AI technology.”

“To convince me of that,” Floyd said, “you’re going to have to define human creativity and persuade me that AI technology is incapable of it.”

“Let me ask you this: did your most recent robot invention result from painstaking experimentation?”

“You mean like Thomas Edison and his army of young engineers?”

“Exactly. That’s exactly what I mean. Or did it result from a sudden flash of insight?”

“You mean like Nicholas Tesla coming up with the idea for an AC motor?”

“Precisely.”

“Why does it matter?”

“Well, it used to be you could show nonobviousness and get a patent based on the lack of probability of your result and the undue experimentation necessary to replicate it. But now, AI engines have enhanced capability to predict, and they can experiment endlessly. A sudden insight is more likely to be unpredictable.”

Floyd articulates a crucial insight: inventiveness and obviousness are inverse concepts. If a purported invention

is obvious, it lacks the element of inventiveness necessary to qualify for a patent.¹ Conversely, when inventiveness is present, the invention is not obvious.²

Generative AI's capacity to invent leads to speculation that, before long, AI will invent everything. Generative AI also is really good at writing patent applications.³ Before long, everything will be invented and the subject of a patent application. But the same capabilities of generative AI mean that an AI-enabled PHOSITA,⁴ the patent system's Wizard of Oz of obviousness, knows everything. To such an AI-defined PHOSITA, everything is obvious.

Put these two projections together and one ends up with a world in which everything is invented, but nothing is patentable.

Allowing AI engines to be inventors, as is often proposed in the literature,⁵ does not solve the problem. Such an approach just means that everything is patentable. But everything still may be obvious.

Generative AI technology has reached the point that it is quite good at assessing obviousness of patent applications or patents themselves under established legal

¹ 35 U.S.C. § 103.

² *Id.*

³ *Cf.* Henry H. Perritt, Jr. Patenting an AI-Generated Infringement Detector, 8 *Ariz. J. Emerg. Tech.* 1 (2025) (describing an AI-generated patent application rejected on eligibility grounds); System and Method for Retrieving Objects, U.S. Patent No. 12,409,564 (issued Sep. 9, 2025) (granting a patent on an application largely drafted by AI).

⁴ A Person Holding Ordinary Skill In The Art. *PHOSITA*, WIKIPEDIA.COM,

https://en.wikipedia.org/wiki/Person_having_ordinary_skill_in_the_art [<https://perma.cc/23Z4-ATXX>] (last visited Oct. 9, 2025).

⁵ *See, e.g.,* Trevor F. Ward, *DABUS, An Artificial Intelligence Machine, Invented Something New and Useful, but the USPTO is not Buying It*, 75 *ME. L. REV.* 71, 72 (2023) (proposing that AI-generated inventions be patentable with the company that employs the AI being the “inventor”).

standards. That reinforces the timeliness of the question posed by the author in a recent article.⁶ But the essentially pessimistic outcome identified in the article: that the power of generative AI may completely undermine the patent system, may not be inevitable. Inventions that are the result of flashes of insight,⁷ as opposed to meticulous experimentation, are likely to be nonobvious, even if a generative AI engine in the form of an inventive machine or a computer having ordinary skill in the art (CHOSITA),⁸ is substituted for the traditional PHOSITA in an obviousness analysis. Inventive machines like CHOSITAs are good at simulating meticulous experimentation, but they cannot have flashes of insight.⁹

This distinction preserves the constitutional purpose of the patent system—promoting the progress of science and useful arts—by maintaining incentives for truly creative breakthroughs while appropriately raising the obviousness threshold for incremental improvements that AI can readily generate.¹⁰ The flash-of-insight approach offers a principled basis for obviousness analysis that aligns with both technological reality and constitutional mandate: inventions that no amount of systematic analysis or experimentation could predictably yield remain worthy of patent protection, regardless of whether that systematic work is performed by humans or machines. This approach transforms the AI challenge from an existential threat to an evolutionary refinement, ensuring that patent law continues

⁶ Henry H. Perritt, Jr., *Creative Destruction for the Patent System? Impact of Generative AI*, 27 MINN. J. L. SCI. & TECH. (forthcoming 2026).

⁷ Sometimes rendered as “flashes of inspiration,” or “sudden insights.” The terms are equivalent.

⁸ CHOSITA, Computer Having Ordinary Skill in The Art.

⁹ See *infra* Part V.

¹⁰ U.S. Const. art. I, § 8, cl. 8.

to reward genuine innovation in an age of artificial intelligence.

The article proceeds in eight parts to develop the thesis that inventions resulting from flashes of inspiration will remain nonobvious, even as AI transforms the PHOSITA standard.

Part II provides essential background on patent law's obviousness doctrine and generative AI technology. It traces the evolution of the PHOSITA standard from *Hotchkiss v. Greenwood*'s¹¹ "ordinary mechanic" to today's composite hypothetical person and explains how generative AI's pattern-matching capabilities enable sophisticated prior art analysis and invention synthesis.

Part III examines the centrality of the PHOSITA concept to obviousness analysis and explores how AI integration will fundamentally alter this standard. It analyzes the USPTO's recent guidance on AI-assisted inventions and considers proposals to replace PHOSITA with a "CHOSITA" (Computer Having Ordinary Skill in the Art) standard that incorporates AI capabilities directly into obviousness determinations.

Part IV confronts the core question: whether AI advancement will make everything obvious and, thus, destroy the patent system. This part distinguishes between two modes of invention—methodical experimentation exemplified by Thomas Edison's systematic approach versus sudden flashes of insight embodied by Nikola Tesla's intuitive breakthroughs. It argues that while AI excels at replicating Edison-style systematic experimentation, it cannot generate genuine flashes of creative insight that transcend existing knowledge patterns.

Part V demonstrates these principles through concrete examples, including the author's interaction with

¹¹ *Hotchkiss v. Greenwood*, 52 U.S. 248, 248 (1850).

AI engines in developing a predator-detection drone and Claude's comprehensive obviousness analysis of an existing patent. These examples illustrate both AI's current capabilities and its fundamental limitations in replicating human intuitive leaps.

Part VI identifies real-world constraints on generative AI use that are likely to mitigate its adverse effect on the patent system.

Part VII concludes that rather than destroying the patent system, generative AI may refine it by raising the obviousness bar for routine technological improvements while preserving robust protection for breakthrough innovations that emerge from uniquely human creative insight. The key for patent practitioners will be identifying and claiming the elements of inventions that result from unpredictable flashes of inspiration, rather than systematic experimentation.

Part VIII are appendices that reproduce the full text of AI-engine responses to obviousness queries.

II. BACKGROUND

A. Overview of Patent Law

1. In General

The very first Congress exercised the authority granted to it by the Patents and Copyrights Clause of the Constitution¹² and enacted a patent statute: the Patent Act of 1790.¹³ The basic requirements to obtain a patent have changed very little in the last 235 years.¹⁴ Only inventions

¹² U.S. CONST. art. I, § 8, cl. 8 (authorizing Congress to establish patent system).

¹³ Patent Act of 1790, ch. 7, 1 Stat. 109-12 (1790).

¹⁴ *Id.* § 1 (showing that 1790 statute circumscribed patent eligibility to “art, manufacture, engine, machine, or device, or any improvement therein not before known or used”); 35 U.S.C. § 101; 35 U.S.C. §

relating to “process[es], machine[s], manufacture[s], or composition[s] of matter . . .” are eligible for a patent.¹⁵ To receive a patent, an invention must be novel,¹⁶ the invention must not be obvious,¹⁷ and the patent application must describe the invention with sufficient clarity and specificity so that someone else skilled in the art of the invention can make and use the invention.¹⁸

Obviousness depends on (1) all the elements of a patent claim being found in a plurality of prior-art references, and (2) evidence that “a skilled artisan would have a motivation ‘to combine the teachings of the prior art references to achieve the claimed invention,’ and . . . [that he] ‘would have had a reasonable expectation of success in doing so.’”¹⁹

102(a)(1) (demonstrating that the current statute allows patents for any “process, machine, manufacture, or composition of matter” unless “the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention”); *Hotchkiss*, 52 U.S. at 267 (1850) (affirming judgment invalidating a patent and deciding that for an invention to qualify for a patent the invention must be the work of an inventor, and not merely that of “an ordinary mechanic.”); see 35 U.S.C. § 103 (demonstrating that the non-obviousness requirement of section 103, which was added by the 1952 Patent Act, codified the *Hotchkiss* requirement for an “invention.”); see generally Giles S. Rich, *Why and How Section 103 Came to Be*, 14 FED. CIR. B. J.181 (2005) (recounting the history and the purpose to replace the ambiguous “invention” standard).

¹⁵ 35 U.S.C. § 101.

¹⁶ 35 U.S.C. § 102.

¹⁷ 35 U.S.C. § 103.

¹⁸ 35 U.S.C. § 112(a).

¹⁹ *ImmunoGen, Inc. v. Vidal*, 653 F. Supp.3d 258, 267 (E.D. Va. 2023); see also MPEP § 2142 (9th ed. Rev. 31, Jan. 2024) (explaining legal concept of prima facie obviousness); MPEP § 2141(III) (9th ed. Rev. 31, Jan. 2024) (articulating seven KSR rationales for obviousness); see generally *KSR Int’l Co. v. Telefax Inc.*, 550 U.S. 398, 415, 419-22 (2007) (reversing the Federal Circuit’s “rigid approach” and

Novelty and nonobviousness depend on comparing the invention to the prior art, which includes previous patents, published applications, public disclosures, and sales.²⁰ Prior art potentially can defeat novelty by anticipating the invention or by making it obvious.²¹ Even an inventor's own disclosures can be prior art and negate the inventor's entitlement to a patent.²² Patent law, however, affords inventors a one-year grace period within which the inventors' disclosures are not disqualifying prior art.²³

Anticipation and obviousness are distinct, yet related. Anticipation says: "Someone else already invented it." While obviousness says: "No one invented it before, but the invention is only a trivial contribution to the state of the art—it involves 'matters of design well within the expected skill of the art and devoid of invention.'"²⁴ Most significantly, "[o]bviousness can be proven by combining existing prior art references, while anticipation requires all

articulating a more flexible, multi-factor test for obviousness; they held that a patent claim may be rejected as "[o]bvious to try").

²⁰ 35 U.S.C. § 102(a); 35 U.S.C. § 103.

²¹ 35 U.S.C. §§ 102, 103.

²² MPEP § 2133.02(I) (9th ed. Rev. 31, Jan. 2024) (citing *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 148 (1989)). The USPTO's Manual of Patent Examining Procedure (MPEP) is a published guide for patent examiners and patent applicants. MPEP Foreword (9th ed. Rev. 31, Jan. 2024). While it does not constitute law, it is generally regarded as an authoritative resource during patent prosecution.

²³ 35 U.S.C. § 102(b); *see also* MPEP § 2152.02(f) (9th ed. Rev. 31, Jan. 2024) (noting the disclosures by the patent applicant within the one-year grace period are not prior art); MPEP § 2153.01 (9th ed. Rev. 31, Jan. 2024) (interpreting one-year grace period under 35 U.S.C. § 102(b)).

²⁴ *Graham v. John Deere Co.*, 383 U.S. 1, 22–23 (1966) (quoting a patent examiner who made an obviousness rejection).

elements of a claim to be disclosed within a single reference.”²⁵

To infringe a patent, an infringer need not have copied the patented invention or even know about it.²⁶ This distinguishes patent infringement from copyright infringement,²⁷ and this distinguishes patent infringement from trade secret misappropriation.²⁸

“Patent infringement may be proven by showing literal infringement of every limitation recited in a claim or by showing infringement under the [D]octrine of [E]quivalents.”²⁹

One obtains a patent by applying to the USPTO³⁰ and paying fees up to thousands of dollars.³¹ The patent application must describe the invention in detail so that the USPTO knows that the applicant has actually invented the invention to be patented, rather than just speculated about the possibility.³² The claims set the metes and bounds of

²⁵ *Cohesive Techs., Inc.*, 543 F.3d at 1364 (Additionally, secondary considerations are relevant to obviousness, but not to anticipation.); *see also* MPEP § 2131.04 (9th ed. Rev. 31, Jan. 2024) (explaining that secondary considerations are irrelevant to anticipation).

²⁶ *See* 35 U.S.C. § 271(a) (defining an infringer as “whoever without authority makes, uses, offers to sell, or sells any patented invention” without requiring the infringer to have knowledge or intent of their infringement).

²⁷ *See* 17 U.S.C. § 501; 17 U.S.C. § 106(1).

²⁸ *See* Uniform Trade Secrets Act § 1(2); 18 U.S.C. § 1832(a) (defining trade secrets misappropriation).

²⁹ *Regents of Univ. of Cal. v. Dako North America, Inc.*, 615 F. Supp.2d 1087, 1091 (N.D. Cal. 2009) (internal citations omitted).

³⁰ 35 U.S.C. § 111; 37 C.F.R. § 1.51; *see also* MPEP § 601 (9th ed. Rev. 31, Jan. 2024).

³¹ *See* 35 U.S.C. § 41(a)(1)(A) (explaining the basic filing fee for an application for an original patent is \$330); 35 U.S.C. § 41(a)(3)(A)(i) (explaining the examination fee is \$220); 35 U.S.C. § 41(d)(1)(B)(i) (explaining the search fee is \$540); 35 U.S.C. § 41(a)(4)(A) (explaining the issue fee is \$1,510).

³² 35 U.S.C. § 112.

the claimed invention.³³ Furthermore, the patent must contain sufficient details so that someone skilled in the relevant art can read the patent to know how to build and use the invention.³⁴ This is the *enablement* requirement.³⁵

Applications are reviewed and acted on, in the first instance, by professional employees of the USPTO called patent examiners.³⁶ Patent prosecution involves an interactive process between the examiner and the applicant (usually the applicant's lawyer).³⁷ During that process, the examiner expresses the examiner's view of legal requirements by rejecting particular claims.³⁸ The applicant is then afforded an opportunity either to revise the claims to make them acceptable to the examiner, to convince the examiner to change his position,³⁹ or to appeal the examiner's adverse determinations internally within the USPTO to the Patent Trial and Appeal Board (PTAB).⁴⁰

If an applicant is dissatisfied with PTAB's decision, the applicant can go to United States district court to compel the USPTO to grant a patent,⁴¹ or the applicant can appeal the PTAB decision to the United States Court of Appeals for the Federal Circuit.⁴²

³³ See 35 U.S.C. § 112(b).

³⁴ *Id.* § 112(a).

³⁵ *Id.*; see also MPEP § 2161(I) (9th ed. Rev. 31, Jan. 2024) (stating that section 112 has three requirements: "(A) A written description of the invention; (B) The manner and process of making and using the invention (the enablement requirement); and (C) The best mode contemplated by the inventor of carrying out his invention").

³⁶ 35 U.S.C. § 131; 37 C.F.R. § 1.104; see also MPEP §§ 701, 707 (9th ed. Rev. 31, Jan. 2024).

³⁷ 37 C.F.R. § 1.104.

³⁸ 37 C.F.R. § 1.104(c); MPEP § 706 (9th ed. Rev. 31, Jan. 2024).

³⁹ See 35 U.S.C. § 132; see also 37 C.F.R. § 1.104(c); MPEP § 707 (9th ed. Rev. 31, Jan. 2024).

⁴⁰ 35 U.S.C. § 134(a); MPEP § 1204 (9th ed. Rev. 31, Jan. 2024).

⁴¹ 35 U.S.C. § 145.

⁴² 35 U.S.C. § 141(a).

Patents last for twenty years from the effective date of the application.⁴³ After the twenty years, anyone is free to use the patented subject matter because it is in the public domain.⁴⁴

Once a patent is issued, it is subject to review, amendment, or cancellation in a variety of proceedings.⁴⁵ In a reissuance, the inventor or other owner of the patent surrenders the original patent and tries to get a new one to correct errors in the original patent.⁴⁶ In a reexamination proceeding, which may be triggered by the patent owner or a third party, the patent office considers new information that raises questions about patentability.⁴⁷ In Post-Grant Review, available for only nine months after patent issuance, anyone can challenge the validity of the patent on any ground that could have resulted in the patent's denial during the prosecution process.⁴⁸ In Inter Partes Review, anyone can challenge the validity of a patent, but only on limited grounds of offering prior art in the form of patents or publications to raise questions about novelty and obviousness.⁴⁹ The Inter Partes Review proceeding is available "after the later of either" nine months after issuance of the patent or, if a Post-Grant Review has been initiated, after the Post-Grant Review concludes.⁵⁰ The

⁴³ 35 U.S.C. § 154(a)(2).

⁴⁴ *Singer Mfg. Co. v. June Mfg. Co.*, 163 U.S. 169, 185 (1896); *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 230 (1964).

⁴⁵ See 35 U.S.C. § 311–312.

⁴⁶ 35 U.S.C. § 251 (authorizing reissue of "defective patents").

⁴⁷ 35 U.S.C. §§ 302–305 (authorizing reexamination).

⁴⁸ 35 U.S.C. §§ 321–322, 324(a)–(b), 326(a)(2)–(4) (authorizing Post Grant Review).

⁴⁹ 35 U.S.C. §§ 311–312, 314(a), 316(a)(2)–(4) (authorizing Inter Partes Review).

⁵⁰ 35 U.S.C. § 311(c).

PTAB conducts the Post-Grant Review and Inter Partes Review proceedings.⁵¹

In addition to these administrative processes, United States district courts have the power to determine the validity of patents asserted in suits for infringement⁵² or in declaratory judgment actions brought by potential infringers.⁵³

2. Inventorship

Only *inventors* are entitled to patents.⁵⁴ To qualify as an inventor, one must contribute[] to the conception of the invention,⁵⁵ but need not reduce the invention to practice.⁵⁶ “[C]onception is established when the invention is made sufficiently clear to enable one skilled in the art to reduce it to practice without the exercise of extensive experimentation or the exercise of inventive skill.”⁵⁷ “An inventor or [co-]inventor must be a natural person.”⁵⁸

⁵¹ 35 U.S.C. § 318(a)–(b) (stating the role of PTAB in deciding Inter Partes Review cases); 35 U.S.C. § 328(a)–(b) (stating the role of PTAB in deciding Post-Grant Review cases).

⁵² 28 U.S.C. § 1338(a); *see* 35 U.S.C. § 282.

⁵³ *See* *Medimmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 126–27 (2007) (explaining that any court may maintain a declaratory judgment action so long as there is a “substantial controversy” within its jurisdiction).

⁵⁴ 35 U.S.C. § 101 (“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.”).

⁵⁵ MPEP § 2109(II) (9th ed. Rev. 31, Jan. 2024).

⁵⁶ MPEP 2109(III) (9th ed. Rev. 31, Jan. 2024); *see also* MPEP § 2138.05 (9th ed. Rev. 31, Jan. 2024) (explaining reduction to practice).

⁵⁷ MPEP § 2138.04 (9th ed. Rev. 31, Jan. 2024).

⁵⁸ MPEP § 2109(VII) (9th ed. Rev. 31, Jan. 2024).

3. Obviousness

The non-obviousness requirement was originally codified in Section 103 of the 1952 Patent Act.⁵⁹ The idea, however, was already 100 years old when the 1952 Act was enacted.⁶⁰ In *Hotchkiss v. Greenwood*,⁶¹ the Supreme Court held that an improvement to a doorknob⁶² was unpatentable because it reflected no more than what an “ordinary mechanic” knew.⁶³ More “ingenuity and skill” were required for an invention to qualify for a patent.⁶⁴

Justice Woodbury dissented,⁶⁵ conceding that something that is “a trifling change and merely colorable” is not patentable.⁶⁶ But arguing that anything that is better, cheaper, and not infringing of what had gone before should be patentable.⁶⁷ In other words, he would have stuck with a test congruent with a utility requirement.

Deciding what is obvious requires adopting a perspective. Patent law has embraced the idea of a “person having ordinary skill in the art,” a PHOSITA, as the

⁵⁹ 35 U.S.C. § 103 (1952).

⁶⁰ *Graham v. John Deere Co.*, 383 U.S. 1, 12, 14-15 (1966) (explaining that Section 103 was added to 1952 act merely to codify the requirement for “invention” from *Hotchkiss*); Jonathan J. Darrow, *The Neglected Dimension of Patent’s Law’s PHOSITA Standard*, 23 *Harv. J. L. & Tec.* 227, 232 (2009).

⁶¹ 52 U.S. 248 (1850).

⁶² *Id.* at 265 (explaining that the improvement for which a patent was sought was the substitution of a clay knob for a knob made of metal or wood).

⁶³ *Id.* at 267.

⁶⁴ *Id.*

⁶⁵ *Id.* (Woodbury, J., dissenting).

⁶⁶ *Hotchkiss*, 52 U.S. at 269 (Woodbury, J., dissenting).

⁶⁷ *Id.*

perspective from which obviousness is to be assessed.⁶⁸ A PHOSITA is an imaginary, composite human being.⁶⁹

4. Impact of AI

In 2020, the USPTO published a report on stakeholder views about the impact of AI on the patent system.⁷⁰ USPTO published requests for comments in April⁷¹ and July, 2024,⁷² on the effect of generative AI on patentability, including its effect on obviousness analyses.⁷³

⁶⁸ MPEP § 2141.03 (9th ed. Rev. 01.2024, Nov. 2024) (defining “person of ordinary skill in the art”).

⁶⁹ MPEP § 2141.03(I) (9th ed. Rev. Jan. 2024) (internal quotations and citations omitted) (“The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the relevant time. Factors that may be considered in determining the level of ordinary skill in the art may include: (1) type of problems encountered in the art; (2) prior art solutions to those problems; (3) rapidity with which innovations are made; (4) sophistication of the technology; and (5) educational level of active workers in the field. A person of ordinary skill in the art is also a person of ordinary creativity, not an automaton. . . . Office personnel may also take into account ”the inferences and creative steps that a person of ordinary skill in the art would employ. In addition to the factors above, Office personnel may rely on their own technical expertise to describe the knowledge and skills of a person of ordinary skill in the art.”).

⁷⁰ USPTO, *Public Views on Artificial Intelligence and Intellectual Property Policy* (Oct. 2020), https://www.uspto.gov/sites/default/files/documents/USPTO_AI-Report_2020-10-07.pdf [hereinafter “Public Views”] [<https://perma.cc/PZ5W-4TJH>].

⁷¹ Request for Comments Regarding the Impact of the Proliferation of Artificial Intelligence on Prior Art, the Knowledge of a Person Having Ordinary Skill in the Art, and Determinations of Patentability Made in View of the Foregoing, 89 Fed. Reg. 34217, 34217 (Apr. 30, 2024).

⁷² Impact of the Proliferation of AI on Prior Art and PHOSITA: A notice of Public Listening Session, 89 Fed. Reg. 55588, 55588 (July 5, 2024).

⁷³ See Public Views, *supra* note 70, at iii, 12–13 (characterizing most commenters as agreeing that growing ubiquity of AI would impact the PHOSITA standard).

It maintains a website specifically focused on AI.⁷⁴ The July notice announced a “listening session” at which USPTO invited participants to weigh in on questions reproduced in § IV.

B. Overview of AI

1. What it is

Artificial intelligence is a computer program or a collection of computer programs that mimics human reasoning under the famous Turing Test, proposed by British scientist Alan Turing in 1950.⁷⁵ Artificial intelligence exists when a human being asks a question and cannot tell whether the answer is coming from another human being or a computer system.⁷⁶

Generative artificial intelligence became publicly visible in the early 2020s.⁷⁷ Generative AI systems can accept prompts of indeterminate length, written in natural human language, and responding glibly in well-constructed natural language of indeterminate length, drawing on an enormous store of recorded human knowledge.

2. What it can do

The author has followed AI developments since the mid-1980s, when he wrote an expert system in employment

⁷⁴ USPTO, *Artificial Intelligence* (Oct. 9, 2025), <https://www.uspto.gov/initiatives/artificial-intelligence> [<https://perma.cc/3EKV-TWYU>].

⁷⁵ Alan Turing, BRITANNICA (Oct. 9, 2025), <https://www.britannica.com/biography/Alan-Turing> [<https://perma.cc/KG2V-HLGY>].

⁷⁶ Melanie Mitchell, *The Turing Test and our shifting conceptions of intelligence*, 385 SCIENCE, 6710 (2024) (restating the Turing Test).

⁷⁷ Bernard Marr, *A Short History Of ChatGPT: How We Got To Where We Are Today*, FORBES (May 19, 2023), <https://www.forbes.com/sites/bernardmarr/2023/05/19/a-short-history-of-chatgpt-how-we-got-to-where-we-are-today/> [<https://perma.cc/6HFN-M3AH>] (reporting that release of ChatGPT on Nov. 30, 2022 quickly went viral, attracting over a million users in five days).

law using the technology of the time. In the 1987 world knowledge representation was the daunting challenge. The necessity of representing the facts in a computable manner was the major weakness of the expert systems approach. It needed to rely on a level of natural language processing that was not then available.

In addition to writing rules such as those shown in subsection II.B.3, the knowledge engineer and expert system programmer had to represent facts as minor premises in computer executable form so they could be matched with the elements in the major premise. Formulating questions that a client could understand with sufficient granularity to feed populate the minor premises was impracticable.

Now, generative AI has overcome the natural language problem. The generative AI models most useful to lawyers are large language models, developed from knowledge bases comprising everything on the Internet and in Wikipedia and other organized sources. Generative AI technology permits a high level of natural language processing, in which an AI engine accepts a prompt from a user and “understands it.” Based on the prompt, it constructs a response in natural language drawing on algorithms it has developed from machine learning applied to large knowledge bases. The machine-learning typically uses neural networks and transformers.⁷⁸

Recent generative AI technologies excel in the patent world, because patents, patent applications, and the documents exchanged in patent prosecution are structured and predictable. The steps in patent prosecution and defense similarly are structured and predictable. This makes it easy for an AI engine to predict “what comes next.”

⁷⁸ Method and Apparatus for Classifying a Class to which a Sentence Belongs By Using Deep Neural Network, U.S. Patent No. 11,568,240 col 17 l. 7–24; *see infra* note 85 (regarding transformers).

Their machine-enabled learning from an enormous store of documents makes them articulate and imaginative in suggesting inventions and marshaling prior art. They are phenomenal search engines for unearthing prior art, either to invent around it or to assess or avoid obviousness in filed applications. Their facility in writing structured documents makes them adroit in drafting patent applications and framing arguments and responses to office actions.

The public uproar over AI,⁷⁹ is overblown, fueled by ill-informed press and media, headline after headline.⁸⁰ In any event, it is irrelevant to the subject of this article.

⁷⁹ See, e.g., Matt Egan, AI Could Pose ‘Extinction-Level’ Threat to Humans and the US Must Intervene, State Dept.-Commissioned Report Warns, CNN BUSINESS (Mar. 12, 2024), <https://www.cnn.com/2024/03/12/business/artificial-intelligence-ai-report-extinction> [<https://perma.cc/36BD-RRKU>].

⁸⁰ Compare Introducing ChatGPT, OpenAI (Nov. 30, 2022), <https://openai.com/index/chatgpt/> (demonstrating the effectiveness and success of Sam Altman’s effort to market Open AI’s ChatGPT) with Rachna Dhanrajani, *AI Spending Soars: Apple, Microsoft, Google, Amazon, and Meta Lead the Charge with \$60 Billion Commitment*, CNBC TV 18 (Nov. 7, 2024), <https://www.cnbc.com/2024/11/07/technology/ai-spending-soars-apple-microsoft-google-amazon-meta-lead-the-charge-19505992.htm> [<https://perma.cc/E2P3-TEDP>] (demonstrating that others in the industry and in the computer science profession jumped on the bandwagon of excitement about the astounding level of humanlike fluency ChatGPT displays, understanding that they can turn the excitement into investor interest and entrepreneurial opportunity). See, e.g., Sheridan Wall & Silke Schellmann, *Disability Rights Advocates Are Worried About Discrimination in AI Hiring Tools*, MIT TECH. R. (Jul. 21, 2021), <https://www.technologyreview.com/2021/07/21/1029860/disability-rights-employment-discrimination-ai-hiring/> [<https://perma.cc/N4C7-HQ36>] (accompanying this rent-seeking, agency costs abound, as advocates make cataclysmic warnings about the technologies in order to increase membership and dues income); Civic Engagement: Artificial Intelligence Issue Brief, NAACP, <https://naacp.org/resources/civic-engagement-artificial-intelligence-issue-brief> [<https://perma.cc/L2YL-3ADN>] (last visited Feb. 24, 2025) (“[W]e are focused and concerned about the role AI

AI is not going to replace good writers, actors, or attractive models.⁸¹ It is not going to lie any more than human beings do.⁸² It is not going to result in massive job loss; on the contrary, it is creating thousands of new jobs.⁸³ It certainly is not an existential threat to anything except maybe those mediocre at their crafts.

Putting apocalyptic predictions aside, generative AI is powerful in dealing with written information.

Generative AI employs well-established and decades-old statistical and natural-language-processing principles,⁸⁴ to infer rules and to apply them to new text.

might play in misinformation, disinformation, and the dilution of the Black vote.”); Daniel Leufer, *Computers Are Binary, People Are Not: How AI Systems Undermine LGBTQ Identity*, ACCESS NOW (Jan. 13, 2023), <https://www.accessnow.org/how-ai-systems-undermine-lgbtq-identity/> [<https://perma.cc/L2YL-3ADN>]; James Q. Wilson, *Political Organizations* (Princeton University Press ed., 1974) (explaining how interests groups exaggerate threats in order to build membership and zeal; Walter G. Moss, *Artificial Intelligence: A New Warning*, LA PROGRESSIVE (Jun. 16, 2024), <https://www.laprogressive.com/techie-tips/artificial-intelligence-warning> [<https://perma.cc/484X-ZAQW>] (“technology [is] ‘the greatest destructive force in modern society’”).

⁸¹ See *Why AI hasn't taken your job: And any jobs-apocalypse seems a long way off*, THE ECONOMIST (May 26, 2025), https://www.economist.com/finance-and-economics/2025/05/26/why-ai-hasnt-taken-your-job?utm_campaign=shared_article; Henry H. Perritt, Jr., *Robots as Pirates*, 73 *Cath. U. L. Rev.* 57 (2024) (analyzing claims that AI is pirating intellectual property and jeopardizes good writing).

⁸² See generally Henry H. Perritt, Jr., *Robot Slanderer*, 46 *U. Ark. Little Rock L. Rev.* 169 (2025) (questioning claims of widespread AI generated misinformation and defamation).

⁸³ See generally Henry H. Perritt, Jr., *Robot Job Destroyer*, 84 *La. L. Rev.* 207 (2023) (providing critical analysis of labor market effects).

⁸⁴ *Ex Parte Daniel J. Ferranti*, Appeal 2022-002794, 2023 WL 9061302, at *1, *10 (Patent Tr. & App. Bd. 2023) (finding the USPTO's Patent Trial and Board rejected a claim limitation of “natural

The technology itself is incremental, building on analytical techniques that have been the bread and butter of social scientists for a hundred years or more. Now, large collections of data on the Internet, and greatly increased computing power, storage, and communications capacity at low cost, extend machine learning and pattern matching techniques that have emerged gradually for decades. Only a few analytical innovations, such as transformers,⁸⁵ enable it. Far more important are dramatic advances in computing

language processing (NLP) algorithms” because it was “well-known, conventional, and routine,” going back into the 1950s).

⁸⁵ What Are Transformers in Artificial Intelligence?, AWS, <https://aws.amazon.com/what-is/transformers-in-artificial-intelligence/> [<https://perma.cc/GD6D-GKBW>] (last visited Feb. 18, 2024); see Jakob Uszkoreit, Transformer: A Novel Neural Network Architecture for Language Understanding, Google Research (Aug. 31, 2027), <https://research.google/blog/transformer-a-novel-neural-network-architecture-for-language-understanding/> [<https://perma.cc/J6BQ-MELD>] (explaining how transformers work, compared to RNNs; summarizing work of eight Google AI researchers); Giuliano Giacaglia, How Transformers Work, Medium (Mar. 10, 2019), <https://medium.com/towards-data-science/transformers-141e32e69591> [<https://perma.cc/28B9-BCED>] (explaining transformers and comparing them with recursive neural networks; giving examples of language translation systems); Rick Merritt, What Is a Transformer Model?, NVIDIA (Mar. 22, 2022), <https://blogs.nvidia.com/blog/2022/03/25/what-is-a-transformer-model/> [<https://perma.cc/H5A9-KJSV>] (explaining how transformers “pay attention”) (“A transformer model is a neural network that learns context and thus meaning by tracking relationships in sequential data like the words in this sentence.”);

Juan Guerrero et al., *Hierarchical Semantic Encoding for Contextual Understanding in Large Language Models*, AUTHOREA (2024) [hereinafter *Semantic Encoding*], <https://www.authorea.com/users/852661/articles/1238501-hierarchical-semantic-encoding-for-contextual-understanding-in-large-language-models> (explaining relationship between use of transformers in LLM processing and semantic hierarchies).

power, miniaturization, storage, and digital communication bandwidth.⁸⁶

It is not wrong to think of large language models as Google and Microsoft Word spellcheck on steroids

Century-old factor analysis and statistical correlation models, now embodied in products, such as ChatGPT, Claude, DeepSeek, Grok, and Google Gemini allow the products that can accept queries⁸⁷—usually called prompts—in the form of hundreds of words of natural language and documents megabytes in size, and extract requested information from an enormous repository of everything that is accessible through the Internet and many other private databases. Then, the products are glib in expressing the results in grammatically correct and fluid natural language.⁸⁸

⁸⁶ See U.S. Gov't Accountability Off., *Artificial Intelligence: Generative AI Technologies and Their Commercial Applications* (2024), <https://www.gao.gov/assets/gao-24-106946.pdf> [<https://perma.cc/2UTC-8CYD>] [hereinafter GAO Report] (identifying technologies that made generative AI possible).

⁸⁷ ChatGPT, <https://chatgpt.com> (last visited Feb. 21, 2025); Gemini, <https://gemini.google.com> [<https://perma.cc/JM9A-PVPY>] (last visited Feb. 21, 2025).

⁸⁸ For example, on November 15, 2024, the author prompted Google Gemini: “would a law review article on an ai generated patent infringement detector be interesting?” Gemini responded:

“Yes, a law review article on an AI-generated patent infringement detector would be very interesting and timely. Here’s why:

“Emerging Technology: AI is rapidly changing how we create and protect intellectual property. An AI tool that can detect patent infringement has significant implications for businesses and legal practice.

“Novel Legal Questions: This technology raises new legal questions about the accuracy, reliability, and biases of AI in legal contexts. It also touches on issues of explainability and transparency in AI decision-making.

“Practical Significance: Such a tool could significantly impact patent litigation, making the process more efficient and potentially more

3. How it works

Generative AI's capabilities are dramatized by comparing excerpts of the author's 1987 WDES with the exercise described in this article.

In the mid-1980s, the author wrote an expert system he called WDES. WDES was implemented in several hundred lines of Turbo Pascal code which applied nested rules representing Aristotelian syllogisms expressing employment law doctrines. The author had written a leading treatise on employee dismissal,⁸⁹ and, therefore, had expertise on the content of those doctrines. He also had considerable experience as a computer programmer, going back to his undergraduate days as an engineering student at MIT. After WDES was complete, he made it available for test drives by several law students and experienced employment attorneys at the law firm of Morgan Lewis and Bockius.

He reported on the results in a 1987 article,⁹⁰ which described the challenges confronting artificial intelligence application to employment law, explained the details of WDES and provided a transcript of questions asked by WDES and resulting advice. The article concluded that the most important technology challenges for the future involved knowledge representation and natural language. When WDES was developed and the article written, the most advanced artificial intelligence systems took the form

accurate. This has real-world consequences for innovators and businesses.”

Google Gemini then went on to suggest topics to be covered in the article. Henry H. Perritt, Jr., Google Gemini, “would a law review article on an ai generated patent infringement detector be interesting?” (November 15, 2024) (on file with author).

⁸⁹ Henry H. Perritt, Jr., *Employee Dismissal Law and Practice*, John Wiley & Sons, 1st ed., 1984. The book now is in its sixth edition.

⁹⁰ Henry H. Perritt, Jr., *Artificial Intelligence Techniques for Evaluating Employee Terminations on a Personal Computer*, 13 *Rutgers Computer & Tech. L. J.* 342 (1987).

of expert systems: rule-based deductive algorithms. Procedural languages like *Turbo Pascal* or the newer *Prolog* were well suited for writing rules and arranging them so logistically. The 1987 WDES employed rules, expressed in the Prolog programming language,⁹¹ like this:

*breach_of_contract if capacity and promise and
consideration and breach*

*Consideration if bargained_for_benefit or
bargained_for_detriment or promissory_estoppel*

*promissory_estoppel if ask("Did the promisee give
up something because of the promise?") and affirm_answer.*
92

WDES also contained a client interrogation module which asked natural-language questions to a client, such as "Did you give up anything after you read your employer's promise of employment security?" If the client answered, "Yes," the program would set the value of *promissory estoppel* to true.

The knowledge representation task designing WDES involved defining data structures with slots for the elements of each legal theory. The Prolog code represents such data structures with slots for offer, acceptance, consideration, and breach. Those data structures represent the major premises in the deductive legal logic. The WDES program code also had to obtain information from the client in a form that allowed it to tag client facts so that they match the slots in the major premise. That interrogation and tagging enabled the program to construct the minor premises that could be tested against the major premises

⁹¹ The Prolog representations of the rules are presented, because they are easier to understand than the original Pascal representations. Rangarajan Krishnamoorthy, *Why Learn Prolog?*, <https://www.rangakrish.com/index.php/2022/10/06/why-learn-prolog/> [https://perma.cc/4KDF-29MF].

⁹² Perritt, *supra* note 90, at 347.

Generative AI automates all that. For major-premise construction, it uses machine learning to induce the data structures that represent major premises in employment law applied to an enormous stock of textual information, including statutes and judicial opinions and law review articles.

It then, when presented with new textual information like the interview transcript, tags the facts disclosed so that the interview can be represented as a series of arrays that the system then compares with the data structures representing the major premises. The arrays are the minor premises.

Machine-learning develops models of semantic relationships in language by comparing language elements separately deconstructed by neural networks and computing a loss function that represents their similarity, or lack thereof.⁹³ The same kind of similarity comparison occurs from the most granular—characters—upwards in a hierarchy of abstraction: words, then phrases, then sentences, then paragraphs, then to ever larger concepts. The result is something like a massive thesaurus.

Natural language user queries can be preprocessed to chunk a set of sentences of the natural language user query into a set of smaller sentences and to retain the references between chunks of the set of sentences.⁹⁴ For each chunk of preprocessed user query a Name Entity

⁹³ Method & Apparatus for Classifying Class, to which Sentence Belongs, Using Deep neural Network, U.S. Patent No. 11,568,240 col 17 l. 7–24 (filed May 16, 2018).

⁹⁴ See Cameron Hashemi-Pour & Nick Barney, What is Named Entity Recognition (NER)?, TechTarget: What Is? <https://www.techtarget.com/whatis/definition/named-entity-recognition-NER> [<https://perma.cc/2WGM-US6H>] (last visited Feb. 24, 2025).

Recognition (NER) ensemble extracts a domain specific name entity from the chunked preprocessed user query.⁹⁵

Classification techniques model the topics of each chunk. Then, in appropriate applications, sentiment analysis can determine a sentiment of each chunk of the user query.⁹⁶ User queries are converted to system queries by a combination of different natural-language-processing functions, such as NER, sentiment analysis, part of speech tagging, canonicalization,⁹⁷ classification, and translation.

Then, pattern matching techniques are used to compare the system query to the knowledge model to determine the closest state in the knowledge model. The system returns a set of decisions scored according to their degree of match with the system query.⁹⁸ The winner state in the knowledge model is the knowledge state with the highest score.⁹⁹ And then, the technology uses its “what comes next?” predictions to organize concepts, paragraphs, and sentences.

⁹⁵ See *id.* Named Entity Recognition (NER) detects semantic entities such as names, locations, business enterprises, events, products, themes, topics, monetary values, and percentages. Once they are detected, the entities are tagged and linked to an overarching neural network. *Id.*

⁹⁶ See *What is Sentiment Analysis*, AWS, <https://aws.amazon.com/what-is/sentiment-analysis/> [<https://perma.cc/2DWW-ECDX>] (last visited Feb. 21, 2025).

⁹⁷ See *What Is Canonicalization*, GOOGLE SEARCH CENT., <https://developers.google.com/search/docs/crawling-indexing/canonicalization> [<https://perma.cc/PYE4-CW8G>] (last visited Mar. 8, 2025) (Canonicalization is the act of converting free-form expression into standardized forms.); see also Convolutional State Modeling for Planning Natural Language Conversations, U.S. Patent Application No. 2020/0387672 figs. 1–3, figs. 12A–12B, ¶ 27–64. (filed Aug. 25, 2020) (abandoned).

⁹⁸ Convolutional State Modeling for Planning Nat. Language Conversations, U.S. Patent Application No. 2020/0387672 ¶¶ 44, 95 (filed Aug. 25, 2020) (abandoned) (referring to pattern matching).

⁹⁹ *Id.* ¶ 5.

Systems can be fine-tuned by taking large language models trained on the full array of data usually used for training such models, and then connecting them with more specialized learning databases. The machine learning system constructs new concept vectors enabling a branching by subject matter before more finely grained responses are constructed.¹⁰⁰

The enormous amounts of capital invested in generative AI ensure that lots of smart people will invent new processes and systems that involve AI technology.¹⁰¹ The capabilities motivating this article will get better.

III. CENTRALITY OF PHOSITA

The threat to the patent system from generative AI results from the inevitable revision in the way obviousness analysis is approached by patent examiners and courts as AI technology becomes more pervasive. The concept of obviousness requires establishing a point of view from

¹⁰⁰ See An Intelligent Question and Answer Method and Device Based on Large Language Model, China Patent No. 117520491A (filed Oct. 27, 2023) (Disclosure of Invention section).

¹⁰¹ Marlize van Romburgh, *The State Of Startups In 12 Charts: AI Soars, Asia Tanks, Seed Stalls And More*, CRUNCHBASE NEWS (2025), <https://news.crunchbase.com/venture/startups-ai-seed-investors-data-charts-ye-2024/#:~:text=The%20growth%20in%20AI%20investment,below%202018%20and%202020%20levels> [https://perma.cc/B72K-5H4P] (“Global startup funding in 2024 was dominated by investment in artificial intelligence companies, with \$100 billion of venture capital going to AI-related startups alone — an 80% increase from 2023.”); *AI Investment Forecast to Approach \$200 Billion Globally by 2025*, GOLDMAN SACHS (2023), <https://www.goldmansachs.com/insights/articles/ai-investment-forecast-to-approach-200-billion-globally-by-2025> <https://perma.cc/WEC8-NH2J> (“Innovations in electricity and personal computers unleashed investment booms of as much as 2% of U.S. GDP as the technologies were adopted into the broader economy. Now, investment in artificial intelligence is ramping up quickly and could eventually have an even bigger impact on GDP.”).

which obviousness is to be judged. Patent law defines that point of view is that of a person holding ordinary skill in the art, a PHOSITA.¹⁰²

The concept of a PHOSITA is statutory:

Section 103 says that an invention is obvious and thus not patentable:

[I]f the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a *person having ordinary skill in the art* to which the claimed invention pertains.¹⁰³

The non-obviousness requirement was codified in section 103 of the 1952 Patent Act¹⁰⁴ which also originated the PHOSITA concept.¹⁰⁵

PHOSITAs are not assumed to search; they consult their own knowledge in deciding what is obvious. But, depending on the field, evidence may show that a PHOSITA routinely consults literature, including patent literature.

The following subsections summarize the conventional understanding of a PHOSITA, explaining how a PHOSITA is defined, what PHOSITAs do, and how their imaginary activities enter into patent examination and litigation. Section IV.A explains how the introduction of

¹⁰² MPEP §§ 2164.01, 2164.05(b) (9th ed. Rev. Jan. 2024) (emphasis added) (showing PHOSITAs also are involved in assessing whether the enablement requirement of 35 U.S.C. § 112 has been satisfied) (“[W]hether a particular claim is supported by the disclosure . . . requires a determination of whether that disclosure . . . enable[s] one skilled in the pertinent art to make and use the claimed invention.”).

¹⁰³ 35 U.S.C. § 103 (emphasis added).

¹⁰⁴ 35 U.S.C. § 103 (1952).

¹⁰⁵ *Id.* (containing language identical to current version); see Darrow, *supra* note 60, at 232–33.

AI technology alters the understanding of PHOSITAs and their role.

A. Conventional understanding

The PHOSITA standard can be set too low—the perspective of a layperson—allowing trivial inventions to be patented. Or it can be set too high—the perspective of a researcher—denying patents to truly innovative inventions.¹⁰⁶

PHOSITAs are more important in district court, where lay judges and jurors determine obviousness than in patent office proceedings where examiners and administrative patent judges are presumed to have some expertise in technology. PTAB and district courts hearing obviousness challenges exert considerable energy defining PHOSITAs.¹⁰⁷ In federal court litigation, expert witnesses are necessary to explain to the judge and jury who a PHOSITA and what a PHOSITA would know. Because the PHOSITA is an artificial person, the PHOSITA cannot be subpoenaed to testify. In patent office proceedings, on the other hand, expert testimony is less necessary because patent examiners and patent judges have expertise in technology themselves.

¹⁰⁶ Darrow, *supra* note 60, at 234.

¹⁰⁷ A search of the Westlaw district court database conducted by the author on 7 June 2025 with the search term, “adv: patent & “district court” & obviousness & (PHOSITA POSA POSITA) produced 586 hits. WESTLAW, “adv: patent & “district court” & obviousness & (PHOSITA POSA POSITA), 586 results, (June 7, 2025) (filtered by “district court”) (on file with the author). A search of the Westlaw PTAB database on the same date with the search term “advanced: ((PHOSITA POSA POSITA) and obviousness” produced 5,784 hits. WESTLAW, “advanced: ((PHOSITA POSA POSITA) and obviousness”, 5,784 results, (June 7, 2025) (filtered by “PTAB”) (on file with author).

The rationale for the PHOSITA concept is this: an element of a reference cannot be combined with other references if it is unknown; something unknown cannot be obvious. But deciding that something is known necessitates identifying the person or entity whose knowledge is to be tested. That person or entity is a PHOSITA.

The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the relevant time. Factors that may be considered in determining the level of ordinary skill in the art may include: (1) “type of problems encountered in the art;” (2) “prior art solutions to those problems;” (3) “rapidity with which innovations are made;” (4) “sophistication of the technology;” and (5) “educational level of active workers in the field. In a given case, every factor may not be present, and one or more factors may predominate.” . . . “A person of ordinary skill in the art is also a person of ordinary creativity, not an automaton.” “[I]n many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” Office personnel may also take into account “the inferences and creative steps that a person of ordinary skill in the art would employ.”¹⁰⁸

“Often it will be necessary for a court to look to . . . the background knowledge possessed by a person having ordinary skill in the art . . . to determine whether there was an apparent reason to combine the known elements”¹⁰⁹ One way to determine what a PHOSITA would know is to offer expert testimony.¹¹⁰

¹⁰⁸ MPEP § 2141.03 (I) (9th ed. Rev. 01.2024, Nov. 2024).

¹⁰⁹ *KSR Int’l Co. v. Telefax Inc.*, 550 U.S. 398, 418 (2007).

¹¹⁰ *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1330 (Fed. Cir. 2009) (finding two expert opinions sufficient to show that repetition would have been known to person of ordinary skill).

Here is an example of expert testimony defining a PHOSITA:

[A]t the time the '808 patent was filed, not many technicians focused solely on evaluating and developing diagnostic systems for the EVAP systems, [such that] the person of ordinary skill would have had experience developing diagnostic and repair tools for engine systems in general The professional experience possessed by the ordinary artisan would thus have included experience in engine diagnosis and repair, including at least some experience with EVAP systems and other emission systems.... The ordinary artisan would also have had a limited understanding of the chemistry of combustion and the characteristics of hydrocarbon based fuel.

According to Dr. Checkel, for the person of ordinary skill who held a high school diploma, the amount of relevant professional experience would be seven to ten years, while those with more educational experience would require correspondingly less years of professional experience.¹¹¹

But common sense and examiner expertise may be enough in some circumstances.¹¹²

¹¹¹ *Redline Detection, LLC v. Star Envirotech, Inc.*, 811 F.3d 435, 450 n.8 (Fed. Cir. 2015) (finding sufficient evidence to support PTAB decision of non-obviousness in inter parties review).

¹¹² *Perfect Web*, 587 F.3d at 1330; *see also Redline Detection* 811 F.3d at 449–450 (Fed. Cir. 2015) (noting competing definitions of PHOSITA, but finding argument waived); MPEP § 2141 (II) (9th ed. Rev. 01.2024, Nov. 2024) (identifying “resolving the level of ordinary skill in the pertinent art” as the third of three necessary factual inquiries under Graham’s obviousness framework) (“In addition to the factors above, Office personnel may rely on their own technical expertise to describe the knowledge and skills of a person of ordinary skill in the art. The Federal Circuit has stated that examiners and administrative patent judges on the Board are persons of scientific competence in the fields in which they work and that their findings are informed by their

In *VirnetX Inc. v. Apple Inc.*,¹¹³ the Federal Circuit noted PTAB member expertise as a reason for allowing them to make obviousness determinations without expert testimony.¹¹⁴

In *Allure Energy, Inc. v. Nest Labs, Inc.*,¹¹⁵ the district court held that it was a mistake to require expert witness qualifications to the definition of a PHOSITA.¹¹⁶

Significantly, the PHOSITA is a composite person, not necessarily an actual human individual.¹¹⁷

The patent office emphasizes the essentiality of defining and articulating ordinary skill in the art to maintain objectivity in obviousness analysis. “The examiner must ascertain what would have been obvious as of the relevant time to one of ordinary skill in the art, and not to the inventor, a judge, a layman, those skilled in remote arts, or to geniuses in the art at hand.”¹¹⁸

Factors to be considered in determining the level of ordinary skill in the art include: “(A) “type of problems

scientific knowledge, as to the meaning of prior art references to persons of ordinary skill in the art.”) (internal quotations and citations omitted).

¹¹³ 665 F. App’x 880 (Fed. Cir. 2016).

¹¹⁴ *Id.* at 884.

¹¹⁵ No. 9-13-CV-102, 2015 WL 11110634 (E.D. Tex. Apr. 13, 2015).

¹¹⁶ *Id.*, at *2.

¹¹⁷ Michael Abramawicz & John F. Duffy, *The Inducement Standard of Patentability*, 120 YALE L. J. 1590, 1604 (2011) (internal footnotes omitted) (arguing that patents should be available only for inventions that would not exist except for the inducement of a patent) (“[O]bviousness is tested by reference to what would have been obvious not to any actual person, but to “a person having ordinary skill in the art”— abbreviated typically, if inelegantly, as “PHOSITA.” As discussed below, the courts have constructed this person with attributes acknowledged to be highly fictional, and those fictional attributes make it difficult or impossible to gain any real intuition as to the cognitive processes of the mythical PHOSITA. That stumbling block is only the beginning of the problems for a cognitive approach.”).

¹¹⁸ MPEP 2141.03 (III) (9th ed. Rev. 01.2024, Nov. 2024).

encountered in the art;” (B) “prior art solutions to those problems;” (C) “rapidity with which innovations are made;” (D) “sophistication of the technology; and” (E) “educational level of active workers in the field. In a given case, every factor may not be present, and one or more factors may predominate.”¹¹⁹

Silence or generalities in a new application may suggest that ordinary skill in the art encompasses figuring out how to accomplish that step.¹²⁰

The test is ordinary creativity; not an automaton.¹²¹ But requiring particular levels of credential, such as “a doctorate level engineer or scientist working at least 40 hours per week in semiconductor research or development” is not appropriate.¹²² The test is *ordinary* skill.

Jonathan Darrow traces the evolution of the non-obviousness standard and the idea of a PHOSITA¹²³ from a mechanic perspective, from 1790 to the 1970,¹²⁴ to a designer perspective, from the 1950s to the present,¹²⁵ and to a researcher perspective from the 1970s to the present.¹²⁶

¹¹⁹ *Id.* § 2141.03(I) (citing *In re GPAC*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986); *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696 (Fed. Cir. 1983), *cert. denied*, 464 U.S. 1043 (1984)).

¹²⁰ *Id.* (citing *Uber Techs., Inc. v. X One, Inc.*, 957 F.3d 1334, 1339 (Fed. Cir. 2020)).

¹²¹ *Id.* (citing *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007)).

¹²² *Id.* (citing *Ex parte Hiyamizu*, 10 USPQ2d 1393, 1394 (B.P.A.I. 1988)).

¹²³ Jonathan J. Darrow, *The Neglected Dimension of Patent’s Law’s PHOSITA Standard*, 23 HARV. J. L. & TECH. 227, 231-32 (2009) (noting that non-obviousness has been conflated with utility, with a refinement of novelty, and with a distinct “invention” requirement).

¹²⁴ *Id.* at 239–42 (“The PHOSITA was thus a tradesman — a person who practiced his art with ordinary skill but who was not an inventor.”).

¹²⁵ *Id.* at 242–43. Darrow uses the word *designer* to refer to *engineers*.

¹²⁶ *Id.* at 243–44.

Hotchkiss explicitly embraced the mechanic perspective. The designer perspective had begun to gain adherents by the end of the nineteenth century¹²⁷ and was squarely embraced by the Supreme Court in its 2007 KSR case.¹²⁸ The researcher perspective begin to drift into the language of obviousness cases after the turn of the twenty-first century.¹²⁹ Darrow admits, however, that a declining percentage of cases use any of the three terms.¹³⁰

Darrow urges abandonment of the researcher perspective, which, he says, was arrived at without much thought and undermines the incentive to invent.¹³¹ He illustrates the different perspectives with examples of PHOSITAs who (1) know how to ride a bicycle, (2) know how to build a bicycle, (3) know how to design a bicycle, and (4) know how to invent new technology for bicycles. No one adheres to the first perspective; it is too permissive. *Hotchkiss* reflects the second perspective. Darrow laments the drift of PHOSITA standard from (2) to (3) and (4).¹³²

B. What PHOSITAs do

Defining a PHOSITA for a given case is not enough. Once the term is defined, the decision-maker then must ask: what did the PHOSITA know and when did he know it?

The consistent theme in all the USPTO guidance is whether a person having ordinary skill in the art (a

¹²⁷ See *Atl. Works v. Brady*, 107 U.S. 192, 200 (1883) (holding that invention requires more than ordinary mechanical *or engineering* skill) (emphasis added).

¹²⁸ *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 424 (2007) (repeatedly referring to person of ordinary skill as “designer”).

¹²⁹ Darrow, *supra* note 123, at 243–47.

¹³⁰ *Id.* at 247.

¹³¹ *Id.* at 238.

¹³² *Id.* (discussing examples).

“PHOSITA”¹³³ would have a “reasonable expectation of success” in combining elements from the prior art references.¹³⁴ If a PHOSITA would not have had a reasonable expectation of success in combining elements of different sources, the invention is not obvious.¹³⁵ This reasonable-expectation-of-success standard is similar in many respects to the without-undue-experimentation test for enablement under § 112.¹³⁶ That test is therefore conceptually useful in exploring tests for obviousness¹³⁷ under the reasonable-expectation-of-success test more often articulated in obviousness controversies.¹³⁸

¹³³ See MPEP § 2141.03 (9th ed. Rev. 7, Nov. 2024) (defining a person of ordinary skill in the art).

¹³⁴ See *id.* § 2143.02.

¹³⁵ *Salix Pharm., Ltd. v. Norwich Pharm. Inc.*, 98 F.4th 1056, 1065–67 (Fed. Cir. 2024) (applying reasonable expectation of success standard in affirming finding of obviousness).

¹³⁶ 35 U.S.C. § 112; MPEP § 2164 (9th ed. Rev. 11.2013, Mar. 2014) (discussing § 112’s enablement requirement). A prior art reference is not anticipatory or an indication of obviousness unless it enables a person skilled in the relevant art to build and use an invention without undue experimentation. See Henry H. Perritt, Jr., *Literary Fantasies as Prior Art: Eclipsing True Invention*, 104 J. PAT. & TRADEMARK OFF. SOC’Y 453 (2024) (criticizing presumption that prior art that anticipates is enabling); *Cephalon, Inc. v. Watson Pharm., Inc.*, 707 F.3d 1330, 1336 (Fed. Cir. 2013) (applying *In re Wands*, 858 F.2d 731, 736–37 (Fed. Cir. 1988) and reversing district court’s application of enablement requirement from § 112).

¹³⁷ See *UCB, Inc. v. Watson Lab’y Inc.*, 927 F.3d 1272, 1288 (Fed. Cir. 2019) (articulating obviousness test as “a reasonable expectation of success . . . without undue experimentation”); *Forest Lab’y, Inc. v. Ivax Pharm., Inc.*, 501 F.3d 1263, 1269 (Fed. Cir. 2007) (affirming district court’s use of undue experimentation as test of obviousness); *Allergan, Inc. v. Teva Pharm. USA, Inc.*, No. 2:15-cv-1455-WCB, 2017 WL 1319555, at *2 (E.D. Tex. Apr. 10, 2017) (characterizing caselaw as rejecting obviousness finding when undue experimentation is required).

¹³⁸ See *In re Vaeck*, 7 F.2d 488, 493 (Fed. Cir. 1991) (Rich, J.) (rejecting USPTO finding of obviousness; prior art did not provide a reasonable expectation of success); *Bridgestone Sports Co., Ltd. v.*

A finding of obviousness may not be based on non-analogous references.¹³⁹ “A reference is analogous art to the claimed invention if: (1) the reference is from the same field of endeavor as the claimed invention (even if it addresses a different problem); or (2) the reference is reasonably pertinent to the problem faced by the inventor (even if it is not in the same field of endeavor as the claimed invention).”¹⁴⁰

The patent office synthesized the following considerations for obviousness derived from *KSR*¹⁴¹ and subsequent cases applying it:

“(A) Combining prior art elements according to known methods to yield predictable results;”¹⁴²

“(B) Simple substitution of one known element for another to obtain predictable results;”¹⁴³

“(C) Use of known technique to improve similar devices (methods, or products) in the same way;”¹⁴⁴

Acushnet Co., No. 05-132 (JJF), 2007 WL 9811093, at *2 (D. Del. May 24, 2007) (special master report) (using undue experimentation as test for obviousness).

¹³⁹ MPEP § 2141.01(a) (9th ed. Rev. 01.2024, Nov. 2024).

¹⁴⁰ See *Id.* § 2141.01(a)(I) (noting that the art being analogous is not a requirement for an anticipation rejection under 35 U.S.C. § 102; it is a requirement only for obviousness).

¹⁴¹ *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 415–21 (2007).

¹⁴² MPEP § 2143(I) (9th ed. Rev. 01.2024, Nov. 2024); see also MPEP § 2143(I)(A) (9th ed. Rev. 01.2024, Nov. 2024) (“all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination yielded nothing more than predictable results to one of ordinary skill in the art.”).

¹⁴³ MPEP § 2143(I) (9th ed. Rev. 01.2024, Nov. 2024); see also MPEP § 2143(I)(B) (9th ed. Rev. 01.2024, Nov. 2024) (“the substitution of one known element for another yields predictable results to one of ordinary skill in the art.”).

¹⁴⁴ MPEP § 2143(I) (9th ed. Rev. 01.2024, Nov. 2024); see also MPEP § 2143(I)(C) (9th ed. Rev. 01.2024, Nov. 2024) (“One of ordinary skill in the art would have been capable of applying this known method of

“(D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;”¹⁴⁵

“(E) ‘Obvious to try’ – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;”¹⁴⁶

“(F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;”¹⁴⁷

“(G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to

enhancement to a ‘base’ device (method, or product) in the prior art and the results would have been predictable to one of ordinary skill in the art. ‘It’s enough . . . to show that there was a known problem . . . in the art, that [another reference] . . . helped address that issue, and that combining the teachings of [the two references] wasn’t beyond the skill of an ordinary artisan.’” (quotations omitted)).

¹⁴⁵ MPEP § 2143(I) (9th ed. Rev. 01.2024, Nov. 2024); *see also* MPEP § 2143(I)(D) (9th ed. Rev. 01.2024, Nov. 2024) (“a particular known technique was recognized as part of the ordinary capabilities of one skilled in the art. One of ordinary skill in the art would have been capable of applying this known technique to a known device (method, or product) that was ready for improvement and the results would have been predictable to one of ordinary skill in the art.”).

¹⁴⁶ MPEP § 2143(I) (9th ed. Rev. 01.2024, Nov. 2024); *see also* MPEP § 2143(I)(E) (9th ed. Rev. 01.2024, Nov. 2024) (“a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely that product [was] not of innovation but of ordinary skill and common sense.” (quotations omitted)).

¹⁴⁷ MPEP § 2143(I) (9th ed. Rev. 01.2024, Nov. 2024); *see also* MPEP § 2143(I)(F) (9th ed. Rev. 01.2024, Nov. 2024) (“design incentives or other market forces could have prompted one of ordinary skill in the art to vary the prior art in a predictable manner to result in the claimed invention.”).

modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.”¹⁴⁸

While conclusive proof of efficacy is not required,¹⁴⁹ an applicant can rebut obviousness with evidence showing that there is no reasonable expectation of success based on the teachings of the prior art.¹⁵⁰ In exploring those criteria, examiners consider:¹⁵¹

Implicit disclosure.¹⁵²

Scientific theory.¹⁵³

Common knowledge in the art.¹⁵⁴

Legal precedent.¹⁵⁵

Obviousness of similar and overlapping ranges, amounts, and proportions.¹⁵⁶

Equivalence for the same purpose recognized in the art.¹⁵⁷

Suitability for an intended purpose recognized in the art.¹⁵⁸

Obviousness of species when prior art teaches genus.¹⁵⁹

¹⁴⁸ MPEP § 2143(I) (9th ed. Rev. 01.2024, Nov. 2024); *see also* MPEP § 2143(I)(G) (9th ed. Rev. 01.2024, Nov. 2024) (“some teaching, suggestion, or motivation . . . to modify the reference or to combine reference teachings, . . . with . . . reasonable expectation of success.”); MPEP § 2143.01 (9th ed. Rev. 01.2024, Nov. 2024) (mere possibility of combining limitations from different references is not enough; some teaching or motivation must exist).

¹⁴⁹ MPEP § 2143.02(I) (9th ed. Rev. 01.2024, Nov. 2024).

¹⁵⁰ *Id.* § 2143.02(II).

¹⁵¹ *Id.* § 2144.

¹⁵² *Id.* § 2144.01.

¹⁵³ *Id.* § 2144.02.

¹⁵⁴ *Id.* § 2144.03.

¹⁵⁵ MPEP § 2144.04 (9th ed. Rev. 01.2024, Nov. 2024).

¹⁵⁶ *Id.* § 2144.05.

¹⁵⁷ *Id.* § 2144.06.

¹⁵⁸ *Id.* § 2144.07.

¹⁵⁹ *Id.* § 2144.08.

Close structural similarity between or among chemical compounds.¹⁶⁰

Greg Reilly would diminish reliance on the PHOSITA concept in patent infringement litigation while retaining it in patent prosecution.¹⁶¹ In prosecution, the existence of the PHOSITA standard spares patent applicants from having to fill in every detail to make a new invention understandable while also imposing reasonable limits on what is patentable.¹⁶² He observes:

[J]udges must put themselves in the shoes of an expert in the field and resolve patent law issues as an expert would. As generalists who rarely have any scientific or technical training, “judges are at a rather serious disadvantage in trying to put themselves in the shoes of an ordinarily skilled scientist.”¹⁶³

C. Order of proof

To understand the role of a PHOSITA and expert witnesses, it is useful to review the order of proof at different stages of patent prosecution and defense. Initial examination is an *ex parte* process between the applicant and the examiner.¹⁶⁴ Typically, applicant participation is limited to submitting claim amendments and arguments as to why the amendments overcome rejections, although applicants also are entitled to submit documentary

¹⁶⁰ *Id.* § 2144.09.

¹⁶¹ Greg Reilly, *Rethinking the PHOSITA in Patent Litigation*, 48 *LOY. U. CHI. L.J.* 501, 533 (2016) (proposing elimination of PHOSITA as test for anticipation in litigation); *id.* at 536–37 (suggesting greater reliance on objective evidence to support expert testimony about what a PHOSITA would know).

¹⁶² *See id.* at 531–33 (explaining rationale for the PHOSITA concept in a patent prosecution context).

¹⁶³ *Id.* at 503 (internal quotations omitted).

¹⁶⁴ *See generally* MPEP 708 (9th ed. Rev. 01.2024, Nov. 2024) (defining order of *ex-parte* examination).

evidence.¹⁶⁵ Examiners often parrot the language “person having ordinary skill in the art,” but rarely go into any explicit detail about how they define a PHOSITA, what a PHOSITA would know, or how he would know it.¹⁶⁶

On appeal of an examiner rejection to the Patent Trial and Appeal Board (PTAB), the procedure becomes more adversarial, but the parties remain the applicant and the examiner. It is not uncommon for an applicant in a PTAB rejection appeal to offer expert declarations about obviousness and evidence.¹⁶⁷ In PTAB post-grant review (PGR) and inter partes review (IPR) proceedings, the procedure is fully adversarial between the applicant and a challenger of patent validity. These proceedings differ from district court litigation only in that testimony is written instead of being taken *ore tenus*,¹⁶⁸ cross-examination is not allowed,¹⁶⁹ and the administrative patent judges sitting on a PTAB panel are entitled to use their own expertise to a greater degree in assessing obviousness than a United States district judge.¹⁷⁰ Submission of opposing expert testimony is common in IPR and PGR cases.¹⁷¹

¹⁶⁵ MPEP § 716.01(a) (9th ed. Rev. 01.2024, Nov. 2024) (requiring consideration of evidence of non-obviousness submitted in form of affidavits, declarations and otherwise).

¹⁶⁶ *See, e.g.*, 35 U.S.C. 103.

¹⁶⁷ *Id.* § 1206(II) (allowing affidavits and other evidence in appeals but requiring timing such that examiner can consider them; citing 37 C.F.R. §§ 41.31(a)(1)-(3) (2025)); 37 C.F.R. § 1.116(e) (2025) (limiting affidavits and other evidence not considered by examiner).

¹⁶⁸ 37 C.F.R. § 42.53 (2025) (requiring testimony to be presented in written form).

¹⁶⁹ *SynQor, Inc. v. Vicor Corp.*, 988 F.3d 1341, 1352–53 (noting that cross-examination is less necessary in PGR and IPR proceedings because of expertise of PTAB board members).

¹⁷⁰ *See id.* at 1352 (referring to application of expertise of PTAB board members, reducing their need for expert testimony).

¹⁷¹ *See, e.g.*, *Canfield Scientific, Inc. v. Melanoscan, LLC*, 987 F.3d 1375, 1382 (Fed. Cir. 2021) (noting presentation of opposing expert witnesses in IPR obviousness challenge).

When a patent is challenged on the grounds of obviousness in United States district court, expert testimony is almost always presented *ore tenus* and subjected to oral cross-examination.¹⁷² Moreover, a considerable amount of district court attention is paid to defining a PHOSITA.¹⁷³

IV. A GENERATIVE AI WORLD

The combination of AI as an inventor or coinventor and AI as a PHOSITA or aide to a PHOSITA raises the specter of inventions being created without substantial human involvement, while also being obvious. Indeed, whatever can be invented by computer systems may also be considered obvious to the same computer systems.¹⁷⁴ Understanding the impact of generative AI on the patent system requires recognizing that obviousness, a disqualification for a patent under § 103, is the inverse of inventorship, the *sine-qua-non* for a patent. The same capabilities that make it possible for generative AI to invent everything also make it possible for AI to know everything,

¹⁷² See, e.g., *J.R. Simplot Co. v. McCain Foods USA, Inc.*, 713 F. Supp. 3d 904, 935 (D. Idaho 2024) (wrestling with definition of PHOSITA). A Westlaw search of district court cases using the terms adv: patent & “district court” & obviousness & (PHOSITA POSA POSITA), conducted by the author on 7 June, 2025, returned 586 results.

¹⁷³ See, e.g., *J.R. Simplot Co. v. McCain Foods USA, Inc.*, 713 F. Supp. 3d 904, 935 (D. Idaho 2024) (wrestling with definition of PHOSITA). A Westlaw search of district court cases using the terms adv: patent & “district court” & obviousness & (PHOSITA POSA POSITA), conducted by the author on 7 June, 2025, returned 586 results.

¹⁷⁴ See Henry H. Perritt, Jr., *Creative destruction for the patent system? Impact of generative AI*, 27 MINN. J. L. SCI. & TECH. (forthcoming 2026); Ryan Abbott, *Everything is Obvious*, 66 UCLA L. REV. 2, 6 (2019).

making all inventions obvious.¹⁷⁵ If, however, an ingredient of inventorship exists that is outside the ken of an AI engine acting in the place of a PHOSITA, certain innovations may remain patentable.¹⁷⁶

A. *Inventorship*

The availability of generative AI and its obvious utility in facilitating inventive activity presents the question of whether AI engines should qualify as inventors under patent law. The answer has been a resounding “no.”¹⁷⁷ The USPTO, however, has recognized the inevitability that human inventors will rely on generative AI to aid their inventive efforts.¹⁷⁸ The Office thus has published guidance on how to consider whether a human being using an AI engine qualifies as an inventor, allowing the joint work of human and computer to be patented.¹⁷⁹

In *Revised Inventorship Guidance for AI-Assisted Inventions*,¹⁸⁰ the USPTO stated that “[t]he same legal standard for determining inventorship applies to all inventions, regardless

¹⁷⁵ See Henry H. Perritt, Jr. *Creative destruction for the patent system? Impact of generative AI*, 27 MINN. J. L. SCI. & TECH. (forthcoming 2026).

¹⁷⁶ Yuan Hao, *The Rise of “Centaur” Inventors*, 104 J. PAT. TRADEMARK OFF. SOC’Y 71, 126–27 (2024) (proposing a different approach, similarly focused on the inventor: allowing AI-enabled inventions to be patentable if (1) the inventor asks the specific question to which AI predicted the solution; (2) the inventor is the first human being to grasp the non-obviousness of the specific and settled idea of the solution; and (3) the inventor discloses the role of AI in crystallizing the conception).

¹⁷⁷ See *Thaler v. Vidal* 43 F.4th 1207, 1213 (Fed. Cir. 2022).

¹⁷⁸ See *Revised Inventorship Guidance for AI-Assisted Inventions*, 90 Fed. Reg. 54636, 54636–37 (Nov. 28, 2025) [hereinafter “Revised Inventorship Guidance”].

¹⁷⁹ See *id.*

¹⁸⁰ *Id.* (internal footnote omitted).

of whether AI systems were used in the inventive process. There is no separate or modified standard for AI-assisted inventions.”¹⁸¹

The USPTO further declared that

AI systems, including generative AI and other computational models, are instruments used by human inventors. They are analogous to laboratory equipment, computer software, research databases, or any other tool that assists in the inventive process. As the case law establishes, inventors may “use the services, ideas, and aid of others” without those sources becoming co-inventors.¹⁶ The same principle applies to AI systems: they may provide services and generate ideas, but they remain tools used by the human inventor who conceived the claimed invention. When one natural person is involved in creating an invention with the assistance of AI, the inquiry is whether that person conceived the invention under the traditional conception standard set forth above in Section III.¹⁸²

Section III provides:

The question is whether the natural person possessed knowledge of all the limitations of the claimed invention such that it 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. Analysis of conception turns on the ability of an inventor to describe an invention with particularity. Absent such a description, an inventor cannot objectively prove possession of a complete mental picture of the invention at a later time.”¹⁸³

Recognizing a problem or defining a goal and turning it over to an AI system to come up with an

¹⁸¹ *Id.* (internal footnote omitted).

¹⁸² *Id.* at IV (internal footnotes omitted).

¹⁸³ *Id.* at III (internal footnotes omitted).

invention is not enough.¹⁸⁴ But constructing a prompt to an AI system to elicit a particular solution to a specific problem is sufficient.¹⁸⁵ The test is whether the prompt qualifies as the contribution of an idea.¹⁸⁶ What ideas have been contributed by the author, equal to or greater than the ideas contributed by Mr. Link in the *Pannu* case? “Write claims,” “write an abstract,” and “write a background of the invention section” certainly do not qualify. The only possibility from the original interactions with ChatGPT is the initial prompt: “design a generative AI system to search for and identify products and services that potentially infringe on a patent.” The prompt has three components: (1) a “generative AI system,” (2) “products and services that potentially infringe,” and (3) “a patent.” These are humdrum and obvious concepts providing little creative guidance to ChatGPT. This prompt is hard to distinguish from the prompt, “Create an original design for a transaxle for a model car, including a schematic and a description of the transaxle” from USPTO Example 1 (Transaxle for Remote Control Car), discussed in detail below.¹⁸⁷

Merely recognizing and embracing the output of an AI system is not enough.¹⁸⁸ But taking the chatbot’s output and adding value to create an invention is enough, as might be conducting experimentation with an AI system’s output.¹⁸⁹

¹⁸⁴ Inventorship Guidance for AI-Assisted Inventions, 89 Fed. Reg. 10043, 10047 (Feb. 13, 2024).

¹⁸⁵ *Id.* at 10048.

¹⁸⁶ See *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1351 (Fed. Cir. 1998).

¹⁸⁷ USPTO, *Example 1: Transaxle for Remote Control Car 2*, 1, 1 <https://www.uspto.gov/sites/default/files/documents/ai-inventorship-guidance-mechanical.pdf> [<https://perma.cc/ELJ7-XVZV>] (last visited Oct. 13, 2024).

¹⁸⁸ Inventorship Guidance for AI-Assisted Inventions, 89 Fed. Reg. 10043, 10048 (Feb. 13, 2024).

¹⁸⁹ *Id.* at 10048–49.

A “natural person(s) who designs, builds, or trains an AI system in view of a specific problem to elicit a particular solution could be an inventor, where the designing, building, or training of the AI system is a significant contribution to the invention created with the AI system.”¹⁹⁰ “Maintaining intellectual domina[nce]” over an AI system, however, or merely owning or overseeing an AI system, is not enough for inventorship.¹⁹¹

Patent Office guidance on the patent eligibility of AI inventions published in July, 2024¹⁹² provides three examples of inventions involving AI and explains how they should be analyzed for subject matter eligibility under 35 U.S.C. § 101.¹⁹³ The USPTO’s Example 1 is the most useful.¹⁹⁴ It analyzes five scenarios in the invention of a transaxle for a remote-controlled car.¹⁹⁵

In Scenario 1 of the example, the users did no more than frame the prompt and review the output of an AI system, not changing it in any material way.¹⁹⁶ In this case, they do not qualify as inventors.¹⁹⁷

¹⁹⁰ *Id.* at 10049.

¹⁹¹ *Id.*

¹⁹² 2024 Guidance Update on Patent Subject Matter Eligibility, Including on Artificial Intelligence, 89 Fed. Reg. 58128, 58128 (July 17, 2024) [hereinafter Guidance Update on Patent Subject Matter Eligibility]. The 2025 Revised Guidance withdrew the 2024 guidance, but the analytical principles illustrated by the 2024 examples still are useful practical guides, because they do not depend on a joint inventorship context. *Compare* Revised Inventorship Guidance, *supra* note 178, *with id.*

¹⁹³ Guidance Update on Patent Subject Matter Eligibility, *supra* note 192, at 58138 (referring to Examples 47-49 from www.uspto.gov/PatentEligibility).

¹⁹⁴ *See* USPTO, *supra* note 187, at 1–9.

¹⁹⁵ *See id.*

¹⁹⁶ *See id.* at 2–3.

¹⁹⁷ *Id.*

In Scenario 2, one of the users builds the transaxle exactly as described by the AI output.¹⁹⁸ The users, however, still do not qualify as inventors.¹⁹⁹ Mere reduction to practice is not enough for inventorship.²⁰⁰

In Scenario 3, the users prompt the AI system for alternative designs, conduct experiments, and change the types of fasteners described.²⁰¹ Now they qualify as inventors.²⁰²

Scenario 4 involves a supplementary prompt for manufacturing suggestions, followed by acceptance of a suggestion from the AI based on user knowledge.²⁰³ The users qualify as inventors of a dependent claim derived from the AI's suggestion because of their contributions to the full scope of the claim, including the limitation of the claim from which it depends.²⁰⁴ Even though the additional feature in the dependent claim is conventional and achievable with routine experimentation, that “does not negate the significance of [the users’] contributions to the invention as a whole.”²⁰⁵

In Scenario 5, an individual oversees the creation and training of the AI system.²⁰⁶ But, because he was not focused on any specific problems related to transaxles in RC cars, he is not an inventor.²⁰⁷

The USPTO guidance suggests that crafting prompts for generative AI may shape the robot's work enough to represent a material contribution to

¹⁹⁸ *Id.* at 4.

¹⁹⁹ *Id.* at 5.

²⁰⁰ See USPTO, *supra* note 187, at 4–5.

²⁰¹ *Id.* at 5.

²⁰² *Id.* at 6–7.

²⁰³ *Id.* at 7.

²⁰⁴ *Id.* at 7–8.

²⁰⁵ *Id.* at 8.

²⁰⁶ See USPTO, *supra* note 187, at 8.

²⁰⁷ *Id.* at 8–9.

conception.²⁰⁸ The guidance considers whether inventorship is appropriate when generative AI does the lion's share of the conception and, in some cases, reduction to practice.²⁰⁹ That, however, was not the situation considered in the Arizona Emerging Technologies article²¹⁰ and the situation giving rise to the issued patent.²¹¹ There, the AI engines acted more like brainstorming buddies than master craftsmen.

The USPTO guidance does not refer to the role of flashes of insight or inspiration in the inventive process, but it should have.

B. PHOSITAs

The availability of generative AI demands reconsideration of the PHOSITA concept. AI engines are readily available through personal computers and smart phones connected to the Internet, and they are easy to use. A user simply types a question in natural language into the prompt box and uploads relevant documents. One can argue that the Model Rules of Professional Responsibility makes it malpractice not to consider consulting an AI engine in fields like patent prosecution where it's obviously

²⁰⁸ See *Inventorship Guidance for AI-Assisted Inventions*, 89 Fed. Reg. 10043, 10048 (Feb. 13, 2024).

²⁰⁹ In copyright law, whether the owner of a copyright in a computer program has a copyright in the program's output may depend on whether the computer program has done the "lion's share of the work" in creating the expression. See *Design Data Corp. v. Unigate Enter., Inc.*, 847 F.3d 1169, 1173 (9th Cir. 2017) (describing without adopting "lion's share" test). While this does not exactly match the configuration of a patent-generating computer program, it is still relevant because it addresses allocation of intellectual property interests when computer systems add significant value.

²¹⁰ Henry H. Perritt, Jr., *Patenting an AI-Generated Infringement Detector*, 8 ARIZ. J. EMERG. TECH. 1 (2025).

²¹¹ *System and Method for Retrieving Objects*, U.S. Patent No. 12,409,564 (issued Sep. 9, 2025).

can be impactful.²¹² Similarly, the standard of competence for patent examiners is quickly evolving toward routine use of AI engines to identify prior art.²¹³

Connor Romm explains that “once AI is common in a given industry, inventors will have to meet the heightened burden of showing nonobviousness based on what a PHOSITA aided by AI—as well as any other widely available technology—would find reasonably pertinent to the problem solved by the invention.”²¹⁴

So what difference will such routine use of AI technology make? Apart from the specific questions the USPTO has asked about PHOSITAs in an AI world, one can say several things about AI’s likely effect. First, using an AI engine vastly extends the reach of a search. The AI engine can discover references regardless of how they have been tagged in a patent system’s indexing taxonomy and can also discover references that do not use the exact words or phrases that the searcher might attempt; they are able to search based on concepts.

²¹² See A.B.A Comm. On Ethics & Pro Resp., Formal Op. 512 (2024) (discussing how the duty of competence includes understanding the use of state-of-the-art technology and obligates lawyers to understand the technology and its benefits and risks, noting the capacity of generative AI to improve lawyer productivity and the quality of representation).

²¹³ Automated Search Pilot Program, 90 Fed. Reg. 48161, 48161 (Oct. 8, 2025) (announcing program to allow applicants access to AI search results made available to examiners); Jason Miller, *USPTO wants to push AI deeper into its processes*, FEDERAL NEWS NETWORK (June 24, 2025), <https://federalnewsnetwork.com/artificial-intelligence/2025/06/uspto-wants-to-push-ai-deeper-into-its-processes/> [https://perma.cc/8ZCZ-YD2W] (reporting on use of AI tool that had been used by examiners 850,000 times by mid-2025).

²¹⁴ Connor Romm, *Putting the Person in PHOSITA: The Human’s Obvious Role in the Artificial Intelligence Era*, 62 B.C. L. REV. 1413, 1418, 1446 (2021) (arguing that current obviousness doctrine is sufficient to accommodate generative AI and that requiring disclosure of the use of AI would distort patent system in undesirable ways).

Second, generative AI makes obscure knowledge intellectually accessible. A search may unearth a reference written in the special language of a field remote from that of the PHOSITA, but the PHOSITA easily can ask the AI engine to explain the reference and then engage in an interactive conversation until the PHOSITA understands how the reference relates to his own field of knowledge.

Third, generative AI can expose connections between facially disparate fields of application, thus broadening the universe of analogous art.

Fourth, generative AI makes it easy to articulate a motivation to combine. “The strongest rationale for combining references is a recognition, expressly or impliedly in the prior art or drawn from a convincing line of reasoning based on established scientific principles or legal precedent, that some advantage or expected beneficial result would have been produced by their combination.”²¹⁵

One simply can ask the AI engine, “why would anyone think of combining these two references? What would be the motivation?”²¹⁶

²¹⁵ MPEP § 2144(II) (9th ed. Rev. 01.2024, Nov. 2024).

²¹⁶ The author submitted two of his patents to ChatGPT and asked it, “Why would anyone think of combining these two prior-art references? What would be the motivation to combine disclosures in these two patents, thus making a new invention obvious?” One of the patents, QRP digital mode radio transceiver, US 12,334,970; the other was A System and Method For Pet Recreation and Exercise Employing an Autonomous Aerial Vehicle, US 12,213,451 [hereinafter “dog drone patent”]. The author selected those two, because, in his mind, they have absolutely nothing to do with each other, and are not analogous art. ChatGPT responded:

“**There is no motivation to combine these two references** under § 103. The disclosures pertain to distinct problem domains (autonomous animal engagement vs. portable radio communication), offer no functional synergy, and would not be expected by a POSITA to produce a predictable result. Any such combination would be an exercise in hindsight reconstruction, precisely what *KSR* and subsequent cases caution against.” Henry H. Perritt, Jr., ChatGPT,

The three examples of AI engines being asked to assess obviousness reproduced in the appendices²¹⁷ show the technology's facility in this regard.

The USPTO is actively exploring the impact of the technology on the PHOSITA concept.²¹⁸ The USPTO's

“Why would anyone think of combining these two prior-art references? What would be the motivation to combine disclosures in these two patents, thus making a new invention obvious” (June 4, 2025) (on file with the author).

Claude said:

“The combination would likely be seen as **non-obvious** because there's no apparent reason why someone skilled in either art would look to the other field for solutions. The motivation to combine would be **artificial** rather than arising naturally from the technical problems being solved.

“A person skilled in amateur radio would have no reason to consult pet automation patents, and vice versa, making this combination lack the motivation typically required for an obviousness rejection.” Henry H. Perritt, Jr., Claude, “Why would anyone think of combining these two prior-art references? What would be the motivation to combine disclosures in these two patents, thus making a new invention obvious” (June 4, 2025) (on file with author).

But when the author asked about the dog drone patent and the author's Robocowboy™ patent, US 12,102,060, Claude's conclusion was different:

“Unlike the radio transceiver combination, here there's **clear motivation** - both patents solve related problems in animal management using similar autonomous vehicle technologies. A skilled artisan would naturally look to both references when designing an improved animal management system.”

“The combination would likely be found **obvious** because the motivation to combine is inherent in the shared technical field and complementary solutions to similar problems.” Henry H. Perritt, Jr., Claude, “Why would anyone think of combining these two prior-art references? What would be the motivation to combine disclosures in these two patents, thus making a new invention obvious” (June 4, 2025) (on file with the author).

²¹⁷ See *infra* Section VIII.

²¹⁸ Christyann Pulliam, Management Quality Assurance Specialist, Technology Center 2100, USPTO, Impact of the Proliferation of AI on Prior Art and Person Having Ordinary Skill in the Art (PHOSITA) Listening Session (July 25, 2024); Impact of the Proliferation of AI on

July 2024 notice announced a “listening session” which invited participants to weigh in on a number of questions.²¹⁹ The following material shows the text of select questions in italics, and the author’s proposed answers following:

B. The Impact of AI on a PHOSITA

*6. Does the term “person” in the PHOSITA assessment presume or require that the “person” is a natural person, i.e., a human? How, if at all, does the availability of AI as a tool affect the level of skill of a PHOSITA as AI becomes more prevalent? For example, how does the availability of AI affect the analysis of the PHOSITA factors, such as the rapidity with which innovations are made and the sophistication of the technology?*²²⁰

The PHOSITA concept does not presume or require that the person be a natural person; indeed, authority abounds for the idea that a PHOSITA is a composite hypothetical creation. The availability of AI as a tool enlarges the PHOSITA’s level of assumed skill. The technology is widely accessible, and it would be an unusual person involved in any art who does not make some use of generative AI.

*“7. How, if at all, should the USPTO determine which AI tools are in common use and whether these tools are presumed to be known and used by a PHOSITA in a particular art?”*²²¹

The USPTO can determine from its own knowledge which AI tools are in common use, and it should take official notice of the fact that the predominant tools such as

Prior Art and PHOSITA: A notice of Public Listening Session, 89 Fed. Reg. 55588, 55588 (July 5, 2024).

²¹⁹ *See Id.*

²²⁰ *Id.* (emphasis added).

²²¹ *Id.* (emphasis added).

the four considered in this article are available to PHOSITAs as of the date of this article.

“8. *How, if at all, does the availability to a PHOSITA of AI as a tool impact:*

a. Whether something is well-known or common knowledge in the art?

b. How a PHOSITA would understand the meaning of claim terms?”²²²

The availability of AI tools enlarges the set of information well known or common knowledge in the art. It also facilitates understanding the meaning of claim terms because of the ease with which the AI engines can reach into their knowledge base to offer definitions and explanations.

9. In view of the availability to a PHOSITA of AI as a tool, how, if at all, is an obviousness determination affected, including when:

a. Determining whether art is analogous to the claimed invention, given AI’s ability to search across art fields? Does the “analogous” art standard still make sense in view of AI’s capabilities?²²³

The availability of AI tools may reduce the importance of art being analogous. The analogous-art requirement was associated with human actors, whose knowledge and skills almost always were associated with and limited by the fields in which they specialized. Generative AI does not specialize in this way, and therefore it may make sense to allow obviousness determinations to be based on references beyond what would have been considered analogous under older technology and practices.

²²² *Id.* (emphasis added).

²²³ *Id.* (emphasis added).

b. Determining whether there is a rationale to modify the prior art, including the example rationales suggested by KSR (MPEP § 2143(1)) (e.g., “obvious-to-try”) or the scientific principle or legal precedent rationales (MPEP § 2144)?

c. Determining whether the modification yields predictable results with a reasonable expectation of success (e.g., how to evaluate the predictability of results in view of the stochasticity (or lack of predictability) of an AI system)?²²⁴

Determining whether there is a rationale to modify prior art now can be aided by suggestions and insights from AI engines, and therefore rationales to modify are more likely to be found.

Likewise, determining whether the modification yields predictable results with a reasonable expectation of success is aided by generative AI. Generative AI can evaluate possible results in a nearly unlimited range of possibilities and use its knowledge to predict success.

“d. Evaluating objective indicia of obviousness or nonobviousness (e.g., commercial success, long felt but unsolved needs, failure of others, simultaneous invention, unexpected results, copying, etc.)?”²²⁵

Generative AI also can aid in evaluating objective indicia of obviousness, but users must be careful of hallucination and hindsight likely to crop up in AI reports.

10. How, if at all, does the recency of the information used to train an AI model or that ingested by an AI model impact the PHOSITA assessment when that assessment may focus on an earlier point in time (e.g., the effective filing date of the claimed invention

²²⁴ Christyann Pulliam, Management Quality Assurance Specialist, Technology Center 2100, USPTO, Impact of the Proliferation of AI on Prior Art and Person Having Ordinary Skill in the Art (PHOSITA) Listening Session (July 25, 2024) (emphasis added).

²²⁵ *Id.* (emphasis added).

*for an application examined under the First-Inventor-to-File provisions of the America Invents Act)?*²²⁶

AI assessments of obviousness must include specific references with availability dates attached.

*11. How, if at all, does the availability to a PHOSITA of AI as a tool impact the enablement determination under 35 U.S.C. § 112(a)? Specifically, how does it impact the consideration of the In re Wands factors (MPEP § 2164.01(a)) in ascertaining whether the experimentation required to enable the full scope of the claimed invention is reasonable or undue?*²²⁷

The availability of AI tools enlarges enablement, because an AI engine can explain how to make and use an invention that is described with some obscurity.

But AI-assisted enablement determinations should not be allowed to eviscerate the specification requirement of § 112. The inventor and applicant must disclose enough specific and concrete information to show that he has possession of the invention – the constructive reduction to practice requirement.

C. CHOSITAs

Suggestions are beginning to emerge that the PHOSITA concept should be replaced or supplemented by a CHOSITA (a computer having ordinary skill in the art).²²⁸ Ryan Abbott calls this an “inventive machine.”²²⁹

²²⁶ *Id.* (emphasis added).

²²⁷ *Id.* (emphasis added).

²²⁸ See Romm, *supra* note 214, at 1441 n.206 (citing Susan Y. Tull & Paula E. Miller, *Patenting Artificial Intelligence: Issues of Obviousness, Inventorship, and Patent Eligibility*, 1 J. ROBOTICS, A.I. & L. 313, 320 (2018)(hypothesizing that as technology continues to improve, “AI may become the ‘person’ of skill in the art”)).

Abbott suggests replacing the PHOSITA standard with an “intelligent machine” standard: a machine having ordinary skill in the art.²³⁰ He suggests that multiple machines could assess obviousness in parallel, increasing reliability, by testing reproducibility.²³¹

²²⁹ Ryan Abbott, *Everything is Obvious*, 66 UCLA L.REV. 2, 6 (2019) (proposing “inventive machine” standard for obviousness); Ryan Abbott, *Machines of Ordinary Skill in the Art*, 11 NO. 5 LANDSLIDE 104, 104 (2019) (suggesting replacement of PHOSITA standard with “inventive machine” standard); see also Romm, *supra* note 214, at 1440 n.197 (citing Liza Vertinsky, *Thinking Machines and Patent Law*, in 18 RESEARCH HANDBOOK ON THE LAW OF ARTIFICIAL INTELLIGENCE 489, 503 (Woodrow Barfield & Ugo Pagallo eds., 2018) (noting that some inventions “may simply be the result of massive computational power that allows for rapid trial and error searching . . . while, from the perspective of the PHOSITA without the aid of thinking machines, the results produced may be surprising”); Romm, *supra* note 214, at 1441 n.206 (citing Susan Y. Tull & Paula E. Miller, *Patenting Artificial Intelligence: Issues of Obviousness, Inventorship, and Patent Eligibility*, in 1 J. ROBOTICS, A.I. & L. 313, 320 (2018) (hypothesizing that as technology continues to improve, “AI may become the ‘person’ of skill in the art”)).

²³⁰ Ryan Abbott, *Everything is Obvious*, 66 UCLA L.REV. 2, 6 (2019) (proposing “inventive machine” standard for obviousness); Ryan Abbott, *Machines of Ordinary Skill in the Art*, 11 NO. 5 LANDSLIDE 104, 104 (2019) (suggesting replacement of PHOSITA standard with “inventive machine” standard); see also Romm, *supra* note 214, at 1440 n.197 (citing Liza Vertinsky, *Thinking Machines and Patent Law*, in 18 RESEARCH HANDBOOK ON THE LAW OF ARTIFICIAL INTELLIGENCE 489, 503 (Woodrow Barfield & Ugo Pagallo eds., 2018) (noting that some inventions “may simply be the result of massive computational power that allows for rapid trial and error searching . . . while from the perspective of the PHOSITA without the aid of thinking machines the results produced may be surprising”); Romm *supra* note 214, at 1441 n.206 (citing Susan Y. Tull & Paula E. Miller, *Patenting Artificial Intelligence: Issues of Obviousness, Inventorship, and Patent Eligibility*, in 1 J. ROBOTICS, A.I. & L. 313, 320 (2018) (hypothesizing that as technology continues to improve “AI may become the ‘person’ of skill in the art”)).

²³¹ Ryan Abbott, *Machines of Ordinary Skill in the Art*, 11 NO. 5 LANDSLIDE 104, 108 (2019).

His concern that, “it is likely to be difficult for human decision makers to theoretically reason about what a machine would find obvious,” has been overcome by the state of the art six years later. One just asks the AI machine whether a patent application or a patent is obvious.²³²

Abbott notes that moving to an inventive machine standard will intensify attention to economic factors such as “long-felt but unsolved needs, the failure of others, and real-world evidence of how an invention was received in the marketplace.”²³³ This is desirable, he says, because economic factors are objective and less indeterminate than “focuses on the degree of cognitive difficulty in conceiving an invention but fails to explain what it actually means for differences to be obvious to an average worker.”²³⁴ For example, considering the inventor’s level of education in defining a PHOSITA “practically invites judges and juries to equate a PHOSITA with the inventor,” a recipe for hindsight.²³⁵

Abbott’s cautious predictions reflect the fact that he wrote his articles three to four years before ChatGPT landed on the public’s doorstep and became the subject matter of hundreds – even thousands – of news stories, magazine articles, opinion pieces and frantic advocacy for governmental action. The state-of-the-art in 2017 did not permit very good computer analysis of obviousness. It does, now, as the appendix shows.

It is not perfect, however. The ultimate conclusion of obviousness by Claude, reproduced in the first

²³² See *infra* Section VIII.

²³³ Ryan Abbott, *Everything is Obvious*, 66 UCLA L. REV. 2, 7, 45–46. (2019).

²³⁴ *Id.* at 44.

²³⁵ Joseph P. Meara, *Just Who Is the Person Having Ordinary Skill In the Art? Patent Law’s Mysterious Personage*, 77 WASH. L. REV. 267, 287 (2002).

appendix,²³⁶ is wrong, because Claude failed to take into account the fact that the prior art reference was filed after the invention application and thus the references did not qualify as prior art at all. Given that the dates involve the pre-AIA version of the statute; however, is certainly possible that the later-filed person smorgasbord could provoke an interference and establish priority if he could prove prior conception and diligent efforts to reduce to practice.

The proposal for an inventive machine has not received universal support.²³⁷

V. IS THERE ROOM FOR INVENTIVENESS, OR IS EVERYTHING OBVIOUS?

Ryan Abbott's views are aligned with this author's speculation²³⁸ that advances in generative AI may destroy the patent system:

“The nonobviousness bar will continue to rise as machines inevitably become increasingly sophisticated. Taken to its logical extreme, and given there may be no limit to how intelligent computers will become, it may be that every invention will one day be obvious to commonly used computers. That would mean no more patents should be issued without some radical change to current patentability criteria.”²³⁹

²³⁶ See *infra* Section VIII.A.

²³⁷ See Kenny Truong, *Expanding Nonobviousness to Account for AI-Based Tools*, 104 J. PAT. TRADEMARK OFF. SOC'Y 51, 65 (2024) (opposing inventive machine approach because AI has not reached the point where it can innovate without human involvement but arguing that AI should be viewed as a tool used by a PHOSITA).

²³⁸ Henry H. Perritt, Jr., *Creative destruction for the patent system? Impact of generative AI*, 27 MINN. J. L. SCI. & TECH. (forthcoming 2026) (arguing that if AI technology can invent everything, it also makes everything obvious).

²³⁹ Abbott, *Everything is Obvious*, *supra* note 233, at 8.

If this happens, he says, the need for patents to incentivize innovation may evaporate, because ordinary workers using generative AI can invent everything that needs inventing.²⁴⁰

Jonathan Darrow notes that the scope of patentability may be narrowed by assuming a higher level of skill in a PHOSITA or by expanding the set of analogous art.²⁴¹ When generative AI is available as a tool to a PHOSITA, it increases his skill level and also increases the scope of analogous art, because it makes art intellectually accessible to him, which might have been outside his specialized understanding before.²⁴²

But machines cannot think.²⁴³ They cannot have flashes of insight like human inventors. Whether the patent system survives AI depends on more than the answer to the question: “does generative AI really know everything?”

²⁴⁰ *Id.* at 9, 49–50.

²⁴¹ Darrow, *supra* note 123, at 248 (noting that restrictions on patentability may take the form of an increased assumed PHOSITA skill level, a broader definition of analogous art, or a change in PHOSITA perspective from mechanic to researcher).

²⁴² See Romm, *supra* note 214, at 1440 n.197 (“noting that some inventions ‘may simply be the result of massive computational power that allows for rapid trial and error searching . . . while from the perspective of the PHOSITA without the aid of thinking machines the results produced may be surprising.’”) (quoting Liza Vertinsky, *Thinking Machines and Patent Law*, in 18 RESEARCH HANDBOOK ON THE LAW OF ARTIFICIAL INTELLIGENCE 489, 503 (Woodrow Barfield & Ugo Pagallo eds., 2018)).

²⁴³ See Hubert L. Dreyfus, WHAT COMPUTERS CAN’T DO: A CRITIQUE OF ARTIFICIAL REASON 290-91 (rev. ed. 1979)(1972); Robert Hummel, *Can Humans Think?*, 5 STEPS 36 (2021), <https://www.potomac institute.org/steps/images/PDF/Articles/CanHumansThink.pdf> [<https://perma.cc/29T4-23WG>] (arguing that application of the Turing test suggests that, if machines can think, humans cannot); Michael Egnor, *Neurosurgeon Outlines Why Machines Can’t Think*, MINDMATTERS (July 17, 2018), <https://mindmatters.ai/2018/07/neurosurgeon-outlines-why-machines-cant-think/> [<https://perma.cc/627F-EW72>].

That is not far from the question often being asked in the public arena whether general AI is possible and obtainable.²⁴⁴ Even if AI knows everything, it cannot know information that has not been thought before and recorded.

Patentability depends on identifying what AI cannot do in the realm of innovation in the statutory fields: process, machine, manufacture, or composition of matter.²⁴⁵

The answer may be that machines—CHOSITAs—are capable of meticulous experimentation, meaning that no level of experimentation is undue and thus providing a reasonable-expectation-of-success for any combination of elements from an unlimited number of references,²⁴⁶ but

²⁴⁴ Compare Blaise Agueria y Arcas & Peter Norvig, *Artificial General Intelligence Is Already Here*, NOEMA (Oct. 10, 2023), <https://www.noemamag.com/artificial-general-intelligence-is-already-here/> [<https://perma.cc/6PH7-WJDC>] (claiming the “key property of generality” has “already been achieved”), and Jeremy Baum & John Villasenor, *How close are we to AI that surpasses human intelligence?*, BROOKINGS (July 18, 2023) <https://www.brookings.edu/articles/how-close-are-we-to-ai-that-surpasses-human-intelligence/> [<https://perma.cc/LF3P-B5FE>](explaining where we are on the road to artificial general intelligence), with Bjornar Tessem, *Machines Don’t Think, They Compute*, NORTMEDIA NETWORK (Oct. 28, 2023), <https://nordmedianetwork.org/latest/news/machines-dont-think-they-compute/> [<https://perma.cc/6SYT-TJ34>] (acknowledging and rebutting arguments that AI is thinking), and Ragnar Fjelland, *Why general artificial intelligence will not be realized*, 7 HUMANITIES AND SOC. SCI. COMM. 10 (June 17, 2020), <https://www.nature.com/articles/s41599-020-0494-4> [<https://perma.cc/NQ7Y-F3NQ>] (updating and reiterating Dreyfuss’s conclusion that general AI is impossible), and Gary Marcus, *Artificial General Intelligence Is Not as Imminent as You Might Think*, SCIENTIFIC AM. (July 1, 2022), <https://www.scientificamerican.com/article/artificial-general-intelligence-is-not-as-imminent-as-you-might-think1/> [<https://perma.cc/Y7RV-QC39>] (arguing artificial general intelligence is still in the distant future).

²⁴⁵ 35 U.S.C. § 101 (defining subject matter eligible for patents).

²⁴⁶ See discussion *supra* Section III.B (discussing these hallmarks of obviousness).

they are not capable of having flashes of insight. Thus, inventions resulting from flashes of inspiration may be beyond the reach of a CHOSITA. There is a role for flashes of inspiration, which AI cannot have; AI mimics Thomas Edison's meticulous experimentation, but not Nikola Tesla's aha!.

A. Understanding inventiveness

Invention is a combination of experimentation and flashes of inspiration. The relative importance of each can be revealed by considering the different cases of Thomas Edison and Nikola Tesla. Edison was an experimenter, who once said "I have not failed. I've just found 10,000 ways that won't work."²⁴⁷ He hired scores of bright young men at his Menlo Park, NJ, gave them a goal, and ordered them to try everything until they found something that worked.²⁴⁸

Unlike Thomas Edison, who tested thousands of ideas through brute-force experimentation, Tesla often visualized his inventions in perfect detail before building them. He claimed:

"I do not rush into actual work. When I get an idea, I start at once building it up in my imagination. I change the construction, make improvements, and operate the device in my mind."²⁴⁹ He said that the idea for an AC motor came to him in 1882 in a sudden vision while he was

²⁴⁷ Thomas A. Edison, *Famous Quotes by Thomas Edison*, THOMAS A EDISON, <https://www.thomasedison.org/edison-quotes> [<https://perma.cc/TPX3-5XW5>] (last visited Oct. 16, 2025).

²⁴⁸ John D. Venable, *A Brief Biography of Thomas Alva Edison*, THOMAS A EDISON, <https://www.thomasedison.org/brief-biography> [<https://perma.cc/L7AN-4TAF>].

²⁴⁹ TESLA UNIVERSE, *Nicola Tesla Quotes*, TESLA UNIVERSE, <https://teslauniverse.com/nikola-tesla/quotes/17> [<https://perma.cc/5CC7-LYAL>] (last visited Oct. 16, 2025).

walking in a park in Budapest. He sketched the rotating magnetic field in the dirt with a stick.²⁵⁰

Tesla's sudden insights were similar to those reported of Archimedes, who suddenly discovered the displacement principle for solids submerged in a liquid by seeing the water level rise when he lowered himself into his bath.²⁵¹

James Watt had an *aha* moment for his steam engine improvement while observing a kettle on a stove.²⁵² Alexander Fleming discovered penicillin discovery from a mold-contaminated petri dish.²⁵³

Lee DeForest oscillated between sudden insights and painstaking experimentation.²⁵⁴

²⁵⁰ TESLA UNIVERSE, *Nicola Tesla Timeline*, TESLA UNIVERSE, <https://teslauniverse.com/nikola-tesla/timeline/1882-tesla-has-ac-epiphany> [<https://perma.cc/JR9Y-9HQV>] (last visited Oct. 16, 2025).

²⁵¹ David Biello, *Fact or Fiction?: Archimedes Coined the Term "Eureka!" in the Bath*, SCIENTIFIC AMERICAN (Dec. 8, 2006), <https://www.scientificamerican.com/article/fact-or-fiction-archimede/> [<https://perma.cc/D7HV-QP4T>] (reporting story of Archimedes' insight about displacement from bath observation).

²⁵² James Baldwin, *James Watt and the Teakettle*, HERITAGE HISTORY, <https://www.heritage-history.com/index.php?c=read&author=baldwin&book=thirty&story=watt> [<https://perma.cc/W6LR-2F5X>] (last visited June 7, 2025) (detailing story of James Watt's childhood observation of teakettle as stimulus of idea for steam engine).

²⁵³ *How was Penicillin Developed?*, SCIENCE MUSEUM (Feb. 23, 2021), <https://www.sciencemuseum.org.uk/objects-and-stories/how-was-penicillin-developed> [<https://perma.cc/6Z3V-K6JZ>] (reporting Fleming's observation of mold).

²⁵⁴ See I. E. LEVINE, ELECTRONICS PIONEER LEE DEFOREST 66–67, 102–103, 112–113 (1984), (Julian Messner ed., 1965) (reporting sudden realization that experiment disclosed in German scientific journal represented a new approach to an RF detector at pp. 66–67, detailing surprise went heat applied to electrodes in experiment substantially increased current flow through a gas detector at pp. 102–103, reporting sudden realization that the CW signal amplifier could amplify voice and replace repeaters in telephone network at pp. 112–113).

James Shockley similarly had a sudden insight for the bipolar junction transistors. He wrote in his notebook, “It has today occurred to me that an amplifier . . . could be made utilizing a semiconductor.”²⁵⁵ Shockley did not arrive at the bipolar junction transistor through trial and error—he mathematically predicted its behavior before building it.²⁵⁶

William Shockley’s journey toward the invention of the bipolar junction transistor is informative about inventorship. Shockley received the Nobel Prize along with John Bardeen and Walter Brattain, whom he had hired into his semiconductor group at Bell Labs.²⁵⁷ Shockley, drawing on his knowledge as a physicist, had speculated as early as 1939 that semiconductor materials could be fabricated to act as an amplifier for electric currents.²⁵⁸ Five years later, he had refined an idea for a field-effect transistor and wrote a paper about it in a scholarly journal.²⁵⁹ But the patent lawyers that Bell Labs would not apply for a patent on his field-effect idea because of an earlier patent by Julius Lilienfeld.²⁶⁰ After Brattain and Bardeen demonstrated a point contact transistor, Shockley, in a competitive fit of envy, secluded himself in Chicago and came up with a better idea, the bipolar junction

²⁵⁵ Steven Leibson, *A Brief History of the MOS transistor, Part 1: Early Visionaries*, ELECTRONIC ENGINEERING J. (Apr. 3, 2023), <https://www.eejournal.com/article/a-brief-history-of-the-mos-transistor-part-1-early-visionaries/> [<https://perma.cc/36MB-WGFQ>] [hereinafter *Brief History*] (reporting 1939 Shockley statement).

²⁵⁶ *Id.*

²⁵⁷ *Nobel Prize in Physics 1956*, THE NOBEL PRIZE, <https://www.nobelprize.org/prizes/physics/1956/summary/> [<https://perma.cc/D26A-AK6C>] (last visited 5 Dec. 2025).

²⁵⁸ JON GERTNER, *IDEA FACTORY: BELL LABS AND THE GREAT AGE OF AMERICAN INNOVATION* 90 (Penguin Books Eds., 2012) (reporting Shockley’s early interest in field effect transistor).

²⁵⁹ *Id.* at 101 (reporting Shockley’s frustration about patent application for field effect transistor).

²⁶⁰ U.S. Patent No. 1,745,175 (issued Jan. 28, 1930).

transistor.²⁶¹ He bypassed the Bell Labs patent lawyers and persuaded the patent lawyers at Bell Labs's parent, AT&T, to apply for a patent, which was issued as U.S. Patent No. 2,569,347.²⁶² Robert Noyce, who once worked for Shockley, was even more impulsive.²⁶³

In a world of CHOSITAs as the replacement for PHOSITAs, patent examiners and courts should not look for an Edison-like process; they should allow for flash of insight do demonstrative inventiveness. AI is good at Edison's approach.²⁶⁴ Edison turned a human army loose on a problem as AI turns a silicon army loose. That silicon army is likely to simulate enough experimentation to find almost anything obvious that results from experimentation.

The importance of flashes of inspiration will increase once again to avoid this result. The facility with which AI engines can evaluate art and innovate in the Thomas Edison style is likely to shift obviousness inquiry to greater reliance on the Nicholas Tesla style of invention.²⁶⁵

But what is a flash of inspiration? Philosophers, psychologists and neuroscientists have been struggling for

²⁶¹ GERTNER, *supra* note 258, at 101–02 (reporting Shockley's account of sequestration in Chicago resulting in idea for junction transistor).

²⁶² See Circuit Element Utilizing Semiconductive Material, U.S. Patent No. 2,569,347 (issued Sept. 25, 1951).

²⁶³ Noyce invented the first practical integrated circuit and was one of the founders of Fairchild Semiconductor and then Intel. T.R. REID, THE CHIP: HOW TWO AMERICANS INVENTED THE MICROCHIP AND LAUNCHED A REVOLUTION 8 (1985). "Noyce was an outgoing, loquacious, impulsive inventor . . ." *Id.*

²⁶⁴ Both Edison and AI try alternatives multiple times.

²⁶⁵ See *supra* Section V.A (describing Tesla and Edison Styles); Robin Feldman, *Artificial Intelligence and Cracks in the Foundation of Intellectual Property*, 76 UCLA L. REV. 47, 83–84 (2024) (agreeing that generative AI as a tool of a PHOSITA will shrink the realm of non-obvious inventions, but disagreeing with the utility of the flash of genius concept as a remedy, stating "the flash of genius, which has been an essential concept in patent law, could mean less and less").

centuries to understand creativity.²⁶⁶ A rough consensus exists that creativity is associated with flashes of insight,²⁶⁷ and theories are beginning to find support on how these flashes occur in the brain.²⁶⁸

It may not be necessary, however, to define flashes of insight or to understand how they occur. It is enough to realize that they comprise ideas not already written down; flashes of insight do not arise from meticulous parsing of language—the specialty of CHOSITAs.²⁶⁹ Large language models from AI represent concepts by discovering statistical relationships of language that people have used to write about concepts in the past.²⁷⁰ When a true flash of insight occurs, no one has written about it yet, and therefore, it is outside the reach of machine learning. The

²⁶⁶ John Kounios & Yvette Kounios, *The Brain Science of Elusive 'Aha! Moments'*, SCIENTIFIC AMERICAN (Feb. 18, 2025), <https://www.scientificamerican.com/article/the-elusive-brain-science-of-aha-moments/> [<https://perma.cc/EDF3-F42B>] (“Scholars have sought to capture the elusive essence of the aha! moment for more than a century, and it is finally within our grasp.”)

²⁶⁷ See John Kounios & Mark Beeman, *The Aha! Moment: The Cognitive Neuroscience of Insight*, 18 CURRENT DIR. PSY. SCI. 210 (2009); John Kounios et al., *The origins of insight in resting-state brain activity*, 46 NEUROPSYCHOLOGIA 281 (2008) (distinguishing between methodical, conscious search for problem solutions and sudden insight).

²⁶⁸ See Barbara Palmer, *The Science of Aha! Moments: Designing Events for Maximum Inspiration*, PCMA CONVENE (May 8, 2025), <https://www.pcma.org/science-of-aha-moments-designing-events-inspiration/> [<https://perma.cc/9LP3-GXE2>] (summarizing research indicating that aha solutions correspond to burst of high-frequency brain waves in right temporal lobe).

²⁶⁹ But see D. K. Simonton, *Scientific creativity as constrained stochastic behavior: The integration of product, person, and process perspectives*, 129 PSYCHOLOGICAL BULLETIN 475 (2003) (arguing that scientific creativity can be accurately modeled as a quasi-random combinatorial process based on statistical relationships).

²⁷⁰ See *supra* Section II(B) (explaining how AI technology works by predicting what comes next).

models resulting from machine learning have no capacity to replicate the insight.

But, giving greater emphasis to flashes of insight must reconcile such an approach with the last sentence of § 103: “Patentability shall not be negated by the manner in which the invention was made.”²⁷¹ In 1941, in *Cuno Eng’g Corp. v. Automatic Devices Corp.*,²⁷² the Supreme Court had held that patents must demonstrate a “flash of creative genius, not merely the skill of the calling.”²⁷³ But, in *Graham v. John Deere Co.*,²⁷⁴ the Court explained that its prior language had been misunderstood, and that it never intended to make the inventor’s state of mind an issue of obviousness.²⁷⁵ It interpreted the last sentence of § 103 as expressly disavowing the flash of genius test.²⁷⁶ Connor Romm also explains that the last sentence of § 103, “patentability shall not be negated by the manner in which the invention was made,”²⁷⁷ was meant to eliminate the flash of genius test.²⁷⁸

Nevertheless, § 103 does not exclude flashes of inspiration as the origin of inventiveness and nonobviousness; it just says that evidence of such flashes is not outcome determinative in obviousness controversies.²⁷⁹ Thus, when an invention results from a flash of insight instead of meticulous experimentation, the difference between the two approaches is unlikely to be litigated.²⁸⁰ Section 103 takes the manner of making the invention out

²⁷¹ 35 U.S.C. § 103.

²⁷² 314 U.S. 84, 91 (1941).

²⁷³ 314 U.S. at 91.

²⁷⁴ 383 U.S. 1 (1966).

²⁷⁵ 383 U.S. 1, 15 (1966).

²⁷⁶ 383 U.S. at 15, n. 7.

²⁷⁷ 35 U.S.C. § 103.

²⁷⁸ Romm, *supra* note 214, at 1431–32 (discussing *Cuno Engineering* and legislative history of section 103).

²⁷⁹ *See* 35 U.S.C. § 103.

²⁸⁰ *See id.*

of contention.²⁸¹ Moreover, it is hard to see how inventor testimony, however much corroborated, would be material on any issue affecting obviousness.

The inventor did whatever he did, and it is the result that gets scrutinized in obviousness assessment, not his methods.

That does not mean, however, that the difference between meticulous experimentation and flash of insight is unimportant. Whether the new invention is a result of a flash of insight is immaterial to whether someone else would have had the necessary flash of insight independently, to close the gaps in the specific disclosures of prior art references. But, if an invention resulted from a flash of insight, an examiner, the PTAB, and a district court will not be able to replicate it, in the sense of tracing a path to it from the prior art references. The likelihood of another inventor having a flash of insight is difficult or impossible for a PHOSITA to predict. Flashes of insight produce discontinuities in the trends of technological development.

Nevertheless, if the inventor's flash was only trivial, his invention is going to be obvious because trivial flashes of insight are not likely to be the product of inventiveness but rather humdrum craftsmanship: "more ingenuity and skill . . . than were possessed by an ordinary mechanic acquainted with the business," in the 1850 words of the Supreme Court in *Hotchkiss*.²⁸²

The literature notes criticism of the subjective flash of insight test as inconsistent with a utilitarian justification for patents.²⁸³ But this takes too narrow a view of the

²⁸¹ *Id.*

²⁸² *Hotchkiss v. Greenwood*, 52 U.S. 248, 267 (1850).

²⁸³ See Laura G. Pedraza-Fariña & Ryan Whalen, *A Network Theory of Patentability*, 87 U. CHI. L. REV. 63, 79 (2020) (noting criticism of "flashes of insight" test as inconsistent with utilitarian justification for

incentive purpose of patent law. Innovation involves not only grunt work, but also impulsive genius. This article proposes renewed attention to flashes of inspiration, not as *evidence* of non-obviousness, but as objective *phenomena* that are likely to result in discontinuities in technology development trends that had not occurred to other technologists. Such discontinuities are unlikely to have been recorded by others and thus are unlikely to influence a CHOSITA's assessment of obviousness.

B. An AI co-inventor goes to work

If flashes of insight influence the development of an invention despite inventor reliance on generative AI as an assistant, those flashes may be enough to avoid a CHOSITA's experimentally-based ability to find obviousness. A brief summary of the steps the author took to develop a patent application for the drone that detects predators of animal flocks and herds and repels those predators shows concretely the interaction between a human co-inventor and his AI co-inventors and the role of flashes of insight in that process.

The author met with a computer programmer to consider contracting with the programmer to build a prototype of the author's RobocowboyTM, the subject of U.S. patent numbers U.S. 12,102,060 and U.S. 12,153,451.²⁸⁴ In the conversation, the programmer expressed excitement for another kind of drone application, one focused on protecting farm animals from predators. The RobocowboyTM identifies and corrals strays and drives entire herds of cattle.²⁸⁵ The author was intrigued by the idea and the two spent the better part of their lunch

patent; flashes of insight do not need the incentive of a patent monopoly).

²⁸⁴ U.S. Patent No. 12,102,060; U.S. Patent No. 12,153,451.

²⁸⁵ U.S. Patent No. 12,102,060.

discussion talking about how a predator detection and interdiction drone might work. They concluded that the detection part might be straightforward: just detect a flock of chickens squawking when a fox enters the coop. The interdiction function is more challenging, they agreed, because of a paucity of photographs and full-motion videos of common predators like foxes, coyotes, hawks, and wolves.²⁸⁶

After the lunch, the author did a Google search, which turned up only a handful of image databases suitable to support machine learning development of predator templates and profiles.²⁸⁷ Within days, the author participated in an interview with the patent examiner on another patent application, a newsgathering drone that would be launched automatically when the system detects a newsworthy event, like Fourth of July fireworks, the landing of an aircraft, or the demolition of a building.²⁸⁸

After that discussion, it occurred to the author that the event detection task for the contemplated predator drone was similar in many ways to the event detection task for the newsworthy-event drone. At that point, he asked DeepSeek, ChatGPT, Claude, and Grok for ideas.²⁸⁹ The

²⁸⁶ The author was present at the lunch and represents that this occurred.

²⁸⁷ GOOGLE, “full motion images of foxes, coyotes, hawks, and wolves” (June 2, 2025) (on file with the author).

²⁸⁸ See System and Method for Capturing Aerial Imagery with Pre-Programmed Autonomous Aerial Vehicle, U.S. Patent Application Serial No. 18/896,443 (filed, Sept. 25, 2024).

²⁸⁹ Henry Perritt, Grok, “suppose one wants to detect a predator within a flock or herd. can this be done simply by identifying something that is not of the flock or herd? If so, how? By thermal differences through infrared sensors? Limit your evaluation to drone-based systems” (June 2, 2025) (on file with the author); Henry Perritt, Claude “suppose one wants to detect a predator within a flock or herd. can this be done simply by identifying something that is not of the flock or herd? If so, how? By thermal differences through infrared sensors? Limit your evaluation to drone-based systems” (June 2, 2025) (on file with the

results included nets and fences and other physical mechanisms, along with thermal signature detection and visual identification.²⁹⁰

The author told the AI engines to forget about nets and fences and other physical mechanisms. The author knew from his Robocowboy™ work and earlier writing about face recognition that lots of pictures are necessary for machine learning, into the hundreds of thousands in some cases.²⁹¹ So, he preferred not to rely on visual recognition as a central feature of the predator drone.

As he was thinking about this, he engaged in conversations with a luncheon group that he regularly participates in and with his sister, who spent her career as a computer programmer and systems analyst. Those conversations reinforced the idea that the most interesting approach was not to identify a predator positively but to identify a predator negatively, by identifying something present near a flock or herd being protected, but *not* a member of the species comprising the flock or herd. The author thought of this as an *exclusion* approach.

As that idea was crystallizing, the author had an hour-long telephone conversation with a former student,

author); Henry Perritt, DeepSeek, “suppose one wants to detect a predator within a flock or herd. can this be done simply by identifying something that is not of the flock or herd? If so, how? By thermal differences through infrared sensors? Limit your evaluation to drone-based systems” (June 2, 2025) (on file with the author); Henry Perritt, ChatGPT, “suppose one wants to detect a predator within a flock or herd. can this be done simply by identifying something that is not of the flock or herd? If so, how? By thermal differences through infrared sensors? Limit your evaluation to drone-based systems” (June 2, 2025) (on file with the author). The author routinely does Google searches for imagery. In his experience and judgment, the imagery available for foxes, coyotes, hawks, and wolves, is less plentiful than for other types of animals such as horses, cattle, and goats.

²⁹⁰ *Id.*

²⁹¹ Based on the author’s experience as stated in the text.

now a practicing lawyer, and they discussed the exclusion method in greater detail.

At that point, the author went back to the AI engines and asked them to identify the most promising techniques to identify a nonmember of a flock or heard. Thermal detection – distinguishing the heat signatures of an intruder from the heat signatures of the flock or heard – emerged, among other techniques, in the responses.²⁹²

The author then asked the AI engines if there really is all that much difference in the heat signatures of common predators and the animals they attack. The AI engines confidently said there were significant differences.²⁹³

²⁹² Henry Perritt, DeepSeek, “evaluate thermal detection for the following predator-flock pairs: fox-chicken, hawk-chicken, wolf-sheep, wolf-cattle, wolf-goat, coyote-chicken, coyote-sheep, coyote-goat; please rewrite this to: (1) emphasize thermal detection as the best means, and (2) pinpoint the gaps that need to be filled by new ideas and new technology” (June 2, 2025) (on file with author); Henry Perritt, ChatGPT, “evaluate thermal detection for the following predator-flock pairs: fox-chicken, hawk-chicken, wolf-sheep, wolf-cattle, wolf-goat, coyote-chicken, coyote-sheep, coyote-goat; please rewrite this to: (1) emphasize thermal detection as the best means, and (2) pinpoint the gaps that need to be filled by new ideas and new technology” (June 2, 2025) (on file with author); Henry Perritt, Claude, “evaluate thermal detection for the following predator-flock pairs: fox-chicken, hawk-chicken, wolf-sheep, wolf-cattle, wolf-goat, coyote-chicken, coyote-sheep, coyote-goat; please rewrite this to: (1) emphasize thermal detection as the best means, and (2) pinpoint the gaps that need to be filled by new ideas and new technology” (June 2, 2025) (on file with author); Henry Perritt, Grok, “evaluate thermal detection for the following predator-flock pairs: fox-chicken, hawk-chicken, wolf-sheep, wolf-cattle, wolf-goat, coyote-chicken, coyote-sheep, coyote-goat; please rewrite this to: (1) emphasize thermal detection as the best means, and (2) pinpoint the gaps that need to be filled by new ideas and new technology” (June 2, 2025) (on file with author).

²⁹³ Henry Perritt, DeepSeek, “evaluate thermal detection for the following predator-flock pairs: fox-chicken, hawk-chicken, wolf-sheep, wolf-cattle, wolf-goat, coyote-chicken, coyote-sheep, coyote-goat; please rewrite this to: (1) emphasize thermal detection as the best means, and (2) pinpoint the gaps that need to be filled by new ideas and

The author then asked the AI engines to evaluate the pros and cons of thermal detection for seven pairs of predators and threatened animals:

“evaluate thermal detection for the following predator-flock pairs: fox-chicken, hawk-chicken, wolf-sheep, wolf-cattle, wolf-goat, coyote-chicken, coyote-sheep, coyote-goat.”²⁹⁴

This account of the author’s interaction with AI engines on his idea for a predator-repelling drone involves three potential flashes of insight:

The congruence between the event-identification capacity of the Robocowboy’s identification of a stray separating from a herd, the newsworthy event occurrence necessary to launch the event-launched newsdrone.

An approach to predatory identification that relies on excluding an object based on it not being a member of a flock or herd, as opposed to identifying a predator by

new technology” (June 2, 2025) (on file with author); Henry Perritt, ChatGPT, “evaluate thermal detection for the following predator-flock pairs: fox-chicken, hawk-chicken, wolf-sheep, wolf-cattle, wolf-goat, coyote-chicken, coyote-sheep, coyote-goat; please rewrite this to: (1) emphasize thermal detection as the best means, and (2) pinpoint the gaps that need to be filled by new ideas and new technology” (June 2, 2025) (on file with author); Henry Perritt, Claude, “evaluate thermal detection for the following predator-flock pairs: fox-chicken, hawk-chicken, wolf-sheep, wolf-cattle, wolf-goat, coyote-chicken, coyote-sheep, coyote-goat; please rewrite this to: (1) emphasize thermal detection as the best means, and (2) pinpoint the gaps that need to be filled by new ideas and new technology” (June 2, 2025) (on file with author); Henry Perritt, Grok, “evaluate thermal detection for the following predator-flock pairs: fox-chicken, hawk-chicken, wolf-sheep, wolf-cattle, wolf-goat, coyote-chicken, coyote-sheep, coyote-goat; please rewrite this to: (1) emphasize thermal detection as the best means, and (2) pinpoint the gaps that need to be filled by new ideas and new technology” (June 2, 2025) (on file with author).

²⁹⁴ Henry Perritt, Claude, “evaluate thermal detection for the following predator-flock pairs: fox-chicken, hawk-chicken, wolf-sheep, wolf-cattle, wolf-goat, coyote-chicken, coyote-sheep, coyote-goat” (June 2, 2025) (on file with author).

matching it with visual templates derived through machine learning.

Relying on thermal predator identification rather than visual identification to avoid the complexities of machine learning from thousands or tens of thousands of predator images.

C. *A CHOSITA goes to work*

The appendix in Part VII reproduces interaction between the author and Claude, the best of the four leading AI engines to do patent analysis.²⁹⁵ In the particular experiment memorialized in the appendix, ChatGPT was particularly useless, simply repeating the requirements for nonobviousness in § 103 and the MPEP without any application whatsoever to the submitted document. Grok said “no response” despite several tries. Even Claude was lazy, after an initial false start and had to be prompted to do a more complete search by the author, as shown in the appendix. But once prompted for a complete analysis, Claude CHOSITA fully disclosed that steps in its search for prior art, in addition to citing the particular references, it carefully detailed his reasoning. Its output comes close to what a patent examiner must communicate to an applicant in the nonfinal rejections based on obviousness.

In an earlier experiment, two days before,²⁹⁶ the author asked Claude to assess the obviousness of another

²⁹⁵ See *infra*, Section VIII. The author has used DeepSeek, Claude, ChatGPT, and Grok for close to a hundred hours aiding him in drafting patent applications and responding to patent examiner office actions. He finds Claude superior in all of these patent related tasks. ChatGPT tends to be vague and generic; Grok often chokes on even modest size documents, and DeepSeek lacks the crispness of Claude’s organization of its responses.

²⁹⁶ Henry Perritt, Claude, “is this invention obvious, considering the tests for obviousness applied by the supreme court, the USPTO, and the

patent. Claude confidently concluded that the patent was obvious in light of a prior art reference that had been filed three days after the patent that it was asked to evaluate.²⁹⁷ None of the facts given Claude suggested earlier conception of the later-filed application or an interference proceeding, and Claude made no mention of either.²⁹⁸ Under pre-AIA law, in the absence of evidence of earlier conception, the sequence of the filing dates would control priority.²⁹⁹ Thus, Claude missed entirely the outcome-determinative point that the reference cited did not qualify as prior art at all.

Also, as in the later experiment, Claude initially considered only the references cited in the submitted patent and concluded that the pattern was not obvious.³⁰⁰ It only reached out to consider other patents when specifically prompted to do so by the author.³⁰¹

But these shortcomings do not mean that CHOSITAs should be disregarded as sources of obviousness analysis. It simply means that their users should scrutinize and think about their results carefully, prompting them additionally as appropriate or, in some appropriate cases, disregarding their conclusions altogether. Despite the essentiality of the scrutiny, CHOSITAs in the

federal circuit? why or why not?" (June 5, 2025) (on file with the author).

²⁹⁷ *Id.*

²⁹⁸ *Id.*

²⁹⁹ See UNITED STATES PATENT AND TRADEMARK OFFICE, MANUAL OF PATENT EXAMINING PROCEDURE § 2136.03 (8th ed., 7th rev. July 2008) (explaining that filing date determines priority under pre-AIA in the absence of evidence of earlier conception).

³⁰⁰ Henry Perritt, Claude, "is this invention obvious, considering the tests for obviousness applied by the supreme court, the USPTO, and the federal circuit? why or why not?" (June 5, 2025) (on file with author).

³⁰¹ Henry Perritt, Claude, "did you do your own search for prior art? if not, please do it, and rewrite your response in light of it" (June 5, 2025) (on file with author).

form of Claude come close to writing acceptable prima facie obviousness rejections when they are appropriate in light of the prior art.

The author's ruminations about the design of a predator-repelling drone are not mature enough to submit them to an AI engine for obviousness analysis. That's why the author chose to submit an issued patent for PHOSITA obviousness analysis in Appendix A.

The author is continuing, however, to crystallize his ideas for a predator-repelling drone and expects ultimately to file a patent application for the invention. Before he does so, he will enlist the aid of Claude and perhaps the other three AI engines to CHOSITA him draft his claims on that application. He will submit draft claims to the AI engines and ask them to assess their obviousness. To provide the AI engines with context, he will likely ask one of them—probably Claude—to draft a complete patent application based on initial claim language the author submits, including background and description as well as claims, to see if they avoid prior art.

D. Writing claims around flashes of inspiration

The key for someone wanting to obtain a patent in an AI-enabled patent system and his patent lawyer is to particularize flashes of inspiration in good claim language. For example, in William Shockley's patent for a bipolar junction transistor, his key insights were reflected in Claims 16 and 18.³⁰² Thomas Edison's key insight was reflected in Claim 2 of his patent for a lightbulb.³⁰³ And, as

³⁰² U.S. Patent No. 2,569,347 Cl. 16, 18 (issued Sep. 25, 1951).

³⁰³ U.S. Patent No. 223,898 Cl. 2 (issued Jan. 27, 1880) ("The combination of carbon filaments with a receiver made entirely of glass and conductors passing through the glass, and horn which receiver the air is exhausted, for the purposes set forth.")

the author's conception for a predator-repelling drone evolve, he will draft claim language tightly around his insights.³⁰⁴

Using flashes of insight to enhance the robustness of patent applications against obviousness challenges means careful drafting of claim language to memorialize the flashes of insight. The goal is no different than the usual goal in claim drafting of writing claims to avoid prior art.³⁰⁵ But identifying the flashes in the inventorship process helps isolate limitations in claims that are differentiating.

Just as Turner did in the story at the beginning of this article, a good patent lawyer should ask his client what parts of the invention were the result of flashes of insight and what parts were the result of painstaking experimentation. The lawyer should then draft claims accordingly. Claims whose limitations are entirely the result of painstaking experimentation are far more likely to be found obvious by a CHOSITA.³⁰⁶

If the client used an AI engine to assist in the inventorship process, the lawyer should make sure that limitations not originating with the AI engine are distinctly expressed in the claims.³⁰⁷

³⁰⁴ See *supra* Section V.B (identifying three insights).

³⁰⁵ See Sudhanshu C. Pathak, *Basics of claim drafting for utility patent applications*, UNITED STATES PATENT AND TRADEMARK OFFICE, Slides 15-16,

<https://www.uspto.gov/sites/default/files/documents/InventionCon2021WhatsinaPatentClaimWorkshopFinalstakeholders.pdf>

[<https://perma.cc/9E2A-7WCH>] (last visited June 8, 2025) (recommending drafting of claims to avoid prior art).

³⁰⁶ AI technology identifies prior art by painstaking evaluation of possibilities, akin to painstaking experimentation.

³⁰⁷ See discussion *supra* Section IV.A (“Inventorship is improper in any patent or patent application that includes a claim in which at least one natural person did not significantly contribute to the claimed invention.”)

The renewed focus on flashes of inspiration recommended by this article does not envision a system in which patent prosecution or patent litigation resolves obviousness issues based on *evidence* of a flash of insight. An inventor does not prevail over an obviousness rejection by testifying that “I had a sudden flash of insight while I was jogging through the neighborhood.” Some flashes of insight will be obvious; some innovations resulting from meticulous experimentation will not be obvious. The language of section 103 excludes testimony about the manner in which an invention was made.³⁰⁸

The proposed realignment would reframe claims to emphasize those resulting from sudden insights to break the continuity of linkages to prior art, thereby placing them beyond the reach of a CHOSITA.

VI. WHAT ELSE WILL SAVE THE PATENT SYSTEM?

Regardless of whether greater focus on flashes of inspiration allows good inventions to be patented, other realities reduce the likelihood that generative AI technology will swallow up the patent system. Generative AI is very expensive, both to create the large language models through machine learning, and to use the resulting models to respond to prompts.³⁰⁹ Those costs are poorly reflected in initial pricing, as vendors compete to obtain market share.³¹⁰ As prices rise to cover costs, as they inevitably must for viable enterprises, the cost of using

³⁰⁸ 35 U.S.C. § 103.

³⁰⁹ Wen Henshall, *The Billion-Dollar Price Tag of Building AI*, TIME (June 3, 2024), <https://time.com/6984292/cost-artificial-intelligence-compute-epoch-report/> [(reporting high and increasing costs)]

³¹⁰ Edward Citron, *Why Everybody Is Losing Money on AI*, WHERE'S YOUR ED AT? (Sep. 5, 2025), <https://www.wheresyoured.at/why-everybody-is-losing-money-on-ai/> [<https://perma.cc/V7ZF-47PS>] (explaining how pricing does not reflect AI supplier costs and the consequences of that).

generative AI in patent prosecution and patent defense will constrain its use.

“AI will likely experience a winter of deflated expectations. Too many products, like driverless cars, automated radiologists, and all-purpose digital agents, have been demoed, publicized—and never delivered.”³¹¹

Also, generative AI vendors likely will behave like any rational firms and seek to maximize profit by product differentiation—so that they can charge what the market will bear in various segments of the market.³¹² That product differentiation will lock patent system participants out of some desirable features of the technology.

Moreover, utility and responsiveness of the AI engines may degrade for various reasons: congestion, as demand for them increases; failure of vendors to arrange for adequate computing capacity and supplies of energy; inattentiveness of vendors in maintaining their systems.

Another possibility is that generative AI will gradually be deprived of sufficient fodder to keep its learning up-to-date. This might occur if owners of copyright and other intellectual property erect pay walls or refuse to license their content to large language models and their image and music equivalents.³¹³ Although, as the

³¹¹ Gary Marcus, *Artificial General Intelligence Is Not as Imminent as You Might Think*, SCIENTIFIC AMERICAN (July 1, 2022), <https://www.scientificamerican.com/article/artificial-general-intelligence-is-not-as-imminent-as-you-might-think1/> [<https://perma.cc/Y7RV-QC39>].

³¹² See Jonathan B. Baker, *Product Differentiation Through Space and Time: Some Antitrust Policy Issues*, FEDERAL TRADE COMMISSION (Feb. 6, 1996), <https://www.ftc.gov/news-events/news/speeches/product-differentiation-through-space-time-some-antitrust-policy-issues> [<https://perma.cc/WYF8-RTSA>] (explaining economics of product differentiation).

³¹³ See *New York Times Co. v. Microsoft Co.*, 777 F. Supp. 3d 283, 304–5 (S.D.N.Y. Apr. 4, 2025) (denying motion to dismiss copyright claims over use of material to train large language models); *The Intercept Media, Inc. v. OpenAI, Inc.*, 767 F. Supp. 3d 18, 29, 30

author has suggested elsewhere, the most likely resolution of the controversy over infringement of work used to train the models is a collective licensing regime that continues to make the world's content readily available, albeit now with a mechanism for sharing the revenue resulting.³¹⁴ Moreover, patents are meant to be public, and the likelihood that they would be withdrawn from learning databases is small.³¹⁵

VII. CONCLUSION

The advent of generative artificial intelligence presents both an existential challenge and an evolutionary opportunity for the patent system. As this analysis demonstrates, AI engines have reached a level of sophistication that fundamentally alters the landscape of obviousness analysis under 35 U.S.C. § 103. When a person having ordinary skill in the art (PHOSITA) is presumed to have access to generative AI tools—as will inevitably become the standard—the traditional boundaries

(S.D.N.Y. 2025) (denying motion to dismiss DMCA claim against generative AI enterprise); Tremblay v. OpenAI, Inc., 716 F. Supp. 3d 772, 777-78 (N.D. Cal. 2024) (dismissing copyright claims against generative AI enterprise); *Case Tracker: Artificial Intelligence, Copyrights and Class Actions*, BAKERHOSTETLER, <https://www.bakerlaw.com/services/artificial-intelligence-ai/case-tracker-artificial-intelligence-copyrights-and-class-actions/> [<https://perma.cc/5M4H-CGZJ>] (last visited Sep. 9, 2025) (collecting case citations for cases involving copyright challenged to AI machine learning systems).

³¹⁴ Henry H. Perritt, Jr., *Robots as Pirates*, 73 CATHOLIC U. L. REV. 57, 120 (2024) (noting possibility of copyright collectives to license content for AI machine learning).

³¹⁵ See 35 U.S.C. § 2 (assigning responsibility to USPTO for disseminating information about patents); *id.* § 10 (authorizing publication of patents); *id.* § 12 (authoring supply of patent documents to public libraries).

of what constitutes “ordinary skill” must be reconsidered and replaced by a CHOSITA standard.

The evidence presented in this article’s appendix shows that AI engines like Claude can conduct obviousness analyses that approach the quality of patent examiner rejections, complete with comprehensive prior art searches, detailed reasoning, and proper application of legal standards. This capability extends far beyond simple information retrieval; it encompasses the sophisticated analytical reasoning that has historically distinguished human expertise. When such tools become universally accessible and routinely used, the PHOSITA standard must incorporate these enhanced capabilities, potentially rendering obvious vast categories of inventions that would have been considered nonobvious under traditional analysis.

This technological disruption need not spell doom for the patent system. The key insight, however, lies in recognizing the fundamental distinction between two modes of human creativity: the methodical, experimental approach exemplified by Thomas Edison’s systematic testing of hundreds or thousands of designs to achieve a goal, and the sudden, unpredictable flashes of insight embodied by Nikola Tesla’s visualization of the rotating magnetic field while walking in a Budapest park.³¹⁶ Generative AI, despite its remarkable capabilities,

³¹⁶ See *Thomas Edison and Menlo Park*, THOMAS EDISON CENTER, <https://www.menloparkmuseum.org/history> [<https://perma.cc/7WDE-X388>] (last visited June 7, 2025) (showing Edison referred to his Menlo Park operation as an “Invention Factory.”); *Invention Factory: Working at Menlo Park*, RUTGERS <https://edison.rutgers.edu/life-of-edison/biographical-essays/factory/working-at-menlo-park> [<https://perma.cc/N3E6-T7D3>] (last visited Sep. 10, 2025) (summarizing young employee experiences and operating the laboratory); EDMUND MORRIS, EDISON text at n. 383 (2019) (reporting 75 laboratory assistants working at least six days per week; on Saturday, lab closed at five PM instead of six).

essentially operates as a sophisticated Edison-style experimenter—systematically combining and recombining known elements according to statistical patterns derived from training data.³¹⁷

What AI cannot replicate are the genuine flashes of creative insight that transcend existing knowledge patterns. These moments of inspiration—whether Archimedes’ displacement principle, Fleming’s recognition of penicillin’s potential, Watt’s steam engine concept, or William Shockley’s aha moment for the transistor amplifier—arise from cognitive processes that operate outside the realm of systematic pattern matching.³¹⁸ Such insights cannot be predicted or replicated through even the most sophisticated analysis of prior art because, by definition, they represent conceptual leaps that no one has previously documented or described.

This distinction suggests a natural evolution of obviousness doctrine rather than its destruction. As AI becomes ubiquitous in technical fields, obviousness analysis will appropriately become more stringent for inventions that result from systematic experimentation and logical combination of known elements. Inventions that genuinely result from unpredictable flashes of insight, however, will remain nonobvious precisely because their conception cannot be systematically derived from prior art, whether by human or artificial intelligence.

The patent system’s survival may thus depend on its ability to distinguish between routine technological improvements—which AI can increasingly replicate and should face higher obviousness standards—and breakthrough innovations that emerge from the uniquely human capacity for creative insight. This evolution would restore the patent system to its original purpose:

³¹⁷ See *supra* Section II(B) (explaining how AI technology works).

³¹⁸ See *supra* Section V(A), note 247 (recounting stories about historical inventions).

incentivizing true invention rather than mere technological craftsmanship.³¹⁹

Rather than destroying the patent system, generative AI may ultimately refine it, creating higher standards for routine improvements while preserving robust protection for genuine flashes of genius. The future of patent law lies not in resisting this technological transformation, but in adapting legal doctrine to preserve innovation incentives for the kinds of creative breakthroughs that only human insight can achieve.

VIII. APPENDIX

A. *Claude waterfall obviousness assessment*

The author gave Claude U.S. patent number US 7,499,008, LiYi Chen, granted Mar. 3, 2009, for a “waterfall” display on a radio and asked it:

Prompt: Is the invention disclosed in this patent obvious under the criteria of section 103 and the MPEP? Why or why not? Find and analyze your own prior-art references

Response: The patent would likely survive an obviousness challenge because:

1. No single prior art reference discloses the three-band architecture with mosaic distribution
2. The combination would not be obvious to a person of ordinary skill
3. The invention solves a specific technical problem (visible boundaries) in a non-obvious way

³¹⁹ *Bonito Boats v. Thundercraft Boats*, 489 U.S. 141, 150–51 (1989) (“The federal patent system thus embodies a carefully crafted bargain for encouraging the creation and disclosure of new, useful, and nonobvious advances in technology in return for the exclusive right to practice the invention for a period of years.”).

4. The mosaic distribution represents a creative solution not suggested by the prior art

The patent represents a genuine technological advancement over the dual-scanning systems by adding a strategically designed middle band that maintains performance while solving the image quality problem.³²⁰

The details of the response made it clear that Claude had only considered the references cited in the patent, so the author urged it to be less lazy:

Prompt: do not limit yourself to the prior art disclosed in the patent. find your own prior art

Response: You're absolutely right. Let me conduct a more comprehensive prior art search beyond what's disclosed in the patent itself. Now let me search for very specific prior art on multi-zone LCD displays and data line arrangements from the late 1990s and early 2000s: Let me search for very specific early prior art on dual-driver LCD systems:

LCD multiple scanning bands prior art before 2003

10 results

LCD multi-zone scanning interlaced display patents 1990s

10 results

“multiple data drivers” LCD display patent before 2002

1 result

“data line disconnection” LCD patent before 2002 multi-segment

1 result

“multi-segment LCD” “scanning bands” patent 1990s

10 results

³²⁰ Henry Perritt Jr., Claude, “Is the invention disclosed in this patent obvious under the criteria of section 103 and the MPEP? Why or why not? Find and analyze your own prior-art references” (June 7, 2025) (on file with the author).

Now let me search for very specific prior art on multi-zone LCD displays and data line arrangements from the late 1990s and early 2000s:

“LCD multi-zone” “multiple data drivers” patent 1998
1999 2000 2001
10 results

Let me search for very specific early prior art on dual-driver LCD systems:

“dual data driver” “split panel” LCD patent 1995-2001
10 results

Based on my comprehensive prior art search, I can now provide a detailed obviousness analysis using actual prior art found independently:

Comprehensive Obviousness Analysis Under 35 U.S.C. § 103

After extensive prior art research, Patent US 7,499,008 B2 is likely OBVIOUS under 35 U.S.C. § 103 for the following reasons:

Key Prior Art Discovered

1. US5426447A (1995) - “Data driving circuit for LCD display” Discloses a data driver circuit that can be integrated directly onto an LCD display substrate with demultiplexer circuits for demultiplexing groups of video data input signals to pixel capacitors arranged in rows. This shows early recognition of the need for multiple data driver architectures.

2. US6118413A (2000) - “Dual displays having independent resolutions and refresh rates” Discloses a

video controller for controlling at least two video displays having independent refresh rates and pixel resolutions with two separate data paths provided within a video controller for each video display. This demonstrates the concept of dual data path architectures for display systems.

3. Multiple Line Addressing (MLA) Prior Art (2005) EP1585102A1 and US20050219175A1 both disclose Multiple Line Addressing (MLA) LCD systems where lines for each common sub-group are interlaced from top to bottom of the display unit in a way that different sub-groups are driven from different sides of the display controller device.

4. US5555001A (1995) - “Redundant scheme for LCD display” Discloses redundant data driving subcircuits that can be substituted for defective data driving circuits, demonstrating the concept of multiple driver circuits with disconnection capabilities.

Graham v. John Deere Analysis

1. Scope and Content of Prior Art:

- **1995:** US5426447A shows demultiplexing data to different groups of pixels
- **1995:** US5555001A shows redundant data drivers with disconnection capability
- **2000:** US6118413A demonstrates dual data path controllers for independent display operation
- **2004-2005:** MLA LCD patents show interlaced scanning with multiple driver zones

2. Differences Between Prior Art and Claims: The claimed invention differs primarily in:

- **Three specific bands:** First, second, and third scanning bands
- **Specific positioning:** Third band positioned between first and second

- **Mosaic distribution:** Disconnecting points arranged in mosaic pattern to eliminate visible boundaries

3. Level of Ordinary Skill (2002-2003): A person of ordinary skill would understand:

- Multi-zone LCD driving was known (MLA systems)
- Dual data drivers were established (US6118413A, US5426447A)
- Data line disconnection for redundancy was known (US5555001A)
- Scan delay problems and solutions were well-documented

4. Obviousness Analysis:

Why the Patent IS OBVIOUS:

A. Obvious Combination: The prior art teaches all essential elements:

- **Multiple scanning zones:** MLA patents teach multi-zone scanning
- **Dual data drivers:** US6118413A teaches dual data paths
- **Data line disconnection:** US5555001A teaches disconnection for redundancy
- **Performance motivation:** Scan delay reduction was a known problem

B. Motivation to Combine:

1. **Known Problem:** Scan delay in high-resolution LCDs was well-documented
2. **Known Solution Direction:** Multi-zone scanning was established (MLA)

- 3. Predictable Results:** Combining dual drivers with zone scanning would predictably reduce scan time

C. Obviousness of the “Mosaic Distribution”:

- The mosaic distribution is merely an optimization to avoid visible boundaries
- Given that dual-zone systems had visible boundary problems (as stated in the patent), distributing disconnection points to minimize visibility would be obvious to avoid this known problem
- This is a design choice rather than an inventive concept

D. Lack of Unexpected Results:

- The patent achieves exactly what one would expect: faster scanning (from multi-zone) + reduced visible boundaries (from distributed disconnections)
- No synergistic or unexpected benefits are demonstrated

Specific Obviousness Rejections:

Primary Rejection: US6118413A + US5555001A + MLA prior art

- US6118413A teaches dual data path LCD controllers
- US5555001A teaches data line disconnection schemes
- MLA patents teach multi-zone scanning
- Combining these to solve known scan delay problems while avoiding visible boundaries would be obvious

Secondary Rejection: US5426447A + Common Knowledge

- US5426447A teaches demultiplexed data driving to grouped pixels
- Extending this to three groups (scanning bands) with strategic disconnections would be obvious given the known scan delay problem

Conclusion

Unlike my initial analysis that focused only on the patent's disclosed prior art, this comprehensive search reveals substantial prior art establishing:

1. **Multi-zone LCD scanning** (MLA patents)
2. **Dual data driver architectures** (US6118413A, US5426447A)
3. **Data line disconnection schemes** (US5555001A)
4. **Known scan delay problems** and motivation for solutions

The combination of these prior art references would make the claimed three-band architecture with mosaic-distributed disconnection points **obvious to a person of ordinary skill in the art** as of the November 2002 priority date.

The patent represents an obvious combination of known elements solving a known problem in a predictable way, without demonstrating unexpected results or overcoming significant technical obstacles not addressed by the prior art.³²¹

B. Claude's evaluation of obviousness of William Shockley's transistor ideas

1. Field effect transistor

Claude on Shockley v. Lilienfeld

³²¹ Henry Perritt Jr., Claude, "do not limit yourself to the prior art disclosed in the patent. find your own prior art" (June 7, 2025) (on file with the author).

Prompt: “evaluate shockley’s 1948 Physical Review paper with Pearson and say whether a patent application based on the paper would be obvious over the Lilienfeld patent. Don’t tell me about the Bell Labs lawyers opinions. Give me your own analysis of obviousness”

Response: I’ll analyze the 1948 Shockley & Pearson Physical Review paper to evaluate whether a patent application based on it would be obvious over the Lilienfeld patent. Let me search for more detailed information about the content of this paper: Let me search for more information about the content and conclusions of the Shockley-Pearson paper: Let me search for more specific information about the Shockley-Pearson 1948 experiments and their relationship to Lilienfeld’s work: Let me search for the specific IEEE paper “The Other Transistor” by RG Arns: Based on my research, I can now provide you with my analysis of whether a patent application based on the Shockley & Pearson 1948 Physical Review paper would be obvious over the Lilienfeld patent.

OBVIOUSNESS ANALYSIS: SHOCKLEY & PEARSON 1948 PAPER VS. LILIENFELD PATENT

My Assessment: A patent application based on the Shockley & Pearson 1948 paper would likely be **OBVIOUS** over the Lilienfeld patent.

Key Evidence from the Research

1. Direct Implementation of Lilienfeld’s Design

According to R.G. Arns’ research in “The Other Transistor” (1998), J.B. Johnson’s 1948 patent deposition revealed that Bell Labs had a project to test Lilienfeld’s transistors, and Shockley and Pearson had built a variation

of Lilienfeld's aluminum oxide MOSFET from his patent and found "11% modulation" and "substantial gain".

2. Publication Concealment

The 1948 Shockley & Pearson Physical Review paper "totally conceals the fact that they were testing Lilienfeld's device" and was published in the same issue where Shockley published his famous paper "The Transistor: a Semiconductor Triode".

3. Experimental Confirmation

The R.G. Arns paper states that "The underlying concept of the MOSFET-modulation of conductivity in a semiconductor triode structure by a transverse electric field-first appeared in a 1928 patent application. It was confirmed experimentally in 1948".

Obviousness Analysis Under Patent Law

Factors Supporting Obviousness:

Same Fundamental Principle: The Shockley-Pearson work directly implemented Lilienfeld's field-effect transistor concept - modulation of conductivity in a semiconductor by a transverse electric field.

Logical Implementation: The 1948 experiments appear to be a straightforward implementation of Lilienfeld's 1925/1928 patents using materials and techniques available in 1948.

No Unexpected Results: The achievement of 11% modulation and substantial gain from a Lilienfeld-type device would not constitute an unexpected result given that Lilienfeld's patent anticipated this functionality.

Known Prior Art: Bell Labs was clearly aware of and actively working with Lilienfeld's patents, as evidenced by their systematic testing of his designs.

Factors That Might Support Non-Obviousness:

Technical Implementation Details: The specific materials, fabrication techniques, and measurement methods used by Shockley and Pearson might involve non-obvious implementation details.

Surface States Understanding: The 1948 work may have incorporated Bardeen's insights about surface states, which provided a more complete theoretical understanding.

Critical Patent Law Considerations

Graham v. John Deere Factors:

Scope of Prior Art: Lilienfeld's patents clearly disclosed the field-effect transistor principle and structure.

Differences: The main differences appear to be implementation details and measurement techniques rather than fundamental conceptual advances.

Level of Ordinary Skill: By 1948, semiconductor processing and electrical measurement techniques had advanced significantly from 1925.

Secondary Considerations: The fact that Bell Labs apparently chose not to pursue patent protection suggests they may have recognized obviousness issues.

Conclusion

A patent application based on the Shockley & Pearson 1948 paper would likely be **obvious** over the Lilienfeld patents because:

It directly implements the same fundamental field-effect principle disclosed by Lilienfeld

The experimental confirmation represents a predictable application of known techniques to existing prior art

The results (modulation and gain) were anticipated by Lilienfeld's disclosure

Bell Labs' own internal assessment (evidenced by their decision not to pursue field-effect patents) suggests they recognized the obviousness issue

The 1948 work appears to be primarily an experimental verification and refinement of Lilienfeld's already-disclosed invention rather than a patentably distinct advance. The concealment of the connection to Lilienfeld's work in the publication further suggests awareness of the prior art problem.³²²

2. Bipolar junction transistor

Prompt: "Is Shockley's U.S. patent 2,569,347 obvious over Lillienfeld 1,745,175 and Oskar Heil"³²³

Response:

I'll search for information about these specific patents to analyze the obviousness question you're asking about. Now let me search for information about the Lillienfeld patent: Now let me search for information about

³²² Henry Perritt, Claude, "evaluate shockley's 1948 Physical Review paper with Pearson and say whether a patent application based on the paper would be obvious over the Lilienfeld patent. Don't tell me about the Bell Labs lawyers opinions. Give me your own analysis of obviousness" (June 8, 2025) (on file with the author).

³²³ Henry Perritt, Claude, "Is Shockley's U.S. patent 2,569,347 obvious over Lillienfeld 1,745,175 and Oskar Heil" (June 8, 2025) (on file with the author).

Oskar Heil's patent: Now let me search specifically for obviousness analysis or patent interference cases involving these patents: Let me search for more specific information about the technical differences between these patents: Based on my research, I can now provide you with a comprehensive analysis of whether Shockley's U.S. patent 2,569,347 would be obvious over Lillienfeld 1,745,175 and Oskar Heil's work.

Obviousness Analysis: Shockley Patent 2,569,347 vs. Prior Art

Bottom Line: Shockley's patent 2,569,347 would likely **NOT** be obvious over the combination of Lillienfeld 1,745,175 and Oskar Heil's work, despite some significant prior art concerns.

Key Patents and Timeline

Lillienfeld Patent 1,745,175: Filed in Canada on October 22, 1925, and granted January 28, 1930, describing a field-effect transistor concept

Oskar Heil Patent: Filed in Germany on March 2, 1934 (British Patent No. 439,457), describing improvements in electrical amplifiers using field-effect principles

Shockley Patent 2,569,347: Filed June 26, 1948, granted September 25, 1951, for "Circuit element utilizing semiconductive material"

Critical Differences Supporting Non-Obviousness

1. Different Transistor Types and Operating Principles

Shockley's 1948 patent described a junction transistor (specifically a bipolar junction transistor), while

Lillienfeld and Heil described field-effect transistors, which operate on fundamentally different principles. Field-effect transistors are voltage-controlled devices where current flow is controlled by an electric field, while bipolar junction transistors are current-controlled devices.

2. Structural Innovation

Shockley's junction transistor used a three-layer sandwich of n-type and p-type semiconductors separated by p-n junctions, based on his concept of "minority carrier injection". This was distinctly different from the field-effect principles described by Lillienfeld and Heil.

3. Practical Implementation Gap

Neither Lillienfeld nor Heil ever built working devices based on their patents, and there's no evidence these devices were actually constructed. However, later work in the 1990s showed that one of Lillienfeld's designs worked as described and gave substantial gain.

Factors Supporting Obviousness

1. Bell Labs' Prior Knowledge

Bell Labs' attorneys discovered that Shockley's field effect principle had been anticipated by Julius Lilienfeld's 1930 patent. Bell Labs lawyers found that some of Shockley's own writings on the transistor were close enough to Lillienfeld's earlier 1925 patent that they thought it best that his name be left off the patent application.

Legal papers from Bell Labs show that William Shockley and Gerald Pearson had built operational versions from Lilienfeld's patents, though their final transistor designs were based on different principles.

2. Overlapping Objectives

Both Lillienfeld's and Shockley's work aimed to "dispense entirely of devices relying upon the transmission of electrons through an evacuated space" - essentially replacing vacuum tubes.

Why Non-Obviousness Likely Prevails

1. Different Technical Approaches

The most compelling argument against obviousness is that Shockley's junction transistor represents a fundamentally different technical solution than the field-effect approach described by Lillienfeld and Heil. When Shockley initially attempted to build a working FET by trying to modulate the conductivity of a semiconductor, he was unsuccessful, mainly due to problems with surface states, which led Bardeen and Brattain to instead invent the point-contact transistor in 1947, followed by Shockley's bipolar junction transistor in 1948.

2. Non-Obvious Path of Development

The actual path to Shockley's invention involved understanding surface states and ultimately abandoning the field-effect approach in favor of junction principles, which would not have been obvious from combining Lillienfeld and Heil's field-effect patents.

3. Unexpected Results

Shockley's junction transistor solved manufacturing and reliability problems that plagued point-contact designs and represented a significant advance in practical semiconductor devices.

Conclusion

While Lillienfeld and Heil's prior art created significant prosecution challenges for Shockley's patent (evidenced by Bell Labs' decision to exclude Shockley

from the original point-contact transistor application), the fundamental differences in operating principles, structure, and the non-obvious path of development would likely support the non-obviousness of Shockley's junction transistor patent over the field-effect transistor prior art.³²⁴

³²⁴ Henry Perritt, Claude, "Is Shockley U.S. patent 2,569,347 obvious over Lillienfeld 1,745,175 and Oscar Heil" (June 8, 2025) (on file with the author).