

Article

Patent Law's Deference Paradox

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INTRODUCTION

It's hard to decide whether an invention deserves a patent. It requires a painstaking inquiry into both the claimed invention and the technology related to it, conducted from the perspective of a hypothetical "person having ordinary skill in the art."¹ Because that inquiry is case-specific and enmeshes the decisionmaker deep in an evidentiary record, it would seem like the classic type of decision that, when appealed, would be decided under a deferential standard of review.²

Not so. When a defendant argues, as a defense to a patent infringement lawsuit, that the asserted patent is invalid, the U.S. Court of Appeals for the Federal Circuit (which hears all patent appeals nationwide)³ frequently reviews the district court's validity ruling *de novo*.⁴ That same *de novo* standard often applies when the Federal Circuit directly reviews a patentability determination made by the Patent Office itself,⁵ such as in an appeal of the agency's decision to deny a patent application or to cancel (or confirm the validity of) an already-issued patent. *De novo* review in appeals from the Patent Office is particularly striking because employees of that Office, unlike most federal district judges (or jurors), have significant expertise in both patent law and the technology relevant to any given patent.⁶ In a close

1. See generally 35 U.S.C. § 103 ("Patentability of Inventions and Grant of Patents").

2. See Arti K. Rai, *Specialized Trial Courts: Concentrating Expertise on Fact*, 17 BERKELEY TECH. L.J. 877, 879 (2002) ("[I]t is hardly efficient to have an appellate court decide case-specific factual questions *de novo*, after a lower court has already expended time and resources on the same questions.").

3. See Paul R. Gugliuzza, *Rethinking Federal Circuit Jurisdiction*, 100 GEO. L.J. 1437, 1461–62 (2012) (describing the court's jurisdiction).

4. See, e.g., *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1369 (Fed. Cir. 2005) ("The court reviews an obviousness ruling *de novo* . . ."). Though the ultimate determination of patentability is usually viewed to present a question of law reviewed *de novo*, that determination is sometimes based on underlying findings of fact, which are reviewed with deference. See *id.* ("The court . . . reviews the underlying factual findings for clear error."). In a similar vein, the Federal Circuit has characterized a few specific validity requirements as presenting purely factual questions that are likewise reviewed deferentially on appeal. See *infra* Part II.B. I will discuss these complications shortly.

5. See, e.g., *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1366 (Fed. Cir. 2016) ("[T]he Board's ultimate conclusion that the claims are not obvious is a legal determination subject to *de novo* review[;] the subsidiary factual findings are reviewed for substantial evidence.").

6. See Rochelle Dreyfuss, *Pathological Patenting: The PTO as Cause or Cure*, 104 MICH. L. REV. 1559, 1576 (2006) ("With its thousands of examiners, many of whom hold advanced degrees in the precise areas where they work, [the Patent Office's] resources outstrip the Federal Circuit's The PTO also stays abreast of [legal] developments

case, it would seem that the Patent Office's decisions should get the benefit of any doubt.

Rigorous appellate review of case-specific patentability determinations is grounded largely on Supreme Court and Federal Circuit precedent holding that patent validity is ultimately a question of law.⁷ Rulings on questions of law, as every law student knows, get no deference on appeal.⁸ In a recent article, I argued that patent validity is *not* actually a question of law; rather, the ultimate determination of patent validity is better understood as a mixed question of law and fact, in that it requires *applying* legal doctrine to the facts of a particular case.⁹ Recharacterizing patent validity as a mixed question, I contended, would change infringement litigation in numerous, mostly beneficial ways. For example, it would clarify the jury's role in deciding patent validity, and it would increase the deference district court validity rulings receive on appeal.¹⁰

This Article extends my prior work, which focused on court-to-court review of patentability rulings, to situations in which the courts are directly reviewing patentability determinations made by the Patent Office. Judicial review of Patent Office determinations occurs in two main ways. First, a defendant sued for infringement can argue that the asserted patent does not satisfy the validity requirements set by federal law.¹¹ In that circumstance, the defendant is arguing, essentially, that the Patent Office made a mistake by issuing the patent in

by holding training sessions with outside experts and through notice-and-comment rulemaking." (citations omitted)).

7. *E.g.*, *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 96 (2011) ("[T]he ultimate question of patent validity is one of law . . ." (quoting *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966))).

8. *See* Steven Alan Childress, *Standards of Review Primer: Federal Civil Appeals*, 229 F.R.D. 267, 274 (2005) ("[An] appellate court independently reviews conclusions of law and freely reverses legal errors." (citations omitted)).

9. *See* Paul R. Gugliuzza, *Law, Fact, and Patent Validity*, 106 IOWA L. REV. 607, 613 (2021).

10. *See id.* at 651–61.

11. *See* 35 U.S.C. § 282(b)(2) (stating that invalidity is a defense to an infringement claim). In a similar vein, a party worried about being sued for infringement can file a lawsuit seeking a declaratory judgment that the patent is invalid. *See, e.g.*, *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 124 (2007). Because that claim for declaratory relief is essentially the mirror image of an invalidity defense to an infringement claim, *see In re Tech. Licensing Corp.*, 423 F.3d 1286, 1288 (Fed. Cir. 2005), this Article's analysis applies equally to validity determinations made in declaratory judgment suits. For reasons explained in more detail below, the Article's analysis also applies when patent validity is being decided, as a defense, by the U.S. International Trade Commission in proceedings seeking to prohibit the importation of products that allegedly infringe a patent. *See infra* note 63. For simplicity's sake, I will mostly refer to

the first place. In district court litigation, the Patent Office's decision to issue the patent gets deference. A federal statute states that patents are presumed to be valid,¹² so defendants must prove that a patent is invalid by clear and convincing evidence,¹³ rather than under the preponderance of the evidence standard that applies to most issues in civil cases.

The second way in which courts review the Patent Office's patentability determinations is in appeals directly from the Patent Office to the Federal Circuit. For example, a dissatisfied applicant can ask the circuit to review a Patent Office decision rejecting an application.¹⁴ In the past decade, the Federal Circuit's role as direct reviewer of the Patent Office has exploded in importance because of new administrative processes created by the America Invents Act (AIA), which Congress passed in 2011.¹⁵ Those processes, generally speaking, give anyone (usually companies that have been or are worried about being sued for infringement) the opportunity to ask a three-judge panel of the Patent Trial and Appeal Board—which consists of several hundred “administrative patent judges” who have technological training and expertise in patent law¹⁶—to reassess the validity of an issued patent. By far the most popular of the new processes is inter partes review, which permits a challenger to argue that almost any patent is invalid on the ground that it lacks novelty or is obvious.¹⁷ These post-issuance validity proceedings at the Patent Office are adversarial, fact-inten-

patent validity being decided in the context of infringement litigation because that is the setting in which the vast majority of court decisions on patent validity take place.

12. 35 U.S.C. § 282(a).

13. *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 111 (2011).

14. 28 U.S.C. § 1295(a)(4). It is also possible to challenge a Patent Office decision rejecting an application by filing a civil suit in federal district court. *See* 35 U.S.C. § 145. But because civil actions to obtain a patent are rare and, under Supreme Court precedent, more like a trial de novo than appellate judicial review of agency action, they are beyond this Article's scope. *See Kappos v. Hyatt*, 566 U.S. 431, 433–34 (2012) (“There are no evidentiary restrictions beyond those already imposed by the Federal Rules of Evidence and the Federal Rules of Civil Procedure. . . . [T]he district court must make a de novo finding when new evidence is presented on a disputed question of fact.”).

15. *See* America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (codified as amended in scattered sections of Title 35 of the U.S. Code).

16. *See* 35 U.S.C. § 6(a) (“The administrative patent judges shall be persons of competent legal knowledge and scientific ability . . .”).

17. *See id.* § 311(b). In inter partes review, the validity challenge can be based only on prior patents and printed publications. Another new process, post-grant review, allows patentability challenges on any ground and based on any type of prior art (including prior uses and sales), but it must be filed within nine months after the patent issues. *See id.* § 321(c). For more details on post-issuance review proceedings at the Patent Office, see *infra* Part I.B.2.

sive, and result in written opinions that, in some circumstances, operate as precedent in future cases before the Board.¹⁸ Yet, despite the Board's expertise and the case-specific, fact-driven nature of any given validity decision, a *de novo* standard of review often applies when that decision is appealed to the Federal Circuit because the ultimate determination of patent validity is considered to present a question of law.¹⁹

This Article's core argument is that patent law's deference framework is exactly backwards. The Patent Office's patentability determination receives significant deference in district court litigation, where the challenger must prove invalidity by clear and convincing evidence. But, in that circumstance, the Patent Office decision receiving deference is that of a single examiner made at the end of an *ex parte* application process in which various incentives nudge the examiner to grant, rather than deny, the application.²⁰ In fact, patent law places the burden on the examiner to establish *unpatentability*,²¹ yet the examiner's decision to grant a patent is—bizarrely—later presumed to be *correct* absent clear and convincing evidence to the contrary. By contrast, the Patent Trial and Appeal Board's reasoned, collaborative, expert judgment on patentability at the end of an elaborate post-issuance review proceeding (as well as in an appeal from the denial of a patent application) is frequently subjected to a *de novo* standard of review when appealed to the Federal Circuit.²²

Judicial deference to administrative agencies is, of course, a common phenomenon in the law. But deference is fraught in the realm of patents because the Patent Office, unlike many agencies, lacks the substantive rulemaking authority that would clearly trigger deference under the Supreme Court's landmark decision in *Chevron U.S.A., Inc. v.*

18. See *Oil States Energy Servs., LLC v. Greene's Energy Grp., LLC*, 138 S. Ct. 1365, 1378 (2018) (discussing the similarities between *inter partes* review and litigation in federal court).

19. See, e.g., *Novartis AG v. Torrent Pharms. Ltd.*, 853 F.3d 1316, 1327 (Fed. Cir. 2017) ("The Board's ultimate conclusion that the claims are not obvious is a legal determination subject to *de novo* review . . .").

20. See Michael D. Frakes & Melissa F. Wasserman, *Does the U.S. Patent and Trademark Office Grant Too Many Bad Patents? Evidence from a Quasi-Experiment*, 67 STAN. L. REV. 613, 616–17 (2015); Melissa F. Wasserman, *The PTO's Asymmetric Incentives: Pressure to Expand Substantive Patent Law*, 72 OHIO ST. L.J. 379, 385 (2011).

21. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992); see Sean B. Seymore, *The Presumption of Patentability*, 97 MINN. L. REV. 990, 996 (2013) (critiquing that presumption).

22. See, e.g., *Uber Techs., Inc. v. X One, Inc.*, 957 F.3d 1334, 1341 (Fed. Cir. 2020) (reversing a Board decision upholding validity because of the Board's "legal error" in determining that a combination of two prior art references did not make a claim limitation obvious).

Natural Resources Defense Council, Inc., which gives the agency the benefit of the doubt when interpreting an ambiguous statute it administers.²³ Accordingly, scholars have created a rich literature analyzing the power of the Patent Office relative to the courts that review it.²⁴ But that literature focuses mainly on whether the Patent Office ought to receive deference for its legal pronouncements—that is, for its interpretations and articulations of patent law. Though scholars have occasionally alluded to the deference the Patent Office may or may not deserve on individual validity determinations—that is, its application of patent law to the facts of particular disputes²⁵—no article has taken up the case-specific deference question since Congress greatly expanded post-issuance review proceedings in the AIA.²⁶ Yet case-

23. On the Federal Circuit's lack of substantive rulemaking authority, see *Merck & Co. v. Kessler*, 80 F.3d 1543, 1549–50 (Fed. Cir. 1996). See also *Chevron U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 843–44 (1984) (“[I]f the statute is silent or ambiguous . . . a court may not substitute its own construction . . . for a reasonable interpretation made by the administrator of an agency.”).

24. For a small sample, see Melissa F. Wasserman, *The Changing Guard of Patent Law: Chevron Deference for the PTO*, 54 WM. & MARY L. REV. 1959, 1965–66 (2013); John M. Golden, *Working Without Chevron: The PTO as Prime Mover*, 65 DUKE L.J. 1657, 1659 (2016); Stuart Minor Benjamin & Arti K. Rai, *Administrative Power in the Era of Patent Stare Decisis*, 65 DUKE L.J. 1563, 1581 (2016); Arti K. Rai, *Engaging Facts and Policy: A Multi-Institutional Approach to Patent System Reform*, 103 COLUM. L. REV. 1035, 1077 (2003). See also Tejas N. Narechania, *Defective Patent Deference*, 95 WASH. L. REV. 869, 936–40 (2020) (analyzing whether the Supreme Court ought to defer to the Patent Office or the Solicitor General on questions of patent law and policy).

25. The most thorough treatment of deference in the law-application context appears in Craig Nard's article, *Deference, Defiance, and the Useful Arts*, 56 OHIO ST. L.J. 1415, 1450 (1995), in which he argued that the Federal Circuit should review factfinding by the Board of Patent Appeals and Interferences—the Patent Trial and Appeal Board's predecessor—under the arbitrary and capricious standard of the Administrative Procedure Act and apply *Chevron* to the Board's ultimate determinations of patentability. For other articles alluding to the case-specific deference issue, see Stuart Minor Benjamin & Arti K. Rai, *Who's Afraid of the APA? What the Patent System Can Learn from Administrative Law*, 95 GEO. L.J. 269, 299 (2007) (noting that, “when the PTO makes a determination of patent validity, it engages . . . in legal interpretation—the application of law to fact,” and suggesting that patent denials—which are subject to several layers of internal agency review—ought to receive more deference than patent grants), and Wasserman, *supra* note 24, at 1971 (“Because the highly deferential standard announced in *Chevron* applies both to pure questions of legal interpretation and to the interpretation involved in applying legal standards to facts, every PTO validity determination could theoretically warrant strong judicial deference.”).

26. In an important recent article, Rebecca Eisenberg critiqued the Federal Circuit's de novo review of the Patent Trial and Appeal Board's obviousness rulings in the new AIA proceedings, arguing instead that, because obviousness is best understood as a mixed question of law and fact, the Federal Circuit should review the Board's rulings deferentially. See Rebecca S. Eisenberg, *A Functional Approach to Judicial Review of PTAB Rulings on Mixed Questions of Law and Fact*, 104 IOWA L. REV. 2387, 2403 (2019).

specific validity determinations comprise the bulk of the Patent Office's work from day to day. In 2019, the Patent Office received 621,453 utility patent applications,²⁷ resolved 9,440 appeals from application rejections and reexamination decisions,²⁸ and considered 1,464 petitions for post-issuance review.²⁹ Nearly every one of those matters required the employees of the Patent Office to apply the legal requirements of patentability in a unique factual setting.

This Article offers two realistic reform proposals that would eliminate the paradoxical way courts review patentability determinations made by the Patent Office.³⁰ First, the presumption of validity—which imposes the clear and convincing standard of proof on validity challenges in court litigation³¹—should be weakened or eliminated. Though only Congress could repeal the presumption entirely, the courts could significantly limit its effect by rigorously applying Supreme Court precedent that permits them to discount the examiner's patentability determination when the examiner did not consider important evidence during the initial examination.³²

Second, the Supreme Court and the Federal Circuit should recognize that patent validity is *not* ultimately a question of law—which is why the standard of review of the Patent Office is often said to be *de novo*—and instead acknowledge that deciding whether an invention

This Article builds on Eisenberg's work by considering the question of deference across all validity requirements and all proceedings in which validity is evaluated, including initial examination, infringement litigation, and post-issuance review.

27. *U.S. Patent Statistics Chart: Calendar Years 1963–2020*, U.S. PAT. & TRADEMARK OFF. (May 2021), https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm [<https://perma.cc/6ZFA-H9Q4>].

28. *Patent Trial & Appeal Board, Receipts and Dispositions by Technology Centers: Appeals*, U.S. PAT. & TRADEMARK OFF. (Sept. 2019), <https://www.uspto.gov/sites/default/files/documents/FY19%20Appeals%20Receipts%20and%20Dispositions%20by%20TC%20-%20September.pdf> [<https://perma.cc/KG38-GEVY>].

29. *Trial Statistics: IPR, PGR, CBM*, U.S. PAT. & TRADEMARK OFF. slide 4 (Sept. 2019), https://www.uspto.gov/sites/default/files/documents/Trial_Statistics_2019-09-30.pdf [<https://perma.cc/XYA4-TUPA>].

30. I use the term “paradox” in this Article to emphasize that the standards for judicial review of the Patent Office are exactly the reverse of what one would expect them to be based on the patent system's institutional structure. *See Paradox*, MERRIAM-WEBSTER DICTIONARY, <https://www.merriam-webster.com/dictionary/paradox> [<https://perma.cc/QB5E-8CC2>] (“[A] statement that is seemingly contradictory or opposed to common sense and yet is perhaps true[.]”).

31. And at the International Trade Commission. *See infra* note 63.

32. *See Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 111 (2011) (“[I]f the PTO did not have all material facts before it, its considered judgment may lose significant force. And, concomitantly, the challenger's burden to persuade the jury of its invalidity defense by clear and convincing evidence may be easier to sustain.”).

is patentable mainly requires applying the law to the facts of a particular case. In most areas of law—but not often in patent law—that exercise of law application would be called a “mixed question of law and fact.”³³ Though reasonable minds can (and do) differ on the degree of deference courts should give to the Patent Office’s purely legal pronouncements about the substance of patent doctrine,³⁴ the current regime for reviewing the Board’s individual patentability determinations—in which a specialized, expert administrative agency’s resolution of a fact-heavy, case-specific, technical question can be reviewed *de novo*—is untenable as a matter of both legal doctrine and innovation policy. Crucially, the Federal Circuit may be starting to realize this. Though a *de novo* standard of review remains on the books and is often stated in the court’s opinions, the Federal Circuit’s appellate review of the legal question of patent validity is, by some accounts, increasingly recognizing the importance of factfinding and becoming increasingly deferential.³⁵

With an eye toward the Federal Circuit’s possible retreat from *de novo* review of patentability determinations, this Article proposes replacing current law’s backwards and opaque deference regime with something much simpler: The Patent Office’s patentability determinations, whether they are being reviewed in court litigation or on direct appeal to the Federal Circuit, should be reviewed under the Supreme Court’s decisions in *Skidmore v. Swift & Co.*³⁶ and *United States v. Mead Corp.*,³⁷ which base the degree of deference on factors including the

33. See, e.g., *State Farm Mut. Auto. Ins. Co. v. Johnson*, 396 P.3d 651, 654 (Colo. 2017) (“A mixed question of law and fact involves the application of a legal standard to a particular set of evidentiary facts in resolving a legal issue.” (quoting *Mt. Emmons Mining Co. v. Town of Crested Butte*, 690 P.2d 231, 239 (Colo. 1984))); see also Henry P. Monaghan, *Constitutional Fact Review*, 85 COLUM. L. REV. 229, 237 (1985) (“[I]t seems misguided to assume, as many courts apparently do, that all law application judgments can be dissolved into either law declaration or fact identification. Law application is a distinctive operation.”). In recent years, the Federal Circuit has begun to identify certain validity inquiries as involving mixed questions (obviousness, most notably), but those decisions remain the exception, not the rule. See *Gugliuzza*, *supra* note 9, at 640.

34. Compare *Wasserman*, *supra* note 24, at 1965–66 (arguing for *Chevron* deference), with *Golden*, *supra* note 24, at 1659 (arguing for a lesser form of deference). See also Michael J. Burstein, *Rules for Patents*, 52 WM. & MARY L. REV. 1747, 1757 (2011) (“[T]he Federal Circuit has generally declined to give any legal weight to the PTO’s substantive interpretations of patent law . . .”).

35. See, e.g., *Eisenberg*, *supra* note 26, at 2402; see also *infra* note 216 (citing additional sources).

36. 323 U.S. 134, 140 (1944).

37. 533 U.S. 218, 288 (2001).

thoroughness of the agency's process and reasoning and the decision's consistency with other agency rulings.³⁸

Under that standard, examiners' perfunctory decisions to grant patents would, in most cases, be closely scrutinized when a defendant accused of patent infringement argues in court that the patent is invalid. Effectively, district courts would consider the question of patent validity *de novo*, with no thumb on the scale favoring the examiner's initial determination of patentability. By contrast, when a panel of administrative patent judges have, in a post-issuance review proceeding at the Patent Trial and Appeal Board, reassessed the validity of an issued patent and either confirmed or canceled it, the Board's decision about patentability would receive significant deference, being reviewed only to ensure there is substantial evidence in the record to support the outcome.³⁹

The remainder of this Article proceeds as follows. Part I provides essential background on the law of patentability and the processes of the patent system. Part II digs deeply into the mechanics of how, exactly, a decisionmaker determines whether an invention meets the patentability requirements set by federal law. Part III identifies the deference paradox at the heart of judicial and appellate review of patentability determinations: Under current law, careful, considered, and case-specific rulings by district courts and the Patent Trial and Appeal Board are often reviewed *de novo*. Conversely, because of the presumption of patent validity, the decision of a single examiner to grant a patent gets substantial deference when that decision is evaluated in court litigation. Part IV presents a remedy to patent law's deference paradox: weakening or repealing the presumption of validity and mandating judicial deference to patentability rulings made by the Patent Trial and Appeal Board. Part V concludes by discussing how the reimagined deference regime proposed in this Article would impact day-to-day decision-making at the Patent Office and in the federal courts.

38. Though this Article is not the first to suggest that the Patent Office should receive *Skidmore* deference, see, e.g., Arti K. Rai, *Patent Validity Across the Executive Branch: Ex Ante Foundations for Policy Development*, 61 DUKE L.J. 1237, 1272 (2012); John M. Golden, *The USPTO's Soft Power: Who Needs Chevron Deference?*, 66 SMU L. REV. 541, 548-49 (2013), it is the first to examine how *Skidmore* should apply across the various proceedings in which validity is determined, both in court and at the Patent Office, and to focus—in the wake of the AIA—on individual patentability determinations, as opposed to broader pronouncements about “what the law is.”

39. A similarly deferential standard of review would apply when the Federal Circuit reviews a Board decision in an appeal from the denial of a patent application. See *infra* Part IV.B.

I. THE LAW OF PATENTABILITY AND THE PROCESSES OF THE PATENT SYSTEM

To set the stage for a critical analysis of patent law's deference framework, this part of the Article provides a primer on the patent application process, the substantive requirements of patentability, and the ways in which the validity of a patent can be challenged after the Patent Office issues it.

A. THE APPLICATION PROCESS AND PATENTABILITY REQUIREMENTS

To obtain a patent, an aspiring patentee files an application with the U.S. Patent and Trademark Office. The filed application is then assigned to an individual examiner who specializes in the technology claimed.⁴⁰ A patent application (and, ultimately, any issued patent) consists of two main parts: (1) the specification, which is a detailed description of the invention (both in words and drawings), along with examples of how the invention could be practiced (“embodiments,” in the argot of patent law), and (2) the claims, which are numbered sentences at the end of the specification that define the patentee's legal right to exclude.⁴¹

The application process, referred to as “prosecution,” is essentially a negotiation between the patent examiner and the applicant about whether the application satisfies the various legal requirements of patentability. The most important validity requirements include:

Novelty: The claimed invention must be “new” as compared to technology that has been previously disclosed—what patent lawyers call the “prior art.”⁴² A patent that lacks novelty is said to have been “anticipated” by the prior art. To justify a finding of anticipation, all elements of the patent claim must be found in a single prior art reference, such as a prior patent, academic article, or a product that has been sold or publicly used.⁴³

Nonobviousness: The claimed invention must be a nontrivial extension of what was previously known.⁴⁴ Unlike anticipation, which

40. The Office's corps of roughly 8,000 examiners is divided into nine “technology centers,” which represent broad technology types, such as “biotechnology and organic chemistry” and “computer networking.” Those technology centers are further divided into “art units,” which represent narrower categories such as “immunology” and “cryptography and security.” See *Patent Technology Centers Management*, U.S. PAT. & TRADE-MARK OFF., <https://www.uspto.gov/patent/contact-patents/patent-technology-centers-management> [<https://perma.cc/962M-9LPP>].

41. See 35 U.S.C. § 112(a)–(b).

42. *Id.* § 102.

43. *Id.* § 102(a).

44. *Id.* § 103.

requires all elements of the claimed invention to be found in a single prior art reference, a finding of obviousness can be based on a combination of prior art references⁴⁵ and can be justified even when some aspect of the claimed invention does not exist in the prior art.⁴⁶

Utility: The claimed invention must be “useful” in that it actually works for a practical purpose.⁴⁷

Adequate disclosure: Section 112 of the Patent Act⁴⁸ contains three important disclosure requirements: (1) written description, which ensures the inventor possessed the invention at the time the application was filed;⁴⁹ (2) enablement, which ensures the specification describes the invention in enough detail that a person of ordinary skill in the art could make and use it;⁵⁰ and (3) definiteness, which ensures the claims give a person of ordinary skill in the art “reasonable certainty” about the patent’s scope.⁵¹

Eligible subject matter: The eligibility requirement ensures both that the claimed invention falls within one of the four categories of patentable inventions listed in § 101 of the Patent Act (a “process, machine, manufacture, or composition of matter”⁵²) and does not violate a judge-made exception to § 101⁵³ that prohibits patents on laws of nature (like gravity⁵⁴), natural phenomena (like naturally occurring DNA sequences⁵⁵), and abstract ideas (like mathematical formulas⁵⁶).

If an application does not satisfy any one of the requirements of

45. See *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007) (“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”).

46. See, e.g., *Dann v. Johnston*, 425 U.S. 219, 230 (1976) (“[T]he mere existence of differences between the prior art and an invention does not establish the invention’s nonobviousness.”).

47. 35 U.S.C. § 101. An invention shown to function only in an experimental setting can still obtain a patent, but an invention that cannot possibly work, such as a perpetual motion machine, cannot. See *Newman v. Quigg*, 877 F.2d 1575, 1581 (Fed. Cir. 1989). Likewise, in the life sciences, promise in a laboratory sometimes does not establish utility in treating human patients. See *Brenner v. Manson*, 383 U.S. 519, 535 (1966).

48. 35 U.S.C. § 112.

49. *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1478–79 (Fed. Cir. 1998).

50. *Consol. Elec. Light Co. v. McKeesport Light Co.*, 159 U.S. 465, 475 (1895).

51. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014).

52. 35 U.S.C. § 101.

53. See *Alice Corp. v. CLS Bank Int’l*, 573 U.S. 208, 217–18 (2014).

54. *Mayo Collaborative Servs. v. Prometheus Lab’ys, Inc.*, 566 U.S. 66, 71 (2012).

55. *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 580 (2013).

56. *Bilski v. Kappos*, 561 U.S. 593, 611 (2010).

patentability, the examiner will reject it.⁵⁷ In response, the applicant can contest the examiner's rejection, amend the application, or, eventually, file an appeal with the Patent Trial and Appeal Board.⁵⁸ If the Board rules against the applicant, the applicant can seek judicial review in the U.S. Court of Appeals for the Federal Circuit.⁵⁹

B. PATENT ENFORCEMENT: SECOND LOOKS AT PATENTABILITY

Even if an applicant is successful in obtaining a patent, the patent's validity can be challenged in subsequent litigation in court or in administrative proceedings at the Patent Office.

1. In Court

A patentee can enforce its patent by filing an infringement suit against anyone who is making, using, selling, offering to sell, or importing the invention covered by the patent,⁶⁰ as well as against anyone who is inducing infringement (by, for example, instructing others to commit acts of infringement)⁶¹ or contributing to infringement (by, for example, selling a component of a patented invention that lacks a substantial non-infringing use).⁶²

57. It is worth noting that, to apply the validity requirements listed above, the decisionmaker must also determine the precise meaning of the terms used in the patent claim at issue. This process of interpretation is called claim construction. *See generally* Tun-Jen Chiang & Lawrence B. Solum, *The Interpretation-Construction Distinction in Patent Law*, 123 YALE L.J. 530, 540–43 (2013) (discussing difficulties in determining the meaning of patent claims); David L. Schwartz, *Practice Makes Perfect? An Empirical Study of Claim Construction Reversal Rates in Patent Cases*, 107 MICH. L. REV. 223, 228–29 (2008) (describing the basic principles of patent claim construction). During examination, the Patent Office gives claims their “broadest reasonable interpretation” on the rationale that that broad construction—which may warrant a rejection because the claim encompasses prior art or is not adequately supported by the specification—will ultimately lead to more precise claim language when the claim is amended in response. *See* *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2145 (2016). After a patent issues, however, a different method of claim construction is used. The aim of the decisionmaker in that circumstance—whether a district judge hearing a patent infringement lawsuit or the Patent Trial and Appeal Board conducting post-issuance review—is to determine what the claims would mean to a person of ordinary skill in the art, based on the plain language of the claim itself, the specification, the patent's prosecution history, and, sometimes, extrinsic evidence such as dictionaries, treatises, and expert testimony. *See* *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314–17 (Fed. Cir. 2005) (en banc); *see also* 37 C.F.R. §§ 42.100(b), 42.200(b), 42.300(b) (2020) (adopting the *Phillips* claim construction standard for the post-issuance proceedings created by the AIA).

58. 35 U.S.C. § 134(a).

59. *Id.* § 141(a).

60. *Id.* § 271(a).

61. *Id.* § 271(b).

62. *Id.* § 271(c).

A defendant sued for infringement (an “accused infringer,” as patent lawyers say) usually raises two main defenses. First, the defendant can argue that it does not, in fact, infringe the patent because its product or process does not fall within the scope of the patent’s claims. Second, and of central importance to this Article, the accused infringer can argue that the patent is invalid because it does not satisfy one of the legal requirements of patentability described above.⁶³

A key feature of district court litigation over patent validity is that, by statute, an issued patent is presumed to be valid.⁶⁴ The rationale for that presumption, the Supreme Court has explained, is “that the PTO, in its expertise, has approved the claim.”⁶⁵ Consequently, a patent challenger must prove invalidity by clear and con-

63. In a defense similar to invalidity, an accused infringer can argue that a patent is not enforceable for reasons grounded in equity; for example, because the patentee withheld important prior art references from the examiner in order to obtain the patent. *See Therasense, Inc. v. Becton, Dickinson & Co.*, 649 F.3d 1276, 1290 (Fed. Cir. 2011) (en banc). Questions of patentability can also arise at the U.S. International Trade Commission, which has authority to stop the importation of products that infringe a U.S. patent. *See* 19 U.S.C. § 1337(a)(1)(B). These so-called § 337 proceedings are quite different from infringement litigation in the district courts. For example, an administrative law judge decides the dispute in the first instance (there is no jury), the ALJ’s decision is then reviewed by the full six-member Commission before an appeal to the Federal Circuit is possible, the only remedy the Commission can grant is an order excluding infringing products from importation (the Commission cannot award damages), and Commission decisions on infringement and validity are not entitled to preclusive effect in subsequent district court litigation. *See generally* Sapna Kumar, *The Other Patent Agency: Congressional Regulation of the ITC*, 61 FLA. L. REV. 529, 534 (2009). That said, Commission proceedings replicate the deference structure of district court litigation most salient to this Article—the presumption of validity applies, *see* *SSIH Equip. S.A. v. Int’l Trade Comm’n*, 718 F.2d 365, 375 (Fed. Cir. 1983), meaning that a challenger must prove invalidity by clear and convincing evidence, and the Federal Circuit reviews many of the Commission’s validity determinations under a de novo standard of review. *See, e.g.,* *Vizio, Inc. v. Int’l Trade Comm’n*, 605 F.3d 1330, 1342 (Fed. Cir. 2010) (“Obviousness is a question of law based on underlying factual inquiries, and thus we review the Commission’s ultimate determination de novo and factual determinations for substantial evidence.”). Accordingly, this Article’s critique of patent law’s deference paradox applies to Commission proceedings, too.

64. 35 U.S.C. § 282(a).

65. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 426 (2007). Other rationales for presuming patents to be valid are of course plausible. For example, the presumption may protect the reliance interest of a patentee who has disclosed its invention to the public, forfeiting any trade secret protection, *see* Mark A. Lemley, *The Surprising Virtues of Treating Trade Secrets as IP Rights*, 61 STAN. L. REV. 311, 333 (2008), or who has invested in efforts to commercialize the patented invention, *see* Doug Lichtman & Mark A. Lemley, *Rethinking Patent Law’s Presumption of Validity*, 60 STAN. L. REV. 45, 52 (2007).

vincing evidence, rather than under the preponderance of the evidence standard that applies to most issues in civil cases.⁶⁶ In district court, that heightened standard of proof is typically applied to the overall determination of validity rather than, say, to subsidiary questions of fact only.⁶⁷ That approach is supported by the Supreme Court's most important decision on the standard of proving patent invalidity, *Microsoft Corp. v. i4i Ltd. P'ship*, in which the Court repeatedly referred to "the challenger's burden to persuade the jury of its invalidity defense by clear and convincing evidence."⁶⁸ So, for example, a jury will be instructed that the accused infringer bears the burden of establishing, by clear and convincing evidence, that a patent would have been obvious.⁶⁹ A judge conducting a bench trial will, likewise, typically apply the clear and convincing standard to the overall determination of validity.⁷⁰

Final judgments in district court patent cases can be appealed to the Federal Circuit.⁷¹ Unlike district courts, which usually apply the presumption of validity (and its attendant heightened standard of proof) to the overall conclusion about patent validity, the Federal Circuit's opinions distinguish between the ultimate conclusion on validity and the facts underlying that conclusion. Conclusions on validity are characterized as a question of law reviewed *de novo* and decided under no specific standard of proof.⁷² Findings about the facts underlying that conclusion are reviewed both (1) with the deference that

66. *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 111 (2011).

67. *See, e.g., Imperial Chem. Indus., PLC v. Danbury Pharm., Inc.*, 745 F. Supp. 998, 1003-04 (D. Del. 1990) ("The statutory presumption of validity requires defendant to bear the burden of proving the invalidity of the . . . patents.")

68. *i4i*, 564 U.S. at 111.

69. *See* MODEL PATENT JURY INSTRUCTIONS § 4.1 (FED. CIR. BAR ASS'N 2016) ("To prove that any claim of a patent is invalid, [the challenger] must persuade you by clear and convincing evidence . . ."); MODEL PATENT JURY INSTRUCTIONS § 7.0 (AM. INTELL. PROP. L. ASS'N 2018) (patent challenger "must prove by clear and convincing evidence that the invention would have been obvious"); *see also* MODEL PATENT JURY INSTRUCTIONS FOR THE NORTHERN DISTRICT OF CALIFORNIA § 4.1a (2019) ("To prove invalidity of any patent claim, [the challenger] must persuade you that it is highly probable that the claim is invalid.").

70. *See, e.g., Bristol-Myers Squibb Co. v. Teva Pharms. USA, Inc.*, 923 F. Supp. 2d 602, 686 (D. Del. 2013) ("[T]he Court finds that Teva has demonstrated by clear and convincing evidence that claim 8 of the '244 Patent is invalid as obvious . . ."), *aff'd*, 752 F.3d 967 (Fed. Cir. 2014); *Immunex Corp. v. Sandoz Inc.*, 395 F. Supp. 3d 366, 380 (D.N.J. 2019) ("Issued patents are presumed valid. To rebut this presumption, Defendants bear the burden of proving invalidity by clear and convincing evidence." (citation omitted)).

71. 28 U.S.C. § 1295(a)(1).

72. *See, e.g., Honeywell Int'l., Inc. v. Int'l Trade Comm'n*, 341 F.3d 1332, 1338 (Fed. Cir. 2003).

normally attaches to lower court factfinding in any area of law⁷³ and (2) under the clear and convincing evidence standard that flows from the statutory presumption of patent validity.⁷⁴

To better understand the Federal Circuit's approach to the presumption of validity, some background on the law-fact distinction in patent validity disputes will help. The Supreme Court has unequivocally stated that "the ultimate question of patent validity is one of law."⁷⁵ But the Court has also recognized that "various factual determinations—for instance, the state of the prior art in the field and the nature of the advancement embodied in the invention . . . bear on" the validity analysis.⁷⁶ In other words, as the Federal Circuit frequently puts it, patent validity "is a question of law based on underlying questions of fact."⁷⁷

The Federal Circuit relies on this admixture of law and fact to give the presumption of validity a more limited scope than district courts. Though district courts typically defer to the Patent Office's overall determination on patentability absent clear and convincing evidence to the contrary, the Federal Circuit purports to apply the presumption of validity to factual questions only, emphasizing that the party challenging validity "bears the burden of proving the *factual elements* of invalidity by clear and convincing evidence."⁷⁸ This conception of the presumption of validity, it is worth noting, is consistent with a concurring opinion in *i4i*, written by Justice Breyer and joined by Justices Scalia and Alito, which contended that district courts should not apply the heightened clear and convincing evidence standard to the ultimate determination of patentability, only to underlying factual questions,

73. See, e.g., *Eli Lilly & Co. v. Teva Parenteral Meds., Inc.*, 845 F.3d 1357, 1372 (Fed. Cir. 2017) ("Obviousness is a question of law based on underlying facts, and [o]n appeal from a bench trial, this court reviews the district court's conclusions of law de novo and findings of fact for clear error." (alteration in original, internal quotation marks omitted)); see also *Childress*, *supra* note 8, at 270, 281 (discussing the deferential standards of review that apply to appellate review of both judge and jury factfinding).

74. See, e.g., *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1359 (Fed. Cir. 2007) ("Since we must presume a patent valid, the patent challenger bears the burden of proving the factual elements of invalidity by clear and convincing evidence.").

75. *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 96 (2011).

76. *Id.* at 96–97.

77. E.g., *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1353 (Fed. Cir. 2013).

78. *Novo Nordisk A/S v. Caraco Pharm. Lab'ys, Ltd.*, 719 F.3d 1346, 1352 (Fed. Cir. 2013) (emphasis added); *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018) ("Any *fact* . . . that is pertinent to the invalidity conclusion must be proven by clear and convincing evidence." (emphasis added)).

such as “when [was] a product . . . first sold” or “[had] a prior art reference . . . been published?”⁷⁹ In other words, as Justice Breyer put it, “[w]here the ultimate question of patent validity turns on” how “legal standards . . . apply to the facts,” the clear and convincing evidence standard “has no application.”⁸⁰

But Justice Breyer’s assertion that heightened standards of proof do not apply to questions that require *applying* law to fact is in tension with examples from numerous other areas of law, most notably, criminal law, where the prosecution bears the burden of proving, beyond a reasonable doubt, that the defendant’s actions violated the applicable law⁸¹—a decision-making task that plainly requires applying principles of criminal law to the facts of a given case.⁸² And despite the effort in many Federal Circuit opinions to distinguish underlying questions of fact (ostensibly subject to the presumption of validity’s heightened standard of proof) from the ultimate, legal determination of patentability (for which the standard of proof goes unspecified),⁸³ it is not difficult to find Federal Circuit opinions applying the clear and convincing standard to the overall conclusion on validity, just like district courts tend to do.⁸⁴

Inconsistency in the case law aside, the salient point is this: Because of the statutory presumption of patent validity, the Patent Office’s initial determination of patentability is afforded at least *some* deference when patent validity is challenged in subsequent court litigation, even if the degree and scope of deference varies between the district courts and the Federal Circuit and among Federal Circuit panels.

79. *Id.*, 564 U.S. at 114 (Breyer, J., concurring).

80. *Id.*

81. See *In re Winship*, 397 U.S. 358, 361 (1970).

82. See, e.g., *United States v. Grismore*, 546 F.2d 844, 849 (10th Cir. 1976) (“It is well-established that the court instructs the jury as to the rules of law and that the jury *applies* the facts as they find them to those rules.” (emphasis added)).

83. As contrasted with the standard of *appellate review*, which is *de novo* for questions of law.

84. See, e.g., *Novartis Pharms. Corp. v. West-Ward Pharms. Int’l Ltd.*, 923 F.3d 1051, 1062–63 (Fed. Cir. 2019) (“[W]e affirm the district court’s decision that West-Ward failed to prove by clear and convincing evidence that claims 1–3 of the ‘131 patent are invalid as obvious.”); *Allergan, Inc. v. Sandoz Inc.*, 726 F.3d 1286, 1291 (Fed. Cir. 2013) (“Patents are presumed valid; accordingly, Sandoz was required to prove that the asserted claims were obvious by clear and convincing evidence.”); *Cellspin Soft, Inc. v. Fitbit, Inc.*, 927 F.3d 1306, 1319 (Fed. Cir. 2019) (“[P]atents granted by the Patent and Trademark Office are presumptively valid. To the extent the district court departed from this principle by concluding that issued patents are presumed *valid* but not presumed patent *eligible*, it was wrong to do so.” (citations omitted)).

2. At the Patent Office

In addition to raising patent invalidity as a defense to an infringement lawsuit,⁸⁵ a party accused of patent infringement can contest the validity of the asserted patent in post-issuance review at the Patent Office.⁸⁶ In 1980, Congress created a process called *ex parte* reexamination, which still exists and allows anyone to challenge a patent's novelty or nonobviousness based on printed prior art, such as preexisting patents or publications.⁸⁷ As the name suggests, *ex parte* reexamination proceeds similar to initial examination: It is conducted entirely between the patentee and an examiner; the party who requested reexamination (often a defendant in an infringement lawsuit or someone worried about becoming one) plays no role.⁸⁸

In response to complaints about *ex parte* reexamination's lack of rigor⁸⁹ and dissatisfaction with *inter partes* reexamination (a more adversarial type of post-issuance review created in 1999),⁹⁰ the America Invents Act of 2011 (AIA) created several new proceedings. The most popular, *inter partes* review, allows anyone to challenge practically any issued patent, at almost any time in the patent's life, on the ground of anticipation or obviousness based on printed prior art.⁹¹ The AIA also created a process called post-grant review, which permits validity challenges on any ground of patentability based on any type of prior art, including prior art that is not simply a document, such as prior sales and public uses of the claimed invention.⁹² A post-grant review challenge, however, must be filed within nine months of when the patent issued.⁹³ A third post-issuance review proceeding

85. Or filing a lawsuit seeking a declaratory judgment of invalidity. *See supra* note 11.

86. Here I provide only a brief summary of the Patent Office's post-issuance proceedings. For more details, see Paul R. Gugliuzza, *(In)valid Patents*, 92 NOTRE DAME L. REV. 271, 279–85 (2016).

87. 35 U.S.C. § 302.

88. *Id.* § 305. To convince the Patent Office to institute reexamination, the request must raise “a substantial new question of patentability affecting any claim of the patent.” *Id.* § 303(a).

89. Most *ex parte* reexaminations (67%) end with the patentee amending the claims to preserve their validity; outright cancelation is rare, occurring only 12% of the time. *See Ex Parte Reexamination Filing Data*, U.S. PAT. & TRADEMARK OFF. 2 (Sept. 30, 2019), https://www.uspto.gov/sites/default/files/documents/ex_parte_historical_stats_roll_up.pdf [<https://perma.cc/89Y2-LQDC>].

90. *See* Gugliuzza, *supra* note 86, at 281–82 (discussing the perceived shortcomings of *inter partes* reexamination).

91. 35 U.S.C. § 311.

92. *Id.* § 321.

93. *Id.*

created by the AIA, covered business method review, permitted challenges to patents related to financial products and services on any validity ground, at almost any time in the patent's life, and based on any type of prior art.⁹⁴ Under a sunset provision in the AIA, however, that proceeding ended in September 2020.⁹⁵

The proceedings created by the AIA are adversarial and designed for the explicit purpose of providing an "efficient alternative to often costly and protracted district court litigation."⁹⁶ Unlike in *ex parte* reexamination, the challenger becomes a party to a post-issuance review proceeding under the AIA and plays the key role in attacking the patent's validity.⁹⁷ The proceedings—called a "trial" by the Patent Office's regulations⁹⁸—are conducted and decided by a three-judge panel of the Patent Trial and Appeal Board, which was also created by the AIA.⁹⁹ The new post-issuance proceedings resemble court litigation in many ways: Discovery is available, the Board conducts evidentiary hearings and oral arguments, and the dispute is decided in a written opinion.¹⁰⁰ In practice, the new proceedings often substitute for infringement litigation—the typical petitioner at the Board is a defendant in a pending patent infringement lawsuit,¹⁰¹ and those lawsuits are frequently stayed pending the Board's ruling.¹⁰²

One key difference between court litigation and post-issuance re-

94. See America Invents Act, Pub. L. 112-29, § 18, 125 Stat. 284, 329–31 (2011) (codified as amended in scattered sections of Title 35 of the U.S. Code).

95. *Id.* § 18(a)(3), 125 Stat. 330–31. Covered business method review was designed to eliminate the sorts of patents, issued in large numbers in the late 1990s and early 2000s, that took longstanding business practices (such as detecting information from the front of a check) and implemented them with generic computer technology (such as an optical scanner). See H.R. REP. NO. 112-98, pt. 1, at 54 (2011).

96. H.R. REP. NO. 112-98, pt. 1, at 45 (2011).

97. 35 U.S.C. § 311.

98. 37 C.F.R. § 42.2 (2020).

99. More precisely, "at least 3." 35 U.S.C. § 6(c). The Director of the Patent Office has sometimes expanded panels of the Board to, effectively, rehear and change the result in particular cases. This practice has proven controversial, see Golden, *supra* note 39, at 2449–50, though it may go away now that the Director is authorized to directly review Board decisions, *United States v. Arthrex, Inc.*, 141 S. Ct. 1970, 1987 (2021).

100. See 35 U.S.C. §§ 316(a), 326(a).

101. See Saurabh Vishnubhakat, Arti K. Rai & Jay P. Kesan, *Strategic Decision Making in Dual PTAB and District Court Proceedings*, 31 BERKELEY TECH. L.J. 45, 80 (2016).

102. See Forrest McClellan, Douglas Wilson & Michelle Armond, *How Increased Stays Pending IPR May Affect Venue Choice*, LAW360 (Nov. 15, 2019), <https://www.law360.com/articles/1220066/how-increased-stays-pending-ipr-may-affect-venue-choice> (last visited Nov. 20, 2021) (reporting that district courts granted 77% of motions to stay litigation pending inter partes review in 2019).

view is that the presumption of validity does not apply in post-issuance proceedings at the Patent Office.¹⁰³ Accordingly, the challenger must prove invalidity by a mere preponderance of the evidence rather than under the clear and convincing evidence standard that applies in court litigation.¹⁰⁴

Because this Article's objective is to critique patent law's deference regime, it is worth noting that the preponderance of the evidence standard that applies in post-issuance proceedings at the Patent Office is one area of deference that patent law gets right. In those proceedings, an individual examiner's relatively perfunctory initial decision in a process skewed in favor of the patentee is not presumed to be correct; the Patent Trial and Appeal Board is free to decide patentability on a clean slate.¹⁰⁵

With no presumption in play, when a Board decision is appealed to the Federal Circuit, the customary standards of review apply: Decisions on issues of law are reviewed *de novo*, decisions on issues of fact are reviewed with deference (specifically, for substantial evidence in the context of judicial review of an administrative agency).¹⁰⁶ Because patent validity is, under Supreme Court precedent, considered to ultimately present a question of law,¹⁰⁷ it is not unusual for the Federal Circuit to apply a *de novo* standard of review to the Board's patentability decision.¹⁰⁸ That said, the Federal Circuit has—in tension with Supreme Court precedent—classified a few grounds of patentability—anticipation most notably—as presenting questions of *fact* only and so are reviewed deferentially.¹⁰⁹ Likewise, the Federal Circuit's ostensibly *de novo* review of patent validity requirements, such as nonobviousness, sometimes appears, in practice, to be deferential because the court leans heavily on the factfinding underlying the legal

103. *In re Etter*, 756 F.2d 852, 856 (Fed. Cir. 1985).

104. 35 U.S.C. §§ 316(e), 326(e); see *In re Swanson*, 540 F.3d 1368, 1377 (Fed. Cir. 2008).

105. See generally Joe Matal, *A Guide to the Legislative History of the America Invents Act: Part II of II*, 21 FED. CIR. B.J. 539, 620 (2012) (discussing the purpose of §§ 316(e) and 326(e), which impose the preponderance of the evidence standard on AIA proceedings).

106. 5 U.S.C. § 706(2)(E).

107. *Microsoft Corp. v. i4i, Ltd. P'ship*, 564 U.S. 91, 96–97 (2011).

108. See, e.g., *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1380 (Fed. Cir. 2016) (“The PTAB’s ultimate determination of obviousness is a legal conclusion, which we review *de novo*.”).

109. See, e.g., *Chamberlain Grp., Inc. v. One World Techs., Inc.*, 944 F.3d 919, 923 (Fed. Cir. 2019) (“Anticipation is a question of fact, and we review the Board’s findings thereon for substantial evidence.”).

conclusion.¹¹⁰

I will explore those complications in more detail below.¹¹¹ For now, the key point is that, in court litigation, an examiner's determination of patentability gets a significant degree of deference because of the statutory presumption of validity.¹¹² But Patent Trial and Appeal Board decisions about patentability, because they present what the Supreme Court has termed a question of law and because the presumption of validity does not apply, are—at least according to the law on the books—subject to de novo review in the Federal Circuit.

II. DECIDING PATENTABILITY

With that background on the law of and process for determining patentability in mind, we can now consider in more detail how, exactly, a decisionmaker—be it an examiner, an administrative patent judge, a federal judge, or a jury—decides whether a particular invention is patentable. To make that determination, a decisionmaker must perform three tasks: one involving a question of law, one involving a question of fact, and one involving a mixture of law and fact. Understanding precisely what each task entails is critical because it makes a significant difference in the amount of deference that attaches in subsequent legal proceedings.¹¹³ This analysis of how patentability decisions are made will help illuminate the paradoxical way deference applies in patent validity disputes—the topic of Part III.

A. TASK #1: WHAT IS THE LAW?

The first thing a decisionmaker must do to decide patentability is identify and articulate the relevant legal standard—that is, the rule of decision for the matter at hand.¹¹⁴ For example: The claimed invention

110. See Eisenberg, *supra* note 26, at 2402 (“[P]urported de novo review has become increasingly perfunctory, at least when the court finds sufficient evidence in the record to support the subsidiary findings. It is the evidentiary record behind these findings, not legal analysis of the conclusion, that dominates the decisions.”); see also *infra* note 216 (citing additional sources).

111. See *infra* Part II.C.

112. See *supra* Part I.B.1.

113. I use “deference” here in a broad sense “to include any situation in which a second decisionmaker is influenced by the judgment of some initial decisionmaker rather than examining an issue entirely de novo.” Jonathan S. Masur & Lisa Larrimore Ouellette, *Deference Mistakes*, 82 U. CHI. L. REV. 643, 652 (2015). Below, I discuss in more detail the precise amount of deference particular patentability determinations ought to receive. See *infra* Part IV.

114. See U.S. Bank Nat’l Ass’n *ex rel.* CWC Capital Asset Mgmt. LLC v. Vill. at Lakeridge, LLC, 138 S. Ct. 960, 965 (2018) (describing as “purely legal” the task of “settling on a legal test” to decide a particular case).

must not have been obvious to a person of ordinary skill in the art when the inventor filed the patent application.¹¹⁵ After reading the patent's specification, a person of ordinary skill in the art must be able to recreate the claimed invention without undue experimentation.¹¹⁶ And no single prior art reference can disclose all elements of the claimed invention.¹¹⁷

Those statements set forth the ultimate standards the law provides for various patentability requirements (nonobviousness, enablement, and novelty, respectively). Those ultimate legal standards can, in addition, raise subsidiary questions of law about their interpretation. For instance, is the existence of a "teaching, suggestion, or motivation" to make the claimed invention required to show an invention would have been obvious?¹¹⁸ What factors should a decisionmaker consider in deciding whether a patent's disclosure requires undue experimentation to make or use the claimed invention?¹¹⁹ Does a sale that requires the purchaser to keep the details of the invention secret put the invention "on sale" for the purpose of § 102's novelty requirement?¹²⁰

All of these questions are pure questions of law, as questions of law are conventionally described: they "can meaningfully be asked in the abstract, without reference to the facts of particular cases."¹²¹ The Federal Circuit gives no deference to lower court decisions about the meaning or content of federal patent law.¹²² In the setting of court-to-court review, de novo review makes sense; it is the typical standard applied when a higher court reviews a lower court decision on a pure question of law.¹²³ Appellate courts, operating under less time pressure and with the collective wisdom of a multi-member bench are, the usual thinking goes, institutionally better situated to decide those

115. 35 U.S.C. § 103.

116. This is the standard judicial articulation of the enablement requirement drawn from § 112 of the Patent Act. *See, e.g., In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988).

117. If one reference does, the patent lacks novelty. *See Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008).

118. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (no, but it is a "helpful" consideration).

119. *Wands*, 858 F.2d at 737 (listing eight factors).

120. *Helsinn Healthcare S.A. v. Teva Pharms. USA, Inc.*, 139 S. Ct. 628, 630 (2019) (yes).

121. Gary Lawson, *Proving the Law*, 86 NW. U. L. REV. 859, 882 n.68 (1992).

122. *See, e.g., Forest Grp., Inc. v. Bon Tool Co.*, 590 F.3d 1295, 1301 (Fed. Cir. 2009) (reviewing de novo a district court's interpretation of the Patent Act's requirement that patented products be marked, 35 U.S.C. § 292).

123. *Highmark Inc. v. Allcare Health Mgmt. Sys., Inc.*, 572 U.S. 559, 563 (2014).

sorts of questions about “what the law is.”¹²⁴ That is particularly true in patent cases, where the Federal Circuit has at least some degree of expertise in and a greater familiarity with patent law than most district judges.¹²⁵ In reality, the Federal Circuit’s expertise and specialization may be causing patent law to evolve in a way that is suboptimal from a social welfare perspective.¹²⁶ But the point here is that, in the setting of court-to-court appeal on pure questions of law, there’s nothing exceptional about the de novo standard of review the Federal Circuit applies in patent cases.

When it comes to judicial review of Patent Office determinations on purely legal questions, however, the calculus changes—or at least it arguably should. The Patent Office plainly has expertise about patent law. Its examiners and the administrative patent judges of the Patent Trial and Appeal Board research, think about, and apply principles of federal patent law constantly, every day.¹²⁷ The Patent Office sometimes promulgates guidance about the legal standards for determining patentability through a process that resembles notice-and-comment rulemaking.¹²⁸ It compiles its rules, policies, and practices in the extensive and authoritative *Manual of Patent Examining Procedure*.¹²⁹ Patent Trial and Appeal Board decisions can, in certain circumstances, be designated as “precedential,” in which case the decision “establishes binding authority” in future proceedings before the Board.¹³⁰ Alternatively, a Board decision can be designated as “informative,” in which case it will “provide[] Board norms on recurring

124. Jonathan Remy Nash & Rafael I. Pardo, *An Empirical Investigation into Appellate Structure and the Perceived Quality of Appellate Review*, 61 VAND. L. REV. 1745, 1748 (2008) (citing additional references).

125. See generally Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1, 7–8 (1989) (describing the benefits of channeling all patent cases to the Federal Circuit).

126. See generally Craig Allen Nard & John F. Duffy, *Rethinking Patent Law’s Uniformity Principle*, 101 NW. U. L. REV. 1619, 1620–21 (2007) (discussing various critiques of the court).

127. See *supra* notes 27–29 and accompanying text for data about the hundreds of thousands of matters resolved by the Patent Office every year.

128. See, e.g., Patent Eligibility Guidance Update, 84 Fed. Reg. 55,942 (Oct. 18, 2019); Interim Guidance on Patent Subject Matter Eligibility, 79 Fed. Reg. 74,618 (Dec. 16, 2014).

129. *Manual of Patent Examining Procedure*, U.S. PAT. & TRADEMARK OFF. (9th ed., rev. Jan. 2018), <https://www.uspto.gov/web/offices/pac/mpep/index.html> [<https://perma.cc/FNE4-ZUTA>].

130. *Precedential and Informative Decisions*, U.S. PAT. & TRADEMARK OFF. (Aug. 2021), <https://www.uspto.gov/patents/ptab/precedential-informative-decisions> [<https://perma.cc/9VL8-PVDP>] (noting that precedential decisions typically address

issues, guidance on issues of first impression to the Board, guidance on Board rules and practices, and guidance on issues that may develop through analysis of recurring issues in many cases.”¹³¹ And the Board decides cases and issues decisions in panels of three judges, with review opportunities all the way up to the Presidentially-appointed and Senate-confirmed PTO Director.¹³² The Patent Office also has an Office of the Solicitor—a group of lawyers with deep expertise in patent law that not only litigates on behalf of the agency but also “works in collaboration with the Department of Commerce on interagency intellectual property law matters.”¹³³

All of this experience and expertise, as well as the agency’s structure and the Board’s decision-making process,¹³⁴ suggests that, as purely normative matter, the Patent Office’s pronouncements about the substance of patent law have a claim to at least some deference when those pronouncements become relevant in court litigation. Whether Congress has conferred *enough* legal authority on the Patent Office to warrant *Chevron* deference—under which the agency’s interpretations of the Patent Act would be upheld so long as they are reasonable¹³⁵—is a matter of significant dispute. Before Congress passed the AIA, the Federal Circuit squarely held that the Patent Office, because it lacked substantive rulemaking authority, was not entitled to *Chevron* deference on its statements about the core legal requirements of patentability.¹³⁶ But the AIA expanded the Patent Office’s authority by empowering it to review the validity of issued patents in the trial-like proceedings described above. Melissa Wasserman has argued that these new proceedings are sufficiently formal to “trigger[] *Chevron* deference for the PTO’s interpretation of ambiguous terms of the Patent Act announced during th[o]se proceedings.”¹³⁷ John

“major policy or procedural issues, or other issues of exceptional importance, including constitutional questions, important issues regarding statutes, rules, and regulations, important issues regarding case law, or issues of broad applicability to the Board”).

131. *Id.*

132. *United States v. Arthrex, Inc.*, 141 S. Ct. 1970, 1987 (2021).

133. *Office of the Solicitor*, U.S. PAT. & TRADEMARK OFF. (July 2021), <https://www.uspto.gov/about-us/organizational-offices/office-general-counsel/office-solicitor> [<https://perma.cc/QR86-NPDJ>].

134. On the importance of reasoned decision-making and political accountability in justifying judicial deference to agency action, see Narechania, *supra* note 24, at 914–21.

135. *Chevron, U.S.A., Inc. v. Nat’l Res. Def. Council, Inc.*, 467 U.S. 837, 843 (1984).

136. *Merck & Co. v. Kessler*, 80 F.3d 1543, 1549–50 (Fed. Cir. 1996).

137. Wasserman, *supra* note 24, at 1977–78; accord Arti K. Rai, *Improving (Software) Patent Quality Through the Administrative Process*, 51 HOUS. L. REV. 503, 540 (2013).

Golden, on the other hand, has traced the ways in which Patent Office post-issuance proceedings differ from the standard model of formal adjudication under the Administrative Procedure Act, concluding that Congress, in the AIA, did *not* delegate sufficient interpretative authority to warrant deference under *Chevron*.¹³⁸

But even if *Chevron* does not apply, that does not mean the Patent Office's pronouncements about patent law should get no deference at all. Golden, for example, recognized that the Patent Office has enough expertise in patent law to warrant deference under *Skidmore*,¹³⁹ in which the Supreme Court articulated a sliding scale of deference that depends on, among other things, the thoroughness of the agency's reasoning and its consistency with other agency pronouncements.¹⁴⁰ In fact, as Golden points out, the Federal Circuit's landmark pre-AIA opinion holding that the Patent Office has no general substantive rule-making authority (and hence does not receive *Chevron* deference) also suggested that *Skidmore* should apply to the Patent Office's interpretations of core patentability doctrines.¹⁴¹

But the Federal Circuit has not yet deferred to the Patent Office's pronouncements about the law of patentability, even after the AIA. The Office does receive *Chevron* deference for its rules about how AIA proceedings are conducted,¹⁴² though the Federal Circuit, more often

138. Golden, *supra* note 24, at 1673–74. For a more general argument that *Chevron* should never apply to legal pronouncements made in the court of agency adjudication, see Kristin E. Hickman & Aaron L. Nielson, *Narrowing Chevron's Domain*, 70 DUKE L.J. 931, 931 (2021).

139. Golden, *supra* note 38, at 549–50.

140. *Skidmore v. Swift & Co.*, 323 U.S. 134, 140 (1944) (“We consider that the rulings, interpretations and opinions of the Administrator under [the Fair Labor Standards Act], while not controlling upon the courts by reason of their authority, do constitute a body of experience and informed judgment to which courts and litigants may properly resort for guidance. The weight of such a judgment in a particular case will depend upon the thoroughness evident in its consideration, the validity of its reasoning, its consistency with earlier and later pronouncements, and all those factors which give it power to persuade, if lacking power to control.”).

141. Golden, *supra* note 38, at 550 (“Less commonly noticed is what the [Federal] [C]ircuit said [in *Merck*, 80 F.3d at 1550, after holding that *Chevron* deference was not warranted]: ‘Such deference as we owe to the PTO’s interpretive “Final Determination” . . . thus arises, not from the rule of *Chevron*, but solely from, *inter alia*, the thoroughness of its consideration and the validity of its reasoning, i.e., its basic power to persuade if lacking power to control. See . . . *Skidmore v. Swift & Co.*, 323 U.S. 134, 140 (1944).”).

142. See, e.g., *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142 (2016) (upholding, as reasonable under *Chevron*, a regulation that used the “broadest reasonable construction” standard to interpret patent claims in post-issuance proceedings); see also 35 U.S.C. § 316(a)(4) (authorizing the Office to adopt regulations “establishing and

than not, has found the relevant provisions of the AIA to be unambiguous, leaving no room for deference to the Patent Office's interpretation.¹⁴³ Outside the context of AIA proceedings, the circuit continues to be hesitant about giving weight to the agency's substantive pronouncements, recently indicating that it owed no deference whatsoever to guidance the Patent Office had promulgated on the issue of patent eligibility.¹⁴⁴ But, as with the procedural questions that have arisen under the AIA, the court has also avoided the issue of deference when possible.¹⁴⁵ Similarly, the Federal Circuit initially indicated it would defer to the Patent Office's interpretation of the types of patents that qualified for covered business method review under the AIA,¹⁴⁶ but in later cases conducted, essentially, *de novo* review.¹⁴⁷

governing" inter partes review). The regulation upheld in *Cuozzo* has since been vacated; the Board now gives patent claims their usual meaning to a person of ordinary skill in the art, just like a district court deciding a dispute over infringement or validity. *See supra* note 57.

143. *See, e.g.,* Facebook, Inc. v. Windy City Innovations, LLC, 973 F.3d 1321, 1333 (Fed. Cir. 2020) (refusing any deference to the Patent Office's interpretation permitting parties to join their own previously filed petitions under 35 U.S.C. § 315(c) "because the clear and unambiguous language of the statute does not authorize same-party joinder"); Click-To-Call Techs., LP v. Ingenio, Inc., 899 F.3d 1321, 1332 (Fed. Cir. 2018) (granting no deference to the Patent Office's determination that dismissal of an infringement lawsuit without prejudice does not trigger statutory time limits for requesting review because the statute was "unambiguous"), *vacated and remanded sub nom.*, Thryv, Inc v. Click-To-Call Techs., LP, 140 S. Ct. 1367 (2020); VirnetX Inc. v. Apple Inc., 931 F.3d 1363, 1377 (Fed. Cir. 2019) (granting no deference to the Patent Office's interpretation of § 317(b), which requires the Patent Office to terminate review once there has been a final decision on the challenger's invalidity case in federal court); Applications in Internet Time, LLC v. RPX Corp., 897 F.3d 1336, 1351 (Fed. Cir. 2018) (granting no deference to the Patent Office's interpretation of the term "real party in interest" as used in the AIA's time bar provision, § 315(b)).

144. *In re* Rudy, 956 F.3d 1379, 1383 (Fed. Cir. 2020) (discussing 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50–57 (Jan. 7, 2019)).

145. *See, e.g.,* Nat. Alts. Int'l, Inc. v. Creative Compounds, LLC, 918 F.3d 1338, 1346 n.2 (Fed. Cir. 2019) ("The U.S. Patent and Trademark Office has adopted guidance on how examiners should determine whether a claim is eligible under § 101 and provided examples of eligible and ineligible claims The parties dispute the persuasiveness of this document and the weight we should afford it under *Skidmore v. Swift & Co.*, 323 U.S. 134 (1944). The issue before us is a matter of law and the result is clear, thus this is not a case in which *Skidmore* deference would affect the outcome.").

146. *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1325 (Fed. Cir. 2015) ("[T]he expertise of the USPTO entitles the agency to substantial deference in how it defines its mission.").

147. *See, e.g.,* Unwired Planet, LLC v. Google Inc., 841 F.3d 1376, 1381–82 (Fed. Cir. 2016) (holding that the Patent Office's definition of "covered business method" patent, which included patents "incidental" or "complementary" to a financial activity, went beyond what the AIA permitted). It's worth noting that, after the Supreme Court's de-

For the purpose of this Article, it is unnecessary to settle the debate about the extent to which courts should defer to the Patent Office's interpretations or articulations of substantive patent law. Rather, it is enough to note that the Federal Circuit's practice of completely *de novo* review of the Patent Office on what the Federal Circuit views as pure questions of patent law is hard to square with Supreme Court case law, most notably *Skidmore*, which suggests that—regardless of whether *Chevron* applies—the considered views of the relatively expert Patent Office should receive at least *some* deference from the courts.

B. TASK #2: WHAT ARE THE FACTS?

Both district courts and the Patent Office do receive deference on the second step in the process of deciding patentability. That step requires a decisionmaker to make findings of historical fact—answering questions about who, what, when, where, why, and how.¹⁴⁸ As distinguished from pure questions of law, which can be asked in the abstract and answered in ways that apply in many different cases,¹⁴⁹ questions of fact, as conventionally understood, look outside the courtroom into events, things, and conditions that are pertinent to the governing legal standard identified at the first step of the analysis.¹⁵⁰

As the Supreme Court suggested in *i4i*, questions of fact “bear on” all of the grounds of patentability summarized above.¹⁵¹ Eligibility under § 101 of the Patent Act, for example, involves questions about whether the patent claims something that occurs in nature¹⁵² or a long-standing business practice¹⁵³—precisely the sorts of outside-

cision in *Thryv*, 140 S. Ct. 1367, the Federal Circuit held that it no longer had jurisdiction to decide whether a patent qualifies for covered business method review. 140 S. Ct. 1367; *see* *SIPCO, LLC v. Emerson Elec. Co.*, 980 F.3d 865, 867 (Fed. Cir. 2020).

148. *U.S. Bank Nat'l Ass'n ex rel. CWC Capital Asset Mgmt. LLC v. Vill. at Lakeridge, LLC*, 138 S. Ct. 960, 966, (2018) (“Along with adopting a legal standard, a . . . court . . . must make findings of what we have called ‘basic’ or ‘historical’ fact—addressing questions of who did what, when or where, how or why.”). Historical, basic, or, alternatively, adjudicative facts focus on “actual or alleged event[s] or circumstance[s]” that are “particularly related to the parties to a proceeding and . . . help[] the tribunal determine how the law applies to those parties.” *Fact*, BLACK'S LAW DICTIONARY (11th ed. 2019). Distinguish legislative facts, which “help[] a court or agency determine the law's meaning and application” and “are not ordinarily specific to the parties in a proceeding.” *Id.*

149. *See supra* note 121 and accompanying text.

150. Stephen A. Weiner, *The Civil Jury Trial and the Law-Fact Distinction*, 54 CALIF. L. REV. 1867, 1869–70 (1966).

151. *Microsoft Corp. v. i4i, Ltd. P'ship*, 564 U.S. 91, 96–97 (2011).

152. *Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc.*, 566 U.S. 66, 77 (2012).

153. *Bilski v. Kappos*, 561 U.S. 593, 611 (2010).

the-courtroom conditions that the law would usually classify as raising issues of fact.¹⁵⁴ The patent eligibility test also inquires into the factual matter of whether the patent claims technology that would have been “well-understood, routine, and conventional” to a person of ordinary skill in the art.¹⁵⁵ For novelty under § 102, the Federal Circuit has treated the comparison of the claimed invention to a particular prior art reference as a question of fact.¹⁵⁶ Numerous questions of fact underlie the determination of obviousness under § 103¹⁵⁷: What, exactly, does the prior art disclose? What are the differences between the claimed invention and the prior art? What is the level of ordinary skill in the art? Would a person of ordinary skill in the art be motivated to combine particular prior art references? What “objective considerations” (or “secondary factors”) of nonobviousness, if any, exist? (Objective considerations include things like the commercial success of the invention and the failure of others to make it.¹⁵⁸) Likewise, numerous fact questions underlie the enablement requirement of § 112, including the quantity of experimentation that would be necessary to recreate the claimed invention, the state of the prior art, the level of ordinary skill in the art, and the predictability or unpredictability of the relevant art.¹⁵⁹ And § 112’s written description requirement, which the Federal Circuit has coded entirely as a question of fact, involves inquiries into the level of ordinary skill in the art and what a person of ordinary skill in the art would understand about the invention from reading the original application and the specification.¹⁶⁰

The Federal Circuit gives deference to both lower courts and the Patent Office on the factual elements underlying any validity determination, though it took prodding from the Supreme Court for it to do so. For instance, in one of the first Supreme Court cases reviewing the Federal Circuit after the circuit’s creation in 1982, the Supreme Court

154. Interestingly, the Federal Circuit has been equivocal about whether these eligibility-related questions are indeed factual or instead legal. For a discussion of the pertinent case law, see Paul R. Gugliuzza, *The Procedure of Patent Eligibility*, 97 TEX. L. REV. 571, 633 (2019).

155. *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018).

156. *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565 (Fed. Cir. 1992) (“Identity of invention is a question of fact, and one who seeks such a finding must show that each element of the claim in issue is found . . . in a single prior art reference . . .”).

157. 35 U.S.C. § 103.

158. For a Federal Circuit opinion coding all of these questions underlying the obviousness determination as factual, see *Arctic Cat, Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1358–59 (Fed. Cir. 2017).

159. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988).

160. *Gentry Gallery, Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479 (Fed. Cir. 1998).

chided the Federal Circuit for not giving appropriate deference to district court factfinding. In that case, the district judge had invalidated a patent for obviousness after a thirteen-day bench trial, but the Federal Circuit, after a painstaking review of the record evidence, reversed.¹⁶¹ To the Supreme Court's chagrin, the Federal Circuit did not even "mention Rule 52(a)" of the Federal Rules of Civil Procedure, which sets forth the clear error standard of review for factfinding by a judge.¹⁶² The district judge, the Supreme Court noted, weighed various pieces of evidence, including the prior art, the differences between the prior art and the patents in suit, the patents' commercial success, and the failure of competitors to develop equally successful products, all under the clear and convincing evidence standard of proof that applies because of the statutory presumption of patent validity.¹⁶³ Since those early days, the law on the books at the Federal Circuit has evolved to give significant deference to district courts on factfinding relevant to deciding patent validity. As noted above, not only do the conventional clear error and substantial evidence standards apply,¹⁶⁴ the Federal Circuit's appellate review is shaded by the clear and convincing evidence standard that a patent challenger must carry on the factual aspects of its invalidity case.¹⁶⁵

In appeals from the Patent Office, the Federal Circuit has always deferred on matters of fact. But, for the first two decades of its existence, the court applied the clear error standard of review,¹⁶⁶ which is considered to be the least deferential of the standards of appellate review that conventionally apply to factfinding.¹⁶⁷ The clear error standard, moreover, is typically used for court-to-court review of factfinding; it is not found anywhere in the Administrative Procedure Act (APA), which governs judicial review of agency actions.¹⁶⁸ The Supreme Court ultimately overturned the Federal Circuit's clear error standard, holding instead that the court should apply the APA's more

161. *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 1091 (Fed. Cir. 1985).

162. *Dennison Mfg. Co. v. Panduit Corp.*, 475 U.S. 809, 811 (1986).

163. *Id.*

164. The clear error standard applies to factfinding by the judge, FED. R. CIV. P. 52(a), and the substantial evidence standard applies to factfinding by the jury, Paul D. Carrington, *The Power of District Judges and the Responsibility of Courts of Appeals*, 3 GA. L. REV. 507, 520 (1969).

165. *Eli Lilly & Co. v. Teva Parenteral Meds., Inc.*, 845 F.3d 1357, 1372 (Fed. Cir. 2017); *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1359 (Fed. Cir. 2007).

166. *In re Zurko*, 142 F.3d 1447, 1449 (Fed. Cir. 1998) (en banc).

167. 2 RICHARD J. PIERCE, JR., ADMINISTRATIVE LAW TREATISE § 11.2, at 977-78 (5th ed. 2010).

168. 5 U.S.C. § 706(2).

deferential standards.¹⁶⁹

The Federal Circuit ultimately chose to apply the APA’s “substantial evidence” standard, which, though more deferential than clear error, is considered less deferential than the “arbitrary or capricious” standard it could have chosen instead.¹⁷⁰

For present purposes, there is no need to dwell on the fine differences between the various standards of review that might apply to Patent Office and lower court factfinding. Rather, the key takeaway is that the standards of review the Federal Circuit applies to factfinding give *some* deference to both the Patent Office and the district courts. And those standards are, now, quite clear. The clear error standard applies when the court is reviewing the factfinding of a trial judge.¹⁷¹ The substantial evidence standard applies when the court is reviewing the factual aspects of a jury verdict¹⁷² and when the circuit is reviewing factfinding by the Patent Office.¹⁷³

C. TASK #3: IS THIS INVENTION PATENTABLE?

The third, final, and most important task for a decisionmaker determining patentability is to apply the abstract legal standard identified at step one¹⁷⁴ to the case-specific facts found at step two.¹⁷⁵ This third task, I have explained elsewhere, requires answering what would be called in other areas of law—but not often in patent law—a mixed question of law and fact.¹⁷⁶ The answer to that mixed question will ultimately determine the invention’s patentability.

169. *Dickinson v. Zurko*, 527 U.S. 150, 155 (1999).

170. *In re Gartside*, 203 F.3d 1305, 1315 (Fed. Cir. 2000). Some federal appellate case law, it is worth noting, questions whether the difference between the substantial evidence and arbitrary and capricious standards is terribly significant. *See, e.g., Ass’n of Data Processing Serv. Orgs., Inc. v. Bd. of Governors of the Fed. Rsrv. Sys.*, 745 F.2d 677, 684 (D.C. Cir. 1984) (Scalia, J.) (“We have noted on several occasions that the distinction between the substantial evidence test and the arbitrary or capricious test is ‘largely semantic.’” (citations omitted)).

171. *McNeil-PPC, Inc. v. L. Perrigo Co.*, 337 F.3d 1362, 1368 (Fed. Cir. 2003).

172. *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 711 F.3d 1348, 1356 (Fed. Cir. 2013).

173. *Redline Detection, LLC v. Star Envirotech, Inc.*, 811 F.3d 435, 449 (Fed. Cir. 2015).

174. *See supra* Part II.A.

175. *See supra* Part II.B.

176. *Gugliuzza, supra* note 9, at 648; *see also* *U.S. Bank Nat’l Ass’n ex rel. CWCapital Asset Mgmt. LLC v. Vill. at Lakeridge, LLC*, 138 S. Ct. 960, 966 (2018) (“What remains for a . . . court . . . is to determine whether the historical facts found satisfy the legal test chosen We here arrive at the so-called ‘mixed question’ of law and fact at the heart of [the] case.”).

The Federal Circuit, for its part, characterizes most validity doctrines as presenting “question[s] of law based on underlying facts,”¹⁷⁷ which, to many lawyers, might sound like a synonym for a mixed question of law and fact. But, in patent cases, it’s not. Rather, the Federal Circuit views most patent validity disputes as presenting *either* questions of law *or* questions of fact.¹⁷⁸ For instance, when reviewing a general jury verdict on obviousness—the most important requirement of patentability¹⁷⁹—the court typically divides its decision into two components. To begin with, the court “presume[s] that the jury resolved the underlying factual disputes in favor of the verdict winner and leave[s] those presumed findings undisturbed if they are supported by substantial evidence.”¹⁸⁰ The court then “examine[s] the legal conclusion [of obviousness or nonobviousness] de novo to see whether it is correct in light of the presumed jury fact findings.”¹⁸¹ When reviewing obviousness decisions by the Patent Trial and Appeal Board, the court similarly distinguishes between the underlying facts (reviewed deferentially) and the ultimate determination of obviousness (reviewed de novo).¹⁸²

This pattern of distinguishing underlying factfinding from the ul-

177. *E.g.*, *Eli Lilly & Co. v. Teva Parenteral Meds., Inc.*, 845 F.3d 1357, 1375 (Fed. Cir. 2017).

178. *See Eisenberg, supra* note 26, at 2392.

179. *See* ROBERT PATRICK MERGES & JOHN FITZGERALD DUFFY, *PATENT LAW AND POLICY* 512–13 (7th ed. 2017) (comparing nonobviousness to other validity requirements, such as novelty and utility, which it characterizes as “relatively mild”). A general jury verdict is one in which the jury simply votes for a winner (the patentee or the accused infringer) on the ground of validity in dispute, without explaining why. *See Gugliuzza, supra* note 9, at 617. A special verdict, by contrast, is one in which the jury makes findings on specific factual questions submitted to them by the judge, who then decides the legal effect of the jury’s findings. *See* FED. R. CIV. P. 49.

180. *Circuit Check Inc. v. QXQ Inc.*, 795 F.3d 1331, 1334 (Fed. Cir. 2015) (quoting *Jurgens v. McKasy*, 927 F.2d 1552, 1557 (Fed. Cir. 1991)).

181. *Id.*

182. *E.g., In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1373 (Fed. Cir. 2016) (“We review the Board’s legal conclusion of obviousness de novo, and underlying factual findings for substantial evidence.” (citing *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1280 (Fed. Cir. 2015))).

timate question of validity holds true for most patentability requirements, including eligibility,¹⁸³ enablement,¹⁸⁴ and claim definiteness.¹⁸⁵ The question of claim construction—often key to determining patentability¹⁸⁶—is likewise treated by the Federal Circuit in the same bifurcated fashion—involving *either* subsidiary facts reviewed deferentially *or* the ultimate determination of claim meaning, which is a question of law reviewed de novo.¹⁸⁷

By contrast, the Federal Circuit treats a few select grounds of patentability as presenting pure questions of fact—in significant tension with the Supreme Court’s clear holding that patent validity is ultimately a question of law.¹⁸⁸ Most notably, the Federal Circuit views anticipation—that is, lack of novelty under § 102—to be a question of fact.¹⁸⁹ The same goes for written description—the question under § 112 of whether the inventor had *actually invented* the invention claimed at the time the application was filed.¹⁹⁰ But the broader point remains: the Federal Circuit tends to classify the ultimate determination of patentability as *either* a question of law *or* a question of fact.¹⁹¹ The court leaves no room for an intermediate characterization that more accurately describes how a decisionmaker actually resolves all

183. *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1166 (Fed. Cir. 2018) (“Eligibility under 35 U.S.C. § 101 is a question of law, based on underlying facts.”).

184. *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1355 (Fed. Cir. 2012) (“Although the ultimate determination of whether one skilled in the art could make and use the claimed invention without undue experimentation is a legal one, it is based on underlying findings of fact.”).

185. *Eli Lilly & Co. v. Teva Parenteral Meds., Inc.*, 845 F.3d 1357, 1370 (Fed. Cir. 2017) (“Indefiniteness is a question of law that we review de novo . . . [W]e review subsidiary factual determinations made by the district court based on extrinsic evidence for clear error.”).

186. *See supra* note 57.

187. *Knowles Elecs. LLC v. Cirrus Logic, Inc.*, 883 F.3d 1358, 1361–62 (Fed. Cir. 2018) (“We review the [Board]’s ultimate claim construction . . . de novo. . . . When the [Board] ‘. . . consult[s] extrinsic evidence,’ such as expert testimony, dictionaries, and treatises, those underlying findings amount to factual determinations that we review for ‘substantial evidence’ . . .” (citations omitted)).

188. *Microsoft Corp. v. i4i Ltd. P’ship*, 564 U.S. 91, 96 (2011).

189. *E.g., In re Gleave*, 560 F.3d 1331, 1334–35 (Fed. Cir. 2009) (“[T]he outcome in this case depends largely on the facts. After all, anticipation is a question of fact . . .”). Oddly, the court considers certain subsidiary questions in the novelty analysis, such as whether a prior art reference was put on sale or into public use, to present questions of law based on underlying facts. For a more detailed discussion of the law-fact boundary under § 102, see Gugliuzza, *supra* note 9, at 632–35.

190. *E.g., Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1355 (Fed. Cir. 2010) (en banc) (“A determination that a patent is invalid for failure to meet the written description requirement of 35 U.S.C. § 112 ¶ 1 is a question of fact . . .” (quoting *PIN/NIP, Inc. v. Platte Chem. Co.*, 304 F.3d, 1235, 1243 (Fed. Cir. 2002))).

191. *See Eisenberg, supra* note 26, at 2392.

questions of patentability: by *applying* the law to the facts of the case—an inquiry that would conventionally be called a mixed question of law and fact.¹⁹²

Mapping the harmful effects of the Federal Circuit’s either/or approach to the law-fact distinction requires differentiating court litigation over patent validity, on the one hand, from direct judicial review of the Patent Office on the other. In court litigation, I have catalogued elsewhere how the Federal Circuit’s efforts to strictly distinguish questions of fact from questions of law have caused numerous problems.¹⁹³ To summarize just a few: They raise complicated questions about the stage of litigation at which particular issues can be resolved.¹⁹⁴ Truly legal questions, for example, can be decided on a motion to dismiss—often the very first document a defendant files in response to the plaintiff’s complaint.¹⁹⁵ But questions of fact typically cannot be resolved at that early stage.¹⁹⁶ Consequently, district courts are wildly inconsistent about whether they will entertain motions to dismiss on certain validity grounds, patent eligibility most notably.¹⁹⁷ The bright line the Federal Circuit tries to draw between law and fact also makes it tricky to decide whether a judge or jury should decide a particular issue. Questions of law are typically decided by the judge; juries only get involved when factual questions are presented.¹⁹⁸ Yet many “legal” questions of patentability (such as obviousness) are decided by juries, while other similarly legal questions of patentability (patent eligibility, most notably) are almost always decided by the

192. See Gugliuzza, *supra* note 9, at 648.

193. See *id.*

194. See *id.* at 651.

195. See FED. R. CIV. P. 12(b)(6).

196. See *Neitzke v. Williams*, 490 U.S. 319, 32–27 (1989) (“Rule 12(b)(6) authorizes a court to dismiss a claim on the basis of a dispositive issue of law. . . . Rule 12(b)(6) does not countenance . . . dismissals based on a judge’s disbelief of a complaint’s factual allegations.”). The Supreme Court’s landmark decisions in *Twombly* and *Iqbal* have muddied the waters here a bit, see generally Adam N. Steinman, *The Pleading Problem*, 62 STAN. L. REV. 1293, 1302–14 (2010) (discussing the relevant case law and its implications), but, for my purpose, it’s sufficient to note that, whatever the precise pleading standard, genuine disputes about the facts of a case typically can’t be resolved on the pleadings alone.

197. Compare *Yanbin Yu v. Apple, Inc.*, 392 F. Supp. 3d 1096, 1102 (N.D. Cal. 2019) (“The Federal Circuit has ‘repeatedly recognized that in many cases it is possible and proper to determine patent eligibility under 35 U.S.C. § 101 on a Rule 12(b)(6) motion.’” (quoting *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1373–74 (Fed. Cir. 2016)), with *Slyce Acquisition Inc. v. Syte-Visual Conception Ltd.*, No. 19-CV-00257, 2020 WL 278481, at *3 (W.D. Tex. Jan. 10, 2020) (“[R]esolving a patent’s § 101 eligibility is rarely appropriate as a Rule 12(b) motion to dismiss.”).

198. See Mark A. Lemley, *Why Do Juries Decide If Patents Are Valid?*, 99 VA. L. REV. 1673, 1690 (2013).

judge alone.¹⁹⁹ And the law-fact distinctions the Federal Circuit has tried to draw make the standards of appellate review unclear. For example, it is extremely difficult to distinguish (a) the ultimate determination of obviousness, which is supposedly reviewed *de novo* as a question of law, from (b) the underlying factual inquiries into the state of the art, the knowledge and motivations of a person of ordinary skill in the art, and secondary considerations about market demand and the failure of others, which comprise basically every legally relevant consideration in deciding whether a claimed invention would have been obvious or not.²⁰⁰

For these reasons and others, when patent validity is a disputed issue in court litigation, it would be better to simply treat it as a mixed question of law and fact, in that it requires applying legal standards to the facts of a given case.²⁰¹ Under well-established doctrines governing mixed questions, matters such as (1) the stage of litigation at which an issue can be decided, (2) by whom (the judge or the jury), and (3) under what standards of review and proof would be decided in a pragmatic, policy-driven fashion driven by considerations of institutional competence.²⁰² This functional approach would greatly reduce the significance of the formalistic—and sometimes difficult to draw—borders between questions of law and questions of fact in litigation over patent validity.²⁰³

In the separate context of judicial review of patentability determinations made by the Patent Office, this third question of law application has received little critical attention. The lack of attention is surprising because law application is the most important task in the mine-run of Patent Office disputes over patentability. Colorable disagreements about “what the law is” (the first question in the framework I have sketched in this part of the Article)²⁰⁴ certainly occur at the Patent Office. But, for most of the over 600,000 applications,²⁰⁵

199. See Gugliuzza, *supra* note 9, at 627 (citing examples).

200. For an argument criticizing the Federal Circuit’s treatment of the law-fact distinction in obviousness disputes, see Joshua L. Sohn, *Re-Thinking the “Motivation to Combine” in Patent Law*, 48 AIPLA Q.J. 1, 4 (2020) (“[T]reating motivation-to-combine as a question of fact essentially swallows up the entire obviousness analysis . . .”).

201. See Gugliuzza, *supra* note 9, at 648.

202. See *id.*

203. See *id.*

204. See *supra* Part II.A.

205. See *U.S. Patent Activity Calendar Years 1790 to the Present*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/web/offices/ac/ido/oeip/taf/h_counts.htm [<https://perma.cc/Q4Q5-VS7F>].

nearly 10,000 appeals,²⁰⁶ and almost 1,500 petitions for post-issuance review the Office considers every year, the governing doctrine is clear.²⁰⁷ Likewise, validity determinations sometimes involve purely factual disputes (the second question in the framework) about, say, when a particular prior art reference was available or what it discloses.²⁰⁸ But the relevant prior art is often documentary, and, as the saying goes, the document speaks for itself.²⁰⁹ In fact, the most widely used post-issuance proceeding at the Patent Office, *inter partes* review, permits validity challenges *only* based on documentary prior art.²¹⁰ But *application* of patent law to the evidentiary record is required in every single patentability proceeding at the Patent Office, whether it is examination in the first instance or a post-issuance review of validity.

The deference the Patent Office receives for its judgment on the ultimate question of patentability varies widely. When the Patent Office's judgment on patentability is reviewed as an invalidity defense to an infringement claim, a federal district court will, as discussed, typically require the challenger to prove its contention of invalidity by clear and convincing evidence²¹¹—a standard that provides significant deference to the examiner's initial determination of patentability. When the Federal Circuit reviews the Patent Office on a direct appeal, however, the Office receives less deference. The Federal Cir-

206. See *Appeal and Interference Statistics*, U.S. PAT. & TRADEMARK OFF. (Aug. 31, 2021), https://www.uspto.gov/sites/default/files/documents/appeal_and_interference_statistics_august2021.pdf [<https://perma.cc/S5HV-2M7E>].

207. Indeed, when the Patent Office adopts a controversial view about the substance of patent law, the Office's views are often challenged not in the course of the internal agency proceedings about the patentability of a particular invention but in separate court litigation under the Administrative Procedure Act. See, e.g., *Cooper Techs. Co. v. Dudas*, 536 F.3d 1330, 1334 (Fed. Cir. 2008) (APA challenge to a Patent Office rule about which patents are subject to *inter partes* reexamination); *Animal Legal Def. Fund v. Quigg*, 932 F.2d 920, 922 (Fed. Cir. 1991) (APA challenge to a Patent Office rule permitting patents on "non-naturally occurring, non-human multicellular organisms").

208. See, e.g., *Acoustic Tech., Inc. v. Itron Networked Sols., Inc.*, 949 F.3d 1366, 1373 (Fed. Cir. 2020) (affirming, as supported by substantial evidence, a Board determination that various prior art references disclosed particular limitations of the relevant patent).

209. See Joshua L. Sohn, *Reassessing the Role of Trial in Patent Litigation*, 27 FED. CIR. B.J. 187, 210 (2018) ("[T]here often is no dispute over the operation of the prior art for purposes of invalidity. Instead, the relevant invalidity question is often whether this undisputed prior art functionality meets the claim language.").

210. See 35 U.S.C. § 311(b) (permitting challenges "only on the basis of prior art consisting of patents or printed publications").

211. See *supra* Part I.B.1.

cuit, just like it does when reviewing district court rulings on patentability, distinguishes between underlying questions of fact, which are reviewed for substantial evidence, and the ultimate question of patentability, which is reviewed *de novo*—except for the grounds of patentability, such as novelty and written description, that the court has coded as purely factual.²¹²

But there is a strong argument that the Federal Circuit should rarely—if ever—conduct *de novo* review on a direct appeal from a Patent Office decision about the patentability of a particular invention. In that context, the decision under review comes not from an individual examiner, but from the administrative patent judges of the Patent Trial and Appeal Board. Not only is a multi-member panel of the Board better suited to make a thorough analysis of patentability than a time-pressed individual examiner, the Board has expertise both in the relevant law and pertinent technology. And when the validity question is presented in one of the post-issuance review proceedings created by the AIA, the Board’s determination is based on a record compiled by highly motivated adversaries who have extensive procedural opportunities to make their case.²¹³

A *de novo* standard of appellate review remains squarely on the books for Federal Circuit review of the Patent Office’s rulings on the ultimate, legal question of patentability. In fact, the Supreme Court, in one of its most recent encounters with patent law, observed with seeming approval that “[t]he Federal Circuit reviews the PTAB’s application of patentability standards *de novo*.”²¹⁴ But the practical considerations just discussed might explain why Federal Circuit review of the Patent Office, in practice, sometimes looks more deferential than the law on the books suggests it should be. As noted, one of the key grounds of invalidity that can be raised in *inter partes* review, anticipation, has been coded by the Federal Circuit—in tension with Supreme Court precedent—as ultimately presenting a question of fact²¹⁵ and hence subject to deferential review. Moreover, recent surveys of the Federal Circuit’s case law on the question of obviousness—the other ground of validity that can be raised in *inter partes* review—have concluded that the court has begun to treat the question as es-

212. See *supra* notes 187–89 and accompanying text.

213. See *supra* notes 98–102.

214. *United States v. Arthrex, Inc.*, 141 S. Ct. 1970, 1977 (2021).

215. See *Knowles Elecs. LLC v. Cirrus Logic, Inc.*, 883 F.3d 1358, 1361–62 (Fed. Cir. 2018).

entially factual by reviewing the Patent Trial and Appeal Board's ultimate conclusion with deference.²¹⁶ Indeed, a few recent Federal Circuit decisions have explicitly stated that obviousness is a mixed question of law and fact,²¹⁷ meaning that a more deferential standard of review could apply.

All that said, it remains firmly established in Supreme Court precedent that patent validity is ultimately a question of law, so the Federal Circuit is justified in engaging in de novo review of the Patent Office any time it wishes to do so.²¹⁸ And, to be clear, the Federal Circuit still often *does* engage in de novo review of the Patent Office's ultimate determination of patent validity, particularly in disputes over obviousness.²¹⁹ Still other Federal Circuit opinions on obviousness try to have it both ways by characterizing mistaken district court or Patent Office fact "finding[s]" (presumably reviewed under a deferential

216. See Ted L. Field, *Obviousness as Fact: The Issue of Obviousness in Patent Law Should Be a Question of Fact Reviewed with Appropriate Deference*, 27 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 555, 607–08 (2017) (reviewing twenty-four Federal Circuit opinions from 2013 through 2015 in which juries decided the issue of obviousness and concluding that, in twenty-one of those opinions, "the district courts and the Federal Circuit effectively treated the ultimate issue of obviousness as a question of fact"); Jason Rantanen, *The Federal Circuit's New Obviousness Jurisprudence: An Empirical Study*, 16 STAN. TECH. L. REV. 709, 713 (2013) (finding that, after the Supreme Court's decision in *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), the Federal Circuit's affirmance rates indicate that the court "is granting greater deference to lower tribunal determinations that patents are obvious"); see also *Corning v. Fast Felt Corp.*, 873 F.3d 896, 902 (Fed. Cir. 2017) (listing basically the entire obviousness inquiry as underlying issues of fact); Eisenberg, *supra* note 26, at 2402 ("[The Federal Circuit's] purported de novo review has become increasingly perfunctory, at least when the court finds sufficient evidence in the record to support the subsidiary findings. It is the evidentiary record behind these findings, not legal analysis of the conclusion, that dominates the decisions.").

217. See, e.g., *Hologic, Inc. v. Smith & Nephew, Inc.*, 884 F.3d 1357, 1361 (Fed. Cir. 2018). The first Federal Circuit case to characterize obviousness as a mixed question appears to be *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1356 (Fed. Cir. 2012).

218. Indeed, even in the opinions stating that obviousness is a mixed question of law and fact, the Federal Circuit applies a de novo standard of review to the ultimate determination of patentability. See, e.g., *Hologic*, 884 F.3d at 1361 ("We review the Board's ultimate obviousness determination de novo . . ."); accord *Kinetic Concepts*, 688 F.3d at 1357.

219. See, e.g., *Uber Techs., Inc. v. X One, Inc.*, 957 F.3d 1334, 1341 (Fed. Cir. 2020) (reversing a Board decision of nonobviousness as based on a "legal error" in reviewing the relevant prior art).

standard) as “legal error[s]” (presumably subject to de novo review)²²⁰ or by attempting to apply both de novo and deferential standards seemingly simultaneously.²²¹ As for anticipation, as noted, the characteristics of the relevant prior art references—because they are documents—are often not genuinely disputed.²²² This is particularly true in inter partes review, where the Board can consider *only* documentary prior art.²²³ Thus, the key question in many anticipation disputes before the Patent Office is one of claim construction—is the patent broad enough to encompass the (undisputed) prior art reference and hence be anticipated by it?²²⁴ And claim construction is a question of law the Federal Circuit almost always reviews de novo, even in appeals from the Patent Trial and Appeal Board.²²⁵

All of this might be enough to make your head spin. But the most important takeaways can be stated simply enough: The third and final question in the validity analysis—the ultimate determination of patentability—is ostensibly a question of law.²²⁶ Questions of law are usually reviewed de novo on appeal. But, in court litigation over patentability, the presumption of validity provides the Patent Office’s initial determination of patentability with deference, though the precise amount of deference varies from district court to the Federal Circuit and from one Federal Circuit panel to another. Likewise, when the Federal Circuit directly reviews the Patent Office (for example, in an appeal from a Patent Trial and Appeal Board decision in inter partes review), the Patent Office’s supposedly legal determination of patent

220. *E.g.*, *Raytheon Techs. Corp. v. Gen. Elec. Co.*, 993 F.3d 1374, 1382 (Fed. Cir. 2021) (“[W]e conclude that [the patent challenger] failed to provide an evidence-based case for how the turbofan engine claimed in the [patent-in-suit] is enabled by Knip’s disclosure. Thus, the Board’s *finding* that Knip is ‘enabling’ [and therefore sufficient to support a defense of obviousness] is *legal error*.” (emphasis added)).

221. *E.g.*, *Becton, Dickinson & Co. v. Baxter Corp.* Englewood, 998 F.3d 1337, 1344 (Fed. Cir. 2021) (“We conclude that the highlighting limitation would have been obvious to one of ordinary skill in the art in view of [the prior art references]. The Board’s determination that the highlighting limitation is not obvious over [the prior art references] is not supported by substantial evidence.”).

222. *See* Sohn, *supra* note 209.

223. 35 U.S.C. § 311(b).

224. *See* Sohn, *supra* note 209, at 210; *see also* Eisenberg, *supra* note 26, at 2414 (“When the Federal Circuit reverses a PTAB claim interpretation, reversal of the validity ruling often follows, even when the validity ruling was based on factual findings entitled to deferential review (such as lack of novelty).”).

225. Though the Federal Circuit defers on any factfinding involving evidence extrinsic to the patent and its prosecution history, Federal Circuit claim construction decisions hinging on extrinsic evidence are few and far between. *See* Gugliuzza, *supra* note 154, at 625 (discussing examples).

226. *See* MERGES & DUFFY, *supra* note 179, at 913 (“Most basic requirements of patent validity have been held to be questions of law.”).

validity sometimes gets deference and sometimes does not. Patent law's current deference regime, then, is indeterminate at best. At worst, it makes for bad innovation policy, as the next part of the Article explains.

III. THE DEFERENCE PARADOX

Patent law contains a deference paradox. Decisions that deserve little deference—such as the decision of a single examiner to grant a patent—get a lot of it. But decisions seemingly worthy of at least some deference—such as a Patent Trial and Appeal Board decision in an inter partes review—can be, and often are, reviewed de novo by the Federal Circuit. This part of the Article describes patent law's deference paradox in more detail before proposing a solution in Part IV.

A. DEFERENCE WHERE NO DEFERENCE IS WARRANTED

In the entire patent system, the patentability determination that gets the most deference is the decision of a single examiner to grant a patent when that decision is evaluated in district court litigation, typically as a defense to an infringement suit. That deference stems from the statutory presumption of patent validity, which requires a patent challenger to prove invalidity by clear and convincing evidence.

The presumption of validity has been extensively criticized in light of the realities of the modern patent system, so I will hit only the highlights. For starters, the application process is stacked in the applicant's favor. As the Federal Circuit has explained: "[T]he examiner bears the initial burden . . . of presenting a prima facie case of unpatentability. . . . If examination at the initial stage does not produce a prima facie case of unpatentability, then without more the applicant is entitled to grant of the patent."²²⁷ And the examiner has little time to carry the burden of showing unpatentability: The average patent application receives, in total, only about nineteen hours of attention from an examiner.²²⁸

Moreover, if the examiner decides to grant a patent, there is no one to appeal, which further skews the law in favor of patentability and outcomes in favor of grants.²²⁹ Ultimately, the Patent Office issues

227. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

228. See Michael D. Frakes & Melissa F. Wasserman, *Is the Time Allocated to Review Patent Applications Inducing Examiners to Grant Invalid Patents?*, 99 REV. ECON. & STAT. 550, 552 (2017).

229. Jonathan Masur, *Patent Inflation*, 121 YALE L.J. 470, 474 (2011); see also, Wasserman, *supra* note 20, at 385.

a patent to about 70% of applicants.²³⁰ Yet over 40% of issued patents whose validity is challenged in court are found to be invalid.²³¹ Of course, there are selection effects underlying judicial invalidation rates; many inventions that receive patents surely *do* deserve them. But the point here is that there is no reason to presume the Patent Office *always* gets it right, as the presumption of validity effectively does.

The questionable nature of the presumption of validity is put in stark relief by considering the sorts of decisions about patentability that can be subjected to de novo review when they are appealed to the Federal Circuit.

B. DE NOVO REVIEW WHERE DEFERENCE IS WARRANTED

Under current law, two types of patentability decisions are, or at least can be, reviewed de novo by the Federal Circuit. First are decisions by district courts on the ultimate question of patent validity, except for the few grounds, such as anticipation and written description, that the Federal Circuit has coded as entirely factual. And second are decisions by the Patent Trial and Appeal Board, both in appeals from application denials and in post-issuance review proceedings, except, again, for the grounds of validity the Federal Circuit treats as presenting pure questions of fact. Yet the district court and Patent Office decisions reviewed in those appeals are far more worthy of deference than the individual examiner decisions that actually *do* get deference in court litigation under the statutory presumption of validity.

1. District Court Validity Decisions

Deciding the validity of a patent on a particular invention is a case-specific determination that turns largely on the evidence in the dispute at hand. For a district court to determine, say, obviousness, the decisionmaker (be it a judge or jury) must consider the scope of the claimed invention, compare that invention to the prior art, consider any motivation to combine the prior art references, and weigh secondary considerations about commercial success and others' efforts to develop the claimed invention.²³² It then must balance all those considerations to make a judgment about patentability that is

230. Mark A. Lemley & Bhaven Sampat, *Examining Patent Examination*, 2010 STAN. TECH. L. REV. 2, ¶ 8.

231. John R. Allison, Mark A. Lemley & David L. Schwartz, *Understanding the Realities of Modern Patent Litigation*, 92 TEX. L. REV. 1769, 1787 (2014) (reporting an invalidity rate of 42.4%, relying on data from cases filed in 2008 and 2009).

232. See *supra* notes 44–46 and accompanying text.

particular to the parties and case at hand.²³³

Other grounds of patentability require similarly fact-intensive, case-specific analyses. Patent eligibility, for instance, turns on determinations of whether an invention covers a long-standing business practice, something that occurs in nature, or covers activity that is conventional in the field. And enablement and indefiniteness both turn on determinations about what a person of ordinary skill in the art would understand from reading the patent.²³⁴

Patent validity is, in other words, precisely the sort of decision—one where “[t]he court takes a raft of case-specific historical facts, considers them as a whole, [and] balances them one against another”—that the Supreme Court has held should be reviewed deferentially when a court of appeals reviews a district court.²³⁵

And for good reason: deciding patentability requires the decisionmaker to become enmeshed in an often-complex evidentiary record; there’s no reason to think that a panel of appellate judges would do that task better than a district judge who is intimately familiar with the case. Though the Federal Circuit has expertise in patent *law*, no judge has expertise in all the areas of technology that patent disputes can implicate.²³⁶ Indeed, several Federal Circuit judges have no background at all in patent law or science and technology.²³⁷

Yet appellate deference to district court rulings on patentability is the exception, not the rule. District courts get deference on underlying factual determinations and on a few specific grounds of patentability that the Federal Circuit has classified as factual. But the ultimate question of validity is a question of law, often reviewed *de novo* by the Federal Circuit on appeals from district courts.

233. See Dmitry Karshtedt, *Nonobviousness: Before and After*, 106 IOWA L. REV. 1609, 1639 (2021) (discussing inconsistencies in Federal Circuit law about how these matters are determined and weighed).

234. On the fact-driven nature of most patentability questions, see Gugliuzza, *supra* note 9, at 650.

235. U.S. Bank Nat’l Ass’n *ex rel.* CWCapital Asset Mgmt. LLC v. Vill. at Lakeridge, LLC, 138 S. Ct. 960, 968 (2018) (applying a deferential standard of review to a district judge’s decision on a mixed question of law and fact); see also Adam N. Steinman, *Appellate Courts and Civil Juries*, 2021 WIS. L. REV. 1, 4 (2021) (arguing that, when a jury decides a mixed question of law and fact, Rule 50 of the Federal Rules of Civil Procedure “requires deferential appellate review”).

236. See Rai, *supra* note 2, at 888.

237. See Paul R. Gugliuzza & Rachel Rebouché, *Gender Inequality in Patent Litigation*, 100 N.C. L. REV. (forthcoming 2022) (manuscript 26–29), <https://ssrn.com/abstract=3871975>.

2. Patent Trial and Appeal Board Decisions

De novo review of patentability determinations is even stranger when the Federal Circuit is directly reviewing a decision of the Patent Trial and Appeal Board, whether the Board's decision is an appeal from the rejection of a patent application or a reexamination decision or from the Board's decision after a trial in a post-issuance review proceeding, such as inter partes review.²³⁸ Not only are the Patent Office decisions under review case-specific and evidence-driven, they are made by panels of administrative patent judges—a group of Patent Office employees with expertise in both patent law and, often, the particular technology at hand.²³⁹

During post-issuance review, the Board considers evidentiary submissions, including witness testimony,²⁴⁰ presented by highly motivated parties—a patentee concerned about seeing its patent canceled and a petitioner who is usually a defendant in a simultaneous infringement suit.²⁴¹ The Federal Rules of Evidence apply to the parties' submissions.²⁴² A panel of the Board then makes a collective decision about patentability and issues its judgment in the form of a reasoned, written opinion²⁴³ that, in some circumstances, will be treated as binding precedent by future panels of the Board.²⁴⁴

Yet current doctrine treats the Board's ultimate decision on patentability as a question of law reviewable de novo, except for the few grounds of validity the Federal Circuit has said are factual. Perversely, as Rebecca Eisenberg has pointed out, the Board's obviousness rulings, in particular, are subject to *more rigorous* appellate review than jury verdicts. Juries usually decide obviousness in a general verdict,

238. See Eisenberg, *supra* note 26, at 2395 (“Court-agency review has generally been more deferential than court-court review.” (citing Bernard Schwartz, *Mixed Questions of Law and Fact and the Administrative Procedure Act*, 19 FORDHAM L. REV. 73 (1950))).

239. See *supra* note 16 and accompanying text.

240. 37 C.F.R. § 42.53 (2020).

241. See *supra* Part I.B.2 (explaining post-issuance review proceedings); see also *supra* note 84.

242. 37 C.F.R. § 42.62 (2020).

243. See 35 U.S.C. §§ 318(a), 328(a).

244. Specifically, a Board opinion can be designated as precedential by the Director of the Patent Office or the Director can convene a Precedential Opinion Panel to rehear a dispute and issue a precedential opinion. See STANDARD OPERATING PROC. 2 (rev. 10), PAT. TRIAL AND APPEAL BD., <https://www.uspto.gov/sites/default/files/documents/SOP2%20R10%20FINAL.pdf> [<https://perma.cc/9GKJ-6N6U>]. See generally Christopher J. Walker & Melissa F. Wasserman, *The New World of Agency Adjudication*, 107 CALIF. L. REV. 141, 196 (2019) (observing that these procedures “empower the Director to better shape policy-making and consistency in PTAB adjudication”).

simply voting for the patentee or accused infringer.²⁴⁵ Accordingly, the Federal Circuit, on appeal, “presume[s]” the jury resolved factual disputes in favor of the verdict winner.²⁴⁶ But the Board—unlike a jury—“has to explain the evidentiary basis for its findings and the reasoning behind its conclusions,” which makes reversal “much easier” because the Federal Circuit can parse and disagree with the Board’s specific findings and reasoning.²⁴⁷

IV. FIXING THE DEFERENCE PARADOX

Two law reform steps would fix patent law’s deference paradox: (1) modifying the presumption of patent validity that applies in court litigation and (2) clarifying the deference due to individual patentability determinations made by the Patent Trial and Appeal Board when those determinations are reviewed by the Federal Circuit.

A. MODIFYING THE PRESUMPTION OF VALIDITY

First, the statutory presumption of patentability should be modified or eliminated. Most simply, Congress could repeal the presumption, leaving all invalidity challenges subject to the preponderance of the evidence standard of proof that applies to most issues in civil litigation. But it does not seem likely that the current Congress, which is increasingly polarized on patent issues,²⁴⁸ would enact such a reform. Moreover, adopting a uniformly lower standard of proof for all district court validity challenges might be *too* simple of a solution. Though many examiner allowances do not entail particularly rigorous analyses of patentability, for some patents, examination might have been contentious, appeals might have resulted, and so on. Those patents, where the Patent Office has already taken a close look at patentability, arguably deserve some deference when their validity is challenged in subsequent litigation.

Importantly, current law provides a better solution than simply applying a preponderance of the evidence standard across the board to all district court validity challenges. The Supreme Court in *i4i* made clear that, even under the clear and convincing evidence standard,

245. For an example verdict form, see Gugliuzza, *supra* note 9, at 618. On general versus special verdicts, see *supra* note 179.

246. See, e.g., *Circuit Check Inc. v. QXQ Inc.*, 795 F.3d 1331, 1334 (Fed. Cir. 2015).

247. Eisenberg, *supra* note 26, at 2404; see also 35 U.S.C. § 318(a) (requiring the Board to issue a “final written decision” at the conclusion of an inter partes review).

248. See Gene Quinn, *Senator Thom Tillis: If IP Stakeholders Can’t Find Consensus, Congress Can’t Help*, IP WATCHDOG (May 5, 2020), <https://www.ipwatchdog.com/2020/05/05/senator-thom-tillis-ip-stakeholders-cant-find-consensus-congress-cant-help/id=121262> [https://perma.cc/HH3V-395S].

when a key piece of prior art was not considered by the examiner, the court is free to give a jury instruction to that effect.²⁴⁹ Experimental evidence suggests that those instructions have an impact: David Schwartz and Chris Seaman found that, based on the rates of subjects finding a patent invalid in a hypothetical patent infringement case, “the addition of an *i4i*-type instruction to the clear and convincing standard may effectively result in a standard of proof that, at least in jurors’ views, is equivalent to the preponderance standard explicitly rejected by the Court in *i4i*.”²⁵⁰

But model jury instructions for patent cases, when discussing the examination process, sometimes give the impression that examination entails an extensive, prolonged look at the claimed invention’s patentability. For instance, the American Intellectual Property Law Association’s model instructions emphasize that the examination process “may go back and forth between the Patent Examiner and the applicant for several months or even years until the Patent Examiner is satisfied that the application and claims are patentable.”²⁵¹ In reality, however, the examiner will not spend months or days on a particular application, as the model instruction implies; on average, a patent examiner spends nineteen hours total working on an application.²⁵²

A better jury instruction would emphasize precisely that: though examiners have some expertise in the relevant field of technology and the legal standards of patentability, the examination process is imperfect due to time, resource, and budget constraints; it is legally slanted in favor of granting the patent; and, accordingly, the examiner’s deci-

249. See AM. INTELL. PROP. LAW ASS’N, *supra* note 69, § 5.1 (“It may . . . be appropriate to instruct the jury . . . ‘to evaluate whether the evidence before it is materially new [as opposed to previously considered during examination by the PTO], and if so, to consider that fact when determining whether an invalidity defense has been proven by clear and convincing evidence.’” (quoting *Microsoft Corp. v. i4i Ltd. P’ship*, 564 U.S. 91, 110–11 (2011) (third alteration in original))).

250. David L. Schwartz & Christopher B. Seaman, *Standards of Proof in Civil Litigation: An Experiment from Patent Law*, 26 HARV. J. L. & TECH. 429, 432 (2013).

251. AM. INTELL. PROP. LAW ASS’N, *supra* note 69, § 1.1; see also FED. CIR. BAR ASS’N, *supra* note 69, § A.1 (noting that the examination process “may go back and forth for some time”); MODEL PATENT JURY INSTRUCTIONS FOR THE NORTHERN DISTRICT OF CALIFORNIA, *supra* note 69, § A.1 (same).

252. See Frakes & Wassermann, *supra* note 228, at 552. For a concise description of the disconnect between the presumption of validity and the reality of patent examination, see Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1528 (2001) (“The presumption of validity has little if any basis in fact. Examiners do not in fact spend long hours poring over a patent application or the prior art. They spend very little time, and far less than either the lawyers or the triers of fact in infringement cases. They regularly miss the most relevant prior art.”).

sion should only get weight to the extent it considered arguments being raised again in litigation. There is certainly a basis in administrative law for giving such an instruction. As Stuart Benjamin and Arti Rai have noted, the Supreme Court's decision in *Dickinson v. Zurko*, which held that the standards of judicial review in the Administrative Procedure Act apply in patent cases,²⁵³ indicates that courts can "take into account an agency's expertise and the structure of an agency's processes in determining how much deference is owed to a particular decision."²⁵⁴

Interestingly, the Federal Circuit Bar Association's model jury instructions contain a passage that could be leveraged to better calibrate the standard of proving patent invalidity to the reality of patent examination. It reads:

The fact that the PTO grants a patent does not necessarily mean that any invention claimed in the patent, in fact, deserves the protection of a patent. For example, the PTO may not have had available to it all other prior art that will be presented to you. In addition, there is the possibility that mistakes were made or that information was overlooked. Examiners have a lot of work to do and no process is perfect. Also, unlike a court proceeding, patent prosecution takes place without input from those who are later alleged to infringe the patent.²⁵⁵

Currently, however, that passage is buried in a long introductory instruction about "What a Patent Is and How One Is Obtained."²⁵⁶ But it could easily be relocated to introduce or frame the invalidity issue and to be more clearly juxtaposed with the presumption of validity—which the instruction undercuts.

B. DEFERENCE TO PATENT TRIAL AND APPEAL BOARD PATENTABILITY RULINGS

The second step of fixing patent law's deference paradox would be for the Federal Circuit, when directly reviewing the Patent Office, to give deference to the agency's ultimate determination of patentability rather than reviewing it *de novo*, as current law permits. How

253. 527 U.S. 150, 150 (1999).

254. See Benjamin & Rai, *supra* note 25, at 319; see also *Dickinson*, 527 U.S. at 163 (1999) (discussing the process of court review of agency factfinding and noting the "importance of case-specific factors," including a finding's "dependence upon agency expertise" and "the presence of internal agency review"). For a similar argument in favor of context-specific standards of review when appellate courts are reviewing trial courts (not necessarily agencies), see Adam N. Steinman, *Rethinking Standards of Appellate Review*, 96 IND. L.J. 1, 6 (2020) ("[T]he way to optimize systemic accuracy is via the . . . targeted, back-end question of whether the appellate court or the trial court is more likely to be correct *in this particular case*.").

255. FED. CIR. BAR ASS'N, *supra* note 69, § A.1.

256. *Id.*

much deference should the circuit give to the Patent Office? Some observers have suggested that the Patent Trial and Appeal Board should get *Chevron* deference for its pronouncements about patent law and, because modern administrative law typically does not distinguish between pure questions of law and the application of law to fact,²⁵⁷ for its individual patentability determinations.²⁵⁸ But *Chevron*—which instructs that “a court may not substitute its own *construction* of a statutory provision for a reasonable *interpretation* made by the administrator of an agency”²⁵⁹—is an awkward fit for questions that require applying settled law to the facts of a particular dispute, such as a determination about the patentability of a specific invention.²⁶⁰

The Supreme Court’s 2001 decision in *United States v. Mead Corp.* provides a better illustration than *Chevron* of the type of deference courts ought to give individual patentability determinations made by the Patent Office.²⁶¹ *Mead* involved a “ruling letter” issued by the U.S. Customs Service, which determined that three-ring day planners imported by Mead were “bound diaries” under the Harmonized Tariff Schedule of the United States and hence, under that schedule, subject to a four percent tariff.²⁶² Under an alternative classification the Customs Service had applied for several years prior, the planners were subject to no tariff at all.²⁶³ On appeal from the Court of International Trade, the Federal Circuit held that the Customs Service’s ruling letter

257. See David J. Barron & Elena Kagan, *Chevron’s Nondelegation Doctrine*, 2001 SUP. CT. REV. 201, 226 (2001).

258. See *supra* notes 134–38 and accompanying text.

259. *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 844 (1984) (emphasis added).

260. Even under an understanding that *Chevron* mandates judicial deference to agency *policy* determinations, see Jack M. Beermann, *Chevron Is a Rorschach Test Ink Blot*, 32 J.L. & POL. 305, 307 (2017), the doctrine would remain an awkward fit for routine agency actions applying settled law to particular sets of facts. And though the distinction between pure questions of law and application of law to fact will not always be clear, see Sidney A. Shapiro & Richard E. Levy, *Judicial Incentives and Indeterminacy in Substantive Review of Administrative Decisions*, 44 DUKE L.J. 1051, 1068 (1995), for the vast majority of the hundreds of thousands of patentability determinations the Patent Office makes every year, the basic legal principles are not subject to dispute—the only issue is whether the claimed invention satisfies them. Accordingly, though modern administrative law attaches little significance to the distinction between pure questions of law and mixed questions of law and fact, *c.f.* *NLRB v. Hearst Publ’ns, Inc.*, 322 U.S. 111, 131 (1944) (holding, in a pre-*Chevron* decision, that the agency’s application of law to factual determinations should be accepted if it has “warrant in the record” and a “reasonable” legal basis), the distinction may remain useful in certain high-volume settings like the Patent Office, where the distinction is usually easy to draw.

261. 533 U.S. 218 (2001).

262. *Id.* at 224–25.

263. *Id.* at 218.

deserved no deference whatsoever because ruling letters were not binding “beyond the specific case under review,” “issue from many locations,” and “need not be published.”²⁶⁴

The Supreme Court granted certiorari to, in the Court’s words, “consider the limits of *Chevron* deference owed to administrative practice in applying a statute.”²⁶⁵ Put slightly differently, the question before the Court was whether, and, if so, to what extent, an agency deserves deference when it *applies* governing law to the facts of a particular case.²⁶⁶ The analogy to patentability determinations is plain: When the Patent Office decides whether an invention is patentable, that is an “administrative practice . . . applying a statute”—the Patent Act.²⁶⁷

In *Mead*, the Supreme Court held that the Customs Service’s ruling letter was not entitled to *Chevron* deference for two reasons. First, the statute authorizing the Customs Service to make classification rulings did not indicate that those rulings should have legal effect beyond the particular dispute before the agency.²⁶⁸ And, second, the procedures used by the Customs Service gave little indication that the agency had “a lawmaking pretense in mind when it undertook to make classifications like” the one at hand.²⁶⁹ The Court noted that not only does the Customs Service “not generally engage in notice-and-comment practice when issuing” ruling letters, “46 different Customs offices issue 10,000 to 15,000 [rulings] each year.”²⁷⁰ “Any suggestion that rulings intended to have the force of law are being churned out at a rate of 10,000 a year at an agency’s 46 scattered offices,” the Court determined, “is simply self-refuting.”²⁷¹

The analogy to patentability decisions is again hard to miss. At the Patent Office—which, in addition to its headquarters in Alexandria, Virginia, has in the past five years opened satellite offices in four other cities²⁷²—over 8,000 examiners process hundreds of thousands

264. *Id.* at 226.

265. *Id.*

266. *See id.*

267. *Id.*

268. *Id.* at 231–32.

269. *Id.* at 233.

270. *Id.*

271. *Id.*

272. Dallas, Denver, Detroit, and San Jose. *See USPTO Locations*, U.S. PAT. & TRADE-MARK OFF., <https://www.uspto.gov/about-us/uspto-office-locations> [<https://perma.cc/2QFV-DVMM>].

of patent applications each year,²⁷³ making thousands of patentability rulings every day. Given those circumstances, an individual examiner's patentability decision plainly does not warrant *Chevron* deference.²⁷⁴ Hence, the proposed jury instruction sketched above, which would highlight the imperfections and limitations of the examination process.²⁷⁵

Decisions by the Patent Trial and Appeal Board, as opposed to individual examiners, present a closer call. Though Board decisions are made by a panel of three administrative patent judges²⁷⁶ in a reasoned, written opinion, they are still relatively high volume: the Board resolves about 1,500 petitions for post-issuance review each year,²⁷⁷ and the Board consists of about 300 different judges. Those facets of Board decision-making (among other considerations) led John Golden to conclude that, even if the Patent Office generally had "*Chevron*-level authority" over "question[s] of statutory interpretation," individual Board decisions are not "proper vehicles for the exercise of such authority."²⁷⁸

Importantly, however, the Supreme Court in *Mead* noted that just because the Customs Service's ruling letters did not deserve *Chevron* deference that did not mean the letters deserved no deference at all.²⁷⁹ Rather, the Court emphasized, "*Chevron* did nothing to eliminate *Skidmore*'s holding that an agency's interpretation may merit some deference whatever its form, given the 'specialized expertise and broader investigations and information' available to the agency" as compared to the reviewing court.²⁸⁰ "There is room," the Court continued, "at least to raise a *Skidmore* claim here, where the regulatory scheme is

273. *Performance and Accountability Report: Fiscal Year 2018*, U.S. PAT. & TRADE-MARK OFF. 12, 32 (Nov. 9, 2018), <https://www.uspto.gov/sites/default/files/documents/USPTOFY18PAR.pdf> [<https://perma.cc/B25J-JZ66>].

274. For an analogous argument against *Chevron* deference in the similarly high-volume area of immigration adjudication, see Shoba Sivaprasad Wadhia & Christopher J. Walker, *The Case Against Chevron Deference in Immigration Adjudication*, 70 DUKE L.J. 1197, 1202 (2021) ("*Chevron* deference should apply in the immigration context only to agency statutory interpretations promulgated through notice-and-comment rulemaking. The less deferential *Skidmore* standard should govern interpretations advanced in immigration adjudication.>").

275. See FED. CIR. BAR ASS'N, *supra* note 69, at 3; see also *supra* note 255 and accompanying text.

276. 35 U.S.C. § 6(c) ("Each appeal . . . shall be heard by at least 3 members of the Patent Trial and Appeal Board . . .").

277. U.S. PAT. & TRADEMARK OFF., *supra* note 29, at 5–6.

278. Golden, *supra* note 24, at 1683–84.

279. *United States v. Mead*, 533 U.S. 218, 234 (2001).

280. *Id.* at 234 (quoting *Skidmore v. Swift & Co.*, 323 U.S. 134, 139 (1994)).

highly detailed, and Customs can bring the benefit of specialized experience to bear on the subtle questions in this case: whether the daily planner . . . falls under ‘diaries,’” under the Harmonized Tariff Schedule, “and whether a planner with a ring binding should qualify as ‘bound.’”²⁸¹ “Such a ruling,” the Court concluded, “may surely claim the merit of its writer’s thoroughness, logic, and expertness, its fit with prior interpretations, and any other sources of weight.”²⁸²

The analogy to Patent Office patentability rulings is, again, plain. A patentability determination is a technologically complex inquiry made by a decisionmaker (or decisionmakers) with specialized expertise. That decision merits deference on judicial review depending on the thoroughness of the decision—ex parte examination versus an adversarial proceeding at the Patent Trial and Appeal Board—and the identity of the decisionmaker—a single examiner versus a panel of the Board.

Skidmore has, to be sure, been criticized as unclear and uncertain.²⁸³ But applying *Mead* in the specific context of Patent Office review suggests how *Skidmore*—seemingly malleable at first glance—could be applied in a reasonably predictable way. The decision to grant a patent—made by an individual examiner in an ex parte proceeding with no appellate review (either internal to the agency or in court) would in the usual case merit no deference under *Skidmore*.²⁸⁴ As noted above, there may be exceptional circumstances in which examination was hotly contested and so the initial decision to issue the patent is more thorough than usual.²⁸⁵ But, in general, when the issue

281. *Id.* at 235.

282. *Id.*

283. See, e.g., *Mead*, 533 U.S. at 241 (Scalia, J., dissenting) (“The Court has largely replaced *Chevron* . . . with that test most beloved by a court unwilling to be held to rules (and most feared by litigants who want to know what to expect): th’ol’ ‘totality of the circumstances’ test.”).

284. See Benjamin & Rai, *supra* note 24, at 299. Though I use the term *Skidmore* “deference” here, Peter Strauss has suggested that, at least in the context of agency pronouncements about “what the law is,” the term *Skidmore* “weight” is more apt. See Peter L. Strauss, “Deference” Is Too Confusing—Let’s Call Them “Chevron Space” and “Skidmore Weight”, 112 COLUM. L. REV. 1143, 1145 (2012) (“‘Skidmore weight’ addresses the possibility that an agency’s view on a given statutory question may in itself warrant respect by judges who themselves have ultimate interpretive authority.”). For my purpose—which focuses on law application rather than law declaration—the precise terminology (deference versus weight) is less important than the basic point that, rather than *automatically* reviewing the Board’s patentability decisions de novo, or *automatically* applying a clear-and-convincing evidence standard of proof of the defense of patent invalidity, the courts should take into account—i.e., give weight to—the specific context in which the Patent Office issued its initial decision.

285. See *supra* Part IV.A.

of patent validity is raised in infringement litigation, the district court should consider the issue *de novo*, with deference given only when the examiner considered the same arguments raised in later litigation. Again, the jury instruction discussed above reflects precisely this view of deference in infringement litigation.

Applying *Mead* and *Skidmore* when the Federal Circuit is directly reviewing the Patent Office might require more nuance depending on whether the case is an appeal of a rejection in initial examination or of a Board decision in post-issuance review. Patent Office rejections—unlike grants—are subject to an appeal process within the agency, including review by the Patent Trial and Appeal Board.²⁸⁶ And the process is adversarial: during the appeal, the examiner usually files a brief defending the rejection²⁸⁷ and the Board conducts an oral hearing if the applicant requests one.²⁸⁸ Thus, a Board decision in an appeal in examination is usually more thorough and considered than an individual examiner's decision to grant a patent, so it should receive more deference on judicial review. But appeal proceedings before the Board are not as elaborate or adversarial as an AIA trial, where discovery is available,²⁸⁹ testimony and extrinsic evidence can be submitted in accordance with the Federal Rules of Evidence,²⁹⁰ and the challenger is highly motivated because it is likely fending off a simultaneous infringement suit.

In the end, however, the Board's decision in each proceeding is a collaborative judgment by a panel of experts issued at the end of a fairly elaborate adjudicative process—not the sort of agency decision we would typically expect to see subjected to *de novo* review, as the Board's validity determinations can be under current law. Rather, in most cases, the Board's decision on the ultimate question of patentability should be reviewed with deference under the substantial evidence standard that applies to “on the record” agency proceedings under the APA.²⁹¹ Substantial-evidence review would bring patent

286. See 37 C.F.R. § 41.31 (2020).

287. See *id.* § 41.39(a).

288. See *id.* § 41.47.

289. See *id.* § 42.51.

290. See *id.* § 42.62(a).

291. The Federal Circuit has already held that the substantial evidence standard applies to *pure* factfinding by the Patent Office. See *In re Gartside*, 203 F.3d 1305, 1313 (Fed. Cir. 2000). The rare Board decisions that turn entirely on questions about “what the law is” could still be reviewed *de novo* as is customary for appellate review on purely legal questions. See *supra* note 207. Or the Board's legal rules could be challenged in a separate lawsuit under the APA, as is also a common practice. See, e.g., *Apple Inc. v. Iancu*, No. 20-cv-6128, 2021 WL 5232241 (N.D. Cal. Nov. 10, 2021) (rejecting

validity's standard of review in line with the standard of review for fact-heavy mixed questions decided in district court litigation²⁹² and in other areas of administrative law.²⁹³

V. AGENCY DEFERENCE MATTERS (AT LEAST IN PATENT CASES)

Changing the standards of review on the books will not change the results in every case in which the federal courts are reviewing the Patent Office's work. Some administrative law scholars contend that deference under *Skidmore*, because it is so malleable, is really no deference at all.²⁹⁴ And appellate reversal rates in patent cases do not always correlate with whether an issue is, under current law, considered to be one of fact (and hence subject to more deferential review) or one of law (subject to de novo review).²⁹⁵

But there is plenty of evidence that standards of review do matter. For one, judges *say* they matter, and numerous judicial opinions state that the standard of review was dispositive.²⁹⁶ In patent cases specifically, at least one experimental study suggests that standards of proof affect decision-making.²⁹⁷ And deference under *Skidmore*, though not as powerful as *Chevron*, appears to be, in practice, quite

a challenge to the Board's rule about when it will exercise discretion to deny a petition for inter partes review); *see also supra* note 207 (citing additional examples). These avenues for judicial review on matters of law—as contrasted with case-specific patentability determinations—would preserve the federal courts' (and particularly the Federal Circuit's) ability to correct any *systemic* flaws in the Patent Office's understanding of patent doctrine or the Office's procedures of review. *See* Jonah B. Gelbach & David Marcus, *Rethinking Judicial Review of High Volume Agency Adjudication*, 96 TEX. L. REV. 1097, 1101 (2018) (noting that courts' key function in reviewing high volume agencies, such as the Social Security Administration, is to "identify and respond to entrenched problems of internal agency administration").

292. *See, e.g.*, *Harper v. City of Los Angeles*, 533 F.3d 1010, 1021 (9th Cir. 2008).

293. *See, e.g.*, *Campbell v. Merit Sys. Prot. Bd.*, 27 F.3d 1560, 1567 (Fed. Cir. 1994).

294. *See, e.g.*, Jack M. Beermann, *End the Failed Chevron Experiment Now: How Chevron Has Failed and Why It Can and Should Be Overruled*, 42 CONN. L. REV. 779, 849 (2010) ("To some, *Skidmore* is no deference at all—the reviewing court goes along with the agency when, all things considered, it agrees with the agency.").

295. *See* Matthew G. Sipe, *Experts, Generalists, Laypeople—and the Federal Circuit*, 32 HARV. J. L. & TECH. 575, 608 (2019) (finding that district court validity rulings on issues considered to present questions of law or mixed questions of law and fact are affirmed by the Federal Circuit in roughly 87% of cases, while validity rulings on issues of fact are affirmed only 67.7% of the time); Paul R. Gugliuzza & Mark A. Lemley, *Can a Court Change the Law by Saying Nothing?*, 71 VAND. L. REV. 765, 788 (2018) (finding a 90% affirmance rate on lower courts' determinations of whether subject matter is patent eligible, ostensibly a question of law reviewed de novo).

296. *See, e.g.*, Masur & Ouellette, *supra* note 113, at 657–58 (cataloguing examples).

297. *See* Schwartz & Seaman, *supra* note 250, at 432 (finding that subjects receiving a preponderance of the evidence standard found the patent invalid more often than those under a clear and convincing evidence standard).

significant.²⁹⁸

Moreover, the Supreme Court seems to think it is important that the federal courts provide the correct level of deference to the Patent Office. Though several current Supreme Court justices are noted skeptics of administrative deference doctrines, particularly *Chevron*,²⁹⁹ the Patent Office has actually fared well in seeking deference in recent years, particularly when operating under the AIA. Applying *Chevron*, the Supreme Court has upheld the agency's claim construction rules for AIA proceedings.³⁰⁰ The Court also upheld the constitutionality of AIA post-issuance review proceedings against constitutional challenges under Article III and the Seventh Amendment.³⁰¹ And the Court recently doubled down on its prior holding limiting the Federal Circuit's authority to review the Patent Trial and Appeal Board's decision about whether to institute post-issuance review.³⁰²

De novo review of patentability determinations made by the Board could be the next target. Indeed, the Supreme Court has issued several opinions over the years chastising the Federal Circuit for overly aggressive appellate review of fact-driven questions. As discussed, the Court has reversed the Federal Circuit for not applying the clear error standard to district court obviousness rulings³⁰³ and for not applying the deferential standards of review in the APA when reviewing factfinding by the Patent Office.³⁰⁴ More recently, the Court overturned Federal Circuit precedent holding that district court claim construction can be reviewed entirely de novo, instead holding that factual aspects of the claim construction inquiry should be reviewed for clear error.³⁰⁵ The Court also overturned the Federal Circuit's approach of reviewing de novo a district court's decision to award attorneys' fees to a prevailing party in a patent infringement case, instead

298. See Kristin E. Hickman & Matthew D. Krueger, *In Search of the Modern Skidmore Standard*, 107 COLUM. L. REV. 1235, 1275 (2007) (finding, based on court of appeals decisions from 2001 through 2006, that the agency prevailed in 60.4% of decisions applying *Skidmore*).

299. See Daniel Hemel, *Argument Analysis: Hating on Chevron*, SCOTUSBLOG (Nov. 7, 2018), <https://www.scotusblog.com/2018/11/argument-analysis-hating-on-chevron> [<https://perma.cc/6DEN-GKR4>].

300. *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142 (2016).

301. *Oil States Energy Servs., LLC v. Greene's Energy Grp., LLC*, 138 S. Ct. 1365, 1370 (2018).

302. *Thryv, Inc v. Click-to-Call Techs., LP*, 140 S. Ct. 1367, 1370 (2020).

303. *Dennison Mfg. Co. v. Panduit Corp.*, 475 U.S. 809, 811 (1986).

304. *Dickinson v. Zurko*, 527 U.S. 150, 155 (1999).

305. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 322 (2015).

holding that those decisions should be reviewed for abuse of discretion.³⁰⁶ In view of those trends,³⁰⁷ it would not be surprising to see the Court take a hard look at a case in which the Federal Circuit reviewed, with no deference, a case-specific, fact-intensive Patent Trial and Appeal Board ruling about, say, obviousness.

Indeed, the Federal Circuit may be wary of precisely such a Supreme Court reversal, which would explain why the circuit has begun to review obviousness in an arguably more deferential fashion.³⁰⁸ As it stands, however, the *de novo* standard of review for the ultimate question of patentability remains on the books.³⁰⁹ And, outside of obviousness and anticipation, many grounds of patentability are, as a matter of practice, consistently reviewed *de novo* as a question of law by the Federal Circuit.³¹⁰ Depending on how you look at it, then, patent law's deference framework is either backwards or, at minimum, unpredictable.³¹¹ Either way, the law would be improved by recognizing that determining patentability entails applying law to the unique facts of a given case, and so the agency's decision should get deference under *Skidmore*.

CONCLUSION

Patent law contains a deference paradox. There is no reason to presume that the decision of a single examiner to grant a patent is correct, yet parties challenging patent validity in litigation bear a heavy burden to show the examiner was wrong. Conversely, the likelihood that the Patent Office got it right in a post-issuance adversarial proceeding decided by three expert judges is higher, yet those decisions can be reviewed *de novo* by the Federal Circuit. Fixing this deference

306. *Highmark Inc. v. Allcare Health Mgmt. Sys., Inc.*, 572 U.S. 559, 561 (2014).

307. It is worth noting that the Supreme Court's ongoing interest in standards of appellate review is not limited to patent law. *See generally* Steinman, *supra* note 254, at 1 ("The Supreme Court has shown considerable interest in selecting the standard of review for particular issues, frequently granting certiorari in order to decide whether *de novo* or deferential review governs certain trial court rulings.").

308. *See supra* note 216 and accompanying text.

309. *See, e.g.*, *St. Jude Med., LLC v. Snyders Heart Valve LLC*, 977 F.3d 1232, 1234 (Fed. Cir. 2020) ("For obviousness, the ultimate determination is a legal one reviewed *de novo* . . .").

310. *See Gugliuzza, supra* note 9, at 615–31 (cataloguing examples).

311. For a persuasive argument that the Federal Circuit's emerging practice of treating obviousness as a mixed question of law and fact is inconsistent with decades of case law stating that the ultimate determination of patentability is a question of law that should be answered by the judge, see Petition for a Writ of Certiorari, *Nichia Corp. v. Everlight Elecs. Co.*, 139 S. Ct. 183 (2018) (No. 17-1707), 2018 WL 3141455, *cert. denied*, 139 S. Ct. 183.

paradox would better calibrate the standards of judicial review to the reality of the patent system. It would ensure that all patents providing the basis for infringement claims get one hard look at their validity—whether in infringement litigation under a lower standard of proof than the law currently provides or in post-issuance proceedings at the Patent Office. And it would ensure that the hard look by a district judge or by a panel of administrative patent judges is not second-guessed by the Federal Circuit, which, as an appellate court, is not ideally situated to decide fact-intensive questions of patentability.