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Notes

BURDENING THE “SKILLED SEARCHER”: THE FEDERAL CIRCUIT FALLS SHORT OF PROVIDING IRONCLAD FIXES TO § 315(E) ESTOPPEL ISSUES IN *IRONBURG V. VALVE*

WILLIAM KEHOE*

I. BEGINNING THE SEARCH: THE CRITICAL (AND CONTROVERSIAL) ROLE OF § 315(E) ESTOPPEL IN BALANCING PATENT LITIGATION DYNAMICS

When the America Invents Act (AIA) of 2011 was signed into law, it was considered to be “the most significant reform to the [U.S.] Patent Act since 1952.”¹ The significance was twofold.² Firstly, it harmonized the U.S. patent system with the rest of the world, particularly by adopting the international practice of preserving patent rights for the “first-inventor-to-file” a patent application.³ Secondly, it addressed an emerging narrative that the U.S. Patent and Trademark Office (USPTO)—the agency tasked with examining all U.S. patent applications under circumstances that favor issuing rather than disallowing patents—was degrading “patent quality” by granting too many “bad” patents of questionable validity, and that it was too expensive to efficiently challenge those “bad” patents in district court litigation.⁴ Although the harmonization provisions

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1. *Implementation of the Leahy-Smith America Invents Act: Hearing Before the H. Comm. on the Judiciary*, 112th Cong. 4 (2012) (statement of Rep. John Conyers, Jr., Ranking Member, H. Comm. on the Judiciary); see also U.S. PAT. & TRADEMARK OFF., STUDY AND REPORT ON THE IMPLEMENTATION OF THE LEAHY-SMITH AMERICA INVENTS ACT 9 (2015) (“On September 16, 2011, President Barack Obama signed the Leahy-Smith America Invents Act (AIA), the most significant reform to the U.S. patent system in 60 years.”).

2. See sources cited *infra* notes 3–4 and accompanying text.

3. See Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 3(j) (6), 125 Stat. 284, 293 (2011) (“It is the sense of the Congress that converting . . . from ‘first to invent’ to a system of ‘first inventor to file’ will improve the United States patent system and promote harmonization of the United States patent system with the patent systems commonly used in nearly all other countries throughout the world . . .”). In a “first-inventor-to-file” system, “the first person to file a patent application on an invention has priority and is entitled to a patent, even when another inventor can establish an earlier invention date.” *SNIPR Techs. Ltd. v. Rockefeller Univ.*, 72 F.4th 1372, 1373 (Fed. Cir. 2023).

4. See 35 U.S.C. § 2(a) (1) (2024) (stating the USPTO “shall be responsible for the granting and issuing of patents”); H.R. Rep. No. 112-98, pt. 1, at 39–40 (2011) (highlighting “a growing sense that questionable patents are too easily obtained and are too difficult to challenge,” and that the Committee’s attention was focused

garnered the most attention leading up to the AIA's enactment,⁵ such coverage dwindled as patent practitioners adjusted their patent procurement practice and the number of overall patents subject to pre-AIA rules inexorably continue to decline.⁶ Conversely, while the AIA provisions

on “improving patent quality and providing a more efficient system for challenging patents that should not have issued; and reducing unwarranted litigation costs”); Saurabh Vishnubhakat, *Patent Inconsistency*, 97 IND. L.J. 59, 61, 65–67 (2022) (reviewing scholarship regarding patent examination and patent litigation from which, prior to the AIA, “[t]he narrative . . . emerged . . . that patents were of increasingly questionable quality and were being asserted in a litigation environment that tolerated and, at times, even rewarded abuse”). A patent is considered “valid” when it, *inter alia*, meets the requirements of the Patent Act. See 35 U.S.C. §§ 101–103 (2024) (patentability requirements include eligible subject matter, novelty, nonobviousness, and utility); *id.* § 112 (disclosure requirements include enablement, written description, and definiteness). Patents are examined by the USPTO to make sure they comply with these statutory requirements. See MPEP § 2103 (9th ed. 2014, rev. July 2022) (directing patent examiners at the USPTO to review “each claim . . . for compliance with every statutory requirement for patentability”). “Patent invalidity” may be asserted as a defense in a patent infringement lawsuit, and can be brought in the form of a declaratory judgment. See 35 U.S.C. § 282 (2024) (invalidity defenses available in district court); 28 U.S.C. § 2201(a) (2024) (declaratory judgments); *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118 (2007) (applying the declaratory judgment standard in the patent law context). Professor Saurabh Vishnubhakat indicates that there are many circumstances at the USPTO that favor the allowance of patents, including the USPTO’s resource constraints that “hamper its ability to reject patent applications with meaningful finality,” and its funding model in which the USPTO earns maintenance fees from granted and non-expired patents. Vishnubhakat, *supra* note 4, at 65. For more information on “patent quality,” defined as “the likelihood that a patent will survive a post-grant challenge to its validity,” see Brian J. Love, Shawn P. Miller & Shawn Ambwani, *Determinants of Patent Quality: Evidence from Inter Partes Review Proceedings*, 90 U. COLO. L. REV. 67, 80–88 (2019) (defining and explaining patent quality).

5. See Dorian Ojemen, *The Ethics of Inter Partes Review Before the USPTO*, 47 ST. MARY’S L.J. 645, 654 (2016) (“The shift from a first-to-file system to a first-to-invent system was the most publicized change under the AIA.”); Toshiko Takenaka, *Unravelling Inventorship*, 21 CHI.-KENT J. INTELL. PROP. 71, 118 (2022) (“One of the most controversial aspects of the AIA was the replacement of the first-to-invent system with the first-inventor-to-file (‘FITF’) system.”); Alana O. Fernandez, *A Primer on the America Invents Act*, FED. LAW., Oct./Nov. 2013, at 30 (“On March 16, 2013, the most substantial change from the act went into effect—the change to a ‘first-to-file’ system.”); JOSH LERNER, ANDREW SPEEN & ANN LEAMON, *THE LEAHY-SMITH AMERICA INVENTS ACT: A PRELIMINARY EXAMINATION OF ITS IMPACT ON SMALL BUSINESS* 5 (2015) (“[The AIA] most notably shifted priority in the granting of patents . . . to ‘first-inventor-to-file’ . . .”).

6. See Cynthia L. Dahl, *Did the America Invents Act Change University Technology Transfer?*, 29 TEX. INTELL. PROP. L.J. 1, 7–11 (2021) (reviewing the impact of the AIA on university technology transfer offices (TTOs) and describing how some TTOs reported no policy changes because they had already been filing patent applications in foreign jurisdictions with a first-to-file system); Kate Gaudry & Thomas Franklin, *The AIA’s First-to-File Transition SHOULD Have Resulted in More Provisional Filings*, IPWATCHDOG (Sept. 14, 2016, 7:15 AM), <https://ipwatchdog.com/2016/09/14/the-aias-first-to-file-transition-should-have-resulted-in-more-provisional-filings/id=72617/> [<https://perma.cc/A94R-AJ3J>] (suggesting, based on the ratio of the number of provisional filings relative to the number of utility filings, “that applicants have generally *not* changed their filing strategies to file more provisional applications in view of the AIA’s change to define prior art based on applications’ filing dates”); Joseph Matal, *Ten Years of the America Invents Act: Toward a More Objective*

addressing concerns of patent quality and litigation costs received comparatively less attention during the enactment of the AIA,⁷ a decade's worth of landmark patent cases, academic commentary, and legislative proposals decisively place them at the focal point of contemporary discussion and debate.⁸

At the heart of the AIA provisions that sought to address concerns of patent quality and litigation costs are a set of administrative procedures that allow a third party to challenge the validity of a granted U.S. patent

and Accurate Patent System, IPWATCHDOG (Sept. 16, 2021, 12:15 PM), <https://ipwatchdog.com/2021/09/16/ten-years-america-invents-act-toward-objective-accurate-patent-system/id=137607/> [<https://perma.cc/VUU6-C26R>] (arguing that because “the overwhelming majority of U.S. filers who also want[ed] foreign patent rights were already obligated to be the first inventor to file an application[,] [t]he AIA’s switch simply meant that U.S. applicants need only comply with one priority system rather than with two”). Commentators have estimated that, as of 2020, approximately 94% of patents under patent prosecution were governed by the AIA. See Colleen V. Chien, Janelle Barbier & Obie Reynolds, *The AIA at Ten—How Much Do the Pre-AIA Prior Art Rules Still Matter?*, PATENTLY-O PAT. L.J., 2021, at 1, 3. Conversely, those commentators also note that “90% of patent litigations initiated in 2020 included a patent” subject to pre-AIA rules. *Id.* at 1. But even though pre-AIA rules may have a larger relevance the litigation context, the applicability of pre-AIA rules continues to decline. See, e.g., *SNIPR Techs.*, 72 F.4th at 1373–74 (holding that pre-AIA interference procedures are not available to determine inventorship disputes when one of the patents is governed exclusively by the AIA).

7. See Matal, *supra* note 6 (“Today, it may surprise some that when the AIA was being debated, the switch to first inventor to file was more controversial than the creation of Patent Trial and Appeal Board (PTAB) validity trials.”); Eileen McDermott, *Celebrating (?) the America Invents Act: Ten Years On, Many IP Stakeholders Say It’s Time for a Second Look*, IPWATCHDOG (Sept. 16, 2021, 3:15 PM), <https://ipwatchdog.com/2021/09/16/celebrating-the-america-invents-act-ten-years-on-many-ip-stakeholders-say-time-for-second-look/id=137631/> [<https://perma.cc/C6U2-8MGG>] (“The [AIA] discussion centered mostly on the change from a first-inventor-to-invent to a first-inventor-to-file system But today, many weaknesses have been exposed. The Patent Trial and Appeal Board (PTAB) is extremely controversial”); Gene Quinn, *The America Invents Act Five Years Later: Reality, Consequences and Perspectives*, IPWATCHDOG (Sept. 6, 2016, 8:00 AM), <https://ipwatchdog.com/2016/09/06/america-invents-act-reality-consequences-perspectives/id=72606/> [<https://perma.cc/SG9P-GK8C>] (“As much focus and energy that was placed on the change from first to invent to first to file, without a doubt the biggest change to U.S. patent practice was the creation of the Patent Trial and Appeal Board (PTAB) and the simultaneous creation of [post-grant proceedings].”).

8. See, e.g., *Oil States Energy Servs., LLC v. Greene’s Energy Grp., LLC*, 138 S. Ct. 1365, 1370–71 (2018) (resolving controversy surrounding the constitutionality of several AIA provisions that addressed patent quality and litigation costs and holding that such provisions do not violate Article III nor the Seventh Amendment of the U.S. Constitution); Colleen Chien, Christian Helmers & Alfred Spigarelli, *Inter Partes Review and the Design of Post-Grant Patent Reviews*, 33 BERKELEY TECH. L.J. 817, 840 (2018) (highlighting controversy created by the AIA provisions that addressed patent quality and litigation costs); Promoting and Respecting Economically Vital American Innovation Leadership Act, S. 2220, 118th Cong. § 2(10) (2023) [hereinafter PREVAİL Act] (stating Congress finds “[u]nintended consequences of the comprehensive 2011 reform of patent laws have become evident during the decade preceding the date of enactment,” which includes a list of several AIA provisions addressing patent quality and litigation costs).

at the USPTO.⁹ These procedures are collectively called “post-grant proceedings,” and they were intended to improve the U.S. patent system in many ways.¹⁰ First, the post-grant proceedings aimed to improve patent quality by creating the U.S. Patent and Trademark Board (PTAB) as an alternate venue, outside of district court, where patent challengers could request a panel of expert administrative judges to thoroughly scrutinize a granted U.S. patent.¹¹ Second, the post-grant proceedings sought to protect patent owners from abusive challenges at the PTAB by implementing procedural restrictions that limited the availability of the post-grant proceedings and estoppel provisions that made the PTAB outcomes consequential.¹² Third, the post-grant proceedings intended to reduce the time and expense of such validity challenges.¹³ Surely, the goals of

9. See Jennifer R. Turchyn, Note, *Improving Patent Quality Through Post-Grant Claim Amendments: A Comparison of European Opposition Proceedings and U.S. Post-Grant Proceedings*, 114 MICH. L. REV. 1497, 1498 (2016) (“One of the AIA’s most meaningful changes was the creation of new post-grant patent-challenge procedures at the [USPTO]. These new administrative procedures allow third parties to contest the validity of issued patents without going to federal court.” (footnote omitted)).

10. See *infra* notes 11–13 and accompanying text.

11. See Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 7, 125 Stat. 284, 313 (2011) (codified as amended at 35 U.S.C. §§ 6(a)–(c)) (creating the PTAB, enumerating its duties, and specifying the panel size); Vishnubhakat, *supra* note 4, at 82 (overviewing “the AIA’s basic aim of patent error-correction through expert administrative reevaluation”). Administrative patent judges are statutorily mandated to be “persons of competent legal knowledge and scientific ability.” 35 U.S.C. § 6(a). For an overview of the PTAB’s error correction role, see *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1353 (2018) (“Sometimes, though, bad patents slip through. Maybe the invention wasn’t novel, or maybe it was obvious all along, and the patent owner shouldn’t enjoy the special privileges it has received. To remedy these sorts of problems, Congress . . . has supplemented litigation with various administrative remedies.”). For more information regarding the limited invalidity grounds that the PTAB can hear, see *infra* note 39 and accompanying text.

12. See H.R. Rep. No. 112–98, pt. 1, at 164 (2011) (statement of Rep. Howard L. Berman, Rep. Melvin L. Watt & Rep. Zoe Lofgren) (“The limitations imposed by H.R. 1249 . . . are motivated by assertions that the *inter partes* procedure may be abused to harass patent owners and interfere with the enforcement of valid patents.”); 154 CONG. REC. S9986 (daily ed. Sept. 27, 2008) (statement of Sen. Jon Kyl) (“[T]he creation of post grant review proceedings for challenging the validity of patents . . . allows . . . review of a patent, with procedural restrictions that will limit the time and expense of these proceedings and protect patent owners.”). For more information on the procedural restrictions, see *infra* notes 38–40 and accompanying text. For more information on the estoppel provisions, see *infra* notes 41–43 and accompanying text.

13. H.R. Rep. No. 112–98, pt. 1, at 40 (“The [AIA] is designed to establish a more efficient and streamlined patent system that will improve patent quality and limit unnecessary and counterproductive litigation costs.”); 157 CONG. REC. S5322–28 (daily ed. Sept. 6, 2011) (statement of Sen. Patrick Leahy) (stating that the pre-AIA options to challenge a patent’s validity at the USPTO were “too lengthy and unwieldy to actually serve as an alternative to litigation”). A 2019 survey found that the median cost to challenge a patent’s validity at the PTAB ranges from \$400,000–\$650,000, which is considerably less than the median cost of \$4,000,000 to litigate patent claims in district court (with over twenty-five million dollars at risk). See AIPLA, REPORT OF THE ECONOMY SURVEY 50, 52 (2019) (reporting median PTAB and patent litigation costs for different monetary values at risk). Additionally, most

improving patent quality, protecting patent owners from abusive challenges, and streamlining litigation costs and efficiency are all desirable and non-mutually exclusive goals.¹⁴ However, designing administrative procedures to achieve those goals requires a careful balance, as provisions that emphasize one goal over another can disproportionately alter the favorability and fairness of post-grant proceedings.¹⁵

While there were multiple kinds of post-grant proceedings implemented with the AIA, one type called “*inter partes* review” (IPR) has become the most popular review mechanism.¹⁶ In line with the goals of the AIA, IPRs are designed to be a cost-effective, accurate, and speedy way for third parties to challenge the validity of a patent based on a limited number of invalidity grounds.¹⁷ On its face, this design positions IPRs to

post-grant proceedings require a final determination by the PTAB within one year of instituting the proceeding, whereas district court litigation has no such timing requirement. See 35 U.S.C. §§ 316(a)(11), 326(a)(11) (2024) (timing requirements of post-grant procedures).

14. See *supra* notes 11–13 and accompanying text for a discussion of these goals; see also *Reforming the Patent Trial and Appeal Board—The PREVAIL Act and Proposals to Promote U.S. Innovation Leadership: Hearing on S.2220 Before the S. Comm. on Intellectual Property of the H. Comm. on the Judiciary*, 118th Cong. 1–2 (2023) (statement of Lamar Smith, Former Chairman of the H. Comm. on the Judiciary and Cosponsor of the AIA) (overviewing that the “centerpiece” AIA administrative procedures had the multiple intents of improving patent quality, protecting patent owners from abusive challenges, and streamlining cost and speed).

15. See, e.g., Vishnubhakat, *supra* note 4, at 63 (explaining that an “unappreciated difficult[y] in the task of error-correction” was that “without careful design, creating processes to invalidate ‘bad’ patents more easily will routinely make it easier to invalidate ‘good’ patents as well”). Substantial legislative history of the AIA focused on and emphasized a “balance” between the goals of the AIA. See 157 CONG. REC. S1030 (daily ed. Mar. 1, 2011) (statement of Sen. Patrick Leahy) (“As a whole, this bill represents a fair, balanced, and necessary effort to improve patent quality . . . and offer productive alternatives to costly and complex litigation.”); 157 CONG. REC. S948 (daily ed. Feb. 28, 2011) (statement of Sen. Patrick Leahy) (“A balanced and efficient intellectual property system that rewards invention and promotes innovation through high-quality patents is crucial to our Nation’s economic prosperity and job growth. . . . [T]he America Invents Act[] will allow our inventors and innovators to flourish”); 157 CONG. REC. S1208 (daily ed. Mar. 3, 2011) (statement of Sen. Jon Kyl) (stating that the AIA will “[m]ake patent lawsuits fair and just for both patent owners and accused infringers”).

16. See Leahy-Smith America Invents Act, § 6(a), 125 Stat. at 299 (codified as amended at 35 U.S.C. §§ 311–319) (*inter partes* review provisions); Christa J. Laser, *The Scope of IPR Estoppel: A Statutory, Historical, and Normative Analysis*, 70 FLA. L. REV. 1127, 1131 (2018) (“Among the AIA’s three new post-grant proceedings[,] . . . the most widely used and widely known is IPR.”). In the USPTO’s 2023 fiscal year, 98% of all petitions filed for a post-grant proceeding were for IPR. See USPTO, PTAB TRIAL STATISTICS, FY23 END OF YEAR OUTCOME ROUNDUP 3 (2023), https://www.uspto.gov/sites/default/files/documents/ptab_aia_fy2023__roundup.pdf [<https://perma.cc/EB9A-2EKE>]. The other two types of AIA post-grant procedures are “post-grant review” (PGR) and “covered business method” (CBM) review. See generally Leahy-Smith America Invents Act, § 6(b), 125 Stat. at 305 (codified as amended at 35 U.S.C. §§ 321–329) (PGR); *id.* § 18, 125 Stat. at 329 (CBM).

17. See 35 U.S.C. § 311(b) (2024) (defining the scope of IPR to extend to only grounds that could be raised under 35 U.S.C. § 102 (novelty) and 35 U.S.C. § 103 (obviousness) based on patents or printed publications); Calvin M. Brien, Note, *An*

be a useful tool for defendants in patent infringement cases by providing them with access to “expert administrative patent judges” who can “more cheaply, more quickly, and more accurately dispense with poor-quality patents.”¹⁸ In reality, IPRs have been more than a merely useful tool, and the statistics indicate that they are essentially the “go-to” option for defendants in patent infringement cases.¹⁹

Although a defendant in a patent lawsuit potentially has much to gain from initiating an IPR, there are several IPR provisions that seek to balance its error correction role with fairness considerations for plaintiff patent owners.²⁰ One of the most important provisions that weighs in favor of patent owners is the estoppel provision of 35 U.S.C. § 315(e), which “aims to obviate abusive IPR conduct” while advancing the goal of providing “faster, less costly alternatives to civil litigation to challenge patents.”²¹ Specifically, the provision creates estoppel against IPR petitioners from challenging the same claims of a patent more than once on “ground[s]” that they “raised or reasonably could have raised during that inter partes review.”²² As such, the scope and applicability of

Empirical Analysis of Patent Validity in Inter Partes Reviews Through the Lens of KSR, 46 AIPLA Q. J. 413, 425 (2018) (“IPRs provide a cheaper and quicker alternative to district court for challenging patent validity, and result in high rates of patent invalidation.” (footnote omitted)).

18. Vishnubhakat, *supra* note 4, at 75 (describing how the PTAB’s expertise and efficiency “were a strong invitation for would-be patent challengers to challenge patents”); *see also* Douglas Dynamics, LLC v. Meyer Prod. LLC, No. 14-CV-886, 2017 WL 1382556, at *1 (W.D. Wis. Apr. 18, 2017) (“IPR is commonly pursued . . . by a defendant who has been sued for patent infringement in district court.”).

19. *See* USPTO, PATENT TRIAL AND APPEAL BOARD PARALLEL LITIGATION STUDY 3 (June 2022), https://www.uspto.gov/sites/default/files/documents/ptab_parallel_litigation_study_20220621_.pdf [<https://perma.cc/S24B-ZTVE>] (finding that “[t]he vast majority of petitioners (about 80% or higher) have been sued by patent owners in another venue prior to filing their petitions”).

20. *See* 157 CONG. REC. S1326 (daily ed. Mar. 7, 2011) (statement of Sen. Jeff Sessions) (listing estoppel, time limits on starting post-grant challenges, and time limits on those proceedings as some of “many protections that were long sought by inventors and patent owners”); *infra* notes 21–23 and accompanying text (discussing estoppel provisions as a protection for patent owners).

21. *Intuitive Surgical, Inc. v. Ethicon LLC*, 25 F.4th 1035, 1041 (Fed. Cir. 2022) (quoting 157 CONG. REC. S936, S952 (daily ed. Feb. 28, 2011) (statement of Sen. Grassley)); *see also* Am. Tech. Ceramics Corp. v. Presidio Components, Inc., No. 14-cv-6544, 2019 WL 365709, at *3 (E.D.N.Y. Jan. 30, 2019) (“[T]he AIA codified an estoppel provision meant to prevent an unsuccessful IPR petitioner from later arguing in a related patent infringement case that a ‘claim is invalid on any ground that the petitioner raised or reasonably could have raised during that [IPR].’” (second alteration in original) (quoting 35 U.S.C. § 315(e)(2) (2024))); Andrew Henderson, Note, *Reining in on IPR Estoppel*, 63 IDEA 186, 190 (2022) (“Pursuing an IPR comes at a price under 35 U.S.C. § 315, as the defendant-petitioner is estopped from raising any ground in litigation that they raised or reasonably could have raised in the IPR proceedings.”).

22. 35 U.S.C. § 315(e)(2); *see infra* Section II.A for a discussion of the IPR estoppel provision.

§ 315(e) plays a critical role in balancing the AIA's goals of efficiency and fairness.²³

The application of the estoppel provisions of § 315(e) plays a massive role in patent litigation strategy and can be the deciding factor in a billion dollar verdict.²⁴ Acknowledging the importance of IPR estoppel to both patent owners and defendants, the Federal Circuit has attempted many times since the AIA was enacted to clarify issues surrounding § 315(e) estoppel.²⁵ However, due to a Supreme Court ruling on tangential IPR issues, the Federal Circuit's efforts were uprooted and § 315(e) estoppel issues have remained in a state of flux and uncertainty.²⁶ Fortunately, the threshold issues regarding the *scope* of § 315(e) estoppel—the situations where the statute should to be applied—are now relatively clear under Federal Circuit precedent.²⁷ Unfortunately, the *application* of § 315(e)

23. See Henderson, *supra* note 21, at 187–88 (“In essence, the quid pro quo of an IPR affords petitioners an expedited and economically advantageous patent validity proceeding in exchange for the foreclosing of certain patent validity challenges in district court.”). For example, if § 315(e) is applied too narrowly, procedural fairness to the patentee is sacrificed as defendants can get multiple bites of the “invalidity apple.” *Id.* at 208 (quoting *Cal. Inst. of Tech. v. Broadcom Ltd.*, No. 16-cv-3714, 2018 WL 7456042, at *6 (C.D. Cal. Dec. 28, 2018)). Furthermore, a narrow application of IPR estoppel means that patentees receive little to no benefit from successfully defending an IPR action. See Love, Miller & Ambwani, *supra* note 4, at 98 (“[W]hen claims are upheld, patentees also benefit from a broad estoppel provision that prevents challengers from raising the same invalidity arguments again in court.”). Conversely, if estoppel is applied too broadly, the purpose of creating the IPR procedure may be frustrated as petitioners may be precluded from “a full and fair opportunity to raise all patent and printed publication invalidity grounds.” See Henderson, *supra* note 21, at 227.

24. See *Cal. Inst. of Tech. v. Broadcom Ltd.*, 25 F.4th 976, 985, 989 (Fed. Cir. 2022) (holding the defendant in a patent litigation suit was estopped from raising prior art because the defendant “reasonably could have raised them in [the IPR] petitions” in light of a jury verdict against the defendant that totaled over \$1.1 billion dollars), *cert. denied sub nom.* *Apple Inc. v. Cal. Inst. of Tech.*, 143 S. Ct. 2658 (2023). Multiple academics and commentators have stressed the importance of Section 315(e) estoppel. See Laser, *supra* note 16, at 1127 (“[S]ubstantial uncertainty in courts’ interpretation of [§ 315(e)(2)] causes an enormous impact on an accused patent infringer’s decision of whether and on what grounds to petition for review.”); Nick Baniel, *IPR Estoppel Issues*, BAKER BOTTS (May 1, 2023), <https://www.bakerbotts.com/thought-leadership/publications/2023/may/ipr-estoppel-issues> [<https://perma.cc/FN2C-HW97>] (“The exact scope and application of IPR estoppel has significant implications for defendants’ strategies across all patent litigation.”); Richard A. Crudo, Ironburg and the Elusive “Skilled Searcher” Estoppel Standard for Newly Discovered Prior Art, STERNE KESSLER (Sept. 22, 2023), <https://www.sternekeessler.com/news-insights/publications/ironburg-and-elusive-skilled-searcher-estoppel-standard-newly-discovered> [<https://perma.cc/V3SS-2BNX>] (“As any PTAB practitioner knows, the possibility of being estopped from asserting prior art in district court is a significant risk that must be considered when filing an IPR.”).

25. See *infra* Section II.B for a discussion of § 315(e) estoppel issues addressed by the Federal Circuit.

26. See *infra* Section II.B for a discussion of the Federal Circuit’s interpretation of § 315(e) in response to a Supreme Court ruling on IPR procedure.

27. See *infra* note 56 and accompanying text for the modern rule governing the scope of § 315(e).

estoppel to particular invalidity grounds was, until recently, an issue addressed solely by U.S. district courts, whose decisions often conflicted with one another and lacked uniformity in their treatment of estoppel.²⁸

In *Ironburg Inventions Ltd. v. Valve Corp.*,²⁹ the Court of Appeals for the Federal Circuit addressed the application of § 315(e) estoppel for the first time.³⁰ In doing so, the court held that the proper standard to determine what invalidity grounds “reasonably could have [been] raised during the [IPR]” was an inquiry into what “a skilled searcher conducting a diligent search reasonably could have been expected to discover.”³¹ Additionally, the court placed the burden of proving this standard, by a preponderance of the evidence, on the patentee.³²

This Note analyzes the dual holdings in *Ironburg* and argues that the adoption of the “skilled searcher” standard, read as a nonexclusive factor in determining “reasonably,” is suitable to adjudicate IPR estoppel.³³ Additionally, this Note argues that the court’s narrow burden-allocation analysis overlooked pertinent Federal Circuit case law that decisively places the burden of persuasion solely on the patent challenger.³⁴ Part II provides background on § 315(e) estoppel, summarizes Federal Circuit precedent regarding its scope, and highlights the district court split regarding its applicability. Part III discusses the factual and procedural history of *Ironburg*. Part IV explains the *Ironburg* court’s holdings that adopted the “skilled searcher” standard and placed the burden of proving such on the patent owner. Part V critiques ambiguities in the *Ironburg* court’s decision to adopt the “skilled searcher” standard, explains where the court fell short in its burden-placement analysis, and outlines a burden allocation consistent with Federal Circuit precedent and § 315(e). Part VI discusses the foreseeable confusion caused by *Ironburg*’s silence on important issues and identifies several actors that can bring clarity to § 315(e) estoppel.

28. See *infra* Section II.C for an overview of the differing ways in which district courts have applied § 315(e).

29. 64 F.4th 1274 (Fed. Cir. 2023).

30. See Cara Regan, Kara Specht & Robert M. Fernandes, *Trending at the PTAB: IPR Estoppel After Ironburg*, LAW360 (May 30, 2023, 6:01 PM), <https://www.law360.com/articles/1681177/trending-at-the-ptab-ipr-estoppel-after-ironburg> [https://perma.cc/M44M-CCBQ] (“But until [*Ironburg*], the court had not weighed in on what grounds not stated in a petition reasonably could have been asserted . . .”).

31. *Ironburg*, 64 F.4th at 1298 (emphasis omitted) (quoting 35 U.S.C. § 315(e) (2) (2024)).

32. See *id.* at 1299 (placing the burden of the “skilled searcher” test on the patentee); *infra* notes 131–134 and accompanying text (summarizing *Ironburg*’s burden placement analysis).

33. See *infra* Section V.A (analyzing issues related to exclusivity and the “skilled searcher” standard).

34. See *infra* Sections V.B–C (analyzing burden allocation under a bifurcated approach).

II. A SEARCH FOR GUIDANCE: ORIGINS AND JUDICIAL INTERPRETATIONS OF § 315

The foundations of IPR and its related estoppel provisions are rooted in statutory law, and the case law interpreting those statutes has been in a constant state of flux since its enactment.³⁵ Section II.A discusses the statutory history, functionality, and language of the IPR and § 315(e) estoppel provisions. Section II.B outlines the history of the Federal Circuit’s interpretation of the scope of § 315(e). Lastly, Section II.C investigates the current split among district courts regarding how to apply § 315(e) estoppel.

A. *The Start of the Search: Statutory Basis and History of IPR Estoppel*

Inter partes review was introduced with the enactment of the AIA and became available for use on September 16, 2012.³⁶ Its structure has been analogized to that of civil litigation because it functions as an “adjudicative proceeding” at the PTAB between two parties—a patent challenger and a patent owner—regarding the validity of a granted patent.³⁷ Initiating an IPR starts with a petitioning stage in which the patent challenger files a petition with the PTAB to institute an IPR of the challenged patent.³⁸ The petition (and thus an IPR) is statutorily limited in scope: it can only challenge the patentability of a patent claim on the “ground[s]” of novelty and nonobviousness, and those grounds can only be based upon “patents or printed publications.”³⁹ If an IPR is instituted by the

35. See *infra* Sections II.A–C for a historical overview of the ways in which IPR estoppel has been applied.

36. See Leahy-Smith America Invents Act § 6(b), 125 Stat. 284, 304 (codified as amended in 35 U.S.C. § 311) (effective date of IPR availability). “*Inter partes review*” replaced the similarly named “*inter partes reexamination*” that was created in 1999. See Roger Shang, *Inter Partes Reexamination and Improving Patent Quality*, 7 Nw. J. TECH. & INTELL. PROP. 185, 188–91 (2009) (outlining the *inter partes* reexamination process).

37. See 157 CONG. REC. S1375 (daily ed. Mar. 8, 2011) (statement of Sen. Kyl) (referring to *inter partes* review as an “adjudicative proceeding in which the petitioner, rather than the Office, bears the burden of showing unpatentability”); SAS Inst., Inc. v. Iancu, 138 S. Ct. 1348, 1353 (2018) (“The new *inter partes* review regime looks a good deal more like civil litigation.”). Given the involvement of the parties, *inter partes* review operates as an “adversarial process,” just like in civil litigation. See Steven J. Schwarz, Tamatane J. Aga, Kristin M. Adams & Katherine C. Dearing, *Savvy Shaw-Ping: A Strategic Approach to AIA Estoppel*, 17 CHI.-KENT J. INTELL. PROP. 67 (2018) (referring to *inter partes* review as an “AIA Trial[]” that “occur[s] before the [PTAB] and are adversarial in nature between the patent owner and a party petitioning for review of the patent claims”); see also 35 U.S.C. § 316(c) (2024) (designating the PTAB as the entity that conducts IPRs).

38. See 35 U.S.C. § 311(a) (2024) (“Subject to the provisions of this chapter, a person who is not the owner of a patent may file with the Office a petition to institute an *inter partes* review of the patent.”); 37 C.F.R. § 42.4 (2023) (specifying the USPTO Director has delegated IPRs to the PTAB).

39. 35 U.S.C. § 311(b) (“A petitioner in an [IPR] may request to cancel as unpatentable 1 or more claims of a patent only on a ground that could be raised under section 102 or 103 and only on the basis of prior art consisting of patents or

PTAB and the IPR is not dismissed or settled, the PTAB issues a “final written decision” that decides the patentability of the challenged patent claims.⁴⁰

While an IPR is conducted within the USPTO, it has the potential to have wide-ranging implications outside of the USPTO.⁴¹ Particularly, when an IPR results in a final written decision, the petitioner of that IPR is estopped from asserting in a civil action that the previously challenged claims are “invalid on any ground that the petitioner raised or reasonably could have raised during that inter partes review.”⁴² As such, the scope of § 315(e)(2) estoppel is statutorily limited to actions “during” the IPR, and the adjudicative standard regarding what grounds are estopped within that scope are those that were “raised or reasonably could have [been] raised” in the IPR.⁴³

printed publications.”). “Novelty” refers to the patentability requirement that the claimed invention must not have been “patented, described in a printed publication, or in public use, on sale, or otherwise available to the public” at a time before the effective filing date of the patent application. *Id.* § 102(a). “Nonobviousness” refers to the patentability requirement that the differences between the claimed invention and prior art under 35 U.S.C. § 102 must not have been “obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” *Id.* § 103.

40. 35 U.S.C. § 317(a) (2024) (holding a settlement of an instituted IPR does not attach estoppel under section 315(e) to the petitioner); *id.* § 318(a) (“If an inter partes review is instituted and not dismissed under this chapter, the Patent Trial and Appeal Board shall issue a final written decision with respect to the patentability of any patent claim challenged by the petitioner . . .”).

41. *See infra* note 42 and accompanying text for an introduction to the potential estoppel effect of an IPR.

42. 35 U.S.C. § 315(e)(2) (2024). Subsection (e)(2) specifically applies to “civil actions and other proceedings,” stating,

The petitioner in an inter partes review of a claim in a patent under this chapter that results in a final written decision under section 318(a), or the real party in interest or privy of the petitioner, may not assert either in a civil action . . . that the claim is invalid on any ground that the petitioner raised or reasonably could have raised during that inter partes review.

Id.

43. *Id.* Thus, there are two crucial questions that determine the scope and applicability of § 315(e)(2) estoppel in an IPR. First, as a scope question, when does an IPR *begin* for estoppel purposes such that a ground can be raised “during” that IPR? *See infra* note 45. In this Note, this inquiry is referred to as the “scope” of § 315(e)(2). *See infra* text accompanying note 56 for an example of this usage. Secondly, as an applicability question, what is the standard or test to adjudicate what “*reasonably*” could have been raised to determine when estoppel should apply? *See infra* text accompanying note 57. In this Note, this inquiry is referred to as the “application” of § 315(e)(2). *See infra* text accompanying note 59 for an example of this usage.

B. *The Search for Boundaries: The Federal Circuit's Journey to Define the Scope of When § 315(e) Is Applicable*

In *Shaw Industries Group, Inc. v. Automated Creel Systems, Inc.*,⁴⁴ the Federal Circuit addressed the scope of what can be considered “during that inter partes review.”⁴⁵ The court held that an “IPR does not begin until it is instituted” and that conversely, only grounds that make it past the institution phase could be considered to have been raised “during” the IPR.⁴⁶ In doing so, the Federal Circuit in *Shaw* took a narrow approach to interpreting the scope of § 315(e)(2), and markedly reduced the scenarios where § 315(e)(2) estoppel could apply.⁴⁷

However, *Shaw's* holding was soon called into question by *SAS Institute Inc. v. Iancu*,⁴⁸ where the Supreme Court dramatically changed the administrative procedure of IPR practice.⁴⁹ Specifically, *SAS* held that the practice of “partially” instituting an IPR on some grounds in the petition, but not others, was outside the bounds of the IPR section of the Patent Act.⁵⁰ As such, the Court concluded that when the PTAB decides to institute an IPR, it must do so on all the grounds raised in a petition.⁵¹

44. 817 F.3d 1293 (Fed. Cir. 2016), *overruled by* Cal. Inst. of Tech. v. Broadcom Ltd., 25 F.4th 976 (Fed. Cir. 2022).

45. *Id.* at 1300. The court in *Shaw* specifically addressed the issue of whether a defendant is estopped in civil litigation under 35 U.S.C. § 315(e)(2) from raising a reference in the civil litigation when that reference was included in an IPR petition, but the reference was not subsequently instituted by the PTAB. *Id.* Partial institution was a practice at the PTAB by which the PTAB could institute an IPR on some grounds and deny institution of other grounds all brought in the same petition. *Id.*

46. *Id.* The Federal Circuit reasoned that “[t]he plain language of the statute prohibits the application of estoppel” in situations where an invalidity ground was raised before the PTAB, but the PTAB decided to not institute that invalidity ground. *Id.*; *see also* Henderson, *supra* note 21, at 203 (summarizing the holding in *Shaw*).

47. *See* Henderson, *supra* note 21 (“*Shaw* represents a narrow view of § 315(e) estoppel.”). Henderson also notes that this holding left open substantial questions regarding the scope of IPR estoppel as applied to (1) grounds that were petitioned but not instituted, and (2) grounds that were non-petitioned, but later raised outside of the IPR adjudication. *Id.* at 203–04.

48. 138 S. Ct. 1348 (2018).

49. *See id.* at 1354 (resolving the issue of whether 35 U.S.C. § 318(a) requires the PTAB to decide the patentability of every claim challenged in the petition—which was contrary to the PTAB practice of sometimes partially instituting IPRs on a subset of claims challenged in the petition); *infra* notes 50–52 and accompanying text (detailing *SAS's* holding and its impact on *Shaw's* validity).

50. *SAS*, 138 S. Ct. at 1358 (“There is no room in this scheme for a wholly unmentioned ‘partial institution’ power that lets the Director select only some challenged claims for decision.”).

51. *See id.* at 1353 (“The agency cannot curate the claims at issue but must decide them all.”). To reach this conclusion, the *SAS* court reasoned that the petitioner, rather than the PTAB, controls the scope of the IPR through what grounds the petitioner includes in the petition. *Id.* at 1355. This holding is consistent with the Supreme Court trend of rigidly interpreting the Patent Act. *See* *Bilski v. Kappos*, 561 U.S. 593, 603 (2010) (rejecting a judicially created test to determine patent eligibility); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 76–77 (2012) (rejecting the rigid test in *Bilski*, again, in favor of the more flexible

This holding called into question the Federal Circuit's decision in *Shaw*, specifically whether its narrow view of § 315(e)(2) estoppel was still good law or if it had been displaced by the new interpretation of IPR procedure.⁵²

Almost four years after *SAS*, the Federal Circuit in *California Institute of Technology v. Broadcom Ltd.*⁵³ had the opportunity to revisit its *Shaw* holding.⁵⁴ While acknowledging that *Shaw's* holding was “perhaps correct at the time,” it could not be reconciled in light of the Supreme Court's guidance in *SAS*.⁵⁵ As such, the Federal Circuit overruled *Shaw* and pronounced the modern rule governing the scope of § 315(e)(2): “[E]stoppel applies not just to claims and grounds asserted in the petition and instituted for consideration by the Board, but to all grounds not stated in the petition but which reasonably could have been asserted against the claims included in the petition.”⁵⁶

C. *The Search for Answers: What Grounds a Petitioner “Reasonably Could Have Raised” Creates Splits Among District Courts*

Although the scope of § 315(e)(2) was an open question until *Broadcom*, district courts that determined § 315(e)(2) was applicable then had to grapple with the underlying question of what standard should be applied to adjudicate whether a defendant “reasonably could have raised” an invalidity ground during the IPR.⁵⁷ Almost uniformly, the

exclusion); Samuel F. Ernst, *A Patent Reformist Supreme Court and Its Unearthed Precedent*, 29 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 1 (2019) (discussing the Supreme Court's rejection of rigid legal rules in Patent Law).

52. See, e.g., *Asetek Danmark A/S v. CoolIT Sys. Inc.*, No. 19-cv-00410, 2019 WL 7589209, at *5–6 (N.D. Cal. Dec. 30, 2019) (collecting cases and noting that “[d]istrict courts in the wake of *Shaw* split over the scope of IPR estoppel”); *Wi-LAN Inc. v. LG Elecs., Inc.*, 421 F. Supp. 3d 911, 923–24 (S.D. Cal. 2019) (weighing whether *SAS* mandates a broader reading of § 315(e)(2) estoppel).

53. 25 F.4th 976 (Fed. Cir. 2022), cert. denied sub nom. *Apple Inc. v. Cal. Inst. of Tech.*, 143 S. Ct. 2658 (2023).

54. *Id.* at 982–83 (discussing the procedural history). Before the trial in *Broadcom*, the defendant filed multiple IPRs in response to allegations of patent infringement. *Id.* In those IPRs, the defendant failed to show that the challenged claims were unpatentable as obvious. *Id.* Back in district court, the defendant argued that the asserted patent claims were invalid based on invalidity grounds that were not raised during the IPR proceedings, even though the defendant was aware of those grounds when filing the IPRs. *Id.* at 989. The district court interpreted § 315(e)(2) as precluding the defendant from raising these invalidity arguments at trial as they reasonably could have raised them in the IPR petitions. *Id.*

55. *Id.* at 990–91 (overruling *Shaw* based on the Supreme Court's holding in *SAS*).

56. *Id.* at 991. In addition to clarifying that the scope of § 315(e)(2) extends to “all grounds not stated in the petition,” the Federal Circuit held that any invalidity grounds that a petitioner was actually aware of at the time of filing its IPR petitions “reasonably could have been included” in the petition, creating estoppel under § 315(e)(2). *Id.*

57. See *infra* Sections II.C.1–3 for a discussion of the various approaches district courts have taken in applying § 315(e)(2) estoppel.

district courts adopted the “skilled searcher” standard.⁵⁸ However, due to a lack of guidance and binding case law, district court rulings substantially diverged how to apply the same “skilled searcher” standard.⁵⁹

1. *Widespread Adoption of the “Skilled Searcher” Standard*

One of the first courts to interpret § 315(e)(2)’s “reasonably could have raised” language was *Clearlamp, LLC v. LKQ Corp.*⁶⁰ Noting that “the Federal Circuit has yet to define [315(e)(2)’s] scope,” the court and the parties turned to the legislative history surrounding the term, specifically statements made by Senator Kyl during AIA debate that suggested utilizing a “skilled searcher standard.”⁶¹ Using this legislative history as its guide, the *Clearlamp* court held that “an *inter partes* review petitioner is estopped from relying on any ground that could have been raised based on prior art that could have been found by a skilled searcher’s diligent search.”⁶² Since its adoption in *Clearlamp*, the “skilled searcher” test has been widely adopted by district courts as the standard to determine what invalidity grounds reasonably could have been raised in the context of § 315(e)(2).⁶³

58. See *infra* Section II.C.1 for a summary of the adoption of the “skilled searcher” standard.

59. See *infra* Sections II.C.2–3 for an overview of the divergent evidentiary standards and burden allocation in applying the “skilled searcher” standard.

60. No. 12 C 2533, 2016 WL 4734389 (N.D. Ill. Mar. 18, 2016).

61. *Id.* at *7–8 (“Section 315(e)(2) estoppel is fairly new and the Federal Circuit has yet to define its scope. . . . Given the lack of precedent, both parties turn to legislative history. . . . Senator Kyl’s floor statement is most on point . . .”). Senator Kyl’s statements compared the current § 315(e)(2) estoppel language to its predecessor and noted that the addition of the modifier “reasonably” before the phrase “could have raised” softens the test such that estoppel only extends to what “a skilled searcher conducting a diligent search reasonably could have been expected to discover” before filing an IPR. See 157 CONG. REC. S1375 (daily ed. Mar. 8, 2011) (statement of Sen. Kyl).

62. *Clearlamp*, 2016 WL 4734389 at *8 (reviewing IPR estoppel’s legislative history).

63. See, e.g., *Biscotti Inc. v. Microsoft Corp.*, No. 13-cv-01015, 2017 WL 2526231, at *7 (E.D. Tex. May 11, 2017) (adopting the “skilled searcher” test); *Snyders Heart Valve LLC v. St. Jude Med.*, No. 18-cv-2030, 2020 WL 1445835, at *7 (D. Minn. Mar. 25, 2020) (same); *Wasica Fin. GmbH v. Schrader Int’l, Inc.*, 432 F. Supp. 3d 448, 453 (D. Del. 2020) (same); *SiOnyx, LLC v. Hamamatsu Photonics K.K.*, 330 F. Supp. 3d 574, 602 (D. Mass. 2018) (same); *Palomar Techs., Inc. v. MRSI Sys., LLC*, 373 F. Supp. 3d 322, 331 (D. Mass. 2019) (same); *Parallel Networks Licensing, LLC v. Int’l Bus. Machs. Corp.*, No. CV 13-2072, 2017 WL 1045912, at *11 (D. Del. Feb. 22, 2017) (same), *aff’d*, 721 F. App’x 994 (Fed. Cir. 2018). However, there has been some variance in the language of the test, leading to at least one debate over the proper language of the standard, particularly whether “would” and “could” are interchangeable. See *Bos. Sci. Corp. v. Cook Grp. Inc.*, 653 F. Supp. 3d 541, 560 (S.D. Ind. 2023) (asserting “when courts use ‘could,’ they are implicitly referring to ‘reasonably could’ from the *Clearlamp* standard. While ‘would’ likewise properly considers this reasonableness requirement, it is not a necessary term for the standard.” (citation omitted)). Furthermore, outside of district courts, this test has been largely adopted by the International Trade Commission and PTAB panels assessing § 315(e)(1) estoppel. See, e.g., In the Matter of Certain Robotic Floor Cleaning

While the “skilled searcher” test was uniformly adopted, some courts considered arguments that the “skilled searcher” test should not be the exclusive standard for determining what reasonably could have been raised.⁶⁴ For example, a district court has weighed the argument that while a set of invalidity grounds *could* have been located through a diligent search, they “could not reasonably have [been] raised” because the defendant “could not have *foreseen*” the patent owner’s infringement theory.⁶⁵ Based on the specific facts of the case, the court concluded that § 315(e)(2) estoppel applied because the patent owner’s theory was “within the scope of what may be plausible.”⁶⁶ However, the court did not outright reject the use of foreseeability, and opined that there may be instances where a patent owner’s theory is “so outlandish” that it would be considered unforeseeable.⁶⁷

Devices & Components Thereof Initial Determination on Violation of Section 337 & Recommended Determination on Remedy & Bond, Inv. No. 337-TA-1252, 2022 WL 16833439 (U.S.I.T.C., Oct. 7, 2022) (adopting the skilled searcher test); *Apotex Inc. v. Wyeth LLC*, No. IPR2015–00873, 2015 WL 5523393, at *4 (P.T.A.B. Sept. 16, 2015) (same).

64. *See infra* notes 65–69 and accompanying text for examples of alternative ways (i.e., outside of the “skilled searcher” standard) to adjudicate what reasonably could have been raised in an IPR.

65. *Microchip Tech. Inc. v. Aptiv Servs. US LLC*, No. 17-CV-01194, 2020 WL 4335519, at *3 (D. Del. July 28, 2020) (emphasis added). Specifically, the defendant conceded that it knew about one of the references it sought to raise in district court and “could have located [the other reference] through a diligent search.” *Id.*

66. *Id.* at *4 (“[The defendant] should have anticipated that [the patent holder] would seek the broadest possible reading of its own patents.”). In reaching this conclusion, the court noted three specific problems with the defendant’s argument: (1) it assumes that its *own* interpretation is correct, but that is a question for a jury to decide; (2) there is no case law where a court declined to apply estoppel because the patentee’s reading was “overbroad”; and (3) the defendant had notice of the patentee’s infringement theory *before* it submitted the IPR petitions. *Id.* at *3.

67. *Id.* Indeed, other courts have weighed, but ultimately rejected, arguments based on foreseeability. *See Innovative Memory Sys., Inc. v. Micron Tech., Inc.*, No. CV 14-1480, 2022 WL 4548644, at *5 (D. Del. Sept. 29, 2022) (rejecting a defendant’s argument that it could not have foreseen a narrow claim construction proposed by the patent holder because “[u]nsuccessful IPR petitioners cannot avoid IPR estoppel merely because they did not subjectively foresee the patentee’s correct claim construction position”). In *Innovative Memory*, the defendant discovered a reference through a keyword search after IPR proceedings had concluded. *Id.* at *4. Although the defendant had performed three previous searches, the new reference was only found once a new search term was used, and that search term “was never mentioned during the IPR proceedings by either the parties or the tribunals.” *Id.* In the PGR estoppel context, the Federal Circuit has rejected similar foreseeability arguments, although it did not foreclose the use of such arguments when the defendant alleges more than the mere possibility of unforeseeable circumstances affecting its invalidity argument. *See Olaplex, Inc. v. L’Oreal USA, Inc.*, 855 F. App’x 701, 715 (Fed. Cir. 2021) (holding that the mere possibility of differing claim constructions between the PTAB and district court, absent a showing by the defendant that its arguments were affected by the claim construction, was insufficient to avoid 35 U.S.C. § 325(e)(2) estoppel). While courts are yet to find a defendant’s foreseeability arguments convincing, there may be unforeseeable scenarios involving venue transfers after a district court, the PTAB, or both has conducted claim construction. *See, e.g., Snyders Heart Valve LLC*, 2020 WL 1445835, at *4 (acknowledging that a

Other courts have advocated for a much broader interpretation of what “reasonably could have been raised.”⁶⁸ Namely, some courts have suggested adopting a standard that “simply asks whether the [invalidity ground] was publicly available at the time of the IPR petition.”⁶⁹ However, for a reference to be invalidating as anticipatory, it must have been “sufficiently accessible to the public interested in the art.”⁷⁰ As such, widespread adoption of this standard would essentially cover all invalidity grounds that could be raised—functionally eviscerating the option for any IPR ground that was later found to not be subject to § 315(e)(2) estoppel.⁷¹

2. *Divergent Evidentiary Standards in the “Skilled Searcher” Inquiry*

Although district courts have widely adopted the “skilled searcher” standard, they have diverged on what evidence is relevant, or even required, to adjudicate the standard.⁷² One point of significant departure has been whether a defendant’s discovery of a new invalidity ground through a search performed after it filed the IPR is relevant, or even dispositive, evidence that they “reasonably could have raised” that ground in the IPR.⁷³ Some courts have held that such evidence is “clear” and “compelling” that earlier, unsuccessful searches were not diligent enough

prior court’s claim construction can be altered upon venue transfer, but rejecting the defendant’s arguments seeking different construction).

68. See *infra* notes 69–70 and accompanying text for examples of district courts suggesting the scope of IPR estoppel to be commensurate with public accessibility.

69. *Oil-Dri Corp. v. Nestle Purina Petcare Co.*, No. 15-cv-1067, 2017 WL 3278915, at *9 & n.11 (N.D. Ill. Aug. 2, 2017) (adopting the “skilled searcher” test, but noting that if it were to use a different standard, it would only look to whether the reference was publicly available); *Innovative Memory*, 2022 WL 4548644, at *3 & n.2 (“The ‘skilled searcher conduc[t]ing a diligent search’ language sounds an awful lot like the standard for determining whether a reference is publicly accessible for purposes of 35 U.S.C. §§ 102 and 311(b) . . .”). The court further noted that “[n]either party has suggested that the §§ 102/311(b) inquiry and the § 315(e) inquiry are the same, and I am unaware of any authority saying that they are.” *Id.* at *3 n.2.

70. *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989). The defendant has the burden of proving that a document is a “printed publication.” See *Medtronic, Inc. v. Barry*, 891 F.3d 1368, 1380 (Fed. Cir. 2018).

71. See *supra* note 69 (providing examples of courts suggesting a public accessibility based IPR estoppel standard). One court has offered a middle ground that would only apply this logic to grounds that were indexed as a U.S. patent in a searchable database. See *Innovative Memory*, 2022 WL 4548644, at *4 (“For my part, I’m not sure that § 315(e) leaves any room for a patent challenger to argue that it could not reasonably have raised an indexed, searchable U.S. patent in its prior IPR proceedings.”). The PTAB has taken a similar position. See *Ex parte Rubin*, No. 93436-0009, 5 (P.T.A.B. Sept. 10, 2020) (“In view of the number of commercial database available to the public, most patents and printed publications, particularly U.S. patents . . . may, in general, be expected to be discovered by a skilled searcher conducting a diligent search.”).

72. See *infra* Section II.C.2 for a survey of district court divergence regarding § 315(e)(2) estoppel evidentiary standards.

73. See *infra* notes 74–75 and accompanying text for a discussion of district court rulings regarding the relevancy of a defendant’s post-IPR discovery of a new potentially invalidating reference.

to meet the “skilled searcher” standard.⁷⁴ Contrarily, at least one court has rejected that the eventual discovery of an invalidity ground indicates that a pre-IPR search “was any less diligent” because it is possible that the post-IPR search exceeded the diligence standard.⁷⁵

Beyond the “actual discovery” evidence discussed above, courts have also diverged on what evidence is indicative of a “diligent search.”⁷⁶ Problematically, some courts have provided little guidance on what a “diligent search” would look like, whereas other courts have sought specific search indicia, such as subclasses and search terms that are related to the patent-in-suit.⁷⁷ Relatedly, some courts have deeply investigated the construction of the post-IPR search procedure for “hindsight bias,” whereas others have quickly brushed aside any hindsight concerns.⁷⁸ Lastly, some

74. *Wi-LAN Inc. v. LG Elecs., Inc.*, 421 F. Supp. 3d 911, 925 (S.D. Cal. 2019) (holding the defendant’s eventual discovery of new invalidity grounds through a search “is compelling evidence itself that [the defendant] reasonably could have discovered these references through a diligent search”). The *Wi-LAN* court also described such as “clear evidence” that the invalidity grounds reasonably could have been discovered by a diligent search. *Id.* at 926; *see also Innovative Memory*, 2022 WL 4548644, at *5 (citing *Wi-LAN* in its conclusion that the defendant was estopped from raising newly located invalidity grounds where the defendant “ultimately did find [the invalidity ground] with a keyword search”); *Trustid, Inc. v. Next Caller Inc.*, No. 18-172, 2021 WL 3015280, at *1 (D. Del. July 6, 2021) (“[T]he fact that Defendant included [the ground] in its invalidity contentions filed just several months after the IPR petition confirms that a skilled searcher likely would have been able to find the reference.”). Other courts found such evidence to create a reasonable inference that the discovered invalidity ground could have been found earlier by a skilled searcher. *See Sioux Steel Co. v. Prairie Land Mill Wright Servs.*, No. 16-cv-2212, 2022 WL 4132441, at *11 (N.D. Ill. Sept. 12, 2022) (estopping several invalidity grounds “[b]ecause [they] were ‘found in a later prior art search, there is a reasonable inference that [they] could have been found earlier by a skilled searcher’” (fourth alteration in original) (emphasis added) (quoting *GREE, Inc. v. Supercell Oy*, No. 19-cv-00071, 2020 WL 4999689, at *5 (E.D. Tex. July 9, 2020))).

75. *Acceleron, LLC v. Dell, Inc.*, No. 12-cv-4123, 2020 WL 10353767, at *4 (N.D. Ga. Mar. 30, 2020) (declining to strike the defendant’s assertion of a user manual as an invalidity ground under § 315(e)(2) based solely on evidence that the defendant discovered the manual through a post-IPR search), *aff’d*, No. 2022-1620, 2023 WL 4503189 (Fed. Cir. July 13, 2023).

76. *See infra* notes 77–80 and accompanying text for a survey of how district courts have addressed the “diligent search” element of the “skilled searcher” standard; *see also Innovative Memory*, 2022 WL 4548644, at *3 (“[N]ot much has been written about how thorough the hypothetical diligent search must be.”).

77. *Compare Palomar Techs., Inc. v. MRSI Sys., LLC*, No. 18-cv-10236, 2020 WL 2115625, at *5 (D. Mass. May 4, 2020) (“There is no set way of conducting search, and searching for prior art is something of an art, not an exact science.”), *with EIS, Inc. v. IntiHealth Ger GmbH*, No. 19-cv-1227, 2023 WL 6797905, at *3 (D. Del. Aug. 30, 2023) (citing two types of search criteria that can lead to the conclusion that a skilled searcher would have found the invalidity grounds and collecting cases supporting such grounds).

78. *Compare Palomar*, 2020 WL 2115625, at *10 (finding the patent holder’s expert testimony regarding search criteria to be “clearly influenced by a hindsight analysis” where the expert admitted to reviewing the invalidity ground before formulating his search criteria), *with Milwaukee Elec. Tool Corp. v. Snap-On Inc.*, 271 F. Supp. 3d 990, 1033 (E.D. Wis. 2017) (rejecting the argument “that the [patentee’s] searches were unfair, being crafted with the benefit of hindsight” where the defendant’s

courts emphasize factors related to “when a skilled searcher might conclude a diligent search,” such as the amount of time spent searching, whereas other courts do not consider such factors.⁷⁹ Based on these disparate treatments of “diligent,” courts have reached different outcomes based on keyword searches that yielded a similar number of results.⁸⁰

Outside of conflicts regarding how to substantively apply the “skilled searcher” test, district courts have procedurally diverged on how to classify the test.⁸¹ A handful of district courts have held that the “skilled searcher” test is a question of fact.⁸² Conversely, some district courts have held that the “skilled searcher” test is a question of law.⁸³

attorneys provided no evidence of hindsight skew and the references were “actually located” by the patentee and defendant). *See also* Henderson, *supra* note 21, at 196 (“[A] search scenario can easily be constructed to locate a reference with a relatively small number of steps, particularly with the benefit of hindsight.”).

79. *Compare Palomar*, 2020 WL 2115625, at *8–9 (making several factual findings regarding when a reasonably diligent searcher would conclude their search, and using those findings to conclude that a skilled searcher conducting a diligent invalidity search would not have found the challenged invalidity ground), *with Innovative Memory*, 2022 WL 4548644, at *4 (analyzing search terms based on their “straightforward[ness]” and the number of search results returned). The court concluded conclusion that a diligent search before the IPR petition would have discovered the invalidity grounds at hand. *Id.*

80. *Compare Palomar*, 2020 WL 2115625, at *15 (rejecting the patent holder’s expert testimony “as to what an objectively reasonable search would have been” over concerns of hindsight bias where the expert’s search strings—comprised of USPC classes and search terms—resulted in a range of one hundred sixty-one to thirty-five results that included the challenged invalidity ground), *with Innovative Memory*, 2022 WL 4548644, at *4 (accepting patent holder’s expert testimony regarding what a skilled searcher performing a diligent search would have found where the expert’s search strings—comprised of CPC classes and “straightforward” search terms—resulted in a range of 100 to 300 patents that included the challenged invalidity ground).

81. *See infra* notes 82–83 and accompanying text for a collection of how district courts have classified the skilled searcher test.

82. *Palomar Techs., Inc. v. MRSI Sys., LLC*, 373 F. Supp. 3d 322, 331 (D. Mass. 2019). The *Palomar* court, in assessing the arguments and evidence presented by both parties, held that there “appear[ed] to at least be a genuine question of material fact as to whether a diligent, skilled searcher would have found the relevant references at the time the IPR was filed” and thus denied the patent holder’s motion for summary judgement. *Id.* at 332; *see also* M-I LLC v. FPUSA, LLC, No. 15-CV-406, 2020 WL 13413830, at *12 (W.D. Tex. Aug. 20, 2020) (denying summary judgement based on the same reasoning). A court once referred to a patent holder’s motion in limine to apply § 315(e)(2) estoppel to an invalidity ground as an “invitation to engage in an impromptu summary adjudication” and declined to proceed with it. *Pavo Sols. LLC v. Kingston Tech. Co.*, No. 14-cv-01352, 2020 WL 1049911, at *4 (C.D. Cal. Feb. 18, 2020).

83. *See Innovative Memory*, 2022 WL 4548644, at *5 (“[C]ourts in this district treat the application of IPR estoppel as a matter for the court.”). Additionally, some courts have decided the “skilled searcher” inquiry as a motion in limine, suggesting it is a legal question for the judge to decide. *See Trustid, Inc. v. Next Caller Inc.*, No. 18-172, 2021 WL 3015280, at *1 (D. Del. July 6, 2021) (granting patentee’s motion in limine to preclude the defendant from raising six prior art references based on estoppel under § 315(e)(2)); *Freal Foods, LLC v. Hamilton Beach Brands, Inc.*, No. CV 16-41, 2019 WL 1558486, at *2 (D. Del. Apr. 10, 2019) (granting in part and denying in part a patentee’s motion in limine to estop certain references).

Despite the district court splits on evidentiary issues, there are some common threads.⁸⁴ Uniformly, if the petitioner in fact knew of the invalidity ground when they filed their petition, they were subsequently estopped from asserting such ground.⁸⁵ Often, parties offer expert testimony or a declaration by a registered patent agent or attorney that specifies what a “reasonably skilled searcher” would have located performing a “diligent search,” and parties that failed to provide such testimony were often on the losing side of § 315(e)(2) estoppel.⁸⁶ Furthermore, in line with this trend, evidence of the results of an actual search is required because attorney arguments alone are insufficient.⁸⁷

Furthermore, at least one court has viewed § 315(e)(2) estoppel as analogous to prosecution history estoppel, which is a question of law, and reasoned that § 315(e)(2) estoppel logically must also be a question of law. *Parallel Networks Licensing, LLC v. Int'l Bus. Machs. Corp.*, No. CV 13-2072, 2017 WL 1045912, at *10 n.13 (D. Del. Feb. 22, 2017) (“Estoppel is a question of law, and, in any event, there are no disputes as to the facts needed to resolve the estoppel question.” (citation omitted)), *aff'd*, 721 F. App'x 994 (Fed. Cir. 2018).

84. See *infra* notes 85–87 and accompanying text for a summary of the common trends in district court application of the “skilled searcher” standard.

85. See *Singular Computing LLC v. Google LLC*, 668 F. Supp. 3d 64, 67 (D. Mass. 2023) (estopping defendant from asserting invalidity arguments based on printed publication and patent references that were identified in its invalidity contentions and claim charts submitted before filing its IPR petition); *Trs. of Columbia Univ. v. Symantec Corp.*, 390 F. Supp. 3d 665, 677 (E.D. Va. 2019) (holding that previously identified grounds in invalidity contentions that were not included in the defendant’s IPR petitions “bars [the defendant] from supporting its invalidity affirmative defense with those grounds of invalidity that it knew existed, but chose not to assert, in its petitions for *inter partes* review”); *Snyders Heart Valve LLC v. St. Jude Med.*, No. 18-cv-2030, 2020 WL 1445835, at *8 (D. Minn. Mar. 25, 2020) (finding estoppel where “[t]here is no question then that [the defendant] had actual knowledge of the patent and written publications prior to its IRP petitions”); *Sioux Steel Co. v. Prairie Land Mill Wright Servs.*, No. 16-cv-2212, 2022 WL 4132441, at *11 (N.D. Ill. Sept. 12, 2022) (estopping thirty-one references that were known by the defendant at the time of IPR petitioning and most were cited in that petition). This is consistent with the Federal Circuit’s holding in *Broadcom*. See *California Institute of Technology v. Broadcom Ltd.*, 25 F.4th 976, 991 (Fed. Cir. 2022) (holding § 315(e)(2) estoppel applies where a defendant was aware of the asserted prior art before filing its IPR petition), *cert. denied sub nom. Apple Inc. v. Cal. Inst. of Tech.*, 143 S. Ct. 2658 (2023).

86. See, e.g., *Oil-Dri Corp. v. Nestle Purina Petcare Co.*, No. 15-cv-1067, 2017 WL 3278915, at *9 (N.D. Ill. Aug. 2, 2017) (patentee attaching a declaration of a registered Patent agent with forty-one years of patent searching experience); *f'real Foods*, 2019 WL 1558486, at *1 (finding no estoppel where it was “undisputed that [patentee] bear[s] the burden of establishing estoppel” and “[t]he only ‘evidence’ offered by [the patentee] in support of their motion is the fact that Defendants uncovered [the reference] two months after filing the IPR”).

87. See *Palomar*, 373 F. Supp. 3d at 331–32 (rejecting a patent holder’s motion for summary judgement regarding § 315(e)(2) estoppel where the patent holder only presented attorney arguments regarding the ease at which the disputed invalidity grounds could have been discovered and “presented no expert affidavits or other factual evidence as to that issue”). Similarly, another district court has found that an attorney argument regarding the similarities between wording within a reference and the patents-in-suit, combined with a “rudimentary search [the patent holder] conducted itself,” was “not a substitute for expert testimony as to why such criterion

3. *Debate Over Which Party Carries the “Skilled Searcher” Burden*

Separate from the evidence relevant to applying the “skilled searcher” test, district courts have placed the burden of providing such evidence on different parties.⁸⁸ Many district courts have declared that the estoppel burden of proof lies solely on the patent owner.⁸⁹ The reason underlying these holdings is that the party that will ultimately benefit from a finding of estoppel—meaning the party that will benefit from certain invalidity grounds being withheld from the trial record—has the burden of raising and proving such.⁹⁰

However, in *Palomar Technologies, Inc. v. MRSI Systems, LLC*,⁹¹ the court opined that the question of what party bears the burden of proving § 315(e)(2) estoppel is not so clear cut.⁹² Lacking guidance from the statute and Federal Circuit, the *Palomar* court reasoned that “the most sensible solution is to allocate the burden of proof in a manner similar to statutes of limitations and discovery rules.”⁹³ Specifically, the court adopted a burden-shifting mechanism in which the initial burden was on the patent owner to assert estoppel and make a prima facie showing that

would be part of a skilled searcher’s diligent search.” *M-I LLC*, 2020 WL 13413830, at *12 & n.7.

88. See *infra* notes 89, 92, and 97 for a collection of various burden-placement outcomes.

89. See, e.g., *Trustid, Inc. v. Next Caller Inc.*, No. 18-172, 2021 WL 3015280, at *1 (D. Del. July 6, 2021) (“Plaintiff bears the burden of establishing estoppel under § 315(e)(2).”); *Clearlamp, LLC v. LKQ Corp.*, No. 12 C 2533, 2016 WL 4734389, at *9 (N.D. Ill. Mar. 18, 2016) (“It is the proponent of an estoppel argument that bears the burden.” (citing *Kennedy v. United States*, 965 F.2d 413, 417 (7th Cir. 1992))); *Pavo Sols. LLC v. Kingston Tech. Co., Inc.*, No. 14-cv-01352, 2020 WL 1049911, at *4 (C.D. Cal. Feb. 18, 2020) (“As the party asserting estoppel, Pavo bears the burden of demonstrating its applicability.”); *Oil-Dri*, 2019 WL 861394, at *10 (“[The patentee], as the proponent of estoppel, bears the burden of showing that estoppel is appropriate.”); *Vaporstream, Inc. v. Snap Inc.*, No. 17-cv-00220, 2020 WL 136591, at *23 (C.D. Cal. Jan. 13, 2020) (“The party asserting estoppel bears the burden to show that estoppel applies.”); *DMF, Inc. v. AMP Plus, Inc.*, No. 18-cv-07090, 2021 WL 6499980, at *2 (C.D. Cal. May 5, 2021) (placing the burden on the plaintiff); *CliniComp Int’l, Inc. v. Athenahealth, Inc.*, No. A-18-CV-00425, 2020 WL 7011768, at *2 (W.D. Tex. Oct. 28, 2020) (“The moving party bears the burden of showing IPR estoppel.”); *Novartis Pharms. Corp. v. Par Pharm. Inc.*, No. 14-cv-1289, 2019 WL 9343055, at *1 (D. Del. Apr. 11, 2019) (“Plaintiff bears the burden of demonstrating that estoppel applies under 35 U.S.C. § 315(e)(2)”); *Bos. Sci. Corp. v. Cook Grp. Inc.*, 653 F. Supp. 3d 541, 553 (S.D. Ind. 2023) (“Plaintiffs and Defendants agree that Plaintiffs bear the ultimate burden of proof on Plaintiffs’ IPR estoppel argument under 35 U.S.C. § 315(e).”).

90. See *Clearlamp*, 2016 WL 4734389, at *9 (emphasizing that the “proponent” of the argument is the party that bears the burden of proving such).

91. No. 18-cv-10236, 2020 WL 2115625 (D. Mass. May 4, 2020).

92. See *id.* at *3–4 (“Arguably, [the statute] could be read to place [the burden] on either party.”). The court further noted that while other courts have placed the burden on the patentee, “[i]t is not obvious, however, that this is the appropriate way to allocate the burden of proof.” *Id.* at *3.

93. *Id.* at *4 (noting the lack of statutory guidance and precedent on the issue of § 315(e)(2)).

it applies.⁹⁴ Thereafter, the burden shifts to the defendant to show that the invalidity ground could not have been reasonably raised.⁹⁵ The court based this decision on fairness and practical considerations, namely that the defendant—as the party that failed to discover the invalidity ground before the IPR—should have to prove why an exception to the normal rule should apply and is also the party in the best position to prove such exception.⁹⁶ While Palomar’s burden allocation is a minority view, at least one court has similarly adopted a burden-shifting mechanism in a comparable post-grant review estoppel context.⁹⁷

The district court split over which party bears the burden of proof, and whether that burden ever shifts, is unsurprising.⁹⁸ The Supreme Court itself has split on a similar burden allocation issue where the statutory provision in question was silent on burden allocation.⁹⁹ Additionally, the Federal Circuit has applied burden-shifting frameworks in the past but struggled to clearly define when such frameworks are appropriate.¹⁰⁰ Part of the confusion stems from a cavalier usage of the ambiguous phrase “burden of proof,” which encompasses the burdens of

94. *See id.* (“[T]he most sensible solution is . . . [that] the initial burden to assert estoppel should be on the party seeking to invoke it (by raising it as a defense, and making a *prima facie* showing that it applies) . . .”).

95. *See id.* The court specifically based this burden-shifting methodology on how courts typically approach the discovery rule in the statute of limitations context. *Id.* at *3. There, “a claim filed outside the limitations period is normally time-barred” unless a discovery rule is available, in which the plaintiff may attempt to establish facts sufficient to meet the discovery rule. *Id.*

96. *See id.* at *3 (reasoning that the statute of limitations burden framework is “based on considerations of fairness and practicality: the plaintiff should be required as a matter of fairness to prove why the exception to the normal rule should apply, and is normally in a far better position to prove that it should than the defendant is to disprove it.”).

97. *See, e.g.,* GREE, Inc. v. Supercell Oy, No. 19-cv-00071, 2020 WL 4999689, at *5 (E.D. Tex. July 9, 2020) (stating, in the § 325(e)(2) PGR estoppel context, that the patent holder “met its burden when it provided evidence that [the defendant] found the references in a later prior art search” and that the defendant “failed to offer evidence to explain why it could not have reasonably found the references earlier”), *report and recommendation adopted*, No. 19-cv-00071, 2020 WL 4937111 (E.D. Tex. Aug. 24, 2020). The court specifically looked to § 315(e)(2) case law for guidance in applying the similarly worded PGR statute. *Id.* at *2. *Compare* 35 U.S.C. § 315(e)(2) (IPR estoppel), *with* 35 U.S.C. § 325(e)(2) (PGR estoppel).

98. *See infra* notes 99–102 and accompanying text for a discussion of the ambiguous nature of the term “burden of proof.”

99. *See* Schaffer *ex rel* Schaffer v. Weast, 546 U.S. 49, 56, 62 (2005) (7–2 decision) (holding that the burden of proof under a provision of the Individuals with Disabilities Education Act fell upon the party seeking relief where the provision was silent on the allocation of the burden of persuasion). Justice Ginsburg would have allocated the burden differently based on “other factors” such as “policy considerations, convenience, and fairness.” *Id.* at 63–67 (Ginsburg, J., dissenting).

100. *See, e.g.,* *In re* Cyclobenzaprine Hydrochloride Extended-Release Capsule Pat. Litig., 676 F.3d 1063, 1075 (Fed. Cir. 2012) (calling a district court’s burden-shifting error “understandable because this court has inconsistently articulated the burden of proof applicable to an obviousness defense in district court litigation”); *infra* notes 101–103 and accompanying text (discussing Federal Circuit case law regarding burden-shifting in the context of patent invalidity).

“persuasion” and “production.”¹⁰¹ In deciding patent law cases, both the Supreme Court and Federal Circuit have held that these two burdens are distinct from one another, meaning they can have different allocations and shifting properties.¹⁰²

The distinction between the two burdens was highlighted in *Dynamic Drinkware LLC. v. National Graphics, Inc.*,¹⁰³ where the Federal Circuit detailed how to allocate—and potentially shift—the burdens of proof when a defendant (or IPR petitioner) challenges the validity of a patent based on anticipation.¹⁰⁴ The court held that the burden of persuasion to prove invalidity lies with the defendant, and this burden never shifts to the patent owner.¹⁰⁵ However, the burden of production to prove invalidity may shift between the parties based on the evidence and arguments made during trial.¹⁰⁶ Outside of the anticipation analysis, the Federal Circuit has reliably used the case law underpinning *Dynamic Drinkware’s* holdings to arrive at analogous burden allocations in different patent law contexts.¹⁰⁷

101. See *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008) (clarifying the two types of burdens encompassed within the term “burden of proof”). The court defined the “burden of persuasion” as “the ultimate burden assigned to a party who must prove something to a specified degree of certainty.” *Id.* The court defined “burden of production” (also referred to as the “burden of going forward with evidence”) as “producing additional evidence and presenting persuasive argument based on new evidence or evidence already of record.” *Id.* at 1327.

102. See *Microsoft Corp. v. i4i Ltd. P’ship*, 564 U.S. 91, 100 & n.4 (2011) (stating that the term “burden of proof” encompasses two burdens); *Tech. Licensing*, 545 F.3d at 1326 (“We will refer to the generic problem of burdens only in the plural—*burdens* of proof—because there are within that phrase two distinct, and quite different, ideas.”). The Supreme Court has called the burden of proof “one of the ‘slipperiest members of the family of legal terms.’” *i4i*, 564 U.S. at 100 n.4 (quoting *Weast*, 546 U.S. at 56).

103. 800 F.3d 1375 (Fed. Cir. 2015).

104. See *id.* at 1378–81 (analyzing burden placement). While *Dynamic Drinkware* involved an appeal from an IPR, the court noted that the framework applied equally in district court litigation. *Id.* at 1379.

105. *Id.* at 1379–80 (holding the burden of persuasion regarding patent invalidity never shifts); see also *In re Cyclobenzaprine*, 676 F.3d at 1077 (finding that, in the context of the burden of persuasion, “the Supreme Court has never imposed nor even contemplated a formal burden-shifting framework in the patent litigation context”).

106. See *Dynamic Drinkware*, 800 F.3d at 1380. Specifically, where the defendant has met their initial burden of production by producing anticipatory prior art, the burden of production then shifts to the patent owner to produce evidence to the contrary. *Id.* The burden of production may shift back to the defendant. *Id.*

107. See *id.* at 1378–79 (illustrating the relative burden framework established in *Tech. Licensing*); *Titan Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372, 1376–77 (Fed. Cir. 2009) (surveying *Tech. Licensing* to demonstrate the burden allocation framework at trial).

III. AN IRON GRIP ON THE GAMING INDUSTRY: IRONBURG'S ASSERTION OF ITS VIDEO GAME CONTROLLER PATENTS AGAINST VALVE

Ironburg Inventions Ltd. (Ironburg) and Valve Corporation (Valve) have had a long history of patent infringement disputes.¹⁰⁸ Ironburg is the owner of several U.S. patents that claim improvements on a handheld controller to be used with a video game console.¹⁰⁹ Valve, a competitor in the video-game controller market, makes a product known as the “Steam Controller”—essentially a hand-held controller for playing video games.¹¹⁰ One of the notable features of the Steam Controller that places it at the heart of the patent dispute is its “grips” located on the underside of the controller that serve as input buttons.¹¹¹

In March 2014, Ironburg first notified Valve that its “marketing of gaming controllers, including Valve’s Steam Controller” allegedly infringed at least two of Ironburg’s gaming controller patents.¹¹² After Valve continued to market its Steam Controller, Ironburg filed a patent infringement lawsuit in December of 2015, claiming Valve’s Steam Controller infringed several patents, including U.S. Patent Number 8,641,525

108. See *infra* notes 109–124 for an overview of Ironburg’s patent litigation with Valve that commenced in 2014.

109. See *infra* note 113 and accompanying text for a list of Ironburg’s patents relevant to its litigation with Valve. For example, one patent recites “one or more additional controls located on the back of the controller” in particular arrangements that allow for a user to operate additional controller actions without the need to remove their thumb from the controller’s thumb sticks. See Controller for Video Game Console, U.S. Patent No. 8,641,525 col. 1 *l.* 56–57 (filed June 17, 2011). The claims of the ’525 patent recite two “elongate member[s]” on the back of an outer case that extend “substantially the full distance between the top edge and the bottom edge.” *Id.* at col. 4 *l.* 53–55. The background section of the ’525 patent states that traditional controllers have buttons located on the front of the controller that are intended to be operated by the user’s thumbs. *Id.* at col. 1. *l.* 8–19. However, because the controller’s thumb sticks are also operated by the user’s thumbs, this creates a situation where a user cannot simultaneously operate both the thumb sticks and front buttons. *Id.* at col. 1. *l.* 33–40.

110. See *Steam Controller*, STEAMPowered.COM, https://store.steampowered.com/app/353370/Steam_Controller/ [<https://perma.cc/7Z2E-4C8E>] (last visited June 14, 2023). According to Valve, the Steam Controller allows users to “[e]xperience a new level of precise control for [their] favorite games[,] . . . even the ones designed without controller support in mind.” *Id.*

111. See Gormash, *The Steam Controller 101 Guide*, STEAM COMMUNITY (Dec. 2, 2015, 10:27 AM), <https://steamcommunity.com/sharedfiles/filedetails/?id=563774882> [<https://perma.cc/2J2P-B8WD>] (surveying features of the Steam Controller). Furthermore, the “Steamworks Documentation” for the Steam Controller touts that “[t]he Steam Controller is distinguished from standard XInput devices [with] . . . [t]wo digital ‘grip’ paddles on the back.” *Steam Controller*, STEAMWORKS DOCUMENTATION, https://partner.steamgames.com/doc/features/steam_controller/device/steam_controller [<https://perma.cc/N4R6-E628>] (last visited June 14, 2023).

112. See Second Am. Compl. for Patent Infringement at ¶ 14, *Ironburg Inventions Ltd. v. Valve Corp.*, 418 F. Supp. 3d 622 (W.D. Wash. 2019) (No. 17CV01182) (recapping notification efforts). The alleged marketing included Valve’s website and U.S. retailers like Amazon, both of whom continued to sell those controllers. *Id.* ¶ 19.

('525 Patent).¹¹³ In response, Valve denied that the Steam Controller infringed any of the asserted patent claims and asserted the affirmative defense that the four patents were invalid.¹¹⁴

In September 2016, Valve requested IPR of every claim in the '525 patent.¹¹⁵ As was acceptable practice before the Supreme Court's ruling in *SAS*, the PTAB partially instituted the IPR proceeding, meaning only a portion of the claims and invalidity grounds raised in Valve's petition were addressed.¹¹⁶ The PTAB ultimately issued a final written decision on the instituted invalidity grounds in September 2017, canceling all of the '525 claims that the PTAB had instituted in the IPR.¹¹⁷ However, because the PTAB only partially instituted the IPR, there were a handful of claims in the '525 patent that the PTAB did not cancel and remained pending in the district court litigation.¹¹⁸ As such, Valve sought to raise several invalidity grounds in district court against the remaining patent claims in an effort to invalidate the whole patent.¹¹⁹ In response, Ironburg requested that Valve be estopped under § 315(e)(2) as to those invalidity grounds, which included grounds included in the IPR petition, but not instituted by the PTAB (non-instituted grounds) and grounds that were not included in the IPR petition (non-petitioned grounds).¹²⁰

In 2019, the district court held that Valve was estopped from raising both the non-instituted and non-petitioned invalidity grounds.¹²¹ In respect to the non-instituted grounds, the court reasoned that Valve waived the issue because Valve had the opportunity after the *SAS* ruling to request remand to the PTAB to have the non-instituted grounds

113. *See id.* ¶¶ 15–17 (recapping the lawsuit commencement). Initially, Ironburg also alleged that the Steam Controller infringed U.S. patent numbers 9,089,770 ('770 Patent), 9,289,688 ('688 Patent), and 9,352,229 ('229 Patent). *See Ironburg Inventions Ltd. v. Valve Corp.*, 418 F. Supp. 3d 622, 625 (W.D. Wash. 2019), *aff'd in part, vacated in part, remanded*, 64 F.4th 1274 (Fed. Cir. 2023).

114. *See* Def. Valve Corp.'s Answer ¶ 19, *Ironburg Inventions Ltd.*, 418 F. Supp. 3d 622 (No. 17CV01182) (detailing Valve's response). Additionally, Valve admitted to having received Ironburg's earlier notices of alleged infringement. *Id.* ¶ 15.

115. *See Ironburg Inventions*, 418 F. Supp. 3d at 625. Ironburg also requested IPR of every claim in the '770 patent. *Id.* Specifically, the PTAB instituted the IPR on three grounds, but declined to institute two other grounds that were raised in the petition. *Id.* at 625–26.

116. *See id.* at 625–26 (“The PTAB instituted inter partes review on most, but not all, of the grounds set forth in Valve's IPR petitions.”); *see also supra* notes 48–51 and accompanying text for a review of *SAS* and its holding that the PTAB may not partially institute an IPR.

117. *See id.* at 625. The final written decision specifically invalidated claims 1, 6, 13, 14, 16, 17, 19, and 20 of the '525 patent. *Id.* at 626.

118. *See id.* at 626. Specifically, claims 2, 4, 7, 9, 10, 11, and 18 of the '525 patent proceeded to trial. *See Ironburg Inventions Ltd. v. Valve Corp.*, No. C17-1182, 2021 WL 2137868, at *1 (W.D. Wash. 2021), *aff'd*, 64 F.4th 1274 (Fed. Cir. 2023).

119. *See Ironburg*, 418 F. Supp. 3d at 626–27 (providing a chart of invalidity grounds raised).

120. *See id.* at 627 (“As to the non-petitioned grounds, Ironburg argues that Valve should be estopped from raising such challenges in this litigation . . .”).

121. *See id.* at 631 (stating the court's conclusions as a matter of law).

addressed, but failed to do so.¹²² As for the non-petitioned invalidity grounds, the court reasoned that because an unrelated third-party had found and raised the same unpetitioned invalidity grounds, “a skilled searcher could have been reasonably expected to find” the unpetitioned invalidity grounds.¹²³ Estopped from raising these invalidity grounds, the trial proceeded only on the issues of infringement and damages, and a jury found that Valve willfully infringed the asserted claims of the ’525 patent—awarding Ironburg over \$4,000,000 dollars in damages.¹²⁴

IV. SEEKING TO END THE SEARCH: THE FEDERAL CIRCUIT WEIGHS IN ON THE PROPER APPLICATION OF § 315(E)(2)

On appeal, the Federal Circuit addressed whether the district court erred in granting estoppel under § 315(e)(2) for the non-instituted grounds and the non-petitioned grounds.¹²⁵ Beginning with the non-instituted grounds, the court reasoned that the only conclusion that could give effect to the statutory language “reasonably could have raised” in light of the Supreme Court’s decision in SAS was that any ground that could have been included in the petition has the potential for estoppel to apply to it.¹²⁶ Emphasizing that Valve had the opportunity to seek remand on these non-instituted grounds and failed to do so, the court held that Valve was properly estopped from raising the non-instituted grounds.¹²⁷

Moving to the non-petitioned grounds, the court started by confirming that it was a matter of first impression “as to what invalidity grounds not presented in a petition are estopped pursuant to § 315(e)(2).”¹²⁸ In deciding the appropriate standard, the court acknowledged that many district courts had adopted the “skilled searcher” standard and that the standard is consistent with § 315(e)(2)’s textual requirement.¹²⁹

122. *See id.* at 629 (reasoning “a partial IPR institution error on the part of the PTAB is waivable”).

123. *See id.* at 631. The third party who was involved in the separate and unrelated IPR proceeding was “Collective Minds Gaming Co. Ltd.,” who settled the matter with Ironburg. *Id.* at 630 & n. 14.

124. *Ironburg Inventions Ltd. v. Valve Corp.*, No. C17-1182, 2021 WL 2137868, at *1 (W.D. Wash. 2021) (recounting the trial and damages award), *aff’d*, 64 F.4th 1274 (Fed. Cir. 2023).

125. *Ironburg Inventions Ltd v. Valve Corp.*, 64 F.4th 1274, 1284–85 (Fed. Cir. 2023) (addressing appealed IPR estoppel issues). *Ironburg* also addressed issues relating to indefiniteness, infringement, willfulness, and enhanced damages. *Id.* at 1281.

126. *Id.* at 1297 (analyzing estoppel as applied to the non-instituted grounds).

127. *Id.* (“As Valve acknowledges, it had the opportunity, following the Supreme Court’s issuance of its decision in SAS, which held that the PTO may institute on all or none of the claims challenged in a petition but could not grant a partial institution, to seek remand of its IPR to the Board.”).

128. *Id.* at 1297–98 (analyzing estoppel as applied to the non-petitioned grounds).

129. *Id.* at 1298 (“As these cases demonstrate, the ‘skilled searcher’ standard is consistent with the [§ 315(e)(2)] statutory requirement . . .”).

Thus, the court adopted the “skilled searcher” standard, holding that § 315(e)(2) estops a defendant from raising invalidity grounds that “a skilled searcher conducting a diligent search reasonably could have been expected to discover” pre-IPR, as these are grounds that the defendant “reasonably could have raised.”¹³⁰

Having adopted a new standard, the court then turned to the question of which party should bear the burden of proving it.¹³¹ After acknowledging that other district courts have placed the burden purely on the patent owner, the court held that the patent owner bears the burden of proving the skilled searcher test by a preponderance of the evidence.¹³² The court reasoned that this allocation is “consistent with the general practice that a party asserting an affirmative defense bears the burden to prove it.”¹³³ Furthermore, the court found Ironburg’s contention that the attorney–client privilege will safeguard the defendant’s search efforts to be unpersuasive, particularly because courts routinely handle privilege issues and the “skilled searcher” standard is based on what a skilled and diligent searcher would find, not what the defendant actually did find.¹³⁴

In light of these holdings, the Federal Circuit concluded that the district court erred in its § 315(e)(2) analysis of the non-petitioned grounds.¹³⁵ Specifically, the district court had reasoned that the deficiency of a key piece of evidence—what level of diligence the unrelated third party had employed to find the same asserted invalidity grounds—was for Valve to remedy.¹³⁶ Given *Ironburg*’s holding that the patent owner bears the burden of proving § 315(e)(2) estoppel, it was improper for the district court to hold “this hole in the record” against Valve, and the court remanded the issue back to the district court.¹³⁷

V. THE SEARCH THAT FELL SHORT: *IRONBURG*’S NARROW ANALYSIS OVERLOOKS ISSUES OF EXCLUSIVITY AND THE PROPER BURDEN ALLOCATION

This Part provides a critical analysis of *Ironburg*’s (1) adoption of the “skilled searcher” standard to adjudicate § 315(e)(2) estoppel, and (2) placement of the burden of proof solely on the patent owner. Section A

130. *See id.* (adopting the “skilled searcher” standard “provided the other conditions of the statute are satisfied”).

131. *See infra* notes 132–134 and accompanying text for a summary of the court’s burden-placement analysis and conclusion.

132. *Ironburg*, 64 F.4th at 1299 (“[T]he burden of proving, by a preponderance of the evidence, that a skilled searcher exercising reasonable diligence would have identified an invalidity ground rests on the patent holder.”).

133. *Id.* (citing exemplary cases of the “general practice”).

134. *See id.* (discussing and rejecting privilege considerations as not a “persuasive basis for us to depart from [the general] approach”).

135. *See id.* at 1284, 1299 (vacating and remanding to the district court for review of the non-petitioned grounds).

136. *See id.* at 1298–99 (“[T]he district court did not place this burden on Ironburg, but instead on Valve . . .”).

137. *Id.* at 1298 (remanding the case on the issue of IPR estoppel). The court left it up to the district court to “determine if a trial is needed or whether the

argues that adopting a broad interpretation of *Ironburg*, which includes the “skilled searcher” standard as a non-exclusive factor in adjudicating § 315(e)(2) estoppel, is appropriate based on the statutory text, legislative history, and historical practice. Section B explains how *Ironburg*’s narrow burden-placement analysis overlooked pertinent Federal Circuit case law and practical considerations that convincingly counsel against *Ironburg*’s allocation of the § 315(e)(2) burden of persuasion. Lastly, Section C applies a bifurcated burden-placement analysis, based in precedent, that demonstrates the shifting properties of the § 315(e)(2) burden of production.

A. *Exclusivity and the “Skilled Searcher” Standard*

Although *Ironburg*’s discussion that adopted the “skilled searcher” standard was a brief, single paragraph, it was based in sound reasoning.¹³⁸ First, the court accurately noted that the language of § 315(e)(2) calls for estoppel to attach to any invalidity ground that “*reasonably* could have [been] raised” during the IPR and utilizing the “skilled searcher” standard in this context is consistent with this statutory mandate.¹³⁹ Second, the court recognized that district court judges, patent owners, and defendants alike—including those involved in *Ironburg*—have largely advocated for the adoption of the “skilled searcher” standard since *Clearlamp* in 2016.¹⁴⁰ Lastly, although the court did not explicitly cite it as a ground for adoption, the “skilled searcher” standard has a firm basis in the legislative history of the AIA.¹⁴¹ As such, the court appropriately adopted the “skilled searcher” standard based on its consistency with the statutory mandate, district court practice, and AIA legislative history.¹⁴²

However, the language surrounding *Ironburg*’s adoption of the “skilled searcher” standard problematically does not explicitly define the breadth of its applicability.¹⁴³ Specifically, the court’s discussion is unclear as to whether the skilled searcher test is adopted as the *exclusive* or *nonexclusive* standard to adjudicate what “reasonably could have

dispute is amenable to resolution via case-dispositive motions or some other mechanism.” *Id.* at 1300.

138. *See id.* at 1297–98 (adopting the “skilled searcher” test).

139. *Id.* at 1298 (analyzing the language of § 315(e)(2)) (quoting 35 U.S.C. § 315(e)(2) (2024)).

140. *See id.* (citing cases relied on by the district court).

141. *See supra* note 61 and accompanying text for a review of the legislative history. The *Ironburg* court implicitly recognized this legislative history elsewhere in the opinion. *See Ironburg*, 64 F.4th at 1299 (referencing “scorched earth” tactics found in the legislative history of § 315(e)(2)).

142. *See supra* notes 139–141 and accompanying text (discussing factors considered in the adoption of the “skilled searcher” standard).

143. *See infra* notes 144–147 and accompanying text for a discussion of the ambiguity left open in *Ironburg*.

[been] raised.”¹⁴⁴ For example, some discussion regarding *Ironburg*’s burden on remand suggests that the “skilled searcher” standard is to be applied exclusively,¹⁴⁵ whereas open language surrounding the adoption of the standard suggests it is to be a nonexclusive factor in adjudicating § 315(e)(2).¹⁴⁶ As such, future courts—including Federal Circuit panels—can reasonably read *Ironburg* narrowly and adopt the “skilled searcher” standard exclusively, or broadly and adopt the standard nonexclusively.¹⁴⁷

While the exclusive-versus-nonexclusive classification may appear to be a nuanced distinction, accurately defining these contours is important due to the Supreme Court’s interest in policing judicially-created patent law tests.¹⁴⁸ Specifically, the Supreme Court has previously rejected the use of judicially-created exclusive tests in the adjudication of the Patent Act, mandating that “courts should not read into the patent laws limitations and conditions which the legislature has not expressed.”¹⁴⁹ Given that the language of § 315(e)(2) does not include any references to a “skilled searcher” nor “conducting a diligent search,” it follows that an exclusive adoption of the “skilled searcher” standard would impermissibly limit § 315(e)(2) estoppel based on unexpressed conditions.¹⁵⁰ Therefore, courts should read *Ironburg*’s adoption of the “skilled searcher” test

144. See *infra* notes 145–146 for examples of language in *Ironburg* that can give rise to different understandings regarding the exclusivity of the “skilled searcher” test.

145. See *Ironburg*, 64 F.4th at 1299 (stating that, on remand, “the burden is on *Ironburg* to prove, by a preponderance of the evidence, that a skilled searcher conducting a diligent search reasonably would have been expected to discover” the invalidity grounds such that § 315(e) estoppel applies).

146. See *id.* at 1298 (conditioning the adoption of the “skilled searcher” standard with language such as “provided the other conditions of the statute are satisfied”).

147. See *supra* notes 143–146 and accompanying text (discussing potential readings of *Ironburg*).

148. See *infra* notes 148–151 and accompanying text (discussing trends in Supreme Court patent-focused case law).

149. *Bilski v. Kappos*, 561 U.S. 593, 602–04 (2010) (quoting *Diamond v. Diehr*, 450 U.S. 175, 182 (1981)) (rejecting the judicially created “machine or transformation test” as the exclusive test for determining patent eligibility and confining its applicability to use as a nonexclusive factor and “useful and important clue” in determining patent eligibility); see also *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 76–77 (2012) (rejecting the “machine or transformation” test, again, in favor of the more flexible “law of nature” exclusion). Additionally, commentators have noted that “the Supreme Court tends to overrule Federal Circuit decisions that . . . impose rigid legal rules as opposed to flexible standards.” See *Ernst*, *supra* note 51, at 1. Said differently, the Supreme Court often finds “that the Federal Circuit erred by applying an inflexible rule rather than a general standard.” *Id.* at 23. Furthermore, the Supreme Court has rejected rigid tests in the areas of patent injunctions, prosecution history estoppel, and obviousness. *Id.* at 20–23.

150. Compare 35 U.S.C. § 315(e)(2) (2024) (IPR estoppel statute), with *Ironburg*, 64 F.4th at 1299 (defining the “skilled searcher” standard).

broadly as a nonexclusive factor in determining what invalidity grounds a defendant “reasonably could have raised” during the IPR.¹⁵¹

B. *Discovering a Fix: Bifurcating the Burden Analysis*

Ironburg’s narrow burden-placement analysis—considering only district court cases in concurrence, general estoppel practices, and privilege issues—overlooked pertinent Federal Circuit case law and persuasive practical considerations that conflict with the court’s conclusion that the patent owner bears the § 315(e)(2) burden of persuasion.¹⁵² Specifically, the court did not consider analogous patent law precedent that bifurcates the burden-allocation analysis into “burden of persuasion” and “burden of production” prongs, which misguided the court’s inquiry.¹⁵³ Furthermore, an analysis of the practical realities that result from the court’s burden placement decisively counsels against *Ironburg*’s allocation, particularly when evaluated in light of the AIA’s goals.¹⁵⁴

As an initial matter, *Ironburg*’s limited burden-placement analysis provides weak support for its conclusion that the patent owner bears the complete § 315(e)(2) burden of proof.¹⁵⁵ For example, the court’s citation to three district court cases that reached the same conclusion, without inquiry into the reasoning underpinning those cases, is unpersuasive given that other district courts—like *Palomar*—provided a highly detailed burden-placement analysis and arrived at a different conclusion.¹⁵⁶ Similarly, the court’s citations to cases applying the general practice that “a party asserting an affirmative defense bears the burden to prove it” lacks the requisite contextual analysis to convincingly claim that such practice is applicable, subsequently missing the important context in which § 315(e)(2) estoppel is applied.¹⁵⁷

151. See *supra* notes 148–150 and accompanying text (discussing potential readings of *Ironburg*). For example, courts may also consider weighing the foreseeability of an invalidity ground, particularly in the context of changing claim constructions or infringement theories. See *supra* notes 64–67 and accompanying text for a discussion of “foreseeability” based arguments at the district court level.

152. See *Ironburg*, 64 F.4th at 1298 (adopting the “skilled searcher” test); *infra* Section V.B (discussing the court’s burden-placement analysis).

153. See *infra* notes 156–160 and accompanying text for a discussion of *Dynamic Drinkware*’s burden-placement analysis and its applicability to § 315(e)(2) estoppel.

154. See sources cited *infra* notes 169–171 and accompanying text for a discussion of the practical realities that come with *Ironburg*’s burden placement.

155. See sources cited *infra* notes 156–157 and accompanying text for a critical analysis of *Ironburg*’s support for its burden-placement analysis.

156. See *Ironburg*, 64 F.4th at 1299 (looking to “other district courts that have placed the estoppel burden of proof solely on the patent owner”). For a discussion of the analysis in *Palomar*, see *supra* notes 91–97 and accompanying text.

157. *Ironburg*, 64 F.4th at 1299 (citing to cases applying a general practice to affirmative defenses); see *infra* notes 171–174 and accompanying text (discussing the IPR context); see also *Schaffer ex rel Schaffer v. Weast*, 546 U.S. 49, 62 (2005) (Stevens, J., concurring) (noting that no single principle can ascertain the correct burden allocation when the statute and legislative history are silent on such issue).

A more persuasive and consistent analysis could have been performed by comparing the § 315(e)(2) estoppel context to Federal Circuit case law analyzing analogous burden allocation issues.¹⁵⁸ One case that is particularly pertinent to resolving the burden-allocation issues of § 315(e)(2) estoppel is *Dynamic Drinkware* because of its immense legal and contextual similarities.¹⁵⁹ As a starting point, both the situations that give rise to § 315(e)(2) estoppel and the facts of *Dynamic Drinkware* involve a patent challenger asserting an invalidity challenge against a patent.¹⁶⁰ Additionally, both situations involve the patent challenger supporting their invalidity challenge based on a reference (or combination of references) that is allegedly qualified to serve as prior art against the patent.¹⁶¹ Furthermore, both contexts involve the patent's owner seeking to effectively disqualify the reference based on statutory grounds *other* than the reference's substantive ability to invalidate the patent.¹⁶² Under these circumstances, both § 315(e)(2) estoppel procedure and *Dynamic Drinkware* arrive at the same legal question—how should courts allocate the burdens of persuasion and production that underly the intertwined invalidity and qualification challenges?¹⁶³

Given the material similarities between these situations, *Dynamic Drinkware's* framework regarding burden allocation is pertinent to—if not outright controlling—of the § 315(e)(2) burden-placement analysis.¹⁶⁴

158. See *infra* notes 164–171 and accompanying text for an alternative burden-allocation analysis.

159. See *Dynamic Drinkware v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1377 (Fed. Cir. 2015) (resolving burden allocation issues in the context of invalidity challenges based on effective filing dates); *supra* notes 103–107 and accompanying text (outlining *Dynamic Drinkware's* analysis).

160. See *supra* notes 37–43 and accompanying text for the IPR procedure that gives rise to this scenario in § 315(e)(2) cases; *Ironburg*, 64 F.4th at 1296, 1299 (“Valve identified four grounds for invalidity . . .”). Similarly, in *Dynamic Drinkware*, the patent challenger was an IPR petitioner who asserted an anticipation-based invalidity challenge. See *Dynamic Drinkware*, 800 F.3d at 1377.

161. See 35 U.S.C. § 311 (2024) (limiting IPRs to “patents or printed publications”). In *Dynamic Drinkware*, the allegedly invalidating reference was a U.S. patent (owned by an uninvolved party) that claimed the benefit of a provisional application. See *Dynamic Drinkware*, 800 F.3d at 1377.

162. See *Ironburg*, 64 F.4th at 1284 (“*Ironburg* moved for an order applying IPR estoppel . . .”); *Dynamic Drinkware*, 800 F.3d at 1380 (“[Patent owner] contended that the asserted claims were entitled to a date of invention prior to that of the [alleged prior art].”). In the § 315(e)(2) context, disqualification involves the patent owner asserting that the potentially invalidating reference is statutorily estopped from being raised. See, e.g., *Ironburg*, 64 F.4th at 1284 (*Ironburg* asserting IPR estoppel). In *Dynamic Drinkware*, disqualification involved the patent owner asserting that the potentially invalidating reference was not statutorily “prior art” under pre-AIA § 102(e) because the reference's filing date was after the patent owner's reduction to practice. *Dynamic Drinkware*, 800 F.3d at 1380.

163. See *Ironburg*, 64 F.4th at 1297–99 (addressing the issue of § 315(e)(2) burden allocation); *Dynamic Drinkware*, 800 F.3d at 1378 (addressing the issue of effective filing date burden allocation in an invalidity dispute).

164. See *infra* notes 165–168 and accompanying text (outlining the major burden-allocation principles of *Dynamic Drinkware* and their implications in the § 315(e)(2) context).

Dynamic Drinkware emphatically placed the burden of persuasion to prove patent invalidity on the patent challenger.¹⁶⁵ Additionally, *Dynamic Drinkware* makes it clear that this ultimate burden *never* shifts from the patent challenger to the patent owner, even when the patent owner contests the qualification of an invalidity reference.¹⁶⁶ Following this precedent in the § 315(e)(2) context, the burden of persuasion must always rest with the patent challenger, even though the patent owner disputes the qualification of a reference based on statutory estoppel.¹⁶⁷ As such, any “hole in the record” in regard to § 315(e)(2) should be held against the patent challenger—a result contrary to that announced in *Ironburg*.¹⁶⁸

While precedent like *Dynamic Drinkware* persuasively calls for the burden of persuasion to reside with the patent challenger, examining the consequences of placing that burden on the patent owner decisively counsels against *Ironburg*'s burden allocation.¹⁶⁹ *Ironburg*'s analysis relied on “the general practice that a party asserting an affirmative defense bears the burden to prove it” and considered only a single basis—privilege—to depart from this generality.¹⁷⁰ Although the court reasonably concluded that privilege issues did not provide a “persuasive basis” to depart from the general practice, this analysis was too narrow of an inquiry and

165. *Dynamic Drinkware*, 800 F.3d at 1379 (“[The defendant], having the ultimate burden of proving its defense of invalidity, . . . also had the initial ‘burden of going forward with evidence that there is such anticipating prior art.’” (quoting *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008))).

166. *Id.* at 1378 (stating the burden of persuasion of patent invalidity never shifts). Said differently, the defendant *always* has the burden to convince the court, and bears “the risk of decisional uncertainty.” *Tech. Licensing*, 545 F.3d at 1327.

167. *See supra* notes 165–166 and accompanying text (setting forth a burden-allocation framework that can be applied in the § 315(e)(2) context).

168. *See Ironburg*, 64 F.4th at 1298–99 (holding the district court erred in applying the evidentiary “hole in the record against [the defendant]”); *see also Dynamic Drinkware*, 800 F.3d at 1378–79 (“Failure to prove the matter as required by the applicable standard means that the party with the burden of persuasion loses on that point—thus, if the fact trier of the issue is left uncertain, the party with the burden loses.” (quoting *Tech. Licensing*, 545 F.3d at 1327)). While *Ironburg* did not explicitly refer to whether its use of the term “burden of proof” was referring to the burden of persuasion or production in its opinion, its textual combination of the phrases “to prove” with “by a preponderance of the evidence” indicates that the court was referring to the burden of persuasion. *See Ironburg*, 64 F.4th at 1299.

169. *See infra* notes 170–183 and accompanying text for a survey of the consequences that come with placing the § 315(e)(2) burden of persuasion on the patent owner.

170. *Ironburg*, 64 F.4th at 1299. Ironically, one of the cases cited by the *Ironburg* court for this general practice positively endorsed a burden-shifting mechanism in the invalidity context. *See Titan Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372, 1376–77 (Fed. Cir. 2009) (“Once the challenger presents initially persuasive evidence of invalidity, the burden of going forward *shifts* to the patentee to present contrary evidence and argument.” (emphasis added)). *Titan Tire* partially relies on *Tech. Licensing*, which substantially guided the burden-placement analysis in *Dynamic Drinkware*. *See id.*; *Dynamic Drinkware*, 800 F.3d at 1379.

overlooked several considerations that render the general practice inapposite in the § 315(e)(2) context.¹⁷¹

One of the most salient considerations that went unaddressed in *Ironburg* is the evidentiary record the burden-bearer needs to produce and the practical implications that come with collecting such evidence.¹⁷² A review of the “skilled searcher” case law reveals that the party bearing the § 315(e)(2) burden must perform a detailed invalidity search to sufficiently create an evidentiary basis.¹⁷³ From the patent owner’s perspective, it is an abnormal activity to perform a robust search for invalidity grounds that may invalidate their own patent.¹⁷⁴ But such a task is more than unusual—it comes with adverse consequences for any patent applications owned by the patent owner under the USPTO’s “duty to disclose information material to patentability” and the “inequitable conduct” doctrine.¹⁷⁵ This places the patent owner in a difficult position:

171. See *Ironburg*, 64 F.4th at 1299. Specifically, the single basis that the court considered was the potential misuse of the attorney–client privilege by the defendant—such as blocking access to the details of pre-IPR invalidity search efforts—that arise when the burden is on the patent owner. *Id.* In doing so, the court pointed out that privilege issues are not extraordinary, and the “skilled searcher” test is an objective inquiry that makes evidence of what the defendant actually *did* discover in a pre-IPR search partially irrelevant. *Id.*

172. See sources cited *infra* notes 173–177 and accompanying text (synthesizing the evidentiary burden of § 315(e)(2) based on district court application of the “skilled searcher” standard).

173. See sources cited *supra* notes 84–87 and accompanying text for a review of the uniformly-applied § 315(e)(2) evidentiary standards. Practically, this means that the party that bears the burden must conduct an actual search, deeply analyze the potential search paths that lead to the invalidity ground at issue, and strategize with an expert regarding whether a skilled searcher would have found such. See *id.* (outlining common evidentiary requirements of the “skilled searcher” standard). Attorney arguments alone are insufficient. See *supra* note 87 and accompanying text (noting the trend of rejecting attorney arguments and other substitutes for expert searches). Realistically, the patent owner will likely hire an expert to perform the invalidity search and provide testimony on their findings. See, e.g., *Palomar Techs., Inc. v. MRSI Systems, LLC*, No. 18-cv-10236, 2020 WL 2115625, at *5–8 (D. Mass. May 4, 2020) (discussing the testimony of several expert witnesses and their prior art searches). However, while the patent owner may not directly encounter invalidity grounds through the search, given the level of review and discussion the patent owner will need to have with the expert, the patent owner is still likely to encounter a substantial amount of invalidity grounds. See *supra* Section C.II for a discussion of the nuanced considerations made in adjudicating § 315(e)(2) estoppel.

174. See 37 C.F.R § 1.56 (2023) (creating a duty of disclosure only for “information known”). This is particularly true since there is no duty for a patent applicant to perform a prior art search. *Id.*

175. See *id.* Specifically, the USPTO imposes a “a duty to disclose . . . all information known to that individual to be material to patentability,” such as those discovered in a patent search. *Id.* § 1.56(a). This duty applies to “[e]ach individual associated with the filing and prosecution of [the] patent application” and extends until a patent is granted or abandoned. *Id.* Additionally, the duty applies to patent applications based on the same disclosure of an issued patent that is the subject of patent litigation, such as continuations or divisionals. See MPEP § 2001.06(c) (9th ed. 2014, rev. July 2022) (creating a duty of disclosure for information related to litigation). Continuation practice is very popular among those that regularly use the patent system. See Gary C. Ganzi, *Patent Continuation Practice and Public Notice*:

they have to balance the “atomic bomb” of patent law—inequitable conduct—with the burden of performing a “skilled” and “diligent” invalidity search.¹⁷⁶ Placing the patent owner in this peculiar scenario is unsatisfactory given its disproportionate risks required to merely meet the evidentiary threshold of the “skilled searcher” standard.¹⁷⁷

While these unsatisfactory practical implications provide a reasonable basis to reallocate *Ironburg’s* burden of persuasion, viewing them in the context of § 315(e)(2) and the AIA decisively provides a persuasive basis to depart from *Ironburg’s* appeal to general estoppel practices.¹⁷⁸ The legislative history of the AIA demonstrates that § 315(e)(2) is part of a larger set of IPR provisions seeking to balance the AIA’s error correction initiatives (that benefit defendants in patent infringement suits) with fairness considerations (that protect patent owners and the innovation incentives of the patent system).¹⁷⁹ While most of the IPR provisions favor the defendant by providing them a multitude of tools to effectively challenge a patent’s validity, § 315(e)(2) is one of the only provisions that protects the patent owner by limiting the patent challenger from taking “a second bite at the invalidity apple once in the district court.”¹⁸⁰ In this context, placing the burden of proof on the patent owner essentially turns the benefits of § 315(e)(2) into risks that destabilize the careful

Can They Coexist?, 89 J. PAT. & TRADEMARK OFF. SOC’Y 545, 549 (2007) (“Continued examination practice has become very popular due to its commercial advantages for the applicant. It is estimated that presently, more than 25% of all pending patent applications in the USPTO are continuing applications.”).

176. *Therasense, Inc. v. Becton, Dickinson & Co.*, 649 F.3d 1276, 1288 (Fed. Cir. 2011) (en banc) (outlining the inequitable conduct standard); see John O. Curry, *Avoiding Responsibility: The Case for Amending the Duty to Disclose Prior Art in Patent Law*, 95 WASH. L. REV. 1031, 1044–45 (2020) (“[Patent] practitioners are still required to make difficult decisions about what art is known by all parties within the ambit of 37 C.F.R. § 1.56.”); see also Regan, Specht & Fernandes, *supra* note 30 (“[A]rt uncovered in such searches may be relevant to information disclosure practice for continuations still pending . . .”).

177. See sources cited *supra* notes 173–176 and accompanying text (outlining and weighing the relative risks of bearing the burden of persuasion in adjudicating § 315(e)(2) estoppel).

178. See *infra* notes 179–182 and accompanying text (discussing the practical implications of *Ironburg’s* burden allocation).

179. See *supra* note 15 (collecting AIA legislative history and academic commentary that emphasizes the importance of carefully balancing the provisions of post-grant proceedings like IPR); *supra* notes 20–23 and accompanying text (outlining and comparing the error correction mechanisms with the fairness safeguards contemplated in the design of a balanced IPR system).

180. *Milwaukee Elec. Tool Corp. v. Snap-On Inc.*, 271 F. Supp. 3d 990, 1029 (E.D. Wis. 2017) (“In order for IPR to fulfill its mission of streamlining patent litigation . . . and promoting efficient dispute resolution, a petitioner cannot be left with the option to institute a few grounds for IPR while holding some others in reserve for a second bite at the invalidity apple . . .”); *Parallel Networks Licensing, LLC v. Int’l Bus. Machs. Corp.*, No. CV 13-2072, 2017 WL 1045912, at *12 (D. Del. Feb. 22, 2017) (discussing how “a second bite at the [invalidity] apple” is an unfair result because it allows a defendant “to reap the benefits of the IPR without the downside of meaningful estoppel”), *aff’d*, 721 F. App’x 994 (Fed. Cir. 2018).

balance the AIA strived to create.¹⁸¹ Furthermore, it can hardly be said that having the patent owner perform a largely redundant invalidity search—something § 315(e)(2) is supposed to incentivize the patent challenger to do *before* filing an IPR petition—“streamlines litigation” because it unnecessarily raises the cost and complexity of litigation.¹⁸² As such, the reason the *Ironburg* court found “no persuasive basis” to depart from the generalized practice was because the court *only* considered issues relating to the potential misuse of the attorney–client privilege, subsequently missing critical context that firmly calls for a different burden allocation.¹⁸³

C. *An Even Playing Field: Burden of Production Shifting*

Because *Ironburg* did not bifurcate its burden-allocation analysis, the court did not have the opportunity to analyze the potential shifting properties of § 315(e)(2)’s burden of production.¹⁸⁴ However, a review of Federal Circuit precedent calls for a burden-shifting mechanism to be implemented alongside the burden of production.¹⁸⁵ Furthermore, the statutory text of § 315(e)(2) and the AIA indicate that once the patent owner produces evidence that the reference-in-question was discoverable during the IPR, the burden of production shifts to the patent challenger to present evidence why such reference, although discoverable, was not one that they “reasonably could have raised” during the IPR.¹⁸⁶

In analyzing the potential for § 315(e)(2) burden of production shifting, *Dynamic Drinkware* is again instructive through its description

181. See *supra* notes 172–177 and accompanying text for a discussion of the risks associated with placing the complete burden of proof on the patent owner, such as unnecessary exposure to inequitable conduct claims; see also *Therasense, Inc. v. Becton, Dickinson & Co.*, 649 F.3d 1276 (Fed. Cir. 2011) (en banc) (discussing the standard for adjudicating inequitable conduct and its consequences on a patent family).

182. See *supra* note 13 and accompanying text (outlining the AIA’s efficiency goals and collecting sources indicating such initiatives). Conversely, defendants in patent litigation routinely perform invalidity searches and § 315(e)(2) is designed to resolve invalidity issues in one venue (the PTAB) rather than two (the PTAB and then later district court). See sources cited *supra* notes 4, 36–39 (discussing the desire for an efficient way to test “patent quality” outside of district court litigation and the design that enables IPRs to be an efficient alternative to district court litigation).

183. See *supra* notes 152–157 for a critical analysis of *Ironburg*’s brief burden-placement analysis that considered only district court cases in concurrence, general estoppel practices, and privilege issues.

184. See *supra* Section V.B for a discussion of a bifurcated approach to § 315(e)(2) burden allocation.

185. See *infra* notes 187–194 and accompanying text for a review of *Dynamic Drinkware*, its applicability to § 315(e)(2), and its implications on the proper § 315(e)(2) burden allocation.

186. See *infra* notes 196–199 and accompanying text for an analysis of the statutory language of § 315(e)(2) that suggests a burden-shifting approach and case law supporting such proposition.

of a three-step framework.¹⁸⁷ First, *Dynamic Drinkware* directs that the defendant asserting the defense of patent invalidity also has the initial burden of production to identify an allegedly invalidating reference.¹⁸⁸ Second, if this initial burden is met, the burden of production—but not the burden of persuasion—*shifts* to the patent owner to demonstrate a basis why the asserted reference is not statutorily qualified to serve as an invalidity ground against the patent.¹⁸⁹ Lastly, if this intermediate burden is met, the burden of production *shifts back* to the defendant to convince the court that the asserted reference qualifies to serve as an invalidity ground.¹⁹⁰

Applying this framework to the § 315(e)(2) context, several properties of the burden of production are apparent.¹⁹¹ First, because *Dynamic Drinkware* and § 315(e)(2) cases both arise out of a defendant's invalidity defense, it follows that the defendant in a § 315(e)(2) case also bears the initial burden of production on this issue.¹⁹² Additionally, it is clear that the burden of production may then shift to the patent owner and potentially shift back to the defendant.¹⁹³ Furthermore, it is evident that although the burden of production may shift from party-to-party,

187. See *infra* notes 188–190 and accompanying text (outlining shifting applicability, initial assignment, and timing based on *Dynamic Drinkware's* precedent).

188. See *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1379 (Fed. Cir. 2015) (holding the defendant satisfied its initial burden by presenting evidence and arguing that the reference was anticipatory under 35 U.S.C. § 102(e)(2)); see also *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008) (holding the defendant, “having the ultimate burden of proving its defense of invalidity based on anticipating prior art, then has the burden of going forward with evidence that there is such anticipating prior art”).

189. See *Dynamic Drinkware*, 800 F.3d at 1380 (holding that the burden of production shifted to the patent owner to “to argue or produce evidence that . . . [the reference] is not prior art”). The patent owner satisfied this burden by “produc[ing] evidence that the invention claimed . . . was reduced to practice prior to the filing date of [the reference], and thus contended that the asserted claims were entitled to a date of invention prior to that of the [reference].” *Id.*

190. *Id.* (holding the “burden of production then shifted to [the defendant] to argue or produce evidence” that the reference was anticipatory in light of the patent owner's rebuttal); see also *Tech. Licensing*, 545 F.3d at 1328 (“[T]he burden of going forward again shifts to the proponent of the invalidity defense . . . to convince the court that [the patent owner] is not entitled to the benefit of the earlier filing date.”).

191. See *infra* notes 192–194 and accompanying text (outlining *Dynamic Drinkware's* principles as applied to § 315(e)(2) adjudication).

192. See *Dynamic Drinkware*, 800 F.3d at 1377 (defendant arguing that the asserted patents were invalid); *supra* note 160 and accompanying text for a review of the invalidity context in which IPR estoppel and the effective filing date challenge of *Dynamic Drinkware* arise.

193. See *Dynamic Drinkware*, 800 F.3d at 1380 (describing how the burden of production may shift to the patent owner and back to the defendant); *supra* note 106 and accompanying text (summarizing *Dynamic Drinkware's* holding that the burden of production to prove invalidity may shift between the parties depending on the evidence and arguments made at trial).

the burden of persuasion to prove patent invalidity never shifts from the defendant to the patent owner.¹⁹⁴

However, what is not explicitly clear from *Dynamic Drinkware* is what evidentiary showing is required in the context of § 315(e)(2) to shift the burden of production from the patent owner back to the defendant.¹⁹⁵ The closest authority on this issue is *Palomar*, which analyzed § 315(e)(2) burden-shifting in light of the statutory text and the goals of the IPR statute.¹⁹⁶ Starting with the statutory text, the *Palomar* court astutely pointed out that the phrase “reasonably could have raised” found in § 315(e)(2) appears analogous to appending a “discovery rule” component to the statute.¹⁹⁷ In general, discovery rules allow the assertion of otherwise barred claims based on evidence that the claim was not discovered until the party “knew, or reasonably should have known,” of the claim.¹⁹⁸ Additionally, discovery rules functionally shift the burden of production from a first party who has made a prima facie showing that the claim should be barred to a second party who counters such showing by satisfying the discovery rule.¹⁹⁹

Based on this structure, it follows that the “reasonably could have raised” language found in § 315(e)(2) strongly suggests the addition of a “discovery rule” component.²⁰⁰ Thus, if the patent owner makes a prima facie case by (1) raising the issue of § 315(e)(2) estoppel, and (2) demonstrating that the asserted reference was discoverable as of the IPR, the burden of production should shift to the defendant.²⁰¹ Thereafter, it is up to the defendant to demonstrate that, despite the asserted

194. See *Dynamic Drinkware*, 800 F.3d at 1380 (holding that the defendant “had the burden of persuasion to prove unpatentability by a preponderance of the evidence, and this burden never shifted”); *supra* notes 105–106 and accompanying text for a review of the non-shifting nature of the burden of persuasion.

195. See *id.* (discussing the evidentiary showings needed to shift the burden of production in the context of invalidity challenges based on claims of priority).

196. See *Palomar Techs., Inc. v. MRSI Systems, LLC*, No. 18-cv-10236, 2020 WL 2115625, at *3–4 (D. Mass. May 4, 2020) (analyzing § 315(e)(2) based on burden-shifting principles); *supra* notes 92–97 and accompanying text for a summary of *Palomar*’s analysis and holding.

197. *Palomar*, 2020 WL 2115625, at *3. Discovery rules are commonly applied to overcome the statute of limitations—an affirmative defense, like § 315(e)(2)—upon which the initial burden rests on the party seeking to benefit from its application, requiring that party to raise the issue and demonstrate the claim is time-barred. *Id.*

198. *Id.* at *3–4. For example, in the statute of limitations context, when the initial burden is met by a defendant demonstrating the claim is time barred, the burden then shifts to the plaintiff to demonstrate why the “discovery rule” is applicable by establishing that the claim did not accrue until they “knew, or reasonably should have known,” of the cause of injury. *Id.* at *3.

199. See *id.* at *4 (referencing a prima facie showing in the context of a discovery rule).

200. See *supra* notes 195–199 and accompanying text for an outline of the structure suggesting this language intended to incorporate a discovery rule component.

201. See 35 U.S.C. § 315(e)(2) (2024) (statutory grounds for raising IPR estoppel); *Palomar*, 2020 WL 2115625, at *4 (“[T]he initial burden to assert estoppel should be on the party seeking to invoke it (by raising it as a defense, and making

reference's discoverability, it is not one that they "reasonably could have raised," such as by arguing the impracticality that "a skilled searcher conducting a diligent search reasonably could have been expected to discover" the reference.²⁰²

In addition to textual support, this burden-shifting framework best comports with the balanced goals of the IPR provisions.²⁰³ As noted by the *Palomar* court, one of the primary purposes of § 315(e)(2) is to "prevent a litigant from withholding references at the IPR proceeding"—of which they objectively should have discovered—"in order to use them in later litigation."²⁰⁴ In line with this incentive system, it is fair and consistent that the defendant who failed to bring the later asserted invalidity ground in its IPR petition be the party required to show that an exception applies to the estoppel mandate of § 315(e)(2).²⁰⁵

Bolstering the reasoning in *Palomar*, burden-shifting best comports with the AIA's goals of streamlining litigation costs and efficiency.²⁰⁶ Under a burden-shifting approach, only one party—the defendant—must conduct a costly and time-consuming invalidity search, rather than having both the defendant (presumptively) conduct a search *before* the IPR petition and then the patent holder duplicate such efforts *after* the IPR concludes.²⁰⁷ Additionally, under a burden-shifting mechanism, defendants are incentivized to carefully weigh raising new invalidity grounds in the first instance, thus keeping litigation costs and complexity at a minimum knowing they have the burden of proving why a diligent search would not have discovered such grounds.²⁰⁸ Thus, the burden-shifting approach to § 315(e)(2) estoppel outlined above best comports with the

a *prima facie* showing that it applies . . ."); *supra* note 199 and accompanying text (discussing the burden-shifting standard in *Palomar*).

202. *Ironburg Inventions Ltd. v. Valve Corp.*, 64 F.4th 1274, 1299 (Fed. Cir. 2023) (adopting the "skilled searcher" standard); *see Palomar*, 2020 WL 2115625, at *3–4 (applying a burden-shifting framework in the context of the "skilled searcher" standard).

203. *See infra* notes 204–205 and accompanying text (summarizing the purposes of § 315(e)(2) and how burden allocation effects the IPR incentive system).

204. *Palomar*, 2020 WL 2115625, at *4 (discussing the purposes of IPRs and how placing the complete burden of proof on the patent owner is contrary to such purposes).

205. *See id.* (noting the primary purpose of § 315(e)(2)); *supra* notes 176, 182 and accompanying text for a review of how making a patent owner perform an invalidity search on their own patent creates a disproportionate risk, particularly when § 315(e)(2) is supposed to incentivize the patent challenger to perform such a search.

206. *See infra* notes 207–209 and accompanying text for a synopsis of the efficiency considerations of § 315(e)(2) burden placement.

207. *See supra* notes 180–182 and accompanying text for a review of how § 315(e)(2) seeks to increase efficiency and fairness of patent litigation.

208. *See supra* note 182 and accompanying text (detailing why a patent owner's invalidity search is redundant and contrary to streamlining litigation). Comparatively, absent a burden-shifting mechanism, defendants are incentivized to raise any later-discovered invalidity grounds in district court because they know they do not have to prove the objective discoverability of those grounds. *See id.* This inefficiency is further compounded by the disincentives that exist for a patent owners. *See supra*

statutory text, the balance of the IPR provisions, and the goals of the AIA.²⁰⁹

VI. THE SEARCH CONTINUES: *IRONBURG* PRESENTS A MISSED OPPORTUNITY TO BRING CLARITY TO § 315(E) ESTOPPEL AND OVERBURDENS PATENT OWNERS

Provided the *Ironburg* decision is read broadly, the explicit adoption of the “skilled searcher” standard is a welcome affirmation of the prevailing practice among district courts.²¹⁰ Unfortunately, this confirmation does not bring much-needed clarity to the substantive and procedural issues surrounding *how to apply* that standard—the source of a significant split among district courts.²¹¹ A review of the pre-*Ironburg* case law demonstrates that the “skilled searcher” standard was already in widespread use, and it was so uncontroversial that both patent owners and defendants often stipulated to its use.²¹² Given the lack of debate, the clarity sought at the district court level was not whether the “skilled searcher” standard is an appropriate standard to adjudicate § 315(e)(2), but rather how to properly apply that standard.²¹³ In this regard, the adoption of the “skilled searcher” standard in *Ironburg* represents a missed opportunity because it leaves open just as many questions—and district court splits—concerning the application of the standard as before *Ironburg* was decided.²¹⁴

Beyond the missed opportunity to clarify issues surrounding the “skilled searcher” standard, the *Ironburg* decision may proliferate existing confusion.²¹⁵ Specifically, the *Ironburg* court provided several string citations to district court cases applying § 315(e)(2) estoppel to support its

notes 176–177 and accompanying text (discussing increased risk of inequitable conduct challenges).

209. See *supra* notes 206–208 (detailing the benefits of a burden-shifting mechanism).

210. See *supra* Section V.A for a review of the adoption of the “skilled searcher” test; *supra* note 63 for a collection of district court cases adopting the test.

211. See *infra* notes 212–214 and accompanying text for a review of the “skilled searcher” issues that have split the district courts despite the test’s near-uniform adoption.

212. See *supra* Section II.C.1 & note 63 (demonstrating widespread adoption of the “skilled searcher” standard).

213. See *supra* Sections II.C.2–3 (discussing divergent evidentiary standards and burden allocation of the “skilled searcher” standard). This confusion is playing out in real time after *Ironburg*. See *GeigTech E. Bay LLC v. Lutron Elecs. Co.*, No. 18 CIV. 05290, 2023 WL 8827572, at *5 (S.D.N.Y. Dec. 21, 2023) (“[T]he Federal Circuit has not refined exactly what facts or circumstances qualify as ‘a skilled searcher conducting a diligent search’ . . .”).

214. See *supra* notes 210–212 and accompanying text (highlighting the issues left unaddressed in *Ironburg*).

215. See sources cited *infra* notes 216–219 and accompanying text for a discussion of foreseeable pitfalls in *Ironburg*’s holding.

two holdings.²¹⁶ Going forward, district courts may look to these cited cases to help fill in the gaps of *Ironburg*'s holdings only to find that the citations contain divergent holdings on various issues.²¹⁷ For example, the court cited both *Pavo Solutions* and *Innovative Memory Systems, Inc.* for the proposition that the burden of proof falls on the patent holder.²¹⁸ However, those two cases are in direct conflict with one another over whether § 315(e)(2) estoppel is applied a question of fact or law.²¹⁹

Additionally, the *Ironburg* court's decision to place the burden of proving the "skilled searcher" test on the patent owner foreseeably puts the patent owner in a lose-lose scenario.²²⁰ From an evidentiary perspective, the patent owner possesses little of the information relevant to meet this burden under the "skilled searcher" standard, meaning that it must redundantly perform the "skilled search" that the defendant should have performed before filing its IPR petition.²²¹ Outside of these inefficiencies, patent owners are likely to be hesitant to perform a "diligent search" for potentially invalidating grounds on their own patent.²²² Practically, this may lead to instances of patent owners choosing not to assert § 315(e)(2) estoppel in favor of avoiding an unfavorable invalidity search—ironically not using the singular estoppel provision designed to benefit them.²²³

While continued confusion in the application of the skilled searcher test and a weakened § 315(e)(2) estoppel standard are the foreseeable

216. See *Ironburg Inventions Ltd. v. Valve Corp.*, 64 F.4th 1274, 1300 (Fed. Cir. 2023) (citing district court cases, such as *Pavo Solutions* and *Innovative Memory Systems, Inc.*).

217. See *id.* (citing cases); *infra* notes 218–227 and accompanying text for an example of two cases with conflicting holdings in their application of the "skilled searcher" test.

218. *Ironburg*, 64 F.4th at 1299 ("Valve . . . point[s] us to other district courts that have placed the estoppel burden of proof solely on the patent owner . . .").

219. Compare *Pavo Sols. LLC v. Kingston Tech. Co., Inc.*, No. 14-cv-01352, 2020 WL 1049911, at *4 (C.D. Cal. Feb. 18, 2020) ("[T]he question of whether a skilled searcher, conducting a diligent search, reasonably could have been expected to discover these prior art references, is a question of fact."), with *Innovative Memory Sys., Inc. v. Micron Tech., Inc.*, No. CV 14-1480, 2022 WL 4548644, at *5 (D. Del. Sept. 29, 2022) ("[C]ourts in this district treat the application of IPR estoppel as a matter for the court."). For a deeper comparison of the conflicting factual-or-legal-issue classification by other district courts, see *supra* notes 81–83.

220. See sources cited *infra* notes 221–223 and accompanying text (compiling grounds as to why patent owners are disadvantaged by *Ironburg*'s burden-placement holding).

221. See, e.g., *M-I LLC v. FPUSA, LLC*, No. 15-CV-406, 2020 WL 13413830, at *12 (W.D. Tex. Aug. 20, 2020) (stating that a "rudimentary search [the patent holder] conducted itself," was "not a substitute for expert testimony as to why such criterion would be part of a skilled searcher's diligent search"); *supra* notes 84–87 and accompanying text (highlighting the common requirements in satisfying the "skilled searcher" standard, such as expert testimony regarding an expert-performed invalidity search).

222. See *supra* notes 174–176 and accompanying text regarding the duty of disclosure and the risk of creating inequitable conduct issues.

223. See *supra* notes 221–222 (reviewing evidentiary and practical considerations of placing the complete § 315(e)(2) burden of proof on the patent owner).

impacts of the *Ironburg* decision, there are several actors that can bring about change.²²⁴ For example, language in *Ironburg* hints that the Federal Circuit is interested in addressing more § 315(e)(2) estoppel cases.²²⁵ Additionally, the Supreme Court has shown interest in IPR procedure before and has an extra incentive to review the “skilled searcher” standard if it is being applied exclusively.²²⁶ Furthermore, Congress has shown a persistent interest in reforming both IPR procedure and the PTAB, particularly by rebalancing the current IPR procedures that favor defendants in patent litigation.²²⁷ Given the many actors that can bring about change in this area, it will be worth watching to see who can provide an “ironclad” fix on the leaky “valve” that has been § 315(e)(2) estoppel.²²⁸

224. See *infra* notes 225–227 (discussing actors who are in a position to make changes to § 315(e)(2)’s application).

225. See *Ironburg Inventions Ltd. v. Valve Corp.*, 64 F.4th 1274, 1300 (Fed. Cir. 2023). For example, the *Ironburg* court’s use of the language “in the first instance” suggests that if it later dislikes the approach taken by the district court on remand, it will reverse on appeal—leaving many § 315(e)(2) questions open for later. *Id.*

226. See *supra* notes 149–151 and accompanying text (collecting examples of the Supreme Court rejecting judicially-created exclusive tests in the adjudication of the Patent Act, such as in *Bilski v. Kappos* and *Mayo Collaborative Servs. v. Prometheus Labs.*).

227. See PREVAIL Act, *supra* note 8, § 4(c) (overhauling IPR and PTAB practice, although leaving in the current § 315(e) “reasonably could have raised” language).

228. See *supra* notes 224–227 and accompanying text (collecting actors and their motives for making changes to IPR estoppel’s current interpretation under *Ironburg*).

