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# Reconceptualizing the Federal Circuit's Choice of Law Doctrine: A Blend of Reverse *Erie*, Interest Analysis, and Federal Common Law

Janelle Barbier*

## Introduction

The United States Court of Appeals for the Federal Circuit's ("Federal Circuit") choice of law approach is constantly under attack.[1] This court has national jurisdiction, but it hears cases from geographic areas that are subject to a second appellate jurisdiction—that in which the district court sits.[2] Due to this unique construction, the Federal Circuit has developed a choice of law doctrine suited to its placement within the federal court system.[3] In sum, the Federal Circuit draws on its own jurisprudence for substantive patent law and applies procedural law from another federal appellate court by placing itself in the shoes of that second appellate court and predicting how that court would rule when necessary.[4] Moreover, the Federal Circuit sometimes

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* LL.M., U.C. Berkeley Law School; J.D., Santa Clara University School of Law; M.S. Microbiology; Professor of Microbiology in another lifetime. I am forever grateful to my conflict of laws professor, Philip Jimenez, for his amazing instruction in this most difficult course. My love of civil procedure only grew. I also thank C.J. Onis and the editorial team at the Federal Circuit Bar Journal for their helpful feedback and work on this Article. All opinions and errors are my own.

[1] *See, e.g.,* Joan E. Schaffner, *Federal Circuit "Choice of Law":* Erie *through the Looking Glass*, 81 Iowa L. Rev. 1173, 1191 (1996) ("The Federal Circuit has misinterpreted congressional goals underlying its jurisdictional grant and the implications of those goals on the court's ability to exercise independent judgment."); Charles L. Gholz, *Choice Of Law In The United States Court Of Appeals For The Federal Circuit*, 13 Am. Intell. Prop. L. Ass'n Q.J. 309, 314 (1985) (describing the Federal Circuit's choice-of-law holdings as "highly unfortunate").

[2] *See* 28 U.S.C. § 1295; 28 U.S.C. § 1294(1) (explaining appeals flow "to the court of appeals for the circuit embracing the district").

[3] *See* Janelle Barbier, Case Comment, *Federal Circuit Declines To Find Patent Claims Indefinite For Broad Descriptive Words (And An Ode To 1L Civil Procedure)*, 39 Santa Clara High Tech. L.J. 113, 122 (2022) (citing Jennifer E. Sturiale, *A Balanced Consideration of the Federal Circuit's Choice-of-Law Rule*, 2020 Utah L. Rev. 475, 487 (2020)).

[4] *See id.*

crafts federal common law, a type of law used to solve conflicts by supplying the rule of decision where none previously exists.[5]

But is the Federal Circuit's methodology really that out of left field? A review of choice of law precedent says that it is not. Modern choice of law theories focus on governmental interest analysis (hereinafter "interest analysis"), a framework that identifies conflicts between the laws of multiple jurisdictions.[6] Even though scholars associate interest analysis with horizontal conflicts, this tool was consistently employed in landmark vertical conflict cases by the Supreme Court of the United States ("Supreme Court").[7] It is this unified methodology of interest analysis that drives the Federal Circuit's choice of law doctrine.[8] As such, the Federal Circuit should abandon its facial classification between substance and procedure in favor of interest analysis.[9] This would not change the Federal Circuit's current approach, but would give context to the court's analyses and allow those familiar with choice of law principles to better predict outcomes.

This Article unifies three conflict-of-law topics in the context of the Federal Circuit's choice of law doctrine, focusing specifically on the Federal Circuit's patent law jurisprudence.[10] In doing so, it argues that the Federal Circuit's methods fall in line with modern interest analysis, an approach favored and applied by the Supreme Court in cases tackling reverse *Erie* problems, as well as in *Erie Railroad v. Tompkins*[11] and its progeny cases.[12] It also explores the role that federal common law plays in resolving conflicts.[13] Part I provides background on interest analysis and federal common law. Part II explores the reverse *Erie* doctrine and its application by the Supreme Court. Part III

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[5] *See infra* Sections I.B, I.C, IV.B.2.

[6] *See* Louise Weinberg, *The Federal-State Conflict Of Laws: "Actual" Conflicts*, 70 Tex. L. Rev. 1743, 1756 (1992); *see also infra* Section I.A.

[7] John R. Leathers, *Erie and Its Progeny as Choice of Law Cases*, 11 Hous. L. Rev. 791, 792 (1974). As discussed *infra* in Part I, horizontal conflicts involve juridical co-equals (such as between laws of different federal appellate circuits) and vertical conflicts involve state and federal laws.

[8] *See infra* Sections I.A, IV.B, IV.B.2.

[9] *See* Schaffner, *supra* note 1, at 1182 ("the court retains this procedure/substance distinction which confuses the Federal Circuit's doctrine").

[10] This Article focuses on patent law because—in addition to an available body of scholarly work in this area—the Author is, admittedly, a patent law nerd. For an overview of the Patent Act, see generally Janelle Barbier, Note, *The* NHK-Fintiv *Rule: Patent Law's Whack-A-Mole*, 39 Santa Clara High Tech. L.J. 339, 344–50 (2023).

[11] 304 U.S. 64 (1938). The *Erie* doctrine originated from *Erie R.R. Co. v. Tompkins,* 304 U.S. 64 (1938).

[12] *See infra* Section I.C.

[13] *See infra* Section I.B.

surveys the Federal Circuit's presence in the federal system and its choice of law precedent. Part IV explains the Federal Circuit's choice of law doctrine as interest analysis and discusses how federal common law and reverse *Erie* fit into this framework.

## I. Background: Choice of Law Principles and Vertical Conflicts

Conflict of law courses are notorious for being among the hardest classes in law school, and for good reason—the area of law is "complex, elusive, and downright difficult."[14] Choice of law problems—the heart of a conflict of laws course—arise when a court must select "the governing law for a case with connections to two or more jurisdictions."[15] *Horizontal conflicts of law* involve conflicts "where two or more jurisdictions which are juridical co-equals have a connection with a juridical event"; by contrast, *vertical conflicts of law* involve "the interplay between federal law and state law and the circumstances under which each will govern a legally significant event which implicates both federal and state interests."[16]

### A. Interest Analysis as a Tool for Identifying Conflicts

Professor Brainerd Currie[17] first coined the term *interest analysis* to describe a methodology used to choose applicable law in horizontal choice of law problems.[18] In doing so, Professor Currie identified three categories of *conflicts*: (1) true conflicts, (2) false (or apparent) conflicts, and (3) unprovided

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[14] Gene R. Shreve, *Teaching Conflicts, Improving The Odds*, 90 Mich. L. Rev. 1672, 1675–76 (1992); *see also* @pamiam1218, Comment to *Should i take conflict of laws course as an elective?*, Reddit, https://www.reddit.com/r/LawSchool/comments/c89t0l/should_i_take_conflict_of_laws_course_as_an/ (last visited Nov. 6, 2023) ("Conflict of Laws was probably the hardest class I took in law school. The concepts and the cases are really just hard to grasp.").

[15] Lea Brilmayer et al., Conflict of Laws, at xxiii (Rachel E. Barkow et al. eds., 8th ed. 2020).

[16] *Conflict of Laws*, Course Catalog, Univ. Mich. L. (2023), https://michigan.law.umich.edu/courses/conflict-laws [https://perma.cc/X9PD-S2C7]. This Article refers to these as "horizontal conflicts" and "vertical conflicts."

[17] For an analysis of Professor Currie's invaluable contribution to choice of law jurisprudence, see generally Kermit Roosevelt III, *Brainerd Currie's Contribution to Choice of Law: Looking Back, Looking Forward*, 65 Mercer L. Rev. 501 (2014).

[18] *E.g.,* Lea Brilmayer et al., *supra* note 15, at 184–87; James E. Westbrook, *A Survey and Evaluation of Competing Choice-of-Law Methodologies: The Case for Eclecticism*, 40 Mo. L. Rev. 407, 421 (1975).

for cases.[19] True conflicts exist when at least two jurisdictions have an interest in applying their law, and a conflict is unavoidable, meaning that both laws cannot be satisfied.[20] False conflicts[21] exist when only one jurisdiction has an interest in applying its law.[22] And unprovided for cases occur when no jurisdiction has an interest in applying its law.[23]

Thus, the battle fought concerns whether there is a conflict or not—"[t]his ultimately becomes a question of construction or interpretation of law."[24] Statutory interpretation plays a prominent role in ascertaining whether a conflict exists.[25] True to Professor Currie's methodology, digging into the policies behind a law elucidates whether an interest truly is in play—"[i]f applying a law would further its purposes, then the state whose law we are considering is interested."[26]

### *1. Interest Analysis in Vertical Conflicts*

At the outset, it is important to differentiate between interest analysis and *interest balancing*. Instead of merely identifying conflicts, interest balancing seeks to resolve true conflicts by "weighing" or "balancing" the interests of the competing jurisdictions.[27]

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[19] *See* Roosevelt, *supra* note 17, at 501, 507 & n.44; Brainerd Currie, *Comments on* Babcock v. Jackson, *A Recent Development in Conflict of Laws*, 63 Colum. L. Rev. 1233, 1242–43 (1963).

[20] *See* Currie, *supra* note 19, at 1242. Currie used the term "state" and not "jurisdiction." *See, e.g.,* Brainerd Currie, *Notes on Methods and Objectives in the Conflict of Laws, in* Selected Essays on the Conflict of Laws 177, 183–87 (1963) (advocating for methods "concerning the choice between conflicting state interests"). As noted, his framework originated as a methodology for analyzing horizontal conflicts. Because this Article discusses his approach in the context of vertical conflicts, it uses the term "jurisdiction" in describing the interest analysis framework.

[21] Currie used the term "apparent conflict." Currie, supra note 19, at 1242. But the term false conflict "has nonetheless been consistently attributed to him by others." Peter Kay Westen, *False Conflicts*, 55 Cal. L. Rev. 74, 75–76 (1967).

[22] *See* Roosevelt III, supra note 17, at 507, 513; Currie, *supra* note 19, at 1242.

[23] *See* Currie, *supra* note 19, at 1243.

[24] Weinberg, *supra* note 6, at 1753.

[25] Currie explained that when determining a jurisdiction's interests, courts should "employ the ordinary processes of construction and interpretation" to "inquire into the policies expressed in the respective laws" that are the subject of the perceived conflict. Currie, *supra* note 19, at 1242–43.

[26] Roosevelt III, *supra* note 19, at 507.

[27] Weinberg, *supra* note 6, at 1757.

As Professor Louise Weinberg[28] explained, in contrast to interest balancing, "[t]he essential use of interest analysis is to identify conflicts, not to resolve them."[29] Indeed, this is the strength of interest analysis and why it is uniquely situated to resolve vertical conflicts—"'balancing' should be unavailable under the Supremacy Clause" because when state law is clearly inconsistent with national policy, state law must give way to federal interests.[30] Because federal law preempts state law, resolving a vertical conflict is straightforward: use the federal law.[31]

### *2. The Constitution's Role in Interest Analysis*

In vertical cases, parties identify purported conflicts between state and federal law.[32] Under the Supremacy Clause of the United States Constitution (the "Constitution"), federal law preempts state law because it is the "supreme Law of the Land."[33] This rule applies evenhandedly to the Constitution, federal statutes, interpretation of federal statutes by federal courts, and federal common law—these classes collectively make up the body of federal law.[34]

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[28] Professor Weinberg specializes in the areas of constitutional law, federal courts, and conflict of laws at the University of Texas School of Law, has co-authored a textbook in conflict of laws, and is an Adviser to the American Law Institute Restatement (Third) of Conflict of Laws. *Louise L. Weinberg*, Univ. of Tex. at Austin Sch. of L., https://law.utexas.edu/faculty/louise-weinberg/biography/ [https://perma.cc/Q96S-YFDC] (last visited Jan. 13, 2025).

[29] Weinberg, *supra* note 6, at 1756.

[30] *Id.* at 1757.

[31] Although federal law does not always displace state law, especially for federal common law, as described *infra* in Section I.B.2.

[32] *Conflict of Laws*, *supra* note 16.

[33] *See* U.S. Const. art. VI § 2:

> This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.

*See also* Hillsborough Cnty. v. Automated Med. Lab'ys, Inc., 471 U.S. 707, 712 (1985) (cleaned up) (explaining "Supremacy Clause, U.S. Const., art. VI, § 2, invalidates state laws that interfere with, or are contrary to, federal law").

[34] However, only statutory interpretation by the Supreme Court is binding on state courts. Omar K. Madhany, Comment, *Towards A Unified Theory Of "Reverse*-Erie," 162 U. Pa. L. Rev. 1261, 1297 n.203 (2014). Likewise, state courts are only bound by federal common law developed by the Supreme Court. *See, e.g.,* Mapp v. Ohio, 367 U.S. 643, 655 (1961) (holding federal exclusionary rule applicable to states); Collins v. Virginia, 584 U.S. 586, 605–06 (2018) (Thomas, J., concurring) (noting exclusionary rule is federal common law).

Beyond the Supremacy Clause, the Constitution plays another role in interest analysis: ensuring that courts do not violate procedural Due Process. Under the Due Process Clause, courts cannot apply the law of a jurisdiction that does not have a legitimate interest in the case.[35] In the absence of an interest, displacing the law of a jurisdiction that does have an interest violates Due Process.[36] This is salient for vertical conflicts because when the federal government does not have a legitimate interest in a case, it cannot apply federal law to displace state law without running afoul of Due Process.[37]

### B. Federal Common Law[38] and Its Place in Our Dual-Law System of Government

The landmark case of *Erie* held that general federal common law cannot exist.[39] This is due to the Tenth Amendment of the Constitution which reserves lawmaking power to the states *unless* that power is given to Congress under the Constitution.[40] In other words, while Article I of the Constitution vests Congress with the power to make federal laws, that power is contingent upon a federal interest specified in the Constitution.[41] Therefore, absent a federal interest in a particular area of law, lawmaking power rests solely with the states.

Under a delegation theory, federal courts derive their lawmaking power from the Constitution and the authority to create federal common law from

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[35] *See* U.S. Const. amends. V, XIV ("nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws"); Allstate Ins. Co., v. Hague, 449 U.S. 302, 312–13 (1981) (recognizing that a State must have a "significant contact or aggregation of contacts, creating state interests," for a "state's substantive law to be selected in a constitutionally permissibly manner").

[36] *See Allstate Ins. Co.*, 449 U.S. at 312 n.16.

[37] *See id.* This Article uses the term "displace" to globally refer to one jurisdiction ignoring the overlapping law of another jurisdiction. In contrast, "preemption" specifically concerns displacement of state law by federal law. *See* Erin O'Hara O'Connor & Larry E. Ribstein, *Preemption and Choice-of-Law Coordination*, 111 Mich. L. Rev. 647, 649 (2013).

[38] Many definitions exist for *federal common law*. One broad definition is "any rule of federal law created by a court . . . *when the substance of that rule is not clearly suggested by federal enactments*—constitutional or congressional." Martha A. Field, *Sources of Law: The Scope of Federal Common Law*, 99 Harv. L. Rev. 881, 890 (1986) (emphasis in original).

[39] *See* Erie R.R. Co. v. Tompkins, 304 U.S. 64 (1938).

[40] *See* U.S. Const. amend. X ("[t]he powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people").

[41] *E.g.*, United States v. Comstock, 560 U.S. 126, 133–34, 144 (2010).

Congress.[42] This delegation may be expressly stated in a statute or implied by Congress.[43] In either case, Congress can only delegate the power to make law for areas it can legislate.[44] But, absent express delegation by Congress, federal courts may only create common law for areas "involving uniquely federal interests" that are "committed . . . to federal control."[45] Because the states are not subject to the same restriction, they have the power to make general common law applicable within a state's borders.[46]

Indeed, in 1934, Congress recognized this limitation on judiciary lawmaking in passing the Rules Enabling Act ("REA").[47] The Act gave the Supreme Court the power to make rules of procedure and evidence for federal courts, so long as they did not "abridge, enlarge, or modify any substantive right."[48] Thus, the REA provides a basis for courts to develop specific federal common law related to federal court procedures.

This was an important distinction—federal subject matter jurisdiction is not coterminous with the authority to make federal common law. A federal court can have jurisdiction over a multitude of cases for which it cannot make common law.[49] Therefore, before creating common law, a federal court must conduct a threshold inquiry on whether it has the power to make law in a given area.[50]

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[42] *See id.* (determining whether the disputed statute "constitute[d] a means that is rationally related to the implementation of a constitutionally enumerated power"). This is similar to how federal agencies derive lawmaking power to promulgate regulations from congressional delegation. *See, e.g.,* Whitman v. Am. Trucking Ass'ns., 531 U.S. 457, 472–76 (2001) (discussing Congress's delegation of lawmaking power to the EPA). For a discussion of delegation theory and federal common law, see generally Thomas W. Merrill, *The Disposing Power Of The Legislature*, 110 Colum. L. Rev. 452 (2010).

[43] *See* Thomas W. Merrill, *The Common Law Powers of Federal Courts*, 52 U. Chi. L. Rev. 1, 42–46 (1985).

[44] *See* Hanna v. Plumer, 380 U.S. 460, 471 (1965).

[45] Boyle v. United Techs. Corp., 487 U.S. 500, 504 (1988).

[46] *See* City of Milwaukee v. Illinois, 451 U.S. 304, 312 (1981).

[47] *See* 28 U.S.C. § 2072 ("The Supreme Court shall have the power to prescribe general rules of practice and procedure and rules of evidence for cases . . . [s]uch rules shall not abridge, enlarge or modify any substantive right. All laws in conflict with such rules shall be of no further force or effect after such rules have taken effect.").

[48] *Id.*

[49] *See City of Milwaukee*, 451 U.S. at 313 ("*Erie* recognized . . . that a federal court could not generally apply a federal rule of decision, despite the existence of jurisdiction, in the absence of an applicable Act of Congress.").

[50] *See* Merrill, *supra* note 43, at 11.

### *1. General and Specific Federal Common Law*

Against this backdrop, it is clear that *Erie* was a case about separation of powers and federalism[51]: the judiciary cannot create federal common law "generally" for every area of law because Congress itself does not possess such broad power.[52] Because Congress alone has the power to make law, federal courts violate the separation of powers principles when they overstep and create law without Congress's blessing.[53]

Moreover, *Erie* held that federal courts must apply *all* substantive state law in a diversity case unless the Constitution prohibits the state from legislating in an area.[54] The Supreme Court interpreted the language in the Rules of Decision Act ("RDA"), "laws of the several states," to include state common law because, absent a federal interest, federal law cannot displace any type of state law.[55] Congress seemingly recognized this restriction when it enacted the RDA and specified the limited reach of federal law.

Even today, *Erie*'s holding has been consistently misinterpreted, with commentators taking issue any time a federal court develops "common law."[56]

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[51] *See* Bradford R. Clark, *Federal Lawmaking and the Role of Structure in Constitutional Interpretation*, 96 Cal. L. Rev. 699, 699 (2008).

[52] *See* Hanna v. Plumer, 380 U.S. 460, 474 (1965) (Harlan, J., concurring) ("I have always regarded that decision [*Erie*] as one of the modern cornerstones of our federalism, expressing policies that profoundly touch the allocation of judicial power between the state and federal systems."). *See generally* Michael S. Green, *The* Erie *Doctrine: A Flowchart*, 52 Akron L. Rev. 215 (2018) (establishing an *Erie* flow chart and asserting that if the issue is not "rationally classifiable as procedure," that Congress is impermissibly trying to "determine the content of a non-federal action," which it "cannot do using its power to regulate the procedure of federal courts").

[53] *See* Green, *supra* note 52, at 226, 229; United States v. Comstock, 560 U.S. 126, 133 (2015) (recognizing that the Necessary and Proper Clause grants Congress "broad authority to enact federal legislation"). A narrow exception applies when "strict conditions" are met: "in the absence of congressional authorization, common lawmaking must be necessary to protect uniquely federal interests." Rodriguez v. Fed. Deposit Ins. Corp., 589 U.S. 132, 136 (2020) (cleaned up). However, the exception is not pertinent to this Article.

[54] *See* Erie R.R. Co. v. Tompkins, 304 U.S. 64, 78 (1938). Prior to *Erie*, a state's common law was not on equal footing with its statutory law, and federal courts could disregard state common law when hearing state actions. *See* Swift v. Tyson, 41 U.S. 1, 18 (1842), *overruled by Erie*, 304 U.S. at 79–80.

[55] *Erie*, 304 U.S. at 78–79; *see* 28 U.S.C. § 1652 ("The laws of the several states, except where the Constitution or treaties of the United States or Acts of Congress otherwise require or provide, shall be regarded as rules of decision in civil actions in the courts of the United States, in cases where they apply.").

[56] *See, e.g.*, Eric Guttag, *Why is SCOTUS Creating a Federal Common Law of Patents*, IP Watchdog (Dec. 10, 2018), https://ipwatchdog.com/2018/12/10/scotus-federal-common-law-patents/id=103946/ [https://perma.cc/WCG8-JMR4] ("Indeed, in other areas of federal

However, federal courts can make *specific* federal common law based on federal interests enumerated in the Constitution.[57] Federal common law is interstitial in nature—it fills in gaps left by Congress when enacting statutes in areas given to Congress by the Constitution.[58] Sometimes, federal common law is necessary to delineate the scope of a federal right.[59] However, federal courts' lawmaking power is not restricted to purely substantive law—a handful of procedural federal common law doctrines permeate legal practice.[60]

### *2. The Role of Federal Common Law in Vertical Conflicts*

Federal common law plays two roles in vertical conflict cases. First, recall that under the Supremacy Clause, it can displace state law when a conflict arises.[61] But not all federal laws are binding on state courts—only federal common law created by the Supreme Court indiscriminately preempts state law.[62] This means that when a state court analyzes a vertical conflict, it is not bound by the federal common law created by lower federal courts. To be sure, as a matter of comity, courts routinely defer to other jurisdictions on local matters when not compelled to defer.[63] However, it is important to know

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law, SCOTUS has made it abundantly clear that 'federal common law' doesn't exist. The most famous example is *Erie v. Tompkins* where SCOTUS overturned its prior view of a 'federal common law' applicable in cases involving diversity jurisdiction.").

[57] *Rodriguez*, 589 U.S. at 136. Some scholars have put forth alternative theories that federal courts have an inherent power to make common law. For a discussion of this "enclave theory," where federal courts "on their own choose federal law" and also "formulate its content," see Kevin M. Clermont, *Reverse*-Erie, 82 Notre Dame L. Rev. 1, 17–18 (2006). That debate is beyond the scope of this Article. This Article proceeds on a delegation theory.

[58] *See* Clermont, *supra* note 57, at 19.

[59] For example, in *De Sylva v. Ballentine*, the Supreme Court was faced with a gap in the Copyright Act—the Act allowed "children" to petition for extension of a deceased individual's copyright but did not define the word "children." De Sylva v. Ballentine, 351 U.S. 570, 571–72 (1956). In this situation, the Court chose to apply state law as a matter of federal common law, holding that the state law of a plaintiff's state of residence provided the scope for the word "children." *Id.* at 581–82. Notably, the Court arrived at its decision by solely considering the state's interests, reasoning that "there is no federal law of domestic relations, which is primarily a matter of state concern." *Id.* at 580.

[60] *See generally* Amy Coney Barrett, *Procedural Common Law*, 94 Va. L. Rev. 813 (2008).

[61] *See* Hillsborough Cnty. v. Auto-mated Med. Lab'ys, Inc., 471 U.S. at 707, 712 (1985).

[62] *See* Mapp v. Ohio, 367 U.S. 643, 655 (1960) (holding federal exclusionary rule applicable to states); *but see* Collins v. Virginia, 584 U.S. 586, 606–07 (2018) (Thomas, J., concurring) (explaining Supremacy Clause only applies to federal common law "rooted in the Constitution or a statute").

[63] *See* Sancho v. Texas Co., 308 U.S. 463, 470 (1940) ("For over sixty years this Court has consistently recognized the deference due interpretations of local law by such local courts unless they appeared to be clearly wrong.").

that federal common law—unless devised by the Supreme Court—serves merely as persuasive authority to courts outside of the jurisdiction where the law was created.[64]

Second, federal courts can create common law to resolve a conflict of law issue. When faced with a federal interest, federal courts can construct specific common law if there is no existing federal law on point and if the court has the power to make common law.[65] This occurs in several contexts: by extending a closely related provision of federal law, adopting state law as federal common law, or creating federal common law anew.[66] Notably, commentators posit that federal courts are on firm ground when fashioning common law to fill a gap created by a conflict between state law and preexisting federal policy tethered to a congressional command.[67] Specific examples of how federal common law interacts with interest analysis are explored below.

### C. The Roles of Interest Analysis and Federal Common Law in *Erie* and Its Progeny Cases

*Erie* created an intense focus on the "line" between substance and procedure in diversity cases. Post-*Erie*, the Supreme Court further refined the rule,[68] seemingly struggling to identify substantive laws—this was necessary because *Erie* did not apply to "procedural" issues.[69]

#### *1. "Refining" The* Erie *Doctrine*

Ultimately, the Supreme Court sought to establish uniformity in vertical courts, such that filing in state and federal court for the same state cause of action would not result in different outcomes.[70] In *Guaranty Trust Company*

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[64] *See Federal Law, Federal Courts, and Binding and Persuasive Authority*, Geo. U. L. Ctr. 2 (2013) ("It is [the Supreme] Court's responsibility to say what [the law] means, and once the Court has spoken, it is the duty of other courts to respect that understanding of the governing rule of law." (quoting Rivers v. Roadway Exp., Inc., 511 U.S. 298, 312 (1994))).

[65] Textile Workers Union of Am. v. Lincoln Mills of Ala., 353 U.S. 448, 457 (1957).

[66] Clermont, *supra* note 57, at 19–20.

[67] *See* Ernest A. Young, *Preemption And Federal Common Law*, 83 Notre Dame L. Rev. 1639, 1664–65 (2008).

[68] This Article assumes that readers are familiar with the basic facts underlying these cases. Even so, they are not necessary to understanding the conflict of law principles as this Article presents the legal underpinnings of each case. For an excellent synopsis of excerpts from these cases; *see generally* Lea Brilmayer et al., *supra* note 15, at 465–75.

[69] *See* Erie R.R. Co. v. Tompkins, 304 U.S. 64, 72–73, 78 (1938).

[70] *See* Hanna v. Plumer, 380 U.S. 460, 466–68 (1965) ("The 'outcome-determination' test therefore cannot be read without reference to the twin aims of the *Erie* rule: discouragement of forum-shopping and avoidance of inequitable administration of the laws.").

*v. York*[71] the Supreme Court developed its well-known "outcome-determination test" that separated substantive from procedural issues—the former "significantly affected" the result of litigation in federal court, and any difference in outcome meant that state law applied.[72] Next, in *Sibbach v. Wilson & Company*[73] the Supreme Court held that the test was whether a rule really regulated procedure.[74] In *Mississippi Publishing Corporation v. Murphree*[75] the Supreme Court held that it "had the power to prescribe a Federal Rule that abolished a formal requirement that served no substantive purpose."[76]

Finally, the Supreme Court narrowed its outcome determination test in *Hanna v. Plumer*[77] to require the application of state law only when it would result in a different outcome promoting forum shopping.[78] At the same time, it loosened the standard for when federal law controls, holding that federal laws "rationally capable of classification as either" substantive or procedural could displace state law.[79] This interest analysis led to a shift in how the Supreme Court approached vertical conflicts. When a federal law conflicted with a state law in an area of legitimate federal interest, there was no choice but to apply federal law as the supreme law of the land.[80]

### *2. Applying Interest Analysis to The* Erie *Doctrine*

Since this panoply of cases, the *Erie* doctrine has plagued first-year law students in civil procedure class.[81] Indeed, the line between substance and procedure "is a hard line to draw and a hard line to teach students."[82] But when the confusion over substance-procedure dichotomy is stripped away, interest

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[71] 326 U.S. 99 (1945).

[72] *Id.* at 109.

[73] 312 U.S. 1 (1941).

[74] *See id.* at 14.

[75] 326 U.S. 438 (1946).

[76] Patrick Woolley, *Rediscovering The Limited Role Of The Federal Rules In Regulating Personal Jurisdiction* 56 Hous. L. Rev. 565, 568 (2019) (citing Miss. Publ'g Corp. v. Murphree, 326 U.S. 438 (1946)).

[77] 380 U.S. 460 (1965).

[78] *Id.* at 468, n.9.

[79] *Id.* at 472.

[80] Leathers, *supra* note 7, at 813.

[81] *See, e.g.,* Robin Kundis Craig, *The Erie Doctrine: Basics*, Ctr. for Comput.-Assisted Legal Instruction, https://www.cali.org/lesson/9148 [https://perma.cc/628W-3YQ9] (last visited Oct. 28, 2023) ("The Erie Doctrine has befuddled Civil Procedure students for decades").

[82] This line comes from Justice Amy Coney Barrett, a former civil procedure professor, who remarked on the difficulty in distinguishing between substance and procedure. Transcript of Oral Argument at 62, Moore v. Harper, 600 U.S. 1 (2023) (No. 21-1271).

analysis is at the heart of these cases.[83] Under the lens of interest analysis, the federal government's interests are restricted to those in the Constitution.[84]

*Erie* articulated the requirements for enacting federal common law from this starting point.[85] Because Congress had the power to regulate interstate commerce under the Constitution, it had the power to make laws regulating railroad safety.[86] However, Congress had not exercised this power as it had not created a statute on point.[87] Thus, the federal courts lacked authority to regulate that area of law, creating a separation of powers issue should the federal court endeavor to create its own rule of law through common law.[88] Because there was no federal interest in creating state law, there was only one

[83] Professor Leathers argues that "all of the cases are reconcilable if they are viewed as choice of law cases" and interest analysis is applied to evaluate their results. He posits that most of these cases turn out to be false conflict cases under interest analysis. Leathers, *supra* note 7, at 792; *see also* Kermit Roosevelt III, *Choice Of Law In Federal Courts: From* Erie *And* Klaxon *To CAFA And* Shady Grove, 106 Nw. U. L. Rev. 1, 11 n.55 (2012) (describing *Erie* as a choice-of-law case susceptible to resolution under a "two-step model," building on Currie's interest analysis).

[84] *See* Leathers, *supra* note 7, at 794. The author opined:

> Put in simple terms, the only possible federal policies are those that come within the areas specifically delegated to the federal system in the United States Constitution, and these policies, when relevant, override any competing state rule. The countervailing force to federal policy interest, the retention by the states of all powers not delegated to the federal system, dictates that in areas left to the states, their interests are supreme.

*Id.*

[85] *Id.* at 796–97.

[86] *See, e.g.*, Mondou v. New York, N.H. & H.R. Co., 223 U.S. 1, 47 (1912) (holding Congress has the power to regulate "[t]he duties of common carriers in respect of the safety of their employees"); CSX Transp., Inc. v. Easterwood, 507 U.S. 658 (1993) (addressing pre-emption by Federal Railroad Safety Act).

[87] *See* Leathers, *supra* note 7, at 797. The author opined:

> The [federal] interest has been foregone legislatively in the first place by the failure of Congress to enact an affirmative rule of conduct, and the ability of the judiciary to fashion such a rule in the absence of the positive statute has been legislatively foregone in the Rules of Decision Act.

*Id.*

[88] *See* Hanna v. Plumer, 380 U.S. 460, 471–72 (1965). The court opined:

> We are reminded by the Erie opinion that neither Congress nor the federal courts can, under the guise of formulating rules of decision for federal courts, fashion rules which are not supported by a grant of federal authority contained in Article I or some other section of the Constitution; in such areas state law must govern because there can be no other law.

*Id.*

law to apply: state law.[89] In interest analysis parlance, *Erie* represented a false conflict because the federal court did not have a legitimate federal interest at stake and could not displace state law.[90] In fact, had the Court allowed the federal court to displace state law, it would have offended Due Process.[91]

In *Byrd v. Blue Ridge Rural Electric Co-op.*,[92] the Supreme Court examined whether a plaintiff is entitled to a jury determination on a question of fact in the face of contrary state law, stating that a judge decides that question of fact.[93] By now, one might recognize that a facial conflict of laws existed because it was not possible to comply with both laws on this same question of fact. The Supreme Court then turned to interest analysis to determine whether a true conflict existed between the two laws: in short, a legitimate federal interest existed because the Seventh Amendment requires federal courts to send all questions of fact to the jury.[94] And because the state also had a legitimate interest in achieving the same outcome for the same action as a federal court in the state,[95] we had ourselves a true conflict.[96]

Sounds like just another interest analysis case right? Not exactly. The Supreme Court added a new twist to its familiar approach, a version of a "balancing test" that examined how important each rule was to its own system of law.[97] In reality, the Supreme Court looked at relative importance to ascertain whether each jurisdiction had a legitimate interest in applying its

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[89] *Id.*

[90] In its cases, the Supreme Court did not explicitly use the terms "false conflict" and "true conflict." This terminology is used to point out that interest analysis explains the Court's holdings in each case. *See also* Leathers, *supra* note 7, at 796–97 (characterizing *Erie* as a "false conflict" due to the absence of a "legitimate federal interest").

[91] *See supra* Section I.A.2 (discussing limitations imposed by Due Process Clause on choice of law analyses).

[92] 356 U.S. 525 (1958).

[93] *Id.* at 534.

[94] *See id.* at 537. At issue was the Re-examination Clause of the Seventh Amendment. *See* U.S. Const. amend. VII, cl. 2 ("no fact tried by a jury, shall be otherwise re-examined in any Court of the United States, than according to the rules of the common law").

[95] *See id.* at 540.

[96] Professor Leathers identified both state and federal interests but classified *Byrd* as a "false conflict" because in his opinion, "in the face of the seventh amendment command, the state has no countervailing interest." Leathers, *supra* note 7, at 812. The true conflict label is arguably a better fit because each jurisdiction had a legitimate interest in applying its own law. But whether we call this a true or false conflict has no bearing on this Article's analyses.

[97] *See Byrd*, 356 U.S. at 538 ("Thus the inquiry here is whether the federal policy favoring jury decisions of disputed fact questions should yield to the state rule in the interest of furthering the objective that the litigation should not come out one way in the federal court and another way in the state court.").

own law.[98] Presumably, true "balancing" was unnecessary because both federal and state interests existed, and they were in direct conflict. Under the Supremacy Clause, the federal law must govern.[99] Notably, in future cases, the Supreme Court reaffirmed *Byrd's* central holding, recognizing the breakdown of the outcome-determination test when faced with "countervailing federal interests."[100]

In *Hanna*, the Supreme Court moved away from a blanket outcome-determination test and held that when a state law conflicts with a valid federal interest, the only choice is to apply federal law, irrespective of its outcome on the case.[101] The issue in *Hanna* concerned the method of service of process—state law required personal service while the Federal Rules of Civil Procedure ("FRCP") allowed for varied service methods, including by registered mail.[102] The outcome of the case turned on whether the plaintiff effected proper service in this diversity case by complying with FRCP 4 but, in turn, not complying with state law.[103]

*Hanna* illustrated a true conflict of laws[104]—it was not possible to comply with the laws of both jurisdictions *and* each jurisdiction had a legitimate interest in the application of its own law. The Supreme Court recognized that applying state law would affect the outcome of the case by resulting in dismissal, whereas allowing service under the FRCP would permit the case to survive.[105] Under the outcome determination test, using state law would have been conclusive.[106] But the Supreme Court took another route. It looked at the federal interests at stake and identified two: (1) the interest in discouraging forum shopping and (2) the interest in supplying the rule of procedure for service of process for cases filed in federal court.[107] Because federal courts have a legitimate federal interest in employing uniform procedures in federal fora—and applying federal law would not result in forum

[98] *See id.* at 540 (reasoning that a constitutional right to trial by jury was a significant federal interest not outweighed by the state's interest in duplicating the outcome that would result in a state court hearing the same action).

[99] *See supra* note 33 and accompanying text.

[100] Gasperini v. Ctr. for Hums., 518 U.S. 415, 432 (1996).

[101] *See* Hanna v. Plumer, 380 U.S. 460, 467–69, 472–74 (1965).

[102] *See id.* at 461–62.

[103] *Id.* at 462–63. If the Court applied state law—instead of the FRCP—the case would be dismissed for lack of personal service. *Id.* at 462–63 n.1, 466.

[104] Again, Professor Leathers refers to this as a "false conflict"—but he acknowledged that it could also be seen as a "true conflict" which is the position taken in this Article. *See* Leathers, *supra* note 7, at 816–17.

[105] *See Hanna*, 380 U.S. at 468–69.

[106] *See* Guaranty Trust Co. v. York, 326 U.S. 99, 109 (1945).

[107] *Hanna*, 380 U.S. at 468.

shopping[108]—conflicting state law on service of process must yield.[109] Moreover, even though interest analysis allowed federal law to displace state law without balancing the respective interests, the state's interest in estate distribution was not impaired by applying the federal rule.[110] Thus, the Supreme Court held that FRCP 4 controlled the case.[111]

In *Gasperini v. Center for Humanities, Inc.*[112] the Supreme Court identified a false conflict; the two laws were not actually in conflict and thus could be applied simultaneously.[113] In *Gasperini*, the defendant challenged a jury award as excessive.[114] The Supreme Court was faced with deciding between conflicting state and federal law standards for assessing a jury verdict.[115] In addition, there was a question of whether the trial or appellate court should review the award—state law required appellate review, while federal law forbade it.[116]

The Supreme Court again took an interest analysis approach. First, it identified a state interest in providing the standard of review in a state cause of action; this interest was exclusive because there is no federal interest in providing the rule of decision for substantive state actions.[117] Because no federal interest existed, the state law supplied the standard of review.[118] However, the Supreme Court identified the federal interest in providing a uniform federal forum.[119] The Seventh Amendment precluded direct appellate review of jury awards.[120] Under the Supremacy Clause, the federal interest prevailed because it was tethered to the Constitution, and the trial court was tasked

[108] *See id.* at 469. Although using the federal rule technically changed the outcome of the case, it did not promote forum shopping because differences between the methods of service were not likely to affect forum choice. *See id.* at 469. And only differences that would promote forum shopping resulted in inequitable administration of laws. *See id.* at 468 n.9.

[109] *See id.* at 473–74.

[110] *See id.* at 478 (Harlan, J., concurring).

[111] *See id.* at 474.

[112] 518 U.S. 415 (1996).

[113] *See id.* at 419.

[114] *See id.* at 420.

[115] *See id.* at 422–24 (noting state law used a "deviates materially" formulation while federal law used a "shock the conscience" standard).

[116] *See id.* at 431.

[117] *See id.* at 436–37.

[118] *See* Leathers, *supra* note 7, at 794 (discussing Constitutional limitations on federal interests).

[119] *See id.* at 467 (Scalia, J., dissenting).

[120] *Gasperini*, 518 U.S. at 432–33; *see* U.S. Const. amend. VII, cl. 2; *supra* text accompanying note 94 (Re-Examination Clause).

with review.[121] Therefore, the Supreme Court reasoned that the federal trial court judge could review the award under the state standard, honoring both the state and federal interests.[122]

### *3. The Role of Federal Common Law in Interest Analysis*

In the following cases, on multiple occasions, the Supreme Court used interest analysis to fashion specific federal common law in vertical cases. After identifying a federal interest, the Court looked at whether state and federal law conflicted.[123] Upon determining that the state law collided with a federal interest, the Supreme Court became obligated to apply federal law per the Supremacy Clause.[124] However, with no positive federal law on point, the Supreme Court developed federal common law that would displace state law and allow the federal interest to prevail.[125]

For example, in *Ferens v. John Deere Company*,[126] the Supreme Court looked at venue transfers under federal law and whether the rule established in *Van Dusen v. Barrack*[127] applied to transfers initiated by the plaintiff instead of by the defendant.[128] In *Van Dusen*, the Court dealt with a venue transfer initiated by the defendant.[129] It found that a federal interest existed in deciding the case in a federal forum, but not between the laws of different states and which law applied.[130] Yet, both transferor and transferee states clearly had an interest in applying their own forum law.[131] To determine whether a federal interest existed in mandating the law of the filing forum, the Supreme Court used interest analysis to delve into the policy behind the venue transfer statute.[132] By examining legislative history, it found that the remedial nature of the statute in counteracting litigation in an inconvenient forum created

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[121] *See id.* at 434–36 (cleaned up) (holding that the Seventh Amendment permitted "appellate review of the trial judge's denial of a motion to set aside a jury verdict as excessive," under an abuse of discretion standard).

[122] *See id.* at 436–38.

[123] *See infra* notes 132–137 and accompanying text.

[124] *See infra* notes 132–137 and accompanying text.

[125] *See infra* notes 140–141 and accompanying text.

[126] 494 U.S. 516 (1990).

[127] 376 U.S. 612 (1964).

[128] *See Ferens*, 494 U.S. at 516. These cases apply to venue transfers brought specifically under 28 U.S.C. § 1404, where venue was proper in the original forum. *See id.*; *Van Dusen*, 376 U.S. at 612.

[129] *See generally* Van Dusen v. Barrack, 376 U.S. 612 (1964).

[130] *See id.* at 636–39, 637 n.37.

[131] *See id.* at 640–42, 641 n.45.

[132] *See id.* at 633–39.

a federal interest in ensuring that venue transfers were not frustrated.[133] Ultimately, the *Van Dusen* rule held that—as a matter of federal common law—upon transferring venue, the law of the transferring court would apply in the new forum.[134]

In *Ferens*, the Supreme Court had to decide whether the *Van Dusen* rule applied equally to transfers initiated by a plaintiff.[135] The Court held that it did because a federal interest existed in, *inter alia*, deciding the case on the best evidence available—not allowing the plaintiff to bring forum law along would frustrate this interest because it would discourage the plaintiff from requesting a transfer.[136] Therefore, applying the *Van Dusen* rule would serve the overall federal interest in avoiding "the systemic costs of litigating in an inconvenient place."[137] In other words, while the results of the two cases were identical, they both required the Court to examine different federal and state interests.

True, the Supreme Court ultimately adopted a rule based on state law as federal common law: use the law of the transferor court for any venue transfer, "regardless of who initiates the transfer."[138] But two points are important from an interest analysis perspective. First, the Supreme Court's actions in both cases were permissible because the venue statute created a federal interest.[139] Thus, the Court had the power to legislate specific federal common law to fill in the gaps of the statute to create a uniform choice of law rule for

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[133] *See id.* at 635–37. The Court reasoned that denying plaintiffs the advantages gained from the laws of the forum initially selected would discourage courts from granting venue transfers, thereby frustrating the federal interest in promoting transfers to mitigate the ill effects of litigation in an inconvenient forum. *See id.* at 616, 633–37.

[134] *See id.* at 639. This result was necessary to preserve the federal interest in uniformity announced in *Erie*; in the case of a venue transfer under § 1404, "the critical identity to be maintained is between the federal district court which decides the case and the courts of the State in which the action was filed." *Id.* at 638–39.

[135] *See* Ferens v. John Deere Co., 494 U.S. 516, 519 (1990).

[136] *See id.* at 525, 529–30, 537. The Court also acknowledged the reasoning in *Van Dusen*, explaining that at least three federal interests arose from the venue statute's policies: avoiding inequitable administration of the law through ensuring that parties are not deprived "of state-law advantages that exist absent diversity jurisdiction," discouraging forum shopping, and promoting venue transfers based on convenience. *Id.* at 523–30 (citing *Van Dusen*, 376 U.S. at 635–37). As noted by the Court, some commentators quarreled with the notion that the statute's legislative history "compels reliance on these three policies." *Id.* at 523 (citing Note, *Choice of Law after Transfer of Venue*, 75 Yale L.J. 90, 123 (1965)).

[137] *Id.* at 537.

[138] *Id*. at 523.

[139] *See* 28 U.S.C. § 1404 (authorizing federal courts to grant discretionary venue transfers).

all venue transfers.[140] Second, because there was a legitimate federal interest, federal common law could displace competing state law.[141] While some state laws may have dictated the same rule as the Supreme Court, others may use a different choice of law framework to decide the question. Overall, the Supreme Court displaced states' ability to use their own choice of law framework in diversity cases involving venue transfer and replaced it with a federal rule of decision.

In the interest analysis context, the Supreme Court remained mindful of limitations on federal law displacing state law. Recall that the Supremacy Clause does not apply to judgments,[142] nor does the Full Faith and Credit Clause apply to judgments rendered by a federal court.[143] This left open the question of what effect a state court must give a federal judgment.[144] Thereby, federal courts expanded the doctrine of *res judicata* as federal common law to address this question.[145]

Most recently, the Supreme Court addressed the preclusive effect of a federal judgment rendered in a diversity action. In *Semtek International v. Lockheed Martin Corporation*,[146] the plaintiff argued that under state law, a federal judgment rendered in a diversity action in another state was not a final judgment and, therefore, not subject to *res judicata*.[147] The Supreme Court was faced with the question of whether a state court could refuse to recognize a judgment as not being on the merits, whereas FRCP 41 said that the judgment was final.[148] In the original forum, the federal court had rendered

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[140] *See* Clermont, *supra* note 57, at 19 (discussing the interstitial nature of federal common law).

[141] *See* Weinberg, *supra* note 6, at 1751 (noting federal interests prevail under the Supremacy Clause). The word "displace" is used in a theoretical sense. *See supra* note 37 (discussing displacement and preemption).

[142] *See supra* Section I.A.2 (discussing Supremacy Clause). However, *laws* regarding federal judgments are binding under the Supremacy Clause. *See* Stephen B. Burbank, *Interjurisdictional Preclusion, Full Faith and Credit and Federal Common Law: A General Approach*, 71 Cornell L. Rev. 733, 763 (1986).

[143] *See* Semtek Int'l v. Lockheed Martin Corp., 531 U.S. 497, 506–07 (2001); U.S. Const. art. IV, § 1 ("Full Faith and Credit shall be given in each State to the public Acts, Records, and judicial Proceedings of every other State. And the Congress may by general Laws prescribe the Manner in which such Acts, Records and Proceedings shall be proved, and the Effect thereof.").

[144] *See* Ronan E. Degnan, *Federalized Res Judicata*, 85 Yale L.J. 741, 744 (1976).

[145] *See, e.g.*, Stoll v. Gottlieb, 305 U.S. 165, 167, 177 (1938) (holding *res judicata* applied to federal judgment on a federal question to preclude its re-litigation in state court).

[146] 531 U.S. 497 (2001).

[147] *Id.* at 500–501.

[148] *See id.*

a judgment with prejudice—for the claim being statutorily barred—despite forum state law specifying that its statute of limitations did not govern actions filed in other states.[149]

In its holding, the Supreme Court explained that an *Erie* question arose in the original forum: could a federal court sitting in diversity issue a final judgment that exceeds state law?[150] The Court began with the premise that "federal common law governs the claim-preclusive effect of a dismissal by a federal court sitting in diversity."[151] Once again, the Supreme Court turned to interest analysis, noting that while a federal interest existed in the FRCP, there was no legitimate federal interest in the claim preclusive effect of a judgment in another state's courts.[152] Neither the Constitution nor federal statutes addressed claim preclusion in federal diversity actions.[153] Thus, the original forum exceeded its authority by determining the claim preclusive effect that a judgment would have in another state court.[154] In the end, the Supreme Court created new specific federal common law: it held that when applying state law, a federal court was limited to giving dismissal the same effect as a state court would for the same action.[155] In other words, state law became federal common law.

## II. State Courts "Acting" as Federal Courts: The "Reverse *Erie*" Doctrine

While *Erie*'s landmark decision received enormous scholarly commentary for its contribution to vertical conflict analysis in federal courts, its mirror image—"reverse *Erie*"—has garnered scant attention.[156] Whereas *Erie* influenced how federal courts sitting in diversity approached choice of law analysis when hearing state law actions,[157] the mirror image—"reverse *Erie*"—occurs when a state court applies federal law.[158]

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[149] *See id.* at 499, 503–04.

[150] *See id.* at 503–04.

[151] *Id.* at 508.

[152] *See id.* at 509.

[153] *See id.* at 507.

[154] *See id.* at 509.

[155] *See id.* at 508–09.

[156] *See* Clermont, *supra* note 57, at 2 ("reverse-*Erie*, often misunderstood, mischaracterized, and misapplied by judges and commentators, goes strangely ignored by most scholars").

[157] *See supra* Section I.C (discussing *Erie* and its progeny cases).

[158] This term traces back to William F. Baxter, *Choice of Law and the Federal System*, 16 Stan. L. Rev. 1, 34 (1963). *See* Richard H. Fallon, Jr. et al., Hart & Wechsler's The Federal Courts and The Federal System 456 n.6 (Robert C. Clark et al. eds., 7th ed. 2015).

Given the federal interest in establishing uniformity and predictability, *Erie* and reverse *Erie* cases should be analyzed consistently—after all, they both involve vertical conflict issues that implicate the Supremacy Clause. As discussed above, *Erie* cases were resolved using interest analysis.[159] It turns out the Supreme Court also tethers its reverse *Erie* holdings to interest analysis. Therefore, a unified conflict of laws theory permeates all vertical conflict cases.

### A. Interest Analysis in Reverse *Erie* Cases: Pre-*Erie*

Although the reverse *Erie* terminology is relatively recent, state courts have long entertained federal actions.[160] In fact, until 1875, state courts were bound by state procedures but had exclusive jurisdiction over federal questions.[161] It is, therefore, no surprise that the Supreme Court recognized the reverse *Erie* problem long before it was named and well before *Erie* made its mark.[162] Even in these early cases, the Supreme Court plowed through interest analyses.[163]

From this history, it is evident that state courts are competent to hear federal matters.[164] Indeed, state courts entertain more federal question cases than do federal courts, and accordingly have the potential to significantly influence federal common law.[165]

### B. Interest Analysis in Reverse *Erie* Cases: The Theory

Reverse *Erie* cases often turn on whether the state court should—or must—apply federal procedure when hearing federal causes of action.[166] The choice of law framework in these analogous contexts proceeds in the same interest

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[159] *See supra* Section I.C.2.

[160] *See* Colo. Cent. Consol. Mining Co. v. Turck, 150 U.S. 138, 143 (1893) (citing Jurisdiction and Removal Act of 1875, 18 Stat. 470. c. 137 (1875)).

[161] *See id.*

[162] *See* Clermont, *supra* note 57, at 23 (citing Cent. Vt. Ry. v. White, 238 U.S. 507, 510–13 (1915); S. Ry. Co. v. Prescott, 240 U.S. 632, 639–41 (1916); Davis v. Wechsler, 263 U.S. 22, 24 (1923)).

[163] For example, in *Wechsler*, the Supreme Court "reject[ed] a state pleading rule that deemed a federal official to have waived a federal venue defense in a state personal-injury case." *Davis*, 263 U.S. at 23 n.97. The Court famously observed that "the assertion of Federal rights, when plainly and reasonably made, is not to be defeated under the name of local practice." *Id.*

[164] In fact, under the Madisonian Compromise, state courts are considered the default courts. *See* Tafflin v. Levitt, 493 U.S. 455, 470 (1990) (Scalia, J., concurring) (citing The Federalist No. 82, p. 132 (E. Bourne ed. 1947)). Accordingly, state courts are presumed to have concurrent jurisdiction over federal actions. *See* Gulf Offshore Co. v. Mobil Oil Corp., 453 U.S. 473, 478 (1981).

[165] *See* Abbe R. Gluck, *Intersystemic Statutory Interpretation: Methodology as "Law" and the* Erie *Doctrine*, 120 Yale L.J. 1898, 1960 (2011).

[166] *E.g.*, Christopher R. Drahozal, The Supremacy Clause 84 (Jack Stark ed., 2004).

analysis fashion. First, the state court must determine whether a conflict exists. If it identifies a conflict between state and federal law, it must determine which law prevails by employing some choice of law methodology. If the analysis "yield[s] a choice in favor of federal law, that choice is binding on the state under the Supremacy Clause."[167] In applying federal law, the state court is bound by all federal law, including substantive federal common law that is binding on federal courts.[168]

A second situation is possible: the state may recognize that a state law interferes with a federal interest, yet no federal law is on point. In this case, the state court has similar options to a federal court sitting in diversity. Despite its name, state courts can also fill in gaps in federal law by creating federal common law.[169] When a state court determines that a state law conflicts with a federal interest within the federal courts' law-making power, it looks for a federal law on point.[170] If none exists, the state court is empowered to create federal common law if it believes that the Supreme Court would create such a law in the same situation.[171] During this process, the state court must turn to federal law in crafting a new federal rule of decision and cannot consider relevant state law.[172] This applies whether a state court makes a new substantive or procedural rule.[173]

### C. Interest Analysis in Reverse *Erie* Cases: The Application

A leading Federal Courts textbook treats reverse *Erie* as a question of preemption, pointing out the "pertinent asymmetry" that "[f]ederal law can and frequently does preempt otherwise valid and applicable state law, whereas

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[167] Clermont, *supra* note 57, at 20.

[168] *See id.* at 20–21 (citing Hinderlider v. La Plata River & Cherry Creek Ditch Co., 304 U.S. 92 (1938)).

[169] For a discussion of states making federal common law, see generally Anthony J. Bellia Jr., *State Courts and the Making of Federal Common Law*, 153 U. Pa. L. Rev. 825, 832–46 (2005).

[170] *See* Clermont, *supra* note 57, at 30. The author explained:

> Sometimes the state court has to be the very first to enunciate federal law. It has authority to do so, if it decides in accordance with existing federal law by trying to discern what the federal courts would decide is the law, rather than by undertaking to formulate federal law either in pursuit of strictly forward looking policies that might guide a legislature or in accordance with nonpositivist principles that might guide a freely law-creating court.

*Id.*

[171] *See id.* at 31.

[172] *See id.* at 31–32.

[173] *See id.*

state law cannot preempt otherwise valid and applicable federal law."[174] But preemption is not the sole—or even the dispositive—question when a vertical conflict of law arises. Just as scholars recognize how interest analysis dominates in *Erie* cases, they too recognize its role in reverse *Erie* cases. The text acknowledges this theory in discussing Professor Kevin Clermont's[175] work on interest analysis, where he argues that in reverse *Erie* cases, judges must resolve choice of law issues by determining whether state or federal law interests predominate, as a matter of federal common law.[176]

As discussed with the *Erie* cases, a combination of preemption and interest analysis is prescribed by the Supreme Court.[177] Similarly, the two themes are applied with equal force in reverse *Erie* cases.[178] Therefore, both perspectives outlined above play a role—interest analysis determines whether a true conflict between state and federal law exists, and the Supremacy Clause controls the outcome when such a conflict is present. The only difference is that state courts—not federal courts—are tasked with completing the analysis.

#### *1. Interest Analysis in Motion:* Felder v. Casey

Due to the Supreme Court's reluctance to review state court judgments,[179] there are few reverse *Erie* cases to draw from.[180] *Felder v. Casey*[181] illustrates the Court's interest analysis approach in reverse *Erie* cases.[182]

In *Felder*, the Supreme Court grappled with whether a "state's notice-of-claim provision to 42 U.S.C. § 1983 actions brought in state courts" posed

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[174] Fallon, Jr. et al., *supra* note 158, at 457.

[175] Professor Clermont is a litigation specialist who teaches Civil Procedure courses at Cornell Law School and has published textbooks and scholarly articles on Civil Procedure and Choice of Law. *Kevin M. Clermont*, Cornell L. Sch., https://www.lawschool.cornell.edu/faculty-research/faculty-directory/kevin-m-clermont/ [https://perma.cc/B769-EXDF] (last visited Jan. 17, 2025).

[176] *See* Fallon, Jr. et al., *supra* note 158, at 457 (citing Clermont, *supra* note 57, at 1).

[177] *See* discussion *supra* Section I.C.

[178] *See* discussion *infra* Section II.C.1.

[179] This implicates serious constitutional issues, at least due to the prohibition on advisory opinions. *See* Herb v. Pitcairn, 324 U.S. 117, 125–26 (1945) (recognizing the Court is "not permitted to render an advisory opinion"). Therefore, although the Court has jurisdiction under 28 U.S.C. § 1257 to review judgments "rendered by the highest court of a State," it will only review state court judgments that are not supported by an adequate and independent state ground. Fox Film v. Muller, 296 U.S. 207, 210 (1935).

[180] Post-*Erie*, scholars consistently peg four cases as reverse *Erie* cases. *See* Clermont, *supra* note 57, at 23 (identifying these cases as *Brown v. W. Ry. of Ala.*, 338 U.S. 294 (1949); *Dice v. Akron, Canton & Youngstown R.R. Co.*, 342 U.S. 359 (1952); *Felder v. Casey*, 487 U.S. 131 (1988); and *Johnson v. Fankell,* 520 U.S. 911 (1997)).

[181] 487 U.S. 131 (1988).

[182] *See id.*

an obstacle to the purposes of the law, as dictated by Congress.[183] Despite the procedural character of the state notice requirement,[184] the Court did not sanction a *per se* approval of state procedures in state courts hearing federal actions.[185] Instead, the Supreme Court began with the proposition that "where state courts entertain a federally created cause of action, the 'federal right cannot be defeated by the forms of local practice.'"[186] The Court then took an interest analysis approach to deciding whether the state law should be displaced by federal law. First, the Supreme Court analyzed the state and federal interests to determine whether a conflict existed.[187] A strong federal interest in uniformity was salient, namely because the state's law had the effect of defeating a plaintiff's cause of action.[188]

Second—after identifying that a conflict indeed existed—the Supreme Court analyzed the choice of law issue. True to other interest analysis cases, the Court determined that this vertical conflict must be resolved by using federal law.[189] Here, the Supreme Court noted that the state law "so interferes with and frustrates the substantive right Congress created that, under the Supremacy Clause, it must yield to the federal interest."[190] Notably, the Supreme Court's holding shows that the Supremacy Clause preempts procedure that does not protect federal interests, adding more fuel to the argument to abolish the substance-procedure dichotomy in choice of law analysis.

*Felder* illustrates another point relevant to this Article—the Supreme Court adopts state law as federal common law only when doing so does not impair federal interests. In previous § 1983 actions, the Court made federal common law through interest analysis and adopted state law as federal common law.[191] Over the defendant's objections, the *Felder* Court declined to follow suit and

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[183] *Felder*, 487 U.S. at 138; *see also* 42 U.S.C. § 1983 (authorizing suits against state officials, acting under color of law, who cause deprivations of federal rights).

[184] A notice of claim rule can be characterized as a "substance-specific" state rule—one that applies "only to cases in a certain substantive area." Madhany, *supra* note 34, at 1290 n.172.

[185] Albeit the Court began with the "unassailable proposition . . . that States may establish the rules of procedure governing litigation in their own courts." *Felder*, 487 U.S. at 138.

[186] *Id.* (citing *Brown*, 338 U.S. at 296).

[187] The Court looked at the state's interest served by the state law; importantly, "[the law's] requirements further[ed] the State's interest in minimizing liability and the expenses associated with it." *Id.* at 142–43. The Court went on to explain that the state's law conflicted with federal interests, namely that its "purpose and effect . . . is to control the expense associated with the very litigation Congress has authorized." *Id.* at 144.

[188] Johnson v. Fankell, 520 U.S. 911, 920–21 (1997).

[189] *Felder*, 487 U.S. at 151.

[190] *Id.*

[191] *See id.* at 144–46 (citing Wilson v. Garcia, 471 U.S. 261, 279 (1985)) (explaining that "federal courts must apply the state statute of limitations governing personal injury claims

instead adopted the state's notice law as part of the § 1983 substantive package.[192] The Court explained that this was for two reasons: nothing indicated that Congress intended for the actions to have a notice requirement, and this law plainly interfered with federal interests.[193]

### *2. Toward a Unified Theory of Interest Analysis*

It is no coincidence that the same methodology is used to resolve both types of vertical conflict cases. Using the Seventh Amendment as an example, interest analysis yields consistent results between state courts hearing a federal action and federal courts hearing a state action. Two cases pondered the right to a jury trial on all questions of fact.

First, the federal case hearing a state action. Recall that in *Byrd*, the Supreme Court held that when state and federal law address the same point in a diversity case, stronger considerations on applying state law were needed to outweigh the federal policy in federal court of not disrupting the relationship between the judge and jury in litigation.[194] The Court's goal was purportedly to determine whether laws on deciding questions of fact were substantive or procedural[195]—in doing so, it "weighed" how important each rule was to each jurisdiction's system.[196]

It appears that the Supreme Court in *Byrd* was really conducting a conflict of law inquiry using interest analysis. Two jurisdictions had laws saying two different things.[197] Both jurisdictions had some interest in applying their own law.[198] However, the federal interest consisted of a strong national policy to ensure the integrity of the Seventh Amendment;[199] therefore, the state's local rule had to yield to the United States Constitution.[200] And even though

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because it is highly unlikely that States would ever fix the limitations period applicable to such claims in a manner that would discriminate against the federal right").

[192] *See id.* at 134.

[193] *See id.* at 140–42. This is in contrast to a statute of limitations, which the Court is more willing to entertain because it presumes that Congress would not create private rights of action with indefinite lifespans. *See id.* at 140.

[194] *See Byrd*, 356 U.S. at 540.

[195] *See id.* at 535–36.

[196] *See* Richard D. Freer & Thomas C. Arthur, *The Irrepressible Influence of* Byrd, 44 Creighton L. Rev. 61, 77, 78 n.89 (2010) (describing *Byrd* as creating a test "requiring the balancing of competing interests" which included "emphasizing the need to assess how likely a different outcome would result from not following state law, rather than assuming that any possible outcome determinative effect mandated use of state law").

[197] *See Byrd*, 356 U.S. at 534.

[198] *See supra* notes 94–96 and accompanying text.

[199] *Byrd*, 356 U.S. at 537–38.

[200] *See supra* note 99 and accompanying text.

the Court considered the state's interest in applying its law, the Supremacy Clause compels the conclusion that the state interest must be subordinated to a conflicting federal interest.[201]

Next, *Dice v. Akron, Canton & Youngstown Railroad*[202] involved a state court hearing a federal action.[203] In *Dice*, the Court dealt with the Federal Employers' Liability Act ("FELA") and whether the state court could lawfully eliminate trial by jury for certain questions of fact.[204] The Court held that the right to trial by jury is "a basic and fundamental feature of our system of federal jurisprudence" and "is too substantial a part of the rights accorded by the Act to permit it to be classified as a mere 'local rule of procedure.'"[205] Therefore, in a flipped application of conflicting laws regarding the arbiter of questions of fact, interest analysis produced consistent results.

Indeed, FELA cases provide further evidence of an interest analysis approach. Recall that Professor Currie posited that jurisdictional interests stemmed from policies.[206] The policy behind FELA is instructive—its purpose is to protect workers, and as such, it is a statute that favors plaintiffs.[207] A comparison of two state court FELA cases shows that the federal interest in effecting Congress's pro-plaintiff policy controls the outcome of the case. In *Minneapolis & St. Louis Railroad Company v. Bombolis*[208] the Supreme Court allowed a pro-plaintiff state rule—one that permitted a less than unanimous

[201] *See supra* note 33 and accompanying text.

[202] 342 U.S. 359 (1952).

[203] *See id.*

[204] *See id.* at 363.

[205] *Id.*

[206] *See* Roosevelt, *supra* note 19, at 507.

[207] *See* Brooke Granger, Comment, *Known Injuries vs. Known Risks: Finding the Appropriate Standard for Determining the Validity of Releases Under the Federal Employers' Liability Act*, 52 Hous. L. Rev. 1463, 1464–66 (2015); Consol. Rail Corp. v. Gottshall, 512 U.S. 532, 542–43 (1994) (describing FELA as a remedial statute with "humanitarian purposes"). In a (hopefully) nostalgic anecdote for readers, the Author made the connection between FELA's purpose and this Article on interest analysis due to her amazing Federal Courts curriculum, which was easily her favorite law school course. *See* Hon. William Fletcher, Professor, Berkeley L. Sch., Lecture in Federal Courts (Mar. 01, 2023) (lecture notes on file with Author) (discussing jurisdiction in federal and state courts and analyzing FELA cases in light of the statute's pro-plaintiff purpose).

[208] 241 U.S. 211 (1916).

verdict—to stand.[209] In contrast, in *Brown v. Western Railway*[210] the Court held that a state procedural rule on pleading requirements could not stand because it undermined the federal interest in "uniform application of the federal act in the state and federal courts."[211] In other words, the Court held that a federal law can regulate the procedure used in state court when the state's rule unduly interferes with federal law.[212] Accordingly, federal interests—not a substance-procedure dichotomy—were the defining line.

## III. The Federal Circuit's Choice of Law Doctrine

In 1982, Congress created the Federal Circuit as a specialized federal appellate court.[213] Within the Court of Appeals system, each circuit court can "interpret federal law independently of the other circuits as a means of providing more independent review of legal issues and experimentation with varying legal rules."[214] Decisions issued by circuit courts are binding on the district courts within their respective regions, but they do not bind other circuit courts.[215]

### A. The Federal Circuit's Role in the Federal Court System as a Specialized Court

Several areas of law fall within the Federal Circuit's jurisdiction,[216] all of which concern federal substantive law. Thus, the Federal Circuit adjudicates federal questions within its specific jurisdictional mandate.[217] This Article focuses specifically on the Federal Circuit's patent law jurisprudence. Federal

[209] *Id.* at 216. Conventional wisdom suggests that juries "are notoriously partial to maimed railroad workers and to the families of deceased railroad workers." Alfred Hill, *Substance And Procedure In State FELA Actions—The Converse Of The* Erie *Problem?*, 17 Ohio St. L.J. 384, 397 (1956). It seems reasonable to assume that allowing only a fraction of these pro-plaintiff jurors to render a verdict for a plaintiff benefits plaintiffs in general. Perhaps this is why in *Dice*, the Court balked at a state's rule that placed factual determinations outside the jury's province—that and the fact that Congress itself referenced "jury trials" in FELA. *Id.*

[210] 338 U.S. 294 (1949).

[211] *Id.* at. 295, 299. The case involved a state rule that construed pleading allegations "most strongly against the pleader." *Id.* at 295.

[212] *See id.* at 296 ("This federal right cannot be defeated by the forms of local practice.").

[213] *See* Federal Court Improvements Act of 1982, Pub. L. No. 97-164, 96 Stat. 25 (1982).

[214] Schaffner, *supra* note 1, at 1175 (citing 28 U.S.C. §§ 1291, 1294).

[215] *See id.* (citing 28 U.S.C. § 1254).

[216] *See* 28 U.S.C. § 1295 (describing appeals which "the Federal Circuit shall have exclusive jurisdiction").

[217] *Id.*

courts have exclusive jurisdiction over patent cases.[218] When a patent case is appealed from a district court, it goes to the Federal Circuit.[219] Further, all district courts are bound by the Federal Circuit's patent law jurisprudence.[220]

Within this context, the Federal Circuit has exclusive jurisdiction over cases "arising under" patent law.[221] Because the statute uses the term "civil action,"[222] the court is authorized to take jurisdiction over *all claims* in a case when at least one claim or counterclaim arises from patent law, or "necessarily depends on resolution of a substantial question of federal patent law."[223] In theory, state courts do not hear cases involving patent claims. However, state courts retain jurisdiction over cases when a defense involves patent law[224]; the Federal Circuit must relinquish cases that at their outset are devoid of claims arising under patent law.[225] Accordingly, due to its jurisdictional grant, the

[218] *See* 28 U.S.C. § 1338(a).

[219] The Federal Circuit has appellate jurisdiction over patent cases from both district courts and the PTAB. *See* 28 U.S.C. §§ 1295(a)(1), (4)(A). For more information on the lifecycle of a patent and the different federal courts and administrative agencies that play a role in patent law, see generally Barbier, *supra* note 10, at 344–50.

[220] *See* Atari, Inc. v. JS&A Group, Inc., 747 F.2d 1422, 1439 (Fed. Cir. 1984) (en banc). As an aside, the Court of Federal Claims is bound by all precedent from the Federal Circuit. *E.g.*, Garner v. United States, 85 Fed. Cl. 756, 759 (2009). Non-Article III courts (the Patent Trial and Appeal Board and the International Trade Commission) are also bound by Federal Circuit precedent.

[221] 28 U.S.C. § 1295(a)(1) (granting the Federal Circuit "exclusive jurisdiction . . . of an appeal from a final decision of a district court of the United States . . . in any civil action arising under, or . . . relating to patents").

[222] *Id.*

[223] Christianson v. Colt Indus. Operating Corp., 486 U.S. 800, 808 (1988). Note that while the Supreme Court held in *Christianson* that counterclaim infringement claims alone did not confer jurisdiction on the Federal Circuit, Congress later abrogated that part of the Court's decision when it amended the Patent Act. *See* Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 19(b), 125 Stat. 284, 331–32 (2011) (codified at 28 U.S.C. § 1295(a) (2018)). Thus, the Federal Circuit has jurisdiction over appeals of action on compulsory counterclaims.

[224] *See Christianson*, 486 U.S. at 809 ("a case raising a federal patent-law defense does not, for that reason alone, 'arise under' patent law").

[225] The Federal Circuit has discretion to continue a case when a jurisdiction animating patent issue disappears on appeal if Article III jurisdiction remains as to the non-patent issues. *See, e.g.,* Oracle Am., Inc. v. Google LLC, 886 F.3d 1179 (Fed. Cir. 2018) (deciding to hear copyright suit after patent issues dropped on appeal). But the Federal Circuit loses jurisdiction over an appeal when the appellant lacks standing. *See, e.g.,* Gould v. Control Laser Corp., 866 F.2d 1391, 1392–93 (Fed. Cir. 1989) (holding settlement moots the action). This places the opposing party in a precarious situation with nowhere to go due to the Federal Circuit's exclusive jurisdiction.

Federal Circuit hears claims arising from patent law, non-patent federal law, and state law.

### B. The Types of Choice of Law Issues Faced by the Federal Circuit and How the Federal Circuit Resolves These Conflicts

The Federal Circuit employs a tailor-made choice of law analysis.[226] The court "categorizes federal legal issues into five categories: (1) substantive issues within its exclusive jurisdiction, (2) procedural issues which implicate or pertain to the substantive patent law, (3) procedural matters relating to the court's own appellate jurisdiction, (4) procedural matters not unique to the patent law, and (5) substantive issues not within its exclusive jurisdiction."[227] Thus, although the Federal Circuit operates "solely" on federal questions, it distinguishes between substantive and procedural laws.[228] This differs from the traditional federal court system that does not draw such lines when presiding over federal question cases.[229]

The Federal Circuit addresses these questions under the following framework: "for procedural issues that are not intertwined with substantive patent law, the law of the regional circuit governs."[230] Early on, the court announced its choice of law doctrine, stating that it would use a predictive approach when tackling issues reserved to the regional circuit courts.[231] The Federal Circuit next elaborated on its newly minted federal common law, explaining that it only exercises independent judgment over legal issues that "pertain[] to a matter . . . unique to its exclusive appellate jurisdiction."[232] Finally, the court elaborated that when both the Federal Circuit and the regional circuit have an interest in applying their own law, the Federal Circuit would consider

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[226] Barbier, *supra* note 4.

[227] Schaffner, *supra* note 1, at 1181.

[228] *Id.*

[229] *Erie*, of course, only applies to federal courts sitting in diversity. *E.g.*, Alexander A. Reinert, Erie *Step Zero*, 85 Fordham L. Rev. 2341, 2342 (2017) (citing Erie R.R. Co. v. Tompkins, 304 U.S. 64, 79–80 (1938)).

[230] Barbier, *supra* note 4, at 121 (citing Panduit Corp. v. All States Plastic Mfg. Co., 744 F.2d 1564, 1574–75 (Fed. Cir. 1984)).

[231] *See Panduit*, 744 F.2d at 1574–75 (explaining that the Federal Circuit seeks to "predict how that regional circuit would have decided the issue in light of the decisions of that circuit's various district courts, [and] public policy"). This predictive approach resembles that used by federal courts sitting in diversity—the federal court is "obligated to apply state law in the way, as best it can determine, that the state high court would." Jonathan Remy Nash, *Examining the Power of Federal Courts to Certify Questions of State Law*, 88 Cornell L. Rev. 1672, 1679 (2003).

[232] Schaffner, *supra* note 1, at 1178 (citing Mars, Inc. v. Kabushiki-Kaisha Nippon Conlux, 24 F.3d 1368, 1371 (Fed. Cir. 1994)).

"several factors including the uniformity in regional circuit law, the need to promote uniformity in the outcome of patent litigation, and the nature of the legal issue involved."[233]

Recall that federal common law is only binding on state courts when created by the Supreme Court.[234] And federal appellate courts—sitting in a horizontal orientation within the federal court system—are not bound by each other's laws, but are only bound by those adopted by or affirmed by the Supreme Court.[235] These rules provide boundaries for the Federal Circuit. As a federal appellate court, the Federal Circuit is not bound by decisions rendered by other federal appellate courts.[236] This holds true for federal common law created by other circuits.

Altogether, the Federal Circuit's framework for analyzing choice of law questions is proper and constitutionally permissible. This Article proposes reconceptualizing the Federal Circuit's choice of law doctrine as interest analysis within a reverse *Erie* framework.

## IV. Reconceptualizing the Federal Circuit's Choice of Law Framework

In sum, interest analysis, federal common law, and reverse *Erie* underpin the Federal Circuit's choice of law methodology. In reaching this conclusion, this Article makes several assumptions that are accepted principles of law. First, as a federal court, the Federal Circuit is authorized—to some degree—to create federal common law.[237] Second, the Federal Circuit has power to make common law specific to patent law.[238] Not only does such a body of law already exist, but the Supreme Court has also dramatically shaped its content over the past decade.[239]

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[233] Manildra Milling Corp. v. Ogilvie Mills, Inc., 76 F.3d 1178, 1181 (Fed. Cir. 1996).

[234] *See supra* Section I.C (discussing federal common law).

[235] *See* Charquia Wright, *Circuit Circus: Defying Scotus and Disenfranchising Black Voters*, 83 Ohio St. L.J. 601, 604 (2022). Under the law of the circuit doctrine, horizontal *stare decisis* applies within a circuit and requires only those courts within the circuit to follow prior in-circuit precedent. *See id.* Of course, Supreme Court precedent is binding on all federal appellate courts. *E.g.*, S.E.C. v. Dorozhko, 574 F.3d 42, 46 (2d Cir. 2009).

[236] *See* Schaffner, *supra* note 1, at 1175–76.

[237] *See supra* Section I.B (discussing power of federal courts to create federal common law).

[238] *See* Gholz, *supra* note 1, at 309 ("it is clear from the legislative history of the act creating the Federal Circuit that the Federal Circuit is to develop its own law as to the 'purely patent' aspects of such appeals"); S. Rep. No. 97-275, at 5 (1981) (noting Federal Circuit will "increase doctrinal stability in the field of patent law").

[239] *See generally* Craig Allen Nard, *Legal Forms and the Common Law of Patents,* 90 B.U. L. Rev. 51 (2010). The Supreme Court's contribution is especially salient in the area

When the dust settles, the following conclusions can be drawn: the Federal Circuit's choice of law doctrine aligns with the interest analysis framework used by the Supreme Court in reverse *Erie* cases.[240] This framework unifies the Federal Circuit's prior choice of law decisions.[241] First, the Federal Circuit determines whether a conflict exists between Federal Circuit law and that of the regional circuit in which the district court sits.[242] This involves diving into how the law affects the court's interests and whether applying regional circuit law would undermine those interests.[243] Second, the Federal Circuit develops federal common law similar to how other federal courts exercise lawmaking authority—by filling in gaps and creating a new rule of decision when needed.[244] Therefore, the Federal Circuit should not retain its facial substance-procedure dichotomy because both types of laws can conflict with its interests. Instead, it should use interest analysis when evaluating all types of laws, regardless of their classification, as this will provide consistency and predictability in the court's choice of law doctrine.

### A. The Federal Circuit "Acts" Like a State Court in a Reverse *Erie* Situation

The Federal Circuit's method of determining whose law to apply is analogous to that of a state court addressing a reverse *Erie* problem—whereas the Federal Circuit "acts" like a state court does in such situations. In describing the court's adjudication of state law claims, Professor Paul Gugliuzza[245]

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of subject matter eligibility under 35 U.S.C. § 101. *See, e.g.,* Alice Corp. Pty. v. CLS Bank Int'l, 573 U.S. 208, 217–18 (2014) (crafting a two-part test to determine whether matter directed to an ineligible idea is nonetheless patentable). To say that these rules have caused chaos among patent practitioners is an understatement. *See, e.g.*, Burman York Mathis III, Alice-*Insanity (Part One), or Why the* Alice-Mayo Test Violates Due Process of Law, IP Watchdog (Oct. 26, 2021), https://ipwatchdog.com/2021/10/26/alice-insanity-part-one-alice-mayo-test-violates-due-process-law/id=139229/ [https://perma.cc/BL5K-MK8C] ("*Alice-Mayo* . . . is . . . a rote, near cliché, babbling of meaningless words that falsely portend to be a cognizable standard of patent eligibility.").

[240] *See* discussion *supra* Part II (discussing Supreme Court's reverse *Erie* cases).

[241] *Cf.* Sean M. McEldowney, Comment, *The "Essential Relationship" Spectrum: A Framework for Addressing Choice of Procedural Law in the Federal Circuit*, 153 U. Pa. L. Rev. 1639, 1639 (2005) ("What is missing is a consistent conceptual framework.").

[242] *See supra* text accompanying notes 230–233.

[243] *See supra* text accompanying note 233.

[244] *See supra* text accompanying notes 57–58.

[245] Professor Gugliuzza specializes in patent litigation and teaches courses in Civil Procedure, Federal Courts, and Intellectual Property Law at Temple University—his scholarly work on the Federal Circuit received the annual best article award from the Federal Courts Section of the Association of American Law Schools. *Paul R. Gugliuzza*,

explained that "the Federal Circuit acted as a state court, deciding state-law claims and determining the content of state law."[246] But the analogy reaches further—the Federal Circuit's choice of law doctrine mirrors reverse *Erie* in all contexts.[247]

Both the Federal Circuit and state courts regularly deal with laws from multiple jurisdictions. State courts are existing entities with established procedures empowered to exercise authority over a second jurisdiction's substantive law matters—that of federal courts.[248] A state court thus acts like a federal court and ideally reaches the same case disposition as the federal court would by placing itself in the shoes of the federal court. Similarly, the Federal Circuit is an existing entity empowered to exercise authority over patent law matters[249] that places itself in the shoes of the regional circuit where the district court sits.[250]

The Federal Circuit therefore "sits" in the circuit by becoming a regional circuit court that *acts* like a state court—it applies that circuit's non-patent law while ruling on substantive matters from a "second" jurisdiction, that of the Federal Circuit. In doing so, the Federal Circuit typically follows its "own" procedure, which is the procedure that the circuit court has morphed into. In this proposal, the regional circuit court's own law includes both "procedural" and "substantive" law that is not intertwined with substantive patent law—it is this collection of laws that becomes the Federal Circuit's "own" law. The Federal Circuit then treats patent law as foreign law, only applicable when the Federal Circuit has a legitimate interest in applying that foreign patent law.

The legal determination made in these parallel contexts is facially identical—both state courts in a reverse *Erie* situation and the Federal Circuit in a patent law situation determine whether to use "procedural" law from

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Temp. U. Beasley Sch. Law, https://law.temple.edu/contact/paul-gugliuzza/ [https://perma.cc/Y5YB-82H5] (last visited Jan. 17, 2025).

[246] Paul R. Gugliuzza, *The Federal Circuit as a Federal Court*, 54 Wm. & Mary L. Rev. 1791, 1807–08 (2013). Other similarities have been noted; for example, Professor Ghosh postulated that "the Federal Circuit portrays itself as a generalist court." Shubha Ghosh, *Jurisdiction Stripping Of The Federal Circuit?*, 52 Akron L. Rev. 391, 392 (2019).

[247] Professor Schaffner proposed a Federal Circuit choice of law doctrine and posited that it "could be classified as a reverse Erie doctrine in a different 'world'"; the comparison centered around a distinction between "issues which govern the primary conduct of the litigants" and "issues governing litigation conduct." Schaffner, *supra* note 1, at 1223–28. This Article proposes a related, but different version, of the reverse *Erie* analogy.

[248] *See supra* Section II.C (discussing the role of state courts in adjudicating federal claims).

[249] 28 U.S.C. § 1295; Gholz, *supra* note 1, at 309.

[250] *See* Panduit Corp. v. All States Plastic Mfg., 744 F.2d 1564, 1575 (1984) ("we sit as if we were the particular regional circuit court where appeals from the district court we are reviewing would normally lie").

their own forum.[251] And both entities struggle with creating a bright-line rule for when "foreign" procedural law overtakes forum procedure. But that is the beauty of interest analysis. As explained below, it does away with the substance-procedure debacle and focuses on interests, regardless of the law's "classification."

Recall that the Supremacy Clause compels the displacement of state law by federal law in certain situations.[252] Beyond the physical similarities in being "multi-jurisdictional," the Federal Circuit is placed in a reverse *Erie* situation because of preemption. Of course, this is not "true" preemption because the Federal Circuit is unlike state courts in that the Supremacy Clause does not dictate the Federal Circuit's choice of law; rather, the Federal Circuit must decide between the laws of two "horizontal" jurisdictions.[253] But the Federal Circuit is not truly on the same level as the regional circuit—at least regarding matters within the Federal Circuit's jurisdiction. And there lies the comparison. State courts must apply federal law in the face of a conflict because federal law preempts state law[254]; likewise, the Federal Circuit must apply Federal Circuit law in the face of a conflict because Federal Circuit law "preempts" regional circuit law in areas like patent law.[255] In other words, when laws clash, state courts apply state law unless preempted by federal law, and the Federal Circuit applies its "own" law—as the regional state court that it mimics—unless preempted by Federal Circuit law.

### B. The Federal Circuit's Choice of Law Doctrine Reflects an Interest Analysis Approach

The Federal Circuit retains a substance-procedure distinction in name, but in reality, undertakes a policy-based approach, employing an interest analysis methodology.[256] Like the Supreme Court in *Hanna*, the Federal Circuit seems less concerned with the procedural/substantive label that a rule garners than

[251] *See supra* Part II (discussing reverse *Erie* cases); *see also infra* Section III.B (discussing Federal Circuit cases involving procedural rules).

[252] *See supra* Section I.A.2 (discussing Supremacy Clause); Leathers, *supra* note 7, at 813.

[253] In theory, the Federal Circuit is a juridical co-equal with other federal appellate courts.

[254] *See supra* Section I.A (discussing interaction between Supremacy Clause and interest analysis).

[255] *See supra* Section III.B (discussing role of Federal Circuit's exclusive jurisdiction in its choice of law doctrine).

[256] Indeed, scholars have noted that "in most recent cases, the court has begun to temper this [substance-procedure] distinction based upon an evaluation of competing policy interests." Schaffner, *supra* note 1, at 1182.

its effect on impairing a legitimate interest.[257] By focusing on its interests,[258] the Federal Circuit has adopted an approach that aligns with the Supreme Court's jurisprudence, holding that "countervailing federal interests" often necessitate the application of federal law.[259] In fact, the Federal Circuit's most recent choice of law decisions reflect this interest-based approach.[260]

Given the Federal Circuit's limited reach, interest analysis is entirely proper. Just as the federal government must have a legitimate federal interest in an area (plus the power to make federal law), to properly displace state law, the Federal Circuit also must have a legitimate interest in an area within its jurisdictional grant in order to displace regional circuit law.

### *1. Legitimate Interests of the Federal Circuit*

While the Federal Circuit uses some form of interest analysis, the task is discerning which legitimate interests justify the court displacing the law of the regional circuits.[261]

Within the patent law context, the Federal Circuit has a strong interest in the purpose for its creation: unifying patent law.[262] Similarly, as with the *Erie* and reverse *Erie* cases, a federal interest in uniformity and predictability

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[257] *Cf.* Hanna v. Plumer, 380 U.S. 460, 473 (1965) (applying federal law even though it changed the outcome of the case); *see also* Ferens v. John Deere Co., 494 U.S. 516, 524 (1990) (cleaned up) ("In *Hanna v. Plumer*, we held that Congress has the power to prescribe procedural rules that differ from state-law rules even at the expense of altering the outcome of litigation.").

[258] *See* Megan M. La Belle, *Privilege for Patent Agents*, 23 B.U. J. Sci. & Tech. L. 350, 361 n.95 (2017) (citing Panduit Corp. v. All States Plastic Mfg., 744 F.2d 1564, 1574–75 (1984); Flex-Foot, Inc. v. CRP, Inc., 238 F.3d 1362, 1365 (Fed. Cir. 2001)) (noting Federal Circuit applies its own procedural law when "unique to patent issues" or "intimately involved in the substance of enforcement of the patent right").

[259] Gasperini v. Ctr. for Hums., 518 U.S. 415, 432 (1996) (noting futility of "outcome-determination" test when competing federal interests are present).

[260] *E.g.*, Manildra Milling Corp. v. Ogilvie Mills, Inc., 76 F.3d 1178, 1181 (Fed. Cir. 1996) ("In deciding which law to apply, we must necessarily evaluate competing policy interests.").

[261] Scholars have proposed forms of interest analysis and interest balancing—that do not involve distinguishing between substance and procedure—when drawing lines on the Federal Circuit exercising independent judgment. *See* Schaffner, *supra* note 1, at 1179. The author opined:

> To determine the proper scope of the Federal Circuit's authority to exercise independent judgment in light of these congressional goals, one must take into account two fundamental considerations: (1) the desire for uniformity in the treatment of 'like cases' and (2) the interests of the Federal Circuit and the regional courts.

*Id.*

[262] *See* S. Rep. No. 97-275, at 2, 4–5 (1981) (explaining that the purpose in creating the Federal Circuit was to "fill a void in the judicial system by creating an appellate forum

exists between the Federal Circuit's application of Federal Circuit law and other federal courts' application of Federal Circuit law. The Federal Circuit's focus on uniformity, ensuring that its patent law jurisprudence provides clear guidelines to district court judges,[263] is a legitimate interest.[264]

Further, even though regional circuit law is properly displaced when it disrupts patent law uniformity—regardless of any interest possessed by the circuit—there is little to no concern with confusion among the other circuits.[265] This is because even when the Federal Circuit crafts rules while serving as the regional circuit court, those circuit courts can still disregard the Federal Circuit's decisions on interpreting federal law.[266]

Accordingly, while there may be additional legitimate interests at play, this Article proceeds on the theory that at least one interest can create a true conflict between the Federal Circuit's own law and the law of a regional circuit in the context of patent cases: stabilizing the national patent law.[267]

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capable of exercising nationwide jurisdiction over appeals in areas of the law where Congress determines there is a special need for nationwide uniformity").

[263] Within the federal court system, district courts are charged with applying the Federal Circuit's patent law jurisprudence in the first instance. This holds true for both the Federal Circuit's substantive and procedural patent rulings. *See* Sturiale, *supra* note 4, at 486–87 (citing Panduit Corp. v. All States Plastic Mfg. Co., 744 F.2d 1564, 1573 (Fed. Cir. 1984)).

[264] *Panduit*, 744 F.2d at 1574–75. In birthing the Federal Circuit, Congress also expressed a desire to curb forum shopping that resulted from varied circuit courts entertaining patent litigation suits. S. Rep. No. 97-275, at 5. While decreasing forum shopping in patent litigation was one of Congress's goals, forum shopping—at least in patent law—is no longer an issue because the Federal Circuit is the only federal appellate court that hears patent appeals. *See* 28 U.S.C. § 1295(a)(1). It is also highly unlikely that parties would add patent causes of action merely for forum shopping purposes of ending up in the Federal Circuit on appeal as opposed to the regional circuit. Frivolous claims, of course, are prohibited and can result in sanctions. *E.g.*, Townsend v. Holman Consulting Corp., 929 F.2d 1358, 1362 (9th Cir. 1990). Nevertheless, the Federal Circuit remains keenly aware of the "potential for forum shopping in the appeal of the nonpatent causes [of action]." Cable Elec. Prods. v. Genmark, Inc., 770 F.2d 1015, 1032 (Fed. Cir. 1985), *overruled on other grounds by* Midwest Indus., Inc. v. Karavan Trailers, Inc., 175 F.3d 1356 (Fed. Cir. 1999) (en banc). But that concern is outside the scope of this Article.

[265] To be sure, there is a significant Federal Circuit interest in "minimizing confusion and conflicts in the federal judicial system." *Manildra*, 76 F.3d at 1181.

[266] *See* Schaffner, *supra* note 1, at 1175 (discussing Evarts Act). District courts are likewise not bound by Federal Circuit precedent pertaining to areas outside of the Federal Circuit's purview. *See Panduit*, 744 F.2d at 1573.

[267] *See* David T. DeZern, Note, *Federal Circuit Antitrust Law And The Legislative History Of The Federal Courts Improvement Act Of 1982*, 26 Rev. Litig. 457, 470–71 (2007) (citing S. Rep. No. 97-275, at 5 (1981); H. Rep. No. 97-312, at 23 (1981)).

### *2. Interest Analysis in Motion: Applications in the Federal Circuit*

Under this Article's theory, the Federal Circuit's choice of law analysis is similar to federal law under the Supremacy Clause: if there is a legitimate Federal Circuit interest, Federal Circuit law displaces conflicting regional circuit law.[268] To underscore this proposal, this Article proceeds with a short tour of various patent law case types adjudicated by the court.

#### *a. Non-Exclusive Substantive Matters*

As discussed, the Federal Circuit retains jurisdiction over an entire civil action. This means that the court must decide choice of law questions pertaining to subject matter outside of its circumscribed jurisdiction.[269] For example, in *Cable Electric Products, Inc. v. Genmark, Inc.*,[270] the Federal Circuit addressed whether state law unfair competition claims were preempted by federal intellectual property law.[271] The court first considered its interest in increasing doctrinal stability in patent law and intended to apply the "discernable law of the involved circuit" in non-patent matters.[272] It then concluded that it lacked an interest in applying its own law to determine whether state trade regulation laws are preempted because it had no "mandate to unify" those types of laws.[273] Presumably, because the Federal Circuit's purview includes only patent law, the court has no interest in the preemptive effect of other federal intellectual property laws.

#### *b. Procedural Matters*

As discussed, the Federal Circuit categorizes procedural matters into two groups: those that implicate substantive patent law and those that do not.[274] Two examples illustrate the court's interest analysis approach to procedure.

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[268] *See supra* Section IV.A (discussing analogy to Supremacy Clause).

[269] *See* Schaffner, *supra* note 1, at 1181; Christianson v. Colt Indus. Operating Corp., 486 U.S. 800, 808–09 (1988) (citations omitted) (considering whether a well-pleaded complaint "claim 'arises under' patent law 'must be determined from what necessarily appears in the plaintiff's statement of his own claim in the bill or declaration, unaided by anything alleged in anticipation or avoidance of defenses in which it is thought the defendant may impose'").

[270] 770 F.2d 1015 (Fed. Cir. 1985).

[271] *Id.* at 1031–32.

[272] *Id.* at 1032 (citing Atari, Inc. v. JS&A Group, Inc., 747 F.2d 1422, 1440 (Fed. Cir. 1984)).

[273] *Id.* at 1033. Of note, the court later overruled the decision in part, holding that regional circuit law did not apply "to conflicts between patent law and other legal rights." Midwest Indus. v. Karavan Trailers, 175 F.3d 1356, 1358–59 (1999). That development does not affect the interest analysis presented in this Article.

[274] *See supra* Section III.B (discussing Federal Circuit's categorization approach).

First, in *Chemical Engineering Corporation v. Essef Industries*,[275] the Federal Circuit was faced with determining the appropriate standard to apply in reviewing a district court's award of expenses under FRCP 37(c).[276] The court held that regional circuit law controlled the inquiry because applying regional law did not threaten the Federal Circuit's interest in patent law uniformity.[277] Because the regional law did not implicate substantive patent law, the Federal Circuit had no reason to displace it with a law of the Federal Circuit's own making. In other words, a false conflict existed because only the regional circuit had a legitimate interest in applying its own law.

Second, in *Biodex Corporation v. Loredan Biomedical, Inc.*,[278] the Federal Circuit was tasked with determining "the reviewability *on appeal* of fact findings made by a jury in a patent trial absent any post-verdict motions."[279] Unlike in *Essef*, this issue *did* implicate substantive patent rights, because it related directly to the appellate review of patent trials.[280] Accordingly, the Federal Circuit held that it was inappropriate to use regional circuit law; instead, the court announced a new rule: it "cannot review the sufficiency of the evidence after a jury verdict absent some post-verdict disposition."[281] Similar to *Essef*, this case presented a false conflict, albeit in the opposite direction. Because a regional circuit has no interest in appellate procedures for patent cases, the Federal Circuit's isolated interest permitted its application of Federal Circuit law.

These cases align with precedent concerning the application of state procedure by state courts entertaining federal actions. The Supreme Court has held that a state court is free to apply a state procedural rule in federal causes of action when that rule does not impair federal interests.[282] Conversely, the

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[275] 795 F.2d 1565 (Fed. Cir. 1986).

[276] *Id.* at 1570–71, 1573–74; *see* Fed. R. Civ. P. 37(c)(2) (permitting district court to order payment of "reasonable expenses" for a party's failure to admit a requested admission).

[277] *See* Chemical Engineering Corp. v. Essef Indus., 795 F.2d 1565, 1573 (Fed. Cir. 1986) ("An award of expenses under Rule 37(c) is procedural, is not unique to patent issues, and does not have a direct bearing on the outcome of patent issues.").

[278] 946 F.2d 850 (Fed. Cir. 1991).

[279] *Id.* at 858 (emphasis in original).

[280] *See id.* at 858–59. The court pointed to its interests grounded in "longstanding policies of promoting uniformity and minimizing confusion." *Id.* at 859.

[281] *Id.* at 859, 862 (finding that "deference to regional circuit law is not appropriate" in light of "longstanding policies of promoting uniformity and minimizing confusion and recognizing the essential relationship before us to the exercise of our statutory authority").

[282] *See* State of Mo. *ex rel.* S. Ry. Co. v. Mayfield, 340 U.S. 1, 5 (1950) (holding state court was permitted to decide the availability of *forum non conveniens* in FELA actions "according to its own local law" so long as the law was applied impartially and did not discriminate against FELA suits). The Court previously developed its non-discrimination principle which

Supreme Court has held that state courts are not required to apply federal procedural rules in federal causes of action when no federal interest in procedural uniformity exists.[283] This reasoning explains the two cases above. In *Biodex*, the Federal Circuit, as the "state court," was not at liberty to apply its own law (that of the regional circuit) because the standard of review for factual findings in patent trials encroached on federal patent rights.[284] While in *Essef*, the Federal Circuit was not required to apply its own law because the standard for reviewing FRCP 37 rulings did not implicate patent uniformity.[285]

Indeed, the Federal Circuit's procedural decisions mimic the logic used by the Supreme Court in reverse *Erie* cases. Recall that in *Felder*, applying a state notice rule would impair federal interests; the Supreme Court thus held that the Supremacy Clause preempted the state's procedural rule, notwithstanding the state's interest in applying its own forum rule.[286] In contrast, in *Johnson v. Fankell*,[287] the Supreme Court held that a state court did not have to apply the federal rule granting a right to an interlocutory appeal from a denial of qualified immunity.[288] This was so, the Court reasoned, because unlike in other reverse *Erie* cases, the state law did not defeat a defendant's federal right to have the court rule on the merits of its qualified immunity defense.[289] A running theme in these cases was a federal interest in uniformity—a state law cannot defeat a litigant's federal cause of action or defense.[290]

Similarly, when analyzing issues that are undoubtedly procedural, the Federal Circuit does not take the regional circuits as it finds them. Like the

precludes state courts from discriminating against federal claims. *See, e.g.,* Mondou v. New York, 223 U.S. 1, 57 (1911) (holding state courts barred from refusing to entertain a federal claim based on disagreement with federal policy).

[283] *See* Am. Dredging Co. v. Miller, 510 U.S. 443, 455–57 (1994) (holding state courts not required to apply federal *forum non conveniens* doctrine to federal maritime causes of action because the policies underlying the federal action did not require procedural uniformity, even though a federal court would apply the doctrine).

[284] Biodex Corp. v. Loredan Biomedical, Inc., 946 F.2d 850, 858–62 (Fed. Cir. 1991).

[285] Chemical Engineering Corp. v. Essef Indus., 795 F.2d 1565, 1573 (Fed. Cir. 1986).

[286] Felder v. Carey, 487 U.S. 131, 151 (1988).

[287] 520 U.S. 911 (1997).

[288] *Id.* at 913. In the case, defendant state officials asserted a qualified immunity defense to the plaintiff's § 1983 claim. *Id.* Federal law permitted this type of case to be immediately appealed as a "final decision." *Id.* at 915 n.3.

[289] *Id.* at 922–23.

[290] *See id.* at 920 (recognizing that the *Felder* decision was grounded in the federal interest in uniformity).

Supreme Court, the Federal Circuit takes a circuit's procedural rules only to the extent those rules do not hamstring patent law uniformity.[291]

### *c. Matters Related to the Federal Circuit's Jurisdiction*

Finally, the Federal Circuit has occasionally analyzed its own appellate jurisdiction. In *C.R. Bard, Inc. v. Schwartz*,[292] the Federal Circuit held that it could independently determine whether it possessed jurisdiction to hear a case.[293] The court performed an interest analysis, pointing to Congress's directive that its jurisdictional statute "be construed in accordance with the objectives of the Act."[294] It concluded that the interest in national patent uniformity mandated that the Federal Circuit have exclusive authority to determine its own jurisdiction—holding otherwise would frustrate Congress's framework "to provide one national Court of Appeals to hear all appeals from district courts in cases arising under the patent laws."[295] And because there was a legitimate Federal Circuit interest, it prevailed.[296] This analysis is compared to that of a state court withholding jurisdiction over a federal question in *Herb v. Pitcairn*[297]—unlike a state court of general jurisdiction, the Federal Circuit can only entertain actions within its jurisdictional mandate.[298] Notably, the Supreme Court sanctioned the Federal Circuit's approach, explaining that the

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[291] *See* Felder v. Carey, 487 U.S. 131, 150 (1988) (cleaned up) ("Federal law takes state courts as it finds them only insofar as those courts employ rules that do not impose unnecessary burdens upon rights of recovery authorized by federal laws.").

[292] 716 F.2d 874 (Fed. Cir. 1983).

[293] *Id.* at 877.Although the district court had held that it lacked jurisdiction over the patent licensee's declaratory judgment action under § 1338, the Federal Circuit concluded that it could review the district court's determination *de novo*. *See id.* at 876–77.

[294] *Id.* at 877–78 (citing S. Rep. No. 97-275 (1982)).

[295] *Id.* at 878.

[296] *See id.*

[297] 324 U.S. 117 (1945). In *Herb*, the plaintiff filed a FELA claim in a municipal court having limited jurisdiction based on geographical scope of where the cause of action arose. *Id.* at 118. The City Court lacked jurisdiction to hear the federal claim under state law; but because the law did not discriminate against federal rights, the Supreme Court found the refusal acceptable, as the FELA could not force itself upon state courts with a valid excuse to refuse to adjudicate the claim. *Id.* at 120, 123. Thus, a parallel runs between the *Herb* court's limited territorial jurisdiction and the Federal Circuit's limited subject matter jurisdiction.

[298] *Compare* Testa v. Katt, 330 U.S. 386, 394 (1947) (holding state courts cannot refuse to hear federal actions when jurisdiction is "adequate and appropriate under established local law"), *with* Sheldon v. Sill, 49 U.S. 441, 449 (1850) ("Courts created by statute can have no jurisdiction but such as the statute confers."). However, like a state court, the Federal Circuit cannot be commandeered for cases it does not hear.

court was entitled, if not obligated, to determine its own jurisdiction, even if a regional court had previously decided the issue.[299]

### C. The Federal Circuit Creates Federal Common Law When Necessary to Carry Out Congressional Directives

The final tenet of this Article's tri-part theory is that the Federal Circuit has the power to make federal common law and exercises this power like the state courts do in reverse *Erie* cases.[300] This Article does not consider the scope of that power, but presumes that it exists for areas intertwined with patent law.[301] Indeed, the Federal Circuit itself has recognized as much.[302]

In addition to its choice of law regime, the Federal Circuit embarked on crafting federal common law in other areas of law. As noted above, the Federal Circuit has a legitimate interest in using its own procedure; therefore, it has an interest in creating its own procedural rules.[303] Two examples illustrate the Federal Circuit's creation of common law procedural rules.

First, an example involving express delegation from Congress. As part of the Federal Rules of Evidence ("FRE"), Congress explicitly conferred on federal courts the power to make common law regarding evidentiary privileges[304] and intended for federal courts to continue to develop privileges through

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[299] *See* Christianson v. Colt Indus. Operating Corp., 486 U.S. 800, 817–18 (1988). The Supreme Court also noted that the Federal Circuit is authorized to dismiss a case or transfer the case in the absence of proper jurisdiction. *See id.* at 818. However, the Supreme Court has not hesitated to correct the Federal Circuit's erroneous conclusions on jurisdiction. *See* Gunn v. Minton, 568 U.S. 251, 258 (2013) (holding that state "legal malpractice claim does not arise under federal patent law").

[300] *See supra* Part II (discussing reverse-*Erie* cases).

[301] *See supra*, note 238 (collecting sources). For a view on the Federal Circuit's ability to broadly construct federal common law, see generally Schaffner, *supra* note 1.

[302] *See* Panduit Corp. v. All States Plastic Mfg. Co., 744 F.2d 1564, 1575 (Fed. Cir. 1984) (emphasis in original) (holding Federal Circuit not precluded "from following existing or creating new law regarding any and all matters in cases where this court has *exclusive* jurisdiction over *all appeals* from a particular court").

[303] *See supra* Section IV.B.2.b (discussing Federal Circuit cases involving procedural rules).

[304] *See* Fed. R. Evid. 501 ("The common law — as interpreted by United States courts in the light of reason and experience — governs a claim of privilege unless any of the following provides otherwise: the United States Constitution; a federal statute; or rules prescribed by the Supreme Court. But in a civil case, state law governs privilege regarding a claim or defense for which state law supplies the rule of decision."); Fallon, Jr. et al., *supra* note 158, at 651 n.7 (recognizing FRE 501 as "expressly delegat[ing] lawmaking authority to the federal courts").

common law "based on modern reason and experience."[305] Moreover, state privilege law governs when state law supplies the rule of decision.[306]

In 2016, the Federal Circuit held that a patent agent privilege existed and precluded discovery of communications "reasonably necessary and incident to the . . . prosecution of patent[s] . . . before the [Patent] Office."[307] Shortly thereafter, the United States Patent and Trademark Office ("USPTO") proposed and promulgated a regulation recognizing patent agent privilege in agency proceedings.[308] And the same year, a Texas state appellate court declined to recognize the privilege in a state law claim for breach of contract.[309] Once again, the Federal Circuit looked at the interests involved—a false conflict existed because state courts have no interest in whether patent agent communications are privileged.[310] Because the Federal Circuit had an interest in applying its own law to patent agent communications, there was only one law to apply: that of the Federal Circuit.[311] Moreover, the Federal Circuit's new federal common law was created pursuant to Congress's command to rely on "reason and experience" when crafting new privileges.[312]

Second, a look at implied delegation. This type of federal common lawmaking can result from an open-ended statute or when Congress enacts a statute establishing a federal program.[313] In *Manildra Milling Corporation v.*

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[305] S. Rep. No. 93–1277, at 7 (1974) (S. Comm. on the Judiciary); *see also* H.R. Rep. No. 93–650 (1973) (H. Comm. on the Judiciary) (intending for federal courts to continue to develop the law of privileges through "the application of the principles of the common law as interpreted by the courts of the United States in the light of reason and experience").

[306] *See* S. Rep. No. 93–1277, at 7.

[307] *In re* Queen's Univ., 820 F.3d 1287, 1301 (Fed. Cir. 2016).

[308] *See* Rule Recognizing Privileged Communications Between Clients and Patent Practitioners at the Patent Trial and Appeal Board, 81 Fed. Reg. 71,653 (Oct. 18, 2016) (codified at 37 C.F.R. § 42.57).

[309] *See In re* Silver, 500 S.W.3d 644, 646–47 (Tex. App. 2016).

[310] *See Queen's Univ.*, 820 F.3d at 1294.

[311] *See id.* at 1290–91. The court harkened back to Supreme Court jurisprudence holding that patent agents engage in the practice of law. *See id.* at 1295–96 (citing Sperry v. State of Florida *ex rel.* Fla. Bar, 373 U.S. 379 (1963)). Based on this precedent, along with "the unique roles of patent agents, the congressional recognition of their authority to act . . . and the current realities of patent litigation," the court recognized "an independent patent agent privilege." *Id.* at 1295. But because all federal courts have the power to make privilege rules, the Federal Circuit likely did not act in excess of congressional delegation, even if the patent agent privilege was not tied to patent law. *See id.* at 1296.

[312] *Id.* at 1294.

[313] *See* Fallon, Jr. et al., *supra* note 158, at 651 n.7. Arguably, the Federal Circuit qualifies under both avenues. The Patent Act "much like the Sherman Act, is a common law enabling statute, leaving ample room for courts to fill in the interstices or to create doctrine emanating solely from Article III's province." Nard, *supra* note 239, at 53. And the court's

*Ogilvie Mills, Inc.*,[314] the Federal Circuit created a rule within the "prevailing party" doctrine in attorney fee awards.[315] The court noticed that the definition of the term "prevailing party" in FRCP 54 varied widely between and within circuits.[316] Even though the Federal Circuit usually defers to regional circuit law when interpreting the FRCP, establishing a single definition of the term would promote uniformity in patent litigation.[317] This shows that—like the Supreme Court—the Federal Circuit is willing to make procedural common law for a procedure not unique to patent law, but that significantly impairs the Federal Circuit's interest in promoting uniformity.

## Conclusion

Recall that in *Byrd*, the Supreme Court looked at a conflict between laws regarding a jury's role in deciding questions of fact.[318] While the Supreme Court claimed to be analyzing whether a "procedure" was so closely related to substance that it must be included in the substantive law, the analysis came down to statutory interpretation and interest analysis.[319] Similarly, the Federal Circuit maintains a facial substance-procedure dichotomy[320]; in reality, it enquires into the interests of the regional circuit and itself, irrespective of a law's classification as "procedure." Under this methodology, the Federal Circuit has ignored a plethora of regional circuit procedural laws in favor of a national interest in uniformity of patent law.

Under an interest analysis approach, the Federal Circuit should displace regional circuit law—or create federal common law as needed—when the court has a legitimate interest that the application of conflicting law would undermine. This approach promotes uniformity and benefits practitioners

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jurisdictional grant includes delegation from Congress authorizing it to fashion an evolving body of patent law. *See* Textile Workers Union of Am. v. Lincoln Mills of Ala., 353 U.S. 448, 456–57 (1957) (holding jurisdictional statute (§ 301 of the Labor Act) authorized federal courts to make specific common law); *but see* Sosa v. Alvarez-Machain, 542 U.S. 692, 739–49 (2004) (Scalia, J., concurring in part) (explaining jurisdictional statute (Alien Tort Statute) did not grant federal courts substantive lawmaking power).

[314] 76 F.3d 1178 (Fed. Cir. 1996) (holding that "a party who has a competitor's patent declared invalid meets the definition of 'prevailing party.'").

[315] *Id.* at 1183.

[316] *Id.* at 1181; *see* Fed. R. Civ. P. 54(d)(1) ("Unless a federal statute, these rules, or a court order provides otherwise, costs – other than attorney's fees – should be allowed to the prevailing party.").

[317] *See Manildra*, 76 F.3d at 1181–82; *see also* Biodex Corp. v. Loredan Biomedical Inc., 946 F.2d 850, 857 n.10 (Fed. Cir. 1991) (collecting cases on FRCP).

[318] *See* Byrd v. Blue Ridge Rural Electric Coop., 356 U.S. 534 (1958).

[319] *See supra* notes 92–98 and accompanying text.

[320] *See* Schaffner, *supra* note 1, at 1182.

who are often required to guess how the Federal Circuit will treat a given issue. The Federal Circuit should recharacterize its choice of law doctrine as interest analysis in a reverse *Erie* situation. This proposed solution would not significantly alter the Federal Circuit's current doctrine and would clarify the basis for its application.

# Rescuing Democracy: A Case to Apply the Moral Utility Doctrine Under Patent Law to Regulate Broken Voting Systems

Victoria Vigo*

## Introduction

In 2012, 102-year-old Haitian immigrant Desiline Victor waited in line for over six hours to cast her ballot in Miami-Dade County because the ballot printers in her precinct malfunctioned.[1] While Ms. Victor's unending patience led to her vote being counted, her story of triumph shines a light on a difficult truth: a system that depends on voter perseverance is a broken system.[2] Many voters would be prevented by outside circumstances from exhibiting Ms. Victor's persistence, regardless of the conviction behind their desire to vote, and would be disenfranchised as a result.[3] Long lines at the polls disenfranchise voters, and Black and Latine voters like Ms. Victor are more likely to experience multi-hour wait times.[4] Lines at the polls generally stem from a combination of problems, including inadequate resource allocation, poorly trained poll workers, and voting system malfunctions, which affect voters of

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[1] *See* Emily Heil, *State of the Union Guest Desiline Victor, 102, Will Be the Face of Voting Delays at Address*, Wash. Post (Feb. 11, 2013), https://www.washingtonpost.com/politics/state-of-the-union-guest-desiline-victor-102-will-be-the-face-of-voting-delays-at-address/2013/02/11/3b81604a-74a4-11e2-95e4-6148e45d7adb_story.html [https://perma.cc/KD6R-HN4U]; Memorandum from Carlos A. Gimenez, Mayor, to Audrey M. Edmonson, Honorable Vice Chairwoman, & Members Bd. of Cnty. Comm'rs (Dec. 19, 2012) (on file with author).

[2] *See* Heil, *supra* note 1.

[3] *See* Hannah Klain et al., Brennan Ctr. for Just., Waiting to Vote: Racial Disparities in Election Day Experiences 8 (2020).

[4] *See id*. at 4.

color disproportionately.[5] Non-male, non-white voters have historically had their votes suppressed in a variety of different forms: entire communities lacking the right to vote,[6] poll taxes,[7] literacy tests,[8] and caging.[9] The right to vote is one of the most infringed upon rights in the nation's history precisely because of how important voting is to determining who holds power.[10]

Long lines due to ballot printer malfunctions, requiring voters like Ms. Victor to possess extraordinary endurance for delays, illustrate a prevalent problem with the infrastructure at the very core of elections: voting systems.[11] Voting systems are a combination of equipment, practices, and associated documentation used to effectuate an election.[12] Election cycle after election cycle, maintenance failures and poorly planned voting systems affect lines at the polls and lead to indirect voter suppression.[13] As of 2024, just three private

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[5] Latine and Black voters are more likely to report long wait times for many reasons including being more likely to live in counties with higher population density, fewer electoral resources, and consisting of disproportionately young voters as young voters experience longer wait times regardless of race. *See id.* at 4–5, 8.

[6] *See Black Americans and the Vote*, Nat'l Archives, https://www.archives.gov/research/african-americans/vote [https://perma.cc/CK4F-MFTH] (last visited Jan. 28, 2023).

[7] Poll taxes required citizens to pay to vote; while many white people were able to avoid payment if they had a relative before the American Civil War who had voted, Black people could not utilize that loophole. *See Poll Taxes*, Nat'l Museum of Am. Hist., https://americanhistory.si.edu/democracy-exhibition/vote-voice/keeping-vote/state-rules-federal-rules/poll-taxes [https://perma.cc/W32X-KMC8] (last visited Jan. 28, 2023).

[8] Laws that required proof of being able to read and write English were used to disqualify immigrants, the poor, and Black people. *See Literacy Tests*, Nat'l Museum of Am. Hist., https://americanhistory.si.edu/democracy-exhibition/vote-voice/keeping-vote/state-rules-federal-rules/literacy-tests [https://perma.cc/NL4P-UFK7] (last visited Jan. 28, 2023).

[9] Voter caging involves sending mass mailings out to registered voters and utilizing those that are returned undelivered as an excuse to purge or challenge voter registration because the voter no longer lives at their listed address. *See* Justin Levitt, *A Guide to Voter Caging*, Brennan Ctr. for Just. (June 29, 2007) https://www.brennancenter.org/our-work/research-reports/guide-voter-caging [https://perma.cc/8Y2R-BLKL].

[10] *See, e.g.*, Yick Wo v. Hopkins, 118 U.S. 356, 370 (1886); Wesberry v. Sanders, 376 U.S. 1, 18 (1964).

[11] *See* Memorandum from Carlos A. Gimenez, Mayor, to Audrey M. Edmonson, Honorable Vice Chairwoman, & Members Bd. of Cnty. Comm'rs (Dec. 19, 2012) (on file with author).

[12] *See* 52 U.S.C. § 21081.

[13] *See* Matthew Fisher, Note, *Will Your Vote Count?: Can the Current Software Withstand and Guarantee the Constitutional Right to Vote?*, 8 J. High Tech. L. 91, 98–99 (2008); *see also Johnson County to Change Election Equipment Before May Primary*, Fox59 (Feb. 11, 2019, 4:03 PM), https://fox59.com/news/johnson-county-to-change-election-equipment-before-may-primary/ [https://perma.cc/4VVD-KSJZ]; J. Alex Halderman, Analysis of the Antrim

corporations—Election Systems & Software ("ES&S"), Dominion, and Hart InterCivic (collectively, the "Big Three")—control 90% of the voting system market.[14] Observers and critics have pointed to this oligarchical control as an obstacle in addressing the litany of problems with the current US voting framework.[15] While the Election Assistance Commission's ("EAC") Voluntary Voting Systems Guidelines ("VVSGs") exist to provide federal guidance to ensure safe and fair voting, they are not forcibly imposed upon the states nor complied with by the Big Three.[16] In addition to their outsized market share, the private corporations are known to be extremely litigious under the guise of protecting their patents.[17] Still, the United States Patent and Trademark Office ("USPTO") continues to issue patents that lead to voter suppression because it does not consider the likelihood of voter suppression when evaluating these inventions.[18] This Note argues that voter suppression should be considered when evaluating these patents.

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County, Michigan November 2020 Election Incident 3 (2021); Andrew W. Appel, *Is Internet Voting Trustworthy? The Science and the Policy Battles*, 21 U.N.H. L. Rev. 523 (2023).

[14] *See* Spenser Mestel, *A Transparent, Open–Source Vision for US Elections*, Undark (Feb. 28, 2024), https://undark.org/2024/02/28/open-source-voting [https://perma.cc/ZY4U-TMRP]; *see also* Matthew Caulfield et al., The Price of Voting: Today's Voting Machine Marketplace 6 (2021) (reporting market share in 2020 to be 88.8%).

[15] *See* Jessica Huseman, *The Market for Voting Machines Is Broken. This Company Has Thrived in It,* ProPublica (Oct. 28, 2019, 2:20 PM), https://www.propublica.org/article/the-market-for-voting-machines-is-broken-this-company-has-thrived-in-it [https://perma.cc/SA9D-YP4N]; Brenda Reddix-Smalls, *Individual Liberties and Intellectual Property Protection–Proprietary Software in Digital Electronic Voting Machines: The Clash Between a Private Right and a Public Good in an Oligopolistic Market*, 19 Fordham Intell. Prop. Media & Ent. L.J. 689, 692 (2009).

[16] *See* Saige Draeger, *Election Assistance Commission Updates Voluntary Voting System Guidelines*, Nat'l Conf. of State Legislators (June 30, 2022), https://www.ncsl.org/news/details/election-assistance-commission-updates-voluntary-voting-system-guidelines [https://perma.cc/ZL5T-HWE3].

[17] *See* Huseman, *supra* note 15; *see also* Emily Levy, *AUDIT USA Threatened with Lawsuit by E-Voting Company ES&S*, Audit USA (Oct. 1, 2018), https://www.auditelectionsusa.org/2018/10/01/audit-usa-threatened-with-lawsuit-by-e-voting-company-ess/ [https://perma.cc/Q5YN-DCNT].

[18] *See* Ballot Tabulation Device and Method for Tabulating Paper Ballots Printed According to Ballot Style, U.S. Patent No. 8,136,729 (filed Mar. 13, 2009) (issued Mar. 20, 2012). This patent was part of ES&S's Unity Suite system, which led to Ms. Victor's six hour wait time, and thus the indirect suppression of voters at her precinct. *See* Memorandum from Carlos A. Gimenez, Mayor, to Audrey M. Edmonson, Honorable Vice Chairwoman, & Members Bd. of Cnty. Comm'rs (Dec. 19, 2012) (on file with author).

To be patented, these systems must be considered useful, meaning a machine must satisfy the moral utility doctrine.[19] Justice Joseph Story sowed the seeds for this doctrine in 1817, which requires that an invention is not illegal, immoral, or contrary to the public good.[20] Since its inception, the moral utility doctrine has been sporadically used to invalidate or deny patents in two ways: (1) in conjunction with the nation's gambling prohibition and (2) to protect consumers from deception.[21] Over 180 years after the doctrine's first use, the United States Court of Appeals for the Federal Circuit ("Federal Circuit") unceremoniously invalidated at least the deception protections of the doctrine in *Juicy Whip v. Orange Bang*.[22] However, Justice Story's long-standing doctrine still has a place in patent law, to prevent awarding patents to inventions that would damage the public good.[23]

This Note argues that the Federal Circuit must invalidate voter-suppressing voting system patents for lack of utility by employing moral utility doctrine jurisprudence to find that voting systems are unique inventions requiring a higher utility standard be applied by the USPTO and the courts. This heightened standard should be based on the EAC's VVSGs to guard the public from protectionist private corporations who seek to monopolize the most public good: voting.[24] Part I of this Note discusses voting as a public good, patentability and the moral utility doctrine, patent infringement, and the landscape of the voting systems industry. Section II.A of this Note analyzes the moral utility doctrine as it relates to voting systems and the constitutional guarantee of the right to vote. Lastly, Section II.B of this Note recommends that the Federal Circuit invalidate patents on any invention that would lead to voter suppression.

## I. Background

The right to vote and the right of patentability are as old as the U.S. Constitution itself.[25] The right to vote is a promise implied through the intent of the Framers to create a free and equitable society that has expanded to include more citizens throughout the nation's history.[26] The right of patent-

[19] *See* 2 Donald S. Chisum, Chisum on Patents § 4.03 (Matthew Bender ed., 2022).

[20] *See id.*; Bedford v. Hunt, 3 F. Cas. 37, 37 (1817); Lowell v. Lewis, 15 F. Cas. 1018, 1019 (1817).

[21] *See* 2 Chisum, *supra* note 19, § 4.03.

[22] 185 F.3d 1364, 1365 (Fed. Cir. 1999).

[23] Paul Spiel, *Deceptive Patents: Deconstructing* Juicy Whip, 2017 BYU L. Rev. 746 (2018).

[24] *See* discussion *infra* Section II.B.

[25] U.S. Const. art. II, § 2; U.S. Const. amend. XV; U.S. Const. art. I, § 8, cl. 8.

[26] Steven Mintz, *Winning the Vote: A History of Voting Rights*, The Gilder Lehrman Inst. of Am. Hist., https://www.gilderlehrman.org/history-resources/essays/

ability, on the other hand, has been legislated upon since the first Congress.[27] The basic principles of patents and protecting the right to vote can coexist, even for already-existing patents, through the moral utility doctrine.[28] Patents allow inventors the right to exclude others from infringing upon their inventions, because the invention is novel and useful, unless the accused infringer can provide a proper defense.[29] A common defense is demonstrating the initial patent's invalidity through proof it is neither novel nor useful.[30] Voting systems, like any other patentable invention, must satisfy the novelty and utility requirements to be patentable. The voting system market fails to provide equitable and transparent voting methods, and critics are becoming more vocal.[31] The public's desire to ensure the right to vote, the failures of these voting systems companies to create appropriate technology, and the failure of Congress to enact effective protective legislation will inevitably clash.[32] To protect the right to vote, this Note suggests that in a confrontation between the right to vote and the validity of voting system patents, the Federal Circuit should protect citizens from voter suppression through the moral utility doctrine.[33]

### A. The Promise of the Right to Vote

The right to vote is a constitutionally-protected element of citizenship in the United States.[34] The American Revolution was fought to achieve the ideal of representational government where citizens could choose those that made their laws.[35] Though this ideal would take several hundred years to come to fruition, it has now been extended to non-land owners, non-white people, women, and under-21-year-olds through various constitutional amendments and Supreme Court decisions.[36] The Voting Rights Act of 1965 ("VRA") utilized the enforcement power of Congress under the Fifteenth Amendment to require that the rights of individuals were not abridged by any state system

winning-vote-history-voting-rights [https://perma.cc/XA4G-UTDU] (last visited Jan. 27, 2023).

[27] *See* 1 Chisum, *supra* note 19, § 1.01.

[28] *See* discussion *infra* Section I.B.1.

[29] *See* 35 U.S.C. §§ 154, 271; 1 Chisum, *supra* note 19, § 1.

[30] *See* 35 U.S.C. § 282; 6 Chisum, *supra* note 19, § 19.01.

[31] *See* discussion *infra* Section I.D.

[32] *See infra* Part II.

[33] *See infra* Part II.

[34] *See* Reynolds v. Sims, 377 U.S. 533, 554 (1964).

[35] *See* Steven Mintz, *Winning the Vote: A History of Voting Rights*, The Gilder Lehrman Inst. of Am. Hist., https://www.gilderlehrman.org/history-resources/essays/winning-vote-history-voting-rights [https://perma.cc/XA4G-UTDU] (last visited Jan. 27, 2023).

[36] *See* Yick Wo v. Hopkins, 118 U.S. 356, 370 (1886); Wesberry v. Sanders, 376 U.S. 1, 18 (1964); U.S. Const. amends. XV, XIX, XXIV, XXVI.

with specific provisions focusing on voting systems while codifying preventative remedies to ensure these rights.[37] The Supreme Court, as it struck down discriminatory apportionment, expressed the importance of the right to vote best: "the right of suffrage is a fundamental matter in a free and democratic society."[38]

### B. The Basics of Patentability

The U.S. Constitution provides the basis for patent law through the intellectual property clause.[39] Since the establishment of the Constitution, Congress passed several acts that together define the bounds of patent law with the 1952 Patent Act currently in effect.[4041] The purpose of all patent legislation is the underlying principle that patents promote innovation through an inventor's right to exclude others from one area of invention, thereby incentivizing them to devise new technological breakthroughs that will benefit the public.[42]

In exchange for the monopoly that this right of exclusion creates, an invention must satisfy requirements that prove it adds to the public interest.[43] Further, in *Webber v. Virginia*,[44] the Supreme Court held that a patentholder cannot utilize a federal patent to claim they had a right to exercise that patent in violation of state law.[45]

Utility patents are granted to a person or entity that invents or discovers a (1) novel and (2) useful machine, process, or manufacture.[46] The second prong requires a useful machine be (1) operable and capable of use and (2) achieves a minimum human purpose that is (3) not illegal, immoral, or contrary to public policy.[47] To satisfy the first two elements of the usefulness test a machine must be specific, substantial, and credible by practically

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[37] *See* 52 U.S.C. §§ 10101(a), 10308(b), 10308(d).

[38] *Id.* at 561–62.

[39] The clause reads: "To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." U.S. Const. art. I, § 8, cl. 8.

[40] *See* 1 Chisum, *supra* note 19, § 1.01.

[41] *See id.* § 6.01.

[42] *See* Fed. Trade Comm'n, To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy 1–2 (2003).

[43] *See* Lackner Co. v. Quehl Sign Co., 145 F.2d 932, 934 (6th Cir. 1944) (citing Densmore v. Scofield, 102 U.S. 375, 378 (1880)); Kendall v. Winsor, 62 U.S. 323, 328 (1858); United States v. Masonite Corp., 316 U.S. 265, 278 (1942).

[44] 103 U.S. 344 (1880).

[45] *Id.* at 347–48.

[46] Design patents are reserved for new and original ornamental designs; plant patents are reserved for newly discovered or asexually produced species of plant. *See id.*

[47] *See* 1 Chisum, *supra* note 19, § 4.01.

fulfilling the needs of the industry.[48] When Congress overhauled Title 35 in 1952, it did not significantly alter the language of the utility requirement from the statutory language established as far back as 1790.[49] Additionally, the Supreme Court has held that to be considered useful, an invention must be capable of use to the effect proposed, and the Federal Circuit has expanded upon that to find that an invention does not need to be capable of each of its stated objectives.[50] For example, an application for a machine that claims to both deflect and detect a stylus could still be patentable if it only effectively performs one of those two functions.[51]

### *1. The Moral Utility Doctrine*

The requirement that a useful patent not be illegal, immoral, or contrary to public policy stems from two Justice Story decisions in 1817: *Lowell v. Lewis*[52] and *Bedford v. Hunt*.[53] These two cases stand for the proposition that useful patents cannot be "mischievous" or contrary to the "morals, the health, or the good order of society."[54] While this has been called the moral utility doctrine, the moral element of this doctrine has narrowed over time.[55] Historically, this doctrine has been used to deny and invalidate patents for gambling inventions or inventions that perpetuate deception or fraud on consumers.[56] Originally, the moral utility doctrine was used to *per se* invalidate a patent even if it had a useful purpose outside of gambling.[57] For example, in *Reliance Novelty Co. v. Dworzek*,[58] the court stated that if the invention at issue was used in gambling, even if it could also be used for some other purpose, it was unnecessary

[48] *See* Hartford-Empire Co. v. Obear-Nester Glass Co., 71 F.2d 539, 566 (8th Cir. 1934); Utility Examination Guidelines, 66 Fed. Reg. 1092, 1094 (Jan. 5, 2001).

[49] *Compare* Patent Act of 1790, ch. 7, 2 Stat. 110 (1790) ("he, she, or they, hath or have invented or discovered any useful art, manufacture, engine, machine or device; or any improvement upon . . . ."), *with* 35 U.S.C. § 101 (1952) ("Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof . . . .").

[50] *See* Mitchell v. Tilghman, 86 U.S. 287, 392, 396 (1873); Stiftung v. Renishaw PLC, 945 F.2d 1173, 1180 (Fed. Cir. 1991).

[51] *See* Stiftung v. Renishaw PLC, 945 F.2d 1173, 1180 (Fed. Cir. 1991).

[52] 15 F. Cas. 1018 (1817).

[53] 3 F. Cas. 37 (1817).

[54] Bedford v. Hunt, 3 F. Cas. 37, 37 (1817); Lowell v. Lewis, 15 F. Cas. 1018, 1019 (1817).

[55] *See, e.g.*, Mitchell Bros. Film Grp. v. Cinema Adult Theater, 604 F.2d 852, 856–57 (5th Cir. 1979).

[56] *See* 2 Chisum, *supra* note 19, § 4.03; Tol-O-Matic, Inc. v. Proma Produkt-Und Mktg. Gesellschaft m.b.H., 945 F.2d 1546, 1553 (Fed. Cir. 1991).

[57] *See* 2 Chisum, *supra* note 19, § 4.03[1][a].

[58] 80 F. 902 (N.D. Cal. 1897).

to consider other arguments against the machine's patentability.[59] However, later courts only invalidated gambling patents if they were incapable of any other beneficial use unrelated to gambling.[60]

Since the late 1990s, the Federal Circuit has narrowed the moral utility doctrine by limiting even the fraud element of Justice Story's interpretation.[61] In *Juicy Whip, Inc. v. Orange Bang, Inc.*,[62] the Federal Circuit found that a patent for an invention designed to imitate another product and confuse customers was not limited by its immorality or illegality because, though the test had been historically used, it had not been applied broadly in recent decisions.[63] Prior to *Juicy Whip*, the leading case in the deception line of cases was *Rickard v. Du Bon*.[64] The *Rickard* doctrine concerned deceptive patents and, utilizing Justice Story's reasoning in *Lowell*, found that Congress did not intend for the only useful purpose of an invention to be perpetuating fraud on consumers.[65] The *Juicy Whip* court refused to follow *Rickard* and its line because they were decided before the passage of the 1952 Patent Act.[66] The court held that a product capable of being altered to resemble another satisfied the 1952 Patent Act requirements, interpreting the act to narrow the statutory requirement of utility.[67] Further, the court suggested that neither the USPTO nor the courts were proper arbiters of deceptive trade practices.[68] To reach this conclusion, the court relied upon *Webber v. Virginia*, which held that a patent does not allow a patent holder to circumvent state law, as Congress did not intend to override the states' police power.[69]

Since *Juicy Whip*, Congress has passed the America Invents Act ("AIA"), significantly changing Title 35.[70] The AIA imposes many new procedures and requirements to the patent process and the operation of the USPTO.[71] Among these changes are expanded opportunities for non-inventors to participate in the patent process,[72] directives for the USPTO to better protect small

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[59] *Id.* at 902–03.

[60] *See* 2 Chisum, *supra* note 19, § 4.03[1][b].

[61] *See* Juicy Whip, Inc. v. Orange Bang, Inc., 185 F.3d 1364, 1365 (Fed. Cir. 1999).

[62] 185 F.3d 1364 (Fed. Cir. 1999).

[63] *Id.* at 1365.

[64] 103 F. 868, 873 (2d Cir. 1900).

[65] *See* Rickard v. Du Bon, 103 F. 868, 873 (2d Cir. 1900).

[66] *See* Juicy Whip, Inc. v. Orange Bang, Inc., 185 F.3d 1364, 1367 (Fed. Cir. 1999).

[67] *Id.* at 1366–67.

[68] *See id.*

[69] *See id.*

[70] *See* America Invents Act of 2012, Pub. L. No. 112-29, 125 Stat. 284 (2011).

[71] *See id.*

[72] *See id.* §§ 6, 8, 125 Stat. at 299–312, 315–16.

businesses and individuals who cannot afford to apply for patents,[73] efforts to study the ethnic makeup of patent applicants,[74] and the establishment of a new prohibition on issuing patents for "claim[s] directed to or encompassing a human organism."[75] In addition to questions of patentability, there are also issues of infringement once patents have been granted.

### C. Infringement Claims & Defenses

A patent does not allow an inventor to utilize their patent in violation of federal, state, or local laws passed to protect the public interest.[76] Further, a patent holder may only exclude others from making, using, offering to sell, or selling the invention in the United States over the twenty-year patent term.[77] Those who violate this right to exclude—knowingly or unknowingly, intentionally or unintentionally—infringe upon the patent.[78] Generally, the scope of a patent determines whether another invention infringes, as defined by the written claims in the patent.[79] While issued patents are presumed valid, invalidity can still be proven by demonstrating that a patent, or its claims, fail to meet any one of the patentability requirements.[80] Invalidity of a patent is an important defense to an infringement claim because "an invalid patent is a blight on 'the important public interest in permitting full and free competition in the use of ideas.'"[81] Given this potential blight, it is the courts' responsibility to ensure that the life of an invalid patent ends, even if an infringement suit can be decided without reaching validity.[82]

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[73] *See id.* §§ 26, 28, 30–31, 125 Stat. at 338–40.

[74] *See id.* § 29, 125 Stat. at 339.

[75] *Id.* § 33, 125 Stat. at 340.

[76] *See* 5 Chisum, *supra* note 19, § 16.02[1][b].

[77] *See* 35 U.S.C. §§ 154(a)(2), 271(a).

[78] *See* 5 Chisum, *supra* note 19, § 16.02[2].

[79] *See* 5 Chisum, *supra* note 19, § 16.02[1][a][ii] n.28; *see also* Bio-Technology Gen. Corp. v. Genentech, Inc., 80 F.3d 1553, 1559 (Fed. Cir. 1996).

[80] *See* 35 U.S.C. § 282; *see also* 6 Chisum, *supra* note 19, § 19.01; discussion of patentability requirements *supra* Section I.

[81] Hieger v. Ford Motor Co., 516 F.2d 1324, 1327 (6th Cir. 1975).

[82] *See* Cardinal Chem. Co. v. Morton Int'l, 508 U.S. 83, 101 (1993); Blonder-Tongue Labs. v. Univ. of Ill. Found., 402 U.S. 313, 333 (1971). Since these decisions the Federal Circuit has continued to vacate a district court's invalidity judgement, however they have been vacated only when raised as an affirmative defense and not a counterclaim. *See, e.g.*, Pods, Inc. v. Porta Stor, Inc., 484 F.3d 1359, 1368 (Fed. Cir. 2007).

### D. Voting Systems: Business & Regulation

Voting systems have existed in the United States since its first election, but the development of patentable systems has a shorter history. With the advent of secret voting in the 1880s and 1890s, as opposed to casting a public voice vote, inventors began patenting systems to assist this new method.[83] As early as 1881, patents were issued for machines like Anthony C. Beranek's "Voting Apparatus."[84] However, voting machines were not widely used in elections until 1891, when New York legalized the use of a mechanical lever voting machine.[85] Around the time of New York's legalization, many states began utilizing the "Myers Voting Machine," which began the widespread use of machines as states legalized their use and implementation.[86] Concurrently, states began the now-commonplace act of purchasing their own voting machines as each state individually determined their own legal process for elections.[87]

The United States has historically utilized six different types of voting systems: hand-counted paper ballots, mechanical lever machines, punch-card machines, ballot-marking devices ("BMDs"), scanned paper ballots, and direct-recording electronic devices ("DREs").[88] In the 2020 presidential election, all fifty states employed a combination of BMDs, hand counting, scanned paper ballots, and DREs.[89] Federal law regarding voting systems has been sparse.[90] Existing federal law primarily covers their use in congressional and presidential elections, offering limited federal requirements and guidelines on the systems themselves and simply establishing criminal laws prohibiting interference with an individual's right to vote.[91] Voting systems encompass not just the machines themselves; rather the Help America Vote Act ("HAVA") defines these systems as the combination of equipment, practices,

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[83] *See* Voting Apparatus, U.S. Patent No. 248,130 (filed June 20, 1881) (issued Oct. 11, 1881); T. David Zuckerman, The Voting Machine: Report on the History, Use and Advantages of Mechanical Means for Casting and Counting Ballots 19 (1925).

[84] *See* '130 Patent.

[85] *See* Zuckerman, *supra* note 83, at 22.

[86] *See* Zuckerman, *supra* note 83, at 22; Voting Machine, U.S. Patent No. 415,549A (filed May 17, 1889) (issued Nov. 19, 1889).

[87] *See* Zuckerman, *supra* note 83, at 22; *see also* '549A Patent.

[88] *See Voting Technology*, MIT Election Data + Sci. Lab, https://electionlab.mit.edu/research/voting-technology [https://perma.cc/Z2BM-6QZY] (last visited Jan. 23, 2023).

[89] *See id.*

[90] *See* Jimmy Balser, Cong. Rsch. Serv., IF12245, Voting Systems and Federal Law 1 (2024).

[91] *See id.*; *Voting Technology*, MIT Election Data + Sci. Lab, https://electionlab.mit.edu/research/voting-technology [https://perma.cc/Z2BM-6QZY] (last visited Jan. 23, 2023).

and associated documentation used to effectuate an election.[92] Further, the limited federal requirements for voting systems enacted in HAVA directly stem from the 2000 presidential election debacle.[93]

### *1. From* Bush v. Gore *to the Help America Vote Act*

The democratic crisis of the 2000 presidential election stemmed from malfunctioning voting systems that prevented an accurate counting of votes.[94] The contentious election came down to 537 votes after the Supreme Court blocked a hand recount process ordered by the Florida Supreme Court.[95] The close election was exacerbated by a multitude of voting system failures: undervotes,[96] hanging chads,[97] dimpled chads,[98] and voter confusion due to butterfly ballots.[99] In Palm Beach County alone, over 2,000 voters' voices were not heard due to confusion in the voting system, which led to their votes being incorrectly counted for Pat Buchanan over Vice President Al Gore.[100] Given the close margins, this difference would have changed the course of the election.[101] The Florida Supreme Court held that ballots should be recounted by

[92] *See* 52 U.S.C. § 21081(b).

[93] *See* Fisher, *supra* note 13, at 97; Bush v. Gore, 531 U.S. 98, 102 (2000) (per curiam).

[94] *See* Abner Greene, Understanding the 2000 Election: A Guide to the Legal Battles that Decided the Presidency 4 (2001).

[95] *See id.* at 5; *Bush*, 531 U.S. at 100, 110.

[96] Undervotes are ballots that are counted without the machine detecting a vote for President. *See Bush*, 531 U.S. at 102.

[97] Hanging chads are ballots where, using a punch-card ballot, only a portion of the paper is detached from the ballot. *See* Ron Elving, *The Florida Recount Of 2000: A Nightmare That Goes On Haunting,* NPR (Nov. 12, 2018, 5:00 AM), https://www.npr.org/2018/11/12/666812854/the-florida-recount-of-2000-a-nightmare-that-goes-on-haunting [https://perma.cc/9LSM-XY6G].

[98] Dimpled chads are ballots that are merely dented, rather than being punched out, while using a punch-card ballot. *See id.*

[99] Butterfly ballots were two-columned sheets with candidates on either side sandwiching punch holes that alternated names from either side of the ballot. To select the desired candidate, a voter had to punch in the appropriate place. Many voters reported confusion at which punch correlated to their desired candidate, leading them to mistakenly vote for a candidate they did not intend. These ballots were invented by a Palm Beach County election official solely for the 2000 presidential election and were not patented. *See* Jonathan N. Wand et al., *The Butterfly Did It: The Aberrant Vote for Buchanan in Palm Beach County, FL*, 95 Am. Pol. Sci. Rev. 793, 794 (2001); *Butterfly Ballot Designer Speaks Out*, ABC News (Dec. 21, 2000), https://abcnews.go.com/Politics/story?id=122175&page=1 [https://perma.cc/N42E-K2N2].

[100] *See* Wand et al., *supra* note 99, at 794.

[101] *See id.*

hand to determine each voter's intent.[102] However, in a widely criticized opinion, the Supreme Court held that this process violated the Equal Protection and Due Process Clauses of the Constitution and stopped the recount.[103]

Congress enacted HAVA intending to respond to the failure of the 2000 election by modernizing voting systems and providing guidance to prevent similar calamities.[104] The act marked the first time that the federal government set any minimum requirements on the nation's election systems.[105] However, partisan bartering enacted a law that has been criticized for creating an agency with no actual authority.[106] Instead, the law established limited requirements, but made EAC guidelines merely a suggestion, giving the newly-created agency no authority to enforce its guidance.[107] HAVA provided federal funding to the states to comply with the new standards.[108] These standards required that all voting systems allow voters to privately check and, if necessary, correct their ballots before votes were counted.[109] Additionally, HAVA required that the voting systems provide a way to notify and allow voters to correct a ballot if they had voted for two candidates for the same office.[110]

To provide continuing assistance to the states, HAVA also set forth voluntary guidelines that would be administered through a new commission, the EAC.[111] EAC administers the VVSGs, the third iteration of which was released in 2021, called VVSG 2.0.[112] The VVSG delineates fifteen principles and fifty-three guidelines that are required for federal certification.[113] However,

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[102] *See* Gore v. Harris, 772 So. 2d 1243, 1261 (Fla. 2000).

[103] *See e.g.*, Mark S. Brodin, *Bush v. Gore: The Worst (or at least second-to-the-worst) Supreme Court Decision Ever*, 12 Nev. L.J. 563 (2012).

[104] *See* Herbert E. Cihak, *The Help America Vote Act: Unmet Expectations?*, 29 U. Ark. Little Rock L. Rev. 679, 683 (2007).

[105] *See id.*

[106] *See id.*

[107] *See id.*; Jessie Ojeda, Note, *Carrot & Stick: Reorganizing and Empowering the Election Assistance Commission*, 90 Geo. Wash. L. Rev. 1354, 1358 (2022).

[108] *See* Cihak, *supra* note 104, at 683; Ojeda, *supra* note 107, at 1358.

[109] *See* Cihak, *supra* note 104, at 683; Ojeda, *supra* note 107, at 1358.

[110] *See* 52 U.S.C. § 21081.

[111] *See* 52 U.S.C. § 21101; Ojeda, *supra* note 107, at 1358.

[112] *See* Karen L. Shanton, Cong. Rsch. Serv., IN11592, Voluntary Voting System Guidelines (VVSG): An Overview 2 (2021).

[113] The 15 principles, all defined by the VVSG, are: high quality design; high quality implementation; transparent; interoperable; equivalent and consistent voter access; voter privacy; marked, verified, and cast as intended; robust, safe, usable, and accessible; auditable; ballot secrecy; access control; physical security; data protection; system integrity; and

federal certification of election systems is optional.[114] Pursuant to Section 231 of HAVA, the federal government provides certification for states that opt to participate in the program.[115] States can choose which provisions to adopt as requirements for their own machines and may adopt none, some, or all of the VVSGs.[116] Only eleven states and the District of Columbia require full certification for their machines, and twenty-seven others use some aspect of the certification system for their machines, leaving twelve that use no elements of the guidelines.[117] States that do not use any of the elements of the guidelines have various reasons for not doing so, including that certification can be time consuming and a desire to govern their own affairs without federal intrusion.[118] No systems currently meet the requirements set forth by VVSG 2.0 because of its recent enactment.[119]

Since HAVA's enactment, the business of voting systems and machines has become increasingly oligopolistic.[120] As of February 2024, the Big Three were estimated to control 90% of the market, up from 88% in 2020.[121] ES&S alone owns 50% of the market, covering seventy million people nationwide—all voting with systems patented by a single private corporation.[122] This concentrated market emerged because of the patchwork of state guidelines created by Congress's refusal to give the EAC actual power under HAVA.[123] Having to satisfy over fifty different certification processes makes it extremely difficult for any company attempting to enter the market, as new businesses must

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detection and monitoring. *See* Election Assistance Comm'n, Voluntary Voting System Guidelines 2.0 21–25 (2021); Draeger, *supra* note 16.

[114] *See* 52 U.S.C. § 20971(a); *see also* U.S. Election Assistance Comm'n, State Requirements and the U.S. Election Assistance Commission Voting System Testing and Certification Program 2 (2020).

[115] *See* 52 U.S.C. § 20971(a).

[116] *See* 52 U.S.C. § 20971(a); *see also* U.S. Election Assistance Comm'n, State Requirements and the U.S. Election Assistance Commission Voting System Testing and Certification Program 2 (2020).

[117] *See* Draeger, *supra* note 16.

[118] *See* Kathleen Hale & Mitchell Brown, *Adopting, Adapting, and Opting Out: State Response to Federal Voting System Guidelines*, 43 Ann. Rev. of Federalism 428, 435 (2013).

[119] *See VotingWorks FAQ*, VotingWorks, https://www.voting.works/faq [https://perma.cc/5XQ5-CVNT] (last visited Jan. 27, 2023). The last certification application under prior iterations of the VVSGs occurred on November 16, 2023. *See Voluntary Voting System Guidelines*, Election Assistance Comm'n, (May 14, 2024), https://www.eac.gov/voting-equipment/voluntary-voting-system-guidelines [https://perma.cc/LZ6Y-L5EQ].

[120] *See* Caulfield et al., *supra* note 14, at 6; *see* Mestel, *supra* note 14.

[121] *See* Caulfield et al., *supra* note 14, at 6; *see* Mestel, *supra* note 14.

[122] *See* Huseman, *supra* note 15.

[123] *See* Ojeda, *supra* note 107, at 1358.

invest millions of dollars in developing a machine or system in every state it seeks to operate.[124] Exacerbating the issue is the industry's size; the entire revenue footprint of all election systems companies in the United States, including the Big Three and the other 10% of the market, is just $350 million.[125] To put it into perspective, this means "the entire elections industry in the world's richest democracy was about the peak size of the R&D department of the camera company GoPro."[126]

Despite supposed modernization since the 2000 presidential election, the developments spurred by HAVA have led to widespread criticism of the election systems market and technologies.[127] The oligopolistic nature of the business provokes criticism that the companies no longer have incentive to innovate at all and, instead, shift their businesses to servicing and providing materials for existing machines.[128] Further, these corporations protect their market share through an overly litigious strategy, further limiting innovation by creating too high a barrier to entry.[129] For example, out of fear that election systems company Smartmatic would be awarded ES&S's contract for Los Angeles County voting systems, ES&S sued Smartmatic for infringement in 2018.[130] ES&S lost the case on Smartmatic's motion for judgment on the pleadings, as ES&S's claims were held too abstract to be patentable.[131] Another of the Big Three, Hart InterCivic, even sued the state of Texas to prevent the state from replacing its machines.[132] Studies conducted on the secrecy of how these companies price their machines and services show that there is no set price for these machines, and each county clerk must negotiate in a vacuum.[133] Most clerks are notoriously under-funded, and, therefore,

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[124] *See* Caulfield et al., *supra* note 14, at 7; Huseman, *supra* note 15.

[125] *See* Caulfield et al., *supra* note 14, at 21.

[126] Ben Wofford, *One Man's Quest to Break Open the Secretive World of American Voting Machines*, Politico (June 25, 2021, 4:30 AM), https://www.politico.com/news/magazine/2021/06/25/voting-machines-costs-election-technology-democracy-matthew-caulfield-483080 [https://perma.cc/H455-NM2U].

[127] *See id.*; *see also* Huseman, *supra* note 15.

[128] *See* Huseman, *supra* note 15.

[129] *See id.*

[130] *See* Election Sys. & Software, LLC v. Smartmatic USA Corp., Civil Action No. 18-cv-01259-RGA, 2022 U.S. Dist. LEXIS 193026, at *1 (D. Del. Oct. 24, 2022); *see also* Ian Lopez, *Judge Greenlights Electronic Voting Tech Patent Fight*, Bloomberg Law (Mar. 6, 2019 3:52 PM), https://www.bloomberglaw.com/bloomberglawnews/ip-law/XAM0FO34000000?bna_news_filter=ip-law#jcite.

[131] *See* Election Sys. & Software, LLC v. Smartmatic USA Corp., No. 18-cv-1259-RGA, 2023 U.S. Dist. LEXIS 71666 (D. Del. Apr. 25, 2023).

[132] *See* Mestel, *supra* note 14.

[133] *See* Wofford, *supra* note 126.

do not have the resources to research new systems, hampering their ability to properly negotiate price.[134] This reality leads counties to repair old machines rather than purchase new ones, which, in turn, continues to underwrite the election systems companies' bottom lines, as two-thirds of the industry's revenue comes from support and maintenance of these older machines.[135] Several critics, including the nonprofit VotingWorks, are trying to solve the steep costs of these election systems.[136] VotingWorks directly rejects the problems these corporations create in administering safe and fair elections by providing transparent voting system pricing to help protect what the United States Department of Homeland Security deems "critical infrastructure."[137] This problem is more prevalent than ever, as faith in the nation's election systems continues to make headlines after former President Trump's claims of election fraud during the 2020 election.[138]

## II. Analysis and Recommendation

The current method of evaluating voting system patents is insufficient and the Federal Circuit should adopt a new standard in accordance with the moral utility doctrine. Many patents for in-use voting systems should fail the moral utility required for patentability, as they allow for voter suppression.[139] Voting systems should be reviewed under a different standard than other patentable inventions, because they serve a fundamental role in a core element of the nation's democracy.[140] Congress has already developed a mechanism to issue standards for federal certification of voting systems through the EAC.[141]

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[134] *See* Kate Rabinowitz, *Election Security a High Priority — Until It Comes to Paying for New Voting Machines*, ProPublica (Feb. 20, 2018, 5:00 AM), https://www.propublica.org/article/election-security-a-high-priority-until-it-comes-to-paying-for-new-voting-machines [https://perma.cc/P5FU-3Y4V]; Mestel, *supra* note 14.

[135] *See* Rabinowitz, *supra* note 134; Mestel, *supra* note 14.

[136] *See VotingWorks About Us*, VotingWorks, https://www.voting.works/about [https://perma.cc/ZY4U-TMRP] (last visited Mar. 4, 2023); Mestel, *supra* note 14.

[137] *See* Press Release, Jeh Johnson, Secretary of Homeland Security, Statement on the Designation of Election Infrastructure as a Critical Infrastructure Subsector (Jan. 6, 2017), https://www.dhs.gov/archive/news/2017/01/06/statement-secretary-johnson-designation-election-infrastructure-critical [https://perma.cc/GGV8-CNJZ]; *see also VotingWorks About Us*, *supra* note 136; Mestel, *supra* note 14.

[138] *See* Kaleigh Rogers, *Republicans Are Ramping Up Election Fraud Claims Ahead of November*, ABC News (May 29, 2024, 2:49 PM), https://abcnews.go.com/538/republicans-ramping-election-fraud-claims-ahead-november/story?id=110640715 [https://perma.cc/9NSF-UP75].

[139] *See* discussion *infra* Section II.B.

[140] *See* discussion *infra* Section II.B.

[141] *See* 52 U.S.C. § 21101; Ojeda, *supra* note 107, at 1358.

These standards should be the framework for utility that the USPTO and the Federal Circuit apply to determine a voting system's patentability.

Consider the following hypothetical: a non-profit voting company seeks to enter the market of a large county, like Austin, Texas, in Travis County, as a response to the criticism against voting machines and moves toward open-source technology, which is becoming more popular nationwide.[142] One of the Big Three companies, as is the usual practice whenever a significant portion of their market share is jeopardized, sues the non-profit for infringement.[143] The non-profit should use this opportunity to push the Federal Circuit towards protecting the principle of one citizen, one vote. This Note asserts that, to accomplish this objective, the non-profit should argue that patents suppressing the right to vote should be held in violation of the moral utility doctrine, and are thus invalid. When the Federal Circuit inevitably hears this case, it should decide for the non-profit to protect the right to vote in the modern age.

### A. The Moral Utility Doctrine Persists Beyond *Juicy Whip*

The moral utility doctrine is founded on the traditional notion that an invention cannot be granted protection through patent law if it serves a purpose contrary to the public good.[144] The Federal Circuit's decision in *Juicy Whip* incorrectly found that the moral utility doctrine should not be utilized.[145] The court's stated reasons for its holding were that the doctrine had not been used in recent years and the passage of the Patent Act of 1952 changed the usefulness framework, warranting the doctrine's abandonment.[146] The court overturned ninety-nine years of patent precedent by claiming that *Rickard* did not represent the "correct view" of the utility doctrine after the Patent Act of 1952.[147]

However, the only other mention of the 1952 Act in the opinion is to quote the statutory definition of utility, suggesting that this definition precludes

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[142] VotingWorks, a non-profit organization, has established themselves as an alternative to private corporations by offering transparency, simplicity, and demonstrable security in their systems. Further, county clerks like Dana DeBeauvoir of Texas are seeking to revolutionize the industry. *See VotingWorks About Us*, *supra* note 136; Benjamin Wofford, *A Texas County Clerk's Bold Crusade to Transform How We Vote*, Wired (Sept. 15, 2020, 6:00 AM), https://www.wired.com/story/dana-debeauvoir-texas-county-clerk-voting-tech-revolution/ [https://perma.cc/LFK2-8EUV]; Huseman, *supra* note 15.

[143] *See* Huseman, *supra* note 15.

[144] *See* Bedford v. Hunt, 3 F. Cas. 37, 37 (1817); Lowell v. Lewis, 15 F. Cas. 1018, 1019 (1817).

[145] *See* Juicy Whip, Inc. v. Orange Bang, Inc., 185 F.3d 1364, 1366–67 (Fed. Cir. 1999).

[146] *See id.*

[147] *See id.* at 1367.

the continuation of a nearly century-old precedent.[148] The language of the 1952 Act quoted by the court is "whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof" may obtain a patent.[149] While the court in *Rickard* does not directly quote any statutory text from the then-governing Patent Act of 1870, the statutory language was: "any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof" may obtain a patent.[150] Though the *Juicy Whip* court leans on the passage of the 1952 Patent Act to support its dissolution of the doctrine in deception cases, the only difference in language between the two patent acts is the verb tense and how the inventor is described.[151] Further, the utility language for patents has not changed significantly since the first patent act that Justice Story interpreted when he decided *Lowell*.[152] The Patent Act of 1790 states "he, she, or they, hath or have invented or discovered any useful art, manufacture, engine, machine or device; or any improvement upon" may obtain a patent.[153] Thus, again, the only significant difference between the language first defining the utility requirement and the most recent patent act is the verb tense and the inventor's description. Together, these minute differences in the language requiring usefulness cannot explain the *Juicy Whip* court's quick dismissal of a doctrine that has existed for over 180 years.[154]

It is possible that the court was referencing different elements of the 1952 Patent Act when it made its decision; however, the court offers no explanation other than the doctrine's age.[155] The only reference the court makes in its opinion of how the doctrine of utility could have changed, given the slight difference between the acts' language, was the moral utility doctrine's sparse use "in recent years."[156] Generally, when Congress uses terms in the same way across different statutes and courts develop a settled meaning for those terms through common law, courts have, as a canon of interpretation,

[148] *See id.* at 1366.

[149] *Id.* (quoting 35 U.S.C. § 101 (1952)).

[150] Patent Act of 1870, ch. 229, 230 Stat. 201, § 24 (1870); *see* Rickard v. Du Bon, 103 F. 868, 873 (2d Cir. 1900).

[151] *See Juicy Whip*, 185 F.3d at 1366–67.

[152] *See* Patent Act of 1790, ch. 7, 2 Stat. 110 (1790); Lowell v. Lewis, 15 F. Cas. 1018, 1019 (1817).

[153] Patent Act of 1790, ch. 7, 2 Stat. 110 (1790).

[154] *See Lowell*, 15 F. Cas. at 1019.

[155] *See Juicy Whip*, 185 F.3d at 1366–67.

[156] *Id.*

presumptively applied the settled meaning.[157] In *Juicy Whip*, the court failed to use this presumption.[158] Additionally, courts have found a presumption in favor of longstanding common law precedent when Congress has not directly addressed the issue through legislation.[159]

In the hypothetical involving infringement of a patent by a non-profit, the issue would be whether the moral utility doctrine should be an understood prong of the usefulness test.[160] In *Juicy Whip*, the court failed to use this presumption.[161] Further, infrequent usage of a doctrine is typically insufficient to overturn nearly 100 years of precedent due to the strong presumption of *stare decisis*.[162] In *Juicy Whip*, the court failed to use this presumption.[163] Even presuming that *Juicy Whip* should be upheld despite failing to follow several basic legal presumptions, the Supreme Court has repeatedly illustrated that traditional constitutional interpretations, like the moral utility doctrine, continue to be appropriate in modern law.[164]

The *Juicy Whip* court goes on to argue that the USPTO does not have a place in protecting the public from deceptive patents, citing *Webber*.[165] However, the court takes the dicta in *Webber* out of context. In *Webber*, the Supreme Court stated that Congress did not intend patent laws to displace the police power of Virginia or any of the states, holding that a patentholder needed to defer to *state* laws, despite having a federal patent.[166] The *Juicy Whip* court applies this reasoning to suggest that the USPTO does not need to protect consumers from a deceptive invention because other *agencies* are

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[157] *See* Eskridge, et. al., Statutes, Regulation, and Interpretation: Legislation and Administration in the Republic of Statutes 1092 (West Academic 2014).

[158] *See Juicy Whip*, 185 F.3d at 1366–67.

[159] *See* Eskridge, et. al., *supra* note 157, at 1107.

[160] *See Juicy Whip*, 185 F.3d at 1366–67.

[161] *See id.*

[162] *See* Flood v. Kuhn, 407 U.S. 258, 282 (1972) ("Even though others might regard this as 'unrealistic, inconsistent, or illogical,' . . . the aberration is an established one, and . . . has been with us now for half a century, one heretofore deemed fully entitled to the benefit of *stare decisis* . . . .").

[163] *See Juicy Whip*, 185 F.3d at 1366–67.

[164] *Cf.* West Virginia v. EPA, 142 S. Ct. 2587, 2617 (2022) (citing Chief Justice John Marshall's reasoning in *Wayman v. Southard* to revive the major questions doctrine though the case was decided in 1825); N.Y. State Rifle & Pistol Ass'n v. Bruen, 597 U.S. 1, 18 (2022) (holding in the context of gun legislation that a state may not create regulations that impede on an individual right when that regulation does not comport with the history and tradition of regulation of the right).

[165] *See* Webber v. Virginia, 103 U.S. 344, 347–48 (1880); *Juicy Whip*, 185 F.3d at 1368.

[166] *See Webber*, 103 U.S. at 347–48.

tasked with protecting consumers from fraud and deception.[167] Thus, the *Juicy Whip* court applied a ruling about the principles of *federalism* to an *agency*, suggesting that the USPTO should defer to other federal agencies who are also tasked with ensuring consumers are not deceived.[168] While this alone is deficient reasoning, the court also ignores that the USPTO had been ensuring consumers are not deceived by inventions under the *Rickard* precedent for almost 100 years, and that, despite the *Juicy Whip* decision, it would continue to perform that role in trademark law under the Lanham Act.[169] Through this reasoning, the *Juicy Whip* court both misapplies the *Webber* precedent and ignores that protecting consumers from deceptive practices is a function the USPTO often performed at the time of the decision under patent law and continues to perform under trademark law even after *Juicy Whip*.[170]

Putting aside the integrity of the Federal Circuit's reasoning in *Juicy Whip*, the passage of the AIA imbued patent law with public policy considerations that suggest congressional intent for continued use of the moral utility doctrine.[171] Assuming for the sake of argument that the Patent Act of 1952 definition of useful intended to invalidate a long-held interpretation of the moral utility doctrine, the AIA, which also made significant changes to Title 35, could be interpreted to alter the scope of the moral utility doctrine.[172] Like the patent acts before it, the AIA does not change the language of Section 101; however, it imposes new procedures and requirements to the patent process and the functioning of the USPTO.[173] Many of the changes directly address the public's interest in patents.[174] Particularly relevant is the absolute prohibition of issuing patents for claims encompassing human organisms.[175] This prohibition illustrates that an invention that could fulfill a productive use should occasionally not be patentable because of moral determinations of public policy—highlighting the essence of the moral utility doctrine.[176] For example, if an inventor desired to use their expertise to create a machine that 3D-printed organs for transplant utilizing human cells, this would constitute a useful purpose under Section 101 standards; but, under the AIA, it

[167] *See Juicy Whip*, 185 F.3d at 1368.

[168] *See id.*

[169] *See id.*; Spiel, *supra* note 23, at 761.

[170] *See Juicy Whip*, 185 F.3d at 1368.; Spiel, *supra* note 23, at 761.

[171] *See infra* text accompanying notes 173–178.

[172] *See* discussion *supra* Section I.B; America Invents Act of 2012, Pub. L. No. 112-98, 125 Stat. 284.

[173] *See* discussion *supra* Section I.B; America Invents Act of 2012, Pub. L. No. 112-98, 125 Stat. 284.

[174] For a summary of relevant changes see discussion *supra* Section I.B.

[175] *See* America Invents Act of 2012, Pub. L. No. 112-98, § 33, 125 Stat. 284, 340.

[176] *See id.*

would not be patentable because it encompasses human organisms.[177] This change, and all the others, suggest that Congress still believes, as the Federal Regulations directly say, that "[a] patent by its very nature is affected with a public interest."[178] Therefore, inventions that could fulfill the first two prongs of the usefulness test but fail the third—by being against the public good, health, or order—remain unpatentable.[179] No post-AIA cases have addressed this issue. However, even if *Juicy Whip* was decided correctly and is still good law after the passage of the AIA, its holding should be limited to deceptive patents, not interpreted as the death knell of the moral utility doctrine.

### B. Voter Suppression Triggers Invalidity Through the Moral Utility Doctrine

The right to vote is a unique constitutional right that requires special protections when issuing and enforcing patents; therefore, the USPTO and the Federal Circuit should recognize that voting systems have unique needs. It is an uncontested truth that fair elections are the most fundamental element of United States democracy and that protecting democracy is in keeping with good order.[180] While patents are constitutionally guaranteed through the intellectual property clause, the right to vote is also constitutionally guaranteed.[181] Congress has passed several constitutional amendments and laws to ensure the right to vote for historically disenfranchised groups.[182] Though patents have traditionally been granted to voting systems, only since the passage of the VRA have these systems been tasked with ensuring equal universal suffrage in a nation that continually falls short of that task.[183]

In addition to the Constitutional and statutory framework, the oligopolistic nature of the election systems market[184] requires action by the Federal

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[177] *See id.*; 35 U.S.C. § 101; *see also* Samuel Fifer & Dimitry Kampar, *A Look At The Patentability Of 3-D Printed Human Organs*, Law360 (May 28, 2013, 12:58 PM), https://www.law360.com/articles/439549/a-look-at-the-patentability-of-3-d-printed-human-organs.

[178] 37 C.F.R. § 1.56 (2021); 37 C.F.R. § 1.555 (2021).

[179] *See* 35 U.S.C. § 101.

[180] "Fair elections are the foundation of our democracy, and the FBI is committed to protecting the rights of all Americans to vote. The U.S. government only works when legal votes are counted and when campaigns follow the law. When the legitimacy of elections is corrupted, our democracy is threatened." *How We Can Help You: Scams and Safety*, FBI, https://www.fbi.gov/how-we-can-help-you/safety-resources/scams-and-safety/common-scams-and-crimes/election-crimes-and-security [https://perma.cc/Y9U2-VPRA] (last visited Jan. 28, 2023).

[181] *See* U.S. Const. art. I, § 8, cl. 8.; U.S. Const. amends. XV, XIX, XXIV, XXVI.

[182] *See* U.S. Const. amends. XV, XIX, XXIV, XXVI; 52 U.S.C. § 21081.

[183] See 52 U.S.C. § 21081; Klain et al., *supra* note 3, at 4.

[184] *See* Huseman, *supra* note 15.

Circuit to ensure that patents are not being utilized to infringe on voting rights. The Big Three have created a stranglehold on innovation.[185] These companies excessively employ claims of infringement in litigation to prevent new players from entering the market with potentially better technologies and designs that could lead to fewer malfunctions.[186] This, together with the corporations' inconsistent pricing for voting machines, creates an environment where understanding the costs of updating voting systems is unknowable and many counties choose not to take that risk.[187]

Voting system malfunction and poor design leads to voter suppression.[188] The democratic crisis of the 2000 presidential election began because of voting machine failure.[189] While these voting system failures were likely outcome-determinative for the 2000 presidential election, each voting system failure, whether due to malfunction or poor design, results in voter suppression.[190] Many of the malfunctions and design failures of these machines have been addressed through the passage of HAVA.[191] However, the hanging chad and butterfly ballot fiasco culminating in the *Bush v. Gore* decision demonstrates that even so-called useful machines can lead to a miscounting of votes on a massive scale.[192] In 2016, in a North Carolina election, precincts that used pollbooks experienced malfunctions that caused voters to be turned away from the polls, suppressing their vote.[193] Thus, patented machines violate and, with inaction, will continue to violate, democratic principles enshrined in the Constitution.[194]

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[185] *See id.*

[186] *See id.*; *see also* Levy, *supra* note 17; Ian Lopez, *Judge Greenlights Electronic Voting Tech Patent Fight*, Bloomberg Law (Mar. 6, 2019, 3:52 PM), https://www.bloomberglaw.com/bloomberglawnews/ip-law/XAM0FO34000000?bna_news_filter=ip-law#jcite.

[187] *See* Caulfield et al., *supra* note 14, at 12, 14.

[188] *See* Jerusalem Demsas, *Are Long Voting Lines Evidence of Voter Suppression? An Expert Explains.*, Vox (Oct. 28, 2020, 10:30 AM), https://www.vox.com/21534660/long-lines-voting-voter-suppression-election-2020 [https://perma.cc/37SL-UK8T].

[189] See discussion *supra* Section I.D.

[190] *See* discussion *supra* Section I.D.

[191] *See* 52 U.S.C. § 20902; *see also supra* text accompanying notes 111–113.

[192] The Votomatic punch-card machine used in Florida during the 2000 election was patented by the USPTO, meaning it was deemed a useful invention. *See* Data Registering Device, U.S. Patent No. 3,201,038A (date filed Nov. 13, 1962) (issued Aug. 17, 1965).

[193] *See Voting Problems Present in 2016, But Further Study Needed to Determine Impact*, Brennan Ctr. for Just. (Nov. 14, 2016), https://www.brennancenter.org/our-work/research-reports/voting-problems-present-2016-further-study-needed-determine-impact [https://perma.cc/9EMW-32FW].

[194] *See* Yick Wo v. Hopkins, 118 U.S. 356, 370 (1886); Wesberry v. Sanders, 376 U.S. 1, 18 (1964); U.S. Const. amends. XV, XIX, XXIV, XXVI.

Further, since granting a patent gives a constitutionally-based right to exclude others under the intellectual property clause and voting systems are the method individuals use to exercise the constitutionally-guaranteed right to vote, granting a patent to an invention that leads to voter suppression would put two constitutional provisions in direct conflict.[195] However, the Bill of Rights and the amendments are meant to limit the powers granted to the federal government in the Articles of the Constitution.[196] Therefore, conflicts between the structural intellectual property clause and the individual right to vote should be decided in favor of protecting voting rights. Rather than disallowing patents for all voting systems, the Federal Circuit should implement a higher standard of usefulness to ensure the systems do not suppress the right to vote. The Federal Circuit should hold any voting system that leads to voter suppression as inherently contrary to the good order of society, thereby failing to be useful under the moral utility doctrine, and thus invalid and unpatentable.[197] Therefore, when the Federal Circuit faces the hypothetical non-profit validity challenge posed at the beginning of this section, it should apply the moral utility doctrine to ensure that these two constitutionally guaranteed rights–the protections of patent law and the right to vote–can comfortably coexist.[198] The Federal Circuit should hold any patent that contributes to voter suppression *per se* invalid for lack of utility through the moral utility doctrine, regardless of a finding that it has an otherwise useful purpose that does not suppress votes.[199] This holding has prior precedent in gambling cases like *Dworzek*, where patents were invalidated if they provided any gambling functionality.[200] At the time of these holdings, gambling was outlawed in many states, and while gambling is no longer illegal under federal law, this reasoning can still provide a precedent to strictly protect citizens from the harm of voter suppression.[201]

However, the right to vote is constitutionally protected, while the prohibition on gambling is not.[202] To apply the moral utility doctrine in the hypothetical non-profit validity challenge, the Federal Circuit should adopt the following test. When approaching a patent that engages with a constitutionally

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[195] *See* U.S. Const. amends. XV, XIX, XXIV, XXVI; U.S. Const. art. I, § 8, cl. 8.

[196] *See* U.S. Const. pmbl.

[197] *See id.*; Bedford v. Hunt, 3 F. Cas. 37, 37 (1817); Lowell v. Lewis, 15 F. Cas. 1018, 1019 (1817).

[198] *See* hypothetical *supra* Section II.

[199] *See* 35 U.S.C. § 101.

[200] *See e.g.*, Reliance Novelty v. Dworzek, 80 F. 902 (N.D. Cal. 1897).

[201] *See* I. Nelson Rose, *Gambling and the Law: Pivotal Dates*, Frontline, https://www.pbs.org/wgbh/pages/frontline/shows/gamble/etc/cron.html [https://perma.cc/NL8J-S4JX] (last visited Apr. 7, 2023); *see, e.g.*, Reliance Novelty v. Dworzek, 80 F. 902 (N.D. Cal. 1897).

[202] *See* U.S. Const. amends. XIV, XV, XIX, XXIV, XXVI.

protected individual right, the court should ask (1) whether use of the invention is the *only* means to exercise that right and, if so, (2) whether there is *any* use that infringes upon the right. If the answer to both questions is yes, the patent fails the moral utility test and should be invalidated. When applying the test to voting systems the first prong will always be satisfied, as the right to vote can only be effectuated using voting systems. Thus, in the context of voting, the only question for the Federal Circuit is whether the voting system effectuates an election that *prioritizes* everyone's right to vote over an inventor's ability to protect their invention.

This proposed test, while broadening the scope of the moral utility doctrine, still limits the doctrine, preventing broad use by protecting only constitutionally guaranteed individual rights. Further, under the test, the Federal Circuit only invalidates the patent when an invention is found to impinge on these rights *and* the use of the invention is the *only* means to exercise the right. For example, even if a patented invention infringes upon freedom of speech, there are many ways individuals can currently exercise their First Amendment right without the invention. Therefore, a hypothetical plaintiff suing a social media platform to invalidate their patents for infringement would fail the first prong of the proposed test. By applying this test, the Federal Circuit could provide the guardrails originally envisioned by the moral utility doctrine while continuing to limit its overuse. Thus, the protections available for the right to vote would be appropriately unique by granting voting system patents only when there are exclusively beneficial uses.

The Federal Circuit and USPTO should apply certification under the VVSGs as their primary guide to determine whether the voting systems will lead or have led to voter suppression. The VVSGs put in place by the EAC and implemented in some manner by thirty-eight states and the District of Columbia, will give the Federal Circuit a federally-approved external guide for determining when voting systems are insufficient to satisfy the second prong of the test.[203] The VVSGs contain fifteen principles that should guide the Federal Circuit and the USPTO in determining the validity of voting system patents.[204] The Federal Circuit would need to look outside the claim structure to determine whether the systems meet the VVSGs. The USPTO would analyze whether these systems were already certified by the EAC to satisfy the VVSGs. If the systems are not certified, the companies should be required to demonstrate that their inventions *could* meet the standards set forth by the VVSGs before the USPTO grants a patent. Those seeking to patent a voting system would bear the burden of proof for meeting this higher standard. However, if these systems fall below this higher standard in practice

[203] *See* Draeger, *supra* note 16.

[204] *See id.*

after being granted a patent, third parties could raise their invalidity in court. Additionally, if the system reviewed by the EAC is already patented and fails to meet certification, the Federal Circuit should use this failure to invalidate the patent through its responsibility to invalidate any "blight" occurring when a patent does not meet the standard for patentability.[205]

Implementing the VVSGs to determine whether a voting system is useful would be a large step in preventing voter suppression caused all too often by patented voting systems.[206] This implementation may require external evidence not routinely reviewed in utility analyses. However, voting systems are unique inventions, essential in facilitating a constitutional right, and require unique solutions. Additionally, this change could improve an underlying issue in the election system, as it would break the pseudo-monopoly between the Big Three that allows for inadequate machines, software, and maintenance issues to persist.[207] Systems like this would be closer to perfection than practicability, but the promise of democracy requires it.

While the VVSGs provide a framework for the Federal Circuit to implement this theory immediately, Congress should enact an overhaul of the EAC to provide the funds and power to adequately guarantee the right to vote. HAVA's enactment was a welcome stopgap for many calling for changes to voting systems; however, it did not go far enough as it did not give the EAC the power to enact mandatory rules that could be updated as technology improved.[208] The Freedom to Vote Act, a bill championed by Democratic Party leaders, recognizes that HAVA is insufficient as it proposes several amendments, including mandatory changes to the machine requirements for federal elections, studies on voting system designs, and a private right of action to enforce the law.[209] However, even if enacted, these changes would be insufficient. Congress should enact a clear law mandating requirements for voting systems and provide an explicit defense to infringement claims for failure to meet these requirements. The Congressional Research Service itself has suggested making the VVSGs mandatory as a valid solution to solving problems with the country's election system, including delays and malfunctions.[210] As

[205] Hieger v. Ford Motor Co., 516 F.2d 1324, 1327 (6th Cir. 1975).

[206] *See* Klain et al., *supra* note 3, at 4.

[207] *See* Huseman, *supra* note 15.

[208] *See* Reddix-Smalls, *supra* note 15, at 721–23; Ojeda, *supra* note 107, at 1358.

[209] *See* Patrick Marley, *Democrats Signal Voting Rights Bills Will Top the Agenda if Harris wins*, Wash. Post (Aug. 22, 2024, 7:00 AM), https://www.washingtonpost.com/politics/2024/08/22/kamala-harris-voting-rights-legislation-senate; Jimmy Balser, Cong. Rsch. Serv., IF12245, Voting Systems and Federal Law 2 (2024); Freedom to Vote Act, S.2344, 118th Cong. §§ 3902–3908 (2023).

[210] *See* Jimmy Balser, Cong. Rsch. Serv., IF12245, Voting Systems and Federal Law 2 (2024).

the right to vote is fundamental to the exercise of all other rights, Congress and the Federal Circuit should ensure this right is not subjugated by other constitutional guarantees.[211]

## Conclusion

For the foregoing reasons, the Federal Circuit should recognize that voting system patents are inherently different from other inventions and require a higher standard for their patentability, in line with the tenets of the moral utility doctrine. The court need not invent these standards without guidance from Congress, as the existence of the EAC and the VVSGs provide principles that can act as a framework for the court in determining whether a system is useful and, therefore, patentable. If any patented voting systems that do not meet the VVSG principles come before the court, the Federal Circuit should invalidate the patent to ensure that system failures do not infringe on the most essential right of citizens: voting.

[211] *See* Reynolds v. Sims, 377 U.S. 533, 562 (1964).

# Artificial Intelligence and Patent Law: How Will the Federal Circuit Keep Up with Rapidly Growing Technology?

Ariana Asefi*

## Introduction

As technology advances, United States patent law ("patent law") often struggles to keep up. Recent developments in artificial intelligence ("AI")[1] exemplify the difficulty in applying existing law to new technological advancements. Patent law has often struggled to clearly define patent requirements, terms, or instructions. For example, the definition of "inventorship" in patent law has developed and changed over many years through unique cases. The courts' attempts to define AI have not been any clearer.[2] The intersection of AI and patent law—two complex and important fields—presents gaps in the law that courts and Congress must fill.[3] As engineers develop AI to require

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[1] This Note will follow the specific user-created models—or "generative AI"—definition of AI, although there are numerous other types. *See* Rina Caballar, *Generative AI vs. Predictive AI: What's the Difference?*, IBM (Aug. 9, 2024), https://www.ibm.com/blog/generative-ai-vs-predictive-ai-whats-the-difference/ [https://perma.cc/FT9C-LY3G] (generative AI "responds to a user's prompt or request with generated original content, such as audio, images, software code, text or video.").

[2] *See generally* Brief for Chicago Patent Attorneys as Amici Curiae Supporting Petitioner for Writ of Certiorari, Thaler v. Vidal, 43 F.4th 1207 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023) [hereinafter Brief for Chicago Patent Attorneys].

[3] *See generally* Request for Comments on USPTO Initiatives to Ensure the Robustness and Reliability of Patent Rights, 88 Fed. Reg. 9492, 9494 (Feb. 14, 2023) [hereinafter Request for Comments on USPTO Initiatives]; Brief for Brooklyn Law Incubator & Policy Clinic, et al. as Amici Curiae Supporting Petitioner for Writ of Certiorari at 15, Thaler v. Vidal, 43 F.4th 1207 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023) [hereinafter Brief for Brooklyn Law Incubator & Policy Clinic].

less human instruction or involvement,[4] guidance concerning AI's impact on intellectual property law becomes more crucial than ever before.

In *Thaler v. Vidal*,[5] the United States Court of Appeals for the Federal Circuit ("Federal Circuit") held that AI cannot be listed as an inventor on a patent application. The Federal Circuit interpreted current patent law to restrict inventorship eligibility to human beings.[6] Currently, an individual[7] may qualify as an inventor on a United States Patent and Trademark Office ("USPTO") patent application if that individual has contributed to the *conception* of the invention—that is, the main point of the invention.[8] As held in *Thaler*, if AI software conceives an invention without any human intervention or contribution, that invention is prohibited from patent eligibility because a human being must be listed as an inventor.[9] However, the Federal Circuit left open the question of whether a human inventor may patent an invention if AI assisted in its creation.[10] Not only are private companies increasingly utilizing AI in their creations, but the U.S. government has also encouraged further technological advancements of AI through executive orders and statutes.[11] For example, Google's recent creation, "NotebookLM," utilizes AI to

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[4] *See What Is an AI Engineer? (And How to Become One?)*, Coursera, https://coursera.org/articles/ai-engineer [https://perma.cc/CB5A-YFKQ] (Jan. 21, 2025); *see also* Robin Mottern, *AI Isn't Scary or Dangerous, The Lack of Human Interaction Is*, LinkedIn, (July 26, 2023) https://www.linkedin.com/pulse/ai-isnt-scary-dangerous-lack-human-interaction-robin-mottern/ [https://perma.cc/GD44-LT4L].

[5] 43 F.4th 1207 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023).

[6] *See id.* at 1211 (the Supreme Court has held that the word "individual," when used in statutes, refers to human beings "unless there is 'some indication Congress intended' a different reading. . . . Nothing in the Patent Act indicates Congress intended to deviate from the default meaning. To the contrary, the rest of the Patent Act supports the conclusion that 'individual' in the Act refers to human beings." (citation omitted) (citing Mohamad v. Palestinian Auth., 566 U.S. 449, 455 (2012))).

[7] The Federal Circuit stated that the "Patent Act does not define 'individual.' However, as the Supreme Court has explained, when used '[a]s a noun, 'individual' ordinarily means a human being, a person.'" *Id.* (quoting Mohamad v. Palestinian Auth., 566 U.S. 449, 454 (2012)). This Note will use the Supreme Court's definition of "individual" in its discussion.

[8] *See, e.g.*, Burroughs Wellcome Co. v. Barr Lab'ys., Inc., 40 F.3d 1223, 1228 (Fed. Cir. 1994); CODA Dev. s.r.o. v. Goodyear Tire & Rubber Co., 916 F.3d 1350, 1358 (Fed. Cir. 2019); *In re* VerHoef, 888 F.3d 1362, 1366 (Fed. Cir. 2018).

[9] *See Thaler*, 43 F.4th at 1212–13.

[10] *See id.* at 1213. This is the primary question of this Note.

[11] *See* Brief for the Brooklyn Law Incubator & Policy Clinic, *supra* note 3, at 12–13 (noting that the CHIPS Act encourages "AI research and investment, not only in the technology itself, but also in those that operate and implement it" (citing 42 U.S.C. § 18993(d)(2)); *see also id.*, *supra* note 3, at 3 (noting that the United States wanted to protect and encourage AI development because of an executive order promoting scientific discovery and competition

create podcasts.[12] Users may upload documents to the software, which are analyzed by AI technology to generate a podcast conversation between two hosts.[13] Companies like Google have utilized AI in myriad ways, ranging from collecting information via algorithms like Netflix's movie suggestions[14] to checking students' papers for grammatical mistakes like Grammarly.[15] AI technology is expanding further to impact many fields beyond just intellectual property, including medicine, education, and information privacy.[16] With AI poised to touch almost every sector of society,[17] it is imperative that the Federal Circuit, and eventually Congress, address and define the relationship between human inventors and AI software systems within patent law.[18]

The Federal Circuit should allow human inventors to use AI as a *tool* in creating inventions. As the Federal Circuit already concluded in *Thaler*, AI should not be eligible for inventorship status because inventors must be

through AI (citing Exec. Order No. 13,859, 84 Fed. Reg. 3,967 (Feb. 11, 2019)); *see also Fact Sheet: President Biden Issues Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence*, White House (Oct. 30, 2023), https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/30/fact-sheet-president-biden-issues-executive-order-on-safe-secure-and-trustworthy-artificial-intelligence/ [https://perma.cc/7BAD-Z6AT].

[12] Geoffrey A. Fowler, *No Time to Read? Google's New AI Will Turn Anything Into a Podcast*, The Washington Post (Oct. 7, 2024), https://www.washingtonpost.com/technology/2024/10/07/google-ai-podcast-notebooklm/ [https://perma.cc/DPT4-DUM5].

[13] *Id.*

[14] *See* Neil Sohota, *Streaming Into The Future: How AI Is Reshaping Entertainment*, Forbes (Mar. 18, 2024, 10:00 AM) https://www.forbes.com/sites/neilsahota/2024/03/18/streaming-into-the-future-how-ai-is-reshaping-entertainment/ [https://perma.cc/JXE7-H5DY] ("Netflix, the colossus of streaming, employs AI algorithms to recommend movies and shows based on your viewing history.").

[15] *See Introducing Generative AI Assistance*, Grammarly, https://support.grammarly.com/hc/en-us/articles/14528857014285-Introducing-generative-AI-assistance#:~:text=Our%20on%2Ddemand%20generative%20AI,respect%20user%20agency%20and%20authenticity (last visited Oct. 14, 2024) [https://perma.cc/96PT-MEGE] ("Our on-demand generative AI assistance provides the ability to quickly compose, rewrite, ideate, and reply. [It is] contextually aware and accounts for personal voice, offering relevant and personalized suggestions that respect user agency and authenticity.").

[16] *See, e.g.*, *Artificial Intelligence's Use and Rapid Growth Highlight Its Possibilities and Perils*, U.S. Gov't Accountability Off. (Sept. 6, 2023), https://www.gao.gov/blog/artificial-intelligences-use-and-rapid-growth-highlight-its-possibilities-and-perils [https://perma.cc/U45N-PHFA] (listing the different ways AI is used today, such as generative AI systems, machine learning, and facial recognition).

[17] *See* Brief for Brooklyn Law Incubator & Policy Clinic, *supra* note 3, at 7.

[18] *See* Request for Comments on USPTO Initiatives, *supra* note 3, at 9493–94.

human beings under the Federal Circuit's interpretation of the Patent Act.[19] However, advancements in modern technology and the evolution of creative works nevertheless encourage the use of AI in the patent realm.[20] Without clear guidance for inventors on how to use these technological advancements in their work and creations, the law will likely become more complex and ambiguous.

In lieu of pending legislation and regulations, the Federal Circuit should implement this Note's proposed two-part test to determine whether an invention may be patent-eligible based on AI's approximate contributions to the invention.[21] First, the Federal Circuit must determine whether a human contributed to the invention, and, if so, how much.[22] Second, once the court determines that a human properly qualifies as an inventor, the court must analyze what role AI played in the invention's creation:[23] did it assist the human inventor, or did it conceive the entire invention? Would the AI system qualify as a joint inventor if it were a human? If the AI system created the entire invention independently or contributed enough to qualify as an inventor under the current inventorship framework, it fails the test, and the invention is not patent-eligible. Conversely, if the AI system merely acted as a tool, it satisfies the test and is eligible for patent protection. Eventually, Congress should codify this test.

This Note encourages the role of AI as a tool in patent inventorship while cautioning against allowing AI to qualify as an inventor in its own right. To further grasp the importance and trajectory of AI and patent law, it is important to understand how one qualifies as an inventor under current patent law, how AI has developed over time, and how AI and patent law now intersect. After understanding the basics, this Note discusses the present problems with AI inventorship and why the Federal Circuit and Congress must address it[24]

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[19] *See* Thaler v. Vidal, 43 F.4th 1207, 1211 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023); *see supra* text accompanying note 6. "When an invention is made by two or more persons jointly, they shall apply for patent jointly . . . ." 35 U.S.C. § 116(a).

[20] Vaibhav Henry, *Patent Litigation Trends in Artificial Intelligence*, Bloomberg L. (Dec. 29, 2020, 4:00 AM), https://news.bloomberglaw.com/ip-law/patent-litigation-trends-in-artificial-intelligence [https://perma.cc/S88C-GDAW] ("[P]atent filing trends show a consistent increase in patenting AI solutions over the last 10 years. Data further reveals more than 11,000 AI patents applications have been filed worldwide in past five months during the pandemic.").

[21] *See infra* Part III.

[22] *See infra* Section III.A.

[23] *See infra* Section III.B.

[24] With AI and patent law being a novel issue, many scholars have expressed thoughts and solutions on how to remedy the unanswered question of AI's involvement in creating inventions. Yet, many of these proposed solutions have significant shortcomings. For example,

and then proposes and defends an alternative solution to this issue by analyzing the relationship between AI and a human inventor.

## I. Background

The Federal Circuit hears appeals of all patent cases in the United States.[25] In these patent cases, the primary goals are to promote innovation and create tangible inventions.[26] To protect such innovations, individuals must apply for inventorship status through the patent application process. Two types of inventorship status exist: (1) sole inventorship and (2) joint inventorship. However, established patent law has not yet evolved to properly address the emerging complexities of AI technology. This section illustrates current patent law and how contemporary AI technology functions.

### A. The Federal Circuit's Jurisdiction

28 U.S.C. § 1295 grants the Federal Circuit exclusive jurisdiction over any civil action related to patent issues.[27] The arising under clause[28] states "in any civil action arising under, or in any civil action in which a party has asserted a compulsory counterclaim arising under, any Act of Congress relating to patents or plant variety protection."[29] The Federal Circuit has exclusive appellate jurisdiction over patent issues, including cases regarding the intersection of patent inventorship and AI.[30]

### B. Patent Law Overview and Purpose

Patent law aims to protect creative works and encourage innovation by giving inventors the right to exclude others from "making, using, offering for sale, or selling" their inventions in the United States.[31] The law provides

other scholars have proposed barring AI from assisting in inventions or allowing AI to do the bulk of the work. But such proposals fall short of providing a dependable and realistic solution. *See infra* Sections II.A–B.

[25] *See* Emmette F. Hale, III, *The "Arising Under" Jurisdiction of the Federal Circuit: An Opportunity for Uniformity in Patent Law*, 14 Fl. St. Univ. L. Rev. 229, 229 (1986).

[26] *See generally Patent Essentials*, USPTO, https://www.uspto.gov/patents/basics/essentials#:~:text=A%20U.S.%20patent%20gives%20you,on%20the%20apples%20from%20the [https://perma.cc/J26C-7NZ6] (last visited Dec. 2, 2024) [hereinafter *Patent Essentials*].

[27] 28 U.S.C. § 1295.

[28] *See id.*

[29] 28 U.S.C. § 1295(a)(1).

[30] *See* Hale, *supra* note 25.

[31] *See Patent Essentials*, *supra* note 26.

many factors that determine whether an invention is patentable.[32] Specifically, "patentable subjects are new and useful arts, machines, manufacturers or compositions of matter," including any new and useful improvements on such subjects.[33] Inventions and subjects must be creative—"mere function, principle, or result[s] cannot be [the] subject of [a] patent."[34] Conversely, an abstract idea or discovery may not be patentable because such ideas are free to all people and nonexclusive, making them ineligible for patentability.[35] The invention must be concrete and exclusive.[36]

When reviewing a patent ineligibility issue, the Supreme Court of the United States ("Supreme Court") created a two-part test ("conception test"): (1) "whether the claims at issue are directed to a patent-ineligible concept,"[37] and (2) whether the claim's elements, considered individually and together, "'transform the nature of the claim' into a patent-eligible application."[38] Essentially, "transform[ing] the nature of the claim" describes the requirement that a patentable invention must contain some original or inventive concept.[39] Was the invention basic, and therefore not eligible for a patent? Or was the invention creative and inventive, and therefore eligible for a patent? This Supreme Court test[40] is the first step of reviewing patent eligibility.

For example, in *Diamond v. Chakrabarty*,[41] the Supreme Court applied the conception test to determine whether an invention was eligible for patent protection.[42] The inventor, Ananda M. Chakrabarty, sought a patent for his invention: a micro-organism that is "capable of breaking down multiple

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[32] *See generally*, 35 U.S.C.S. § 101, Part 1 of 2 n. 35.

[33] *Id.* (citing Rubber Co. v. Goodyear, 76 U.S. 788 (1869)).

[34] *Id.* (citing Mitchell v. Tilghman, 86 U.S. 287 (1874)).

[35] *See* Diamond v. Chakrabarty, 447 U.S. 303, 309 (1980) (citing Funk Bros. Seed Co. v. Kalo Inoculant Co., 333 U.S. 127, 130 (1948)). *Chakrabarty* came before *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208 (2014), but *Chakrabarty* established principles seen in *Alice's* conception test.

[36] *See Chakrabarty*, 447 U.S. at 309.

[37] *Alice Corp.*, 573 U.S. at 217 (citing Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc., 566 U.S. 66, 77 (2012)).

[38] *Id.* (quoting *Mayo Collaborative Servs.*, 566 U.S. at 78–79).

[39] *Id.*

[40] *See id.*

[41] 447 U.S. 303 (1980).

[42] *See id.* at 309. The conception test is: (1) "whether the claims at issue are directed to [a] patent-ineligible [concept]," and (2) whether the claim's elements, considered individually and together, "'transform the nature of the claim' into a patent-eligible application." *Alice Corp.*, 573 U.S. at 217.

components of crude oil."[43] The opposing counsel argued that permitting a patent on this micro-organism would end further genetic research, violating the sole purpose of patent law, which is to promote innovation.[44] But the Supreme Court recognized that the possibility of slowing down research related to micro-organisms was not a valid reason to dismiss a patent application.[45] The Supreme Court considered the first prong of the conception test: whether this micro-organism was concrete and tangible or whether it was merely abstract.[46] If it had already existed and was a mere discovery, the claim would be patent-ineligible under part one of the test.[47] However, Chakrabarty's invention was found eligible for a patent because the micro-organism was human-made, tangible, and not a mere discovery of an already existing living organism.[48]

The Supreme Court then looked at the second prong of the conception test: "'transform[ing] the nature of the claim' into a patent-eligible application."[49] This step decides whether the invention is a new, original creation or basic and non-exclusive one.[50] Here, Chakrabarty's invention demonstrated a new and useful composition, making the invention eligible for a patent.[51] The micro-organism had the capability of breaking down crude oil—a unique feature, not a general or basic micro-organism.[52] Accordingly, the Supreme Court found that Chakrabarty's invention satisfied patent requirements under the conception test because the invention was transformative.[53]

Once an individual creates an invention that satisfies these patent requirements, that individual must apply for a patent to qualify for USPTO patent

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[43] *Id.* at 305, 309 (the Court explained that Chakrabarty's application asserted thirty-six claims related to his "invention of 'a bacterium from the genus *Pseudomonas*. . . .' This human-made, genetically engineered bacterium is capable of breaking down multiple components of crude oil. Because of this property . . . Chakrabarty's invention is believed to have significant value for the treatment of oil spills.").

[44] *See id.* at 316–17.

[45] *See id.* at 317.

[46] *See id.* at 309–10.

[47] *See* Alice Corp. v. CLS Bank Int'l, 573 U.S. 208, 217 (2014).

[48] *See Chakrabarty*, 447 U.S. at 311–13.

[49] *See Alice Corp.*, 573 U.S. at 209 (quoting Mayo Collaborative Servs. v. Prometheus Lab'ys., Inc., 566 U.S. 66, 79 (2012)).

[50] *See id.*

[51] *See Chakrabarty*, 447 U.S. at 311–13.

[52] *See id.* at 305.

[53] *See id.* at 309–10; *see also Alice Corp.*, 573 U.S. at 208–09.

protection.[54] The applicant must list the invention's inventor or co-inventors on the USPTO application.[55]

### C. Inventorship

As things currently stand, an inventor listed under a patent must be the "individual or, if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention."[56] Although patent law discusses inventors and inventorship, neither the Patentability of Inventions Statute[57] nor the Applications of Patents Statute[58] define who or what can be an inventor, nor do these statutes describe what qualifies as inventorship.[59] The Federal Circuit's threshold question in determining whether an individual is an inventor boils down to whether that person *conceived* the invention: if the individual did not conceive the invention, that individual is not an inventor.[60] The Federal Circuit described conception as the "touchstone of the invention, the completion of the mental part of invention."[61] Because conception only requires mental completion, the inventor does not need to test or build the invention to satisfy inventorship requirements.[62] Yet, working on the make or model of the invention does help solidify arguments for conception.[63] Therefore, the individual—or individuals—who conceives the invention is considered the inventor on a patent application.[64]

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[54] *See Patent Essentials*, *supra* note 26.

[55] *See id*.

[56] Thaler v. Vidal, 43 F.4th 1207, 1211 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023) (citing 35 U.S.C. § 100(f)).

[57] *See* 35 U.S.C. § 100(f).

[58] *See* 35 U.S.C. § 116.

[59] *Compare* 35 U.S.C. § 100(f), *with* 35 U.S.C. § 116.

[60] *See* Solvay S.A. v. Honeywell Int'l Inc., 622 F.3d 1367, 1377 (Fed. Cir. 2010) (citing Burroughs Wellcome Co. v. Barr Lab'ys., Inc., 40 F.3d 1223, 1228 (Fed. Cir. 1994)) (holding that Honeywell was not an inventor because it did not conceive the claimed invention).

[61] *E.g.*, *Burroughs Wellcome Co.*, 40 F.3d at 1227–28; CODA Dev. s.r.o. v. Goodyear Tire & Rubber Co., 916 F.3d 1350, 1358 (Fed. Cir. 2019); *In re* VerHoef, 888 F.3d 1362, 1366 (Fed. Cir. 2018).

[62] *See, e.g.*, *Burroughs Wellcome Co.*, 40 F.3d at 1229 (noting that an inventor need not physically reduce an invention to practice, but must have a definite and permanent idea of the complete and operative invention, sufficiently developed that a person skilled in the art could implement it without extensive experimentation).

[63] *See id.* (noting that there are times where "the event of reduction to practice in effect provides the only evidence to corroborate conception of the invention.").

[64] *See id.*

Once an inventor[65] or inventors conceive an invention, they may file a patent application with the USPTO.[66] On a patent application, the applicant must list the inventor or joint inventors, indicating who created the claimed invention.[67] Without an individual listed as an inventor, the applicant cannot receive a patent on the claimed invention.[68] Even if an individual is listed on the application, that individual still must meet the criteria for an inventor.[69] The individual is eligible for inventorship if he or she devises or proposes a specific and settled idea.[70] The Federal Circuit has held that "an idea is definite and permanent when the inventor has a specific, settled idea, a *particular solution* to the problem at hand, not just a general goal or research plan."[71] Not only is inventorship important for filing patents at the USPTO, but patent inventorship also acts as an incentive for inventors to invent products.[72] Thus, the inventor listed on the application must be the *authorized original* or joint inventor of the claimed invention, indicating that the inventor, or inventors, conceived the invention's idea.[73]

### *1. Sole Inventorship*

If one person creates or conceives an invention and applies for a patent, that individual is the "sole inventor" of the patent.[74] The inventor of a patent is the individual who "invent[ed] the subject matter sought to be patented."[75]

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[65] An inventor is an "individual or, if a joint invention, the individuals collectively who invented or discovered the subject matter of the invention." Thaler v. Vidal, 43 F.4th 1207, 1211 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023) (citing 35 U.S.C. § 100(f)).

[66] *See* 35 U.S.C. § 101.

[67] *See generally* 35 U.S.C. § 100(j).

[68] *See id.*; *see also* 35 U.S.C. § 115 (a)–(b). For example, in *Thaler v. Vidal*, the Federal Circuit found that software developer Dr. Stephen Thaler's ("Thaler") AI system, the Device for the Autonomous Bootstrapping of Unified Science ("DABUS"), was not an individual and could not qualify as an inventor, so DABUS' invention could not receive patent protection. *See Thaler* 43 F.4th at 1211–12. *Thaler* demonstrates that being established as an inventor on a patent application is essential to patent eligibility. *See id.*

[69] 35 U.S.C. § 115 (a)–(b).

[70] *See generally In re* VerHoef, 888 F.3d 1362, 1365–66 (Fed. Cir. 2018).

[71] *See id.* at 1366 (citing Burroughs Wellcome Co. v. Barr Lab'ys., Inc., 40 F.3d 1223, 1227–28 (Fed. Cir. 1994)).

[72] *See Innovation and Intellectual Property*, World Intell. Prop. Org., https://www.wipo.int/ip-outreach/en/ipday/2017/innovation_and_intellectual_property.html#:~:text=Patents%20recognize%20and%20reward%20inventors,invested%20in%20developing%20a%20technology [https://perma.cc/D38J-GH7G] (last visited Oct. 7, 2024).

[73] *Id.*

[74] *See In re* Hardee, 1984 TTAB LEXIS 220, at *6–7 (T.T.A.B. 1984).

[75] Cumberland & Pharms. Inc. v. Mylan Inst. LLC, 846 F.3d 1213, 1217 (Fed. Cir. 2017) (quoting 35 U.S.C. § 102(f) (2006)).

Conception of the claimed invention determines whether an individual may achieve inventorship status.[76] There is no test to determine whether conception is sole or joint, and case law demonstrates this dichotomy by holding that:

> "[d]etermining 'inventorship' is nothing more than determining who conceived the subject matter at issue, whether that subject matter is recited in a claim in an application or in a count in an interference." Whether such a determination is "nothing more than" or "quite difficult," a valid patent requires correct inventorship.[77]

The Federal Circuit has also stated that conception may look different depending on the facts of the case.[78] In *In re VerHoef*,[79] the Federal Circuit held that a patent application listing Jeff H. VerHoef as a sole inventor failed to acknowledge another inventor, Dr. Alycia Lamb.[80] The invention, a feature of a dog mobility device, featured a prominent figure-eight configuration for the strap around the dog.[81] The patent examiner found that the figure-eight configuration was a prominent feature and that VerHoef did not solely invent it, thus denying his patent application that asserted his sole inventorship.[82] Lamb argued that she had contributed to the dog mobility device by suggesting the use of the figure-eight loop, thus contributing to the *conception* of the invention.[83] Because of Lamb's contributions to the invention, Lamb was added as a *co-inventor*, changing the patent from VerHoef as a sole inventor to a co-inventor.[84] The Federal Circuit concluded that both Lamb and VerHoef conceived the claimed invention.[85]

In *In re Hardee*,[86] the Trademark Trial and Appeal Board ("TTAB") removed a listed co-inventor, Rahul Sud, from a patent because he did not contribute to the essential features of the invention.[87] Kim C. Hardee stated that he con-

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[76] *See*, *e.g.*, *In re* VerHoef, 888 F.3d 1362, 1365 (Fed. Cir. 2018) (citation omitted).

[77] *Id.* at 1365.

[78] *See generally id.* (citing *In re* Gartside, 203 F.3d 1305, 1315 (Fed. Cir. 2000)) (noting that determinations of conception and inventorship vary depending on underlying factual findings). *Compare* VerHoef, 888 F.3d at 1366, *with* Hardee, 1984 TTAB LEXIS 220, at *6–7.

[79] 888 F.3d 1362 (Fed. Cir. 2018).

[80] *See id.* at 1368.

[81] *See id.* at 1365.

[82] *See id.*

[83] *See id.*

[84] *See id.* at 1368.

[85] *See id.* at 1366–67.

[86] 1984 TTAB LEXIS 220 (T.T.A.B. 1984).

[87] *See id.* at *6–8. This case was before the U.S. Trademark Trial and Appeals Board but was heard by a panel of the Deputy Assistant Commissioner of Patents. *See id.* at *6–7 (T.T.A.B. 1984). The Patent Trial and Appeal Board ("PTAB") was not established until 2012 under the America Invents Act. U.S. Gov't Accountability Off., GAO-22-106121, Patent Trial and Appeal Board: Preliminary Observations on Oversight of Judicial

ceived the invention before Sud joined the team, in which Hardee produced documents to demonstrate the date of the invention's conception, specifically page eleven of his notebook.[88] Because the TTAB determined that the page established conception and Sud did not contribute to the page, it revoked Sud's status as a co-inventor and instituted sole inventorship to Hardee.[89]

Both *VerHoef* and *Hardee* reiterate that inventorship depends on the specific facts of each case and is based on the conception of the claimed invention.[90]

### *2. Joint Inventorship*

Patents may also have multiple inventors, called "joint inventors" or "co-inventors," when more than one inventor contributes to the invention's conception.[91] The Patent Act states that,

> When an invention is made by two or more persons jointly, they shall apply for patent jointly and each make the required oath, except as otherwise provided in this title. Inventors may apply for a patent jointly even though (1) they did not physically work together or at the same time, (2) each did not make the same type or amount of contribution, or (3) each did not make a contribution to the subject matter of every claim of the patent.[92]

Similar to sole inventorship, determining joint inventorship varies case by case.[93] Patent law defines a joint inventor as an individual who discovered or invented the "subject matter of a joint invention," but the law fails to provide any additional information on—or a definition of—joint inventions.[94] Although the law is vague, the Federal Circuit has interpreted *joint* inventor to mean an *individual* that "make[s] a contribution to the conception of the

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Decision-Making 4 (2022), https://www.gao.gov/products/gao-22-106121 [https://perma.cc/3W2X-M5Y9]. Prior to PTAB, the board was called the Board of Patent Appeals and Interferences, which was created in 1984, the same year that this case was decided. *See Patent Law Research Guide*, Univ. of Akron (Jan. 22, 2025), https://libguides.uakron.edu/patentlaw/ptab#:~:text=Up%20until%20September%2016%2C%202012,Interferences%20was%20created%20in%201984 [https://perma.cc/5RG4-2JM4].

[88] *See Hardee*, 1984 TTAB LEXIS 220, at *7.

[89] *See id.*

[90] *See, e.g.*, *VerHoef*, 888 F.3d at 1366; *Hardee*, 1984 TTAB LEXIS 220, at *6–7.

[91] *See* 35 U.S.C. § 116(a).

[92] *Id. See also* 35 U.S.C.S. § 116 n. 4 (citing Am. Tel. & Tel. Co. v. Integrated Network Corp., 972 F.2d 1321, 1324–26 (Fed. Cir. 1992) (noting that although joint inventors do not need to physically work together or at the same time, the joint invention must have some element of collaboration because independent, unaware work does not qualify as joining inventorship)).

[93] *See generally VerHoef*, 888 F.3d at 1365 (noting that conception and inventorship are questions of law but premised on underlying factual findings).

[94] 35 U.S.C. § 100(g).

claimed invention that is not insignificant in quality."[95] To qualify as joint inventors, the individuals must exert "some element of joint behavior, such as collaboration or working under common direction."[96] Otherwise, the individual will not qualify for inventorship status.[97]

For instance, in *Weaver v. Houchin*,[98] the Federal Circuit held that the evidence presented excluded Johnney R. Weaver, an alleged inventor of a sweepstakes and voucher system, from obtaining joint inventorship.[99] Weaver was one of five individuals seeking inventorship status on this invention.[100] The invention was essentially a video game network for users to purchase vouchers and play certain games that were unrelated to the sweepstakes.[101] In return for purchasing the vouchers, the users received optional entries into the sweepstakes.[102] Specifically, Weaver asserted that he qualified as a co-inventor for the sweepstakes invention because he created the "Hello Money Sweepstakes" manual, produced the "Photo Money Talk game equipment," and relied on testimony from Tim Vaudrin, another individual seeking inventorship status.[103] The Federal Circuit held that, while the other individuals *independently* contributed to the invention's conception, Weaver had not.[104] There was no evidence showing that he conceived the "Hello Money Sweepstakes" manual, the photo had no weight, and Vaudrin's testimony stated that Vaudrin had no personal knowledge of Weaver's contributions.[105] The Federal Circuit denied Weaver joint inventorship.[106]

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[95] *See, e.g.*, Fina Oil & Chem. Co. v. Ewen, 123 F.3d 1466, 1473–74 (Fed. Cir. 1997) (vacating and remanding the District Court's decision when it held Ewen was not a co-inventor because multiple inventors can be listed on a patent as long as the respective contributions are not insignificant in character and provided some inventive contribution to the invention); *Am. Tel.*, 972 F.2d at 1324–26. *Compare* Weaver v. Houchin, 467 F. App'x. 878, 879–81 (Fed. Cir. 2012), *with VerHoef*, 888 F.3d at 1366.

[96] Kimberly-Clark Corp. v. Procter & Gamble Distrib. Co., 973 F.2d 911, 917 (Fed. Cir. 1992).

[97] *See generally id.*

[98] 467 F. App'x 878 (Fed. Cir. 2012).

[99] *See id.* at 879–81 (explaining the disputed patent was a method and apparatus for conducting a sweepstakes).

[100] *See id.* at 878–79.

[101] *See* Method and Apparatus for Conducting a Sweepstakes, U.S. Patent No. 7,316,614 (filed Nov. 4, 2003) (issued Jan. 8, 2008).

[102] *See id.*

[103] *See Weaver*, 467 F. App'x. at 880–81.

[104] *See id.*

[105] *Id.*

[106] *See id.*

While the Federal Circuit in *VerHoef* held that Lamb was a joint inventor because she contributed to the idea of the figure-eight loop by proposing a solution to a functional issue with the loop,[107] the Federal Circuit in *Weaver* declared that Weaver's alleged contributions were not essential to the invention, barring inventorship status.[108] *VerHoef* and *Weaver* differ in their outcomes because, in *VerHoef*, Lamb proposed an idea directly impacting the functionality of the vital component of the invention, making her a joint inventor.[109] Conversely, in *Weaver*, the evidence showed that Weaver made no meaningful contributions to the invention.[110] This is how conception impacts inventorship.

### *3. The "Individual" Inventor*

While the Patent Act does not define who or what an "individual" entails, the Federal Circuit held in *Thaler* that an "individual" must be a human being under ordinary meaning statutory interpretation.[111] Dr. Stephen Thaler's ("Thaler") Device for the Autonomous Bootstrapping of Unified Science ("DABUS") acts as a "collection of source code or programming and a software program."[112] Thaler sought patent protection for two inventions that DABUS solely created and generated, listing DABUS on the patent application as the sole inventor.[113] The two inventions included a Neural Flame, which is a light source used as "an emergency beacon that discriminates itself from other alternating light sources within the environment,"[114] and a Fractal Container, which is "an interlocking food container based on fractal geometry that is easy for robots to grip and stack."[115] Thaler created DABUS, owns DABUS, and submitted DABUS's applications for the Neural Flame and

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[107] *See In re* VerHoef, 888 F.3d 1362, 1366 (Fed. Cir. 2018).

[108] *See Weaver*, 467 F. App'x. at 880–81.

[109] *See VerHoef*, 888 F.3d at 1366.

[110] *See Weaver*, 467 F. App'x. at 879–81.

[111] *See* Thaler v. Vidal, 43 F.4th 1207, 1211–12 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023) (citing Beech Aircraft Corp. v. EDO Corp., 990 F.2d 1237, 1248 (Fed. Cir. 1993) (finding that "only natural persons can be 'inventors.'")). *See generally* 35 U.S.C. §§ 100–212.

[112] *See Thaler*, 43 F.4th at 1209.

[113] *See id.* at 1207.

[114] *Application for Patent: Devices and Methods for Attracting Enhanced Attention*, The A.I. Project 5, https://artificialinventor.com/wp-content/uploads/2019/07/Neural-Flame-Application.pdf [https://perma.cc/H5QQ-PHYD] (last visited Dec. 2, 2024).

[115] *DABUS Accepted as First AI Inventor*, Minesoft, https://minesoft.com/dabus-accepted-as-first-ai-inventor/ [https://perma.cc/7A3W-5UXD] (last visited Oct. 22, 2024) (discussing that DABUS was accepted as an inventor in South Africa and Australia). *See also Thaler*, 43 F.4th at 1209.

Fractal Container to the USPTO.[116] Thaler did not list himself as an inventor on the patent applications because DABUS created and designed each invention, and Thaler believed that "he did not contribute to the conception of these inventions."[117] As a result, the USPTO denied DABUS's patent application because "a machine does not qualify as an inventor."[118] Without Thaler contributing to the conception of DABUS's inventions, he is not eligible for inventorship status either, making both the Neural Flame and the Fractal Container ineligible for patent protection.[119]

The United States District Court for the Eastern District of Virginia affirmed the USPTO's judgment, upholding the requirement for an inventor to be an individual.[120] Adhering to the plain meaning of "individual," the district court held that an individual is a natural person.[121] Despite Thaler appealing the decision, the Federal Circuit affirmed the district court's ruling that AI does not qualify as an inventor, thereby restricting the use of AI software.[122] Subsequently, the Supreme Court denied Thaler's petition for a *writ of certiorari*.[123] Therefore, the Federal Circuit's ruling in *Thaler* remains the highest binding law: AI cannot qualify as an inventor in the United States.[124]

### D. What is AI, and Why is it Important?

The 1990s and 2000s saw a surge of inventions employing early forms of AI, such as speech recognition software and household appliances like the Roomba.[125] Today, AI technology has become advanced and widespread, ranging from virtual assistants like Apple's Siri to OpenAI's ChatGPT to self-driving cars.[126] Generative AI is a type of artificial intelligence that "responds to a user's prompt or request with generated original content, such as audio,

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[116] *See Thaler*, 43 F.4th at 1209.

[117] *See id.*

[118] *See id.* at 1210 (citing U.S. Application Nos. 16/524,350 (teaching a "Neural Flame") at 269–71, and 16/524,532 (teaching a "Fractal Container") at 548–50).

[119] *See id.*

[120] *See id.*

[121] *See id.* at 1209–10 (citing Thaler v. Hirshfeld, 558 F. Supp. 3d 238, 245–50 (E.D. Va. 2021)).

[122] *See, e.g.*, Brief for the Chicago Patent Attorneys, *supra* note 2, at 2; *see also* Brief for the Brooklyn Law Incubator & Policy Clinic, *supra* note 3, at 12.

[123] *See* Thaler v. Vidal, 143 S. Ct. 1783, 1783 (2023).

[124] *See Thaler*, 43 F.4th at 1212.

[125] *See generally id.*; Rockwell Anyoha, *The History of Artificial Intelligence*, Harv. Univ. Sci. in the News Blog (Aug. 28, 2017), https://sitn.hms.harvard.edu/flash/2017/history-artificial-intelligence/ [https://perma.cc/DRR5-8SRR].

[126] *See* Caballar, *supra* note 1.

images, software code, text or video."[127] Generative AI continues to learn and grow as it receives more information from users and developers.[128] Yet, Congress has still not modified patent law to address this developing area of technology.[129]

Although AI is helpful, the public has expressed concern that it may take control of typical human labor.[130] Many workers have communicated a fear of AI taking over their jobs and of AI's rapid growth.[131] One study conducted by CNBC discovered that 60% of "employees who use AI regularly reported they worry about its impact on their jobs."[132] Goldman Sachs estimated that roughly 300 million jobs could be lost or diminished by AI advancements and growth.[133]

Although President Biden issued an Executive Order in 2022 to establish the purpose of AI, Congress has not passed any substantive legislation regarding AI's role in society.[134] President Biden's Executive Order discussed the importance of new AI standards and regulations to protect workers, ensure individuals' safety, and promote innovation.[135] President Biden recognized the threat AI poses to intellectual property law if unchecked, thus ordering the USPTO to "publish guidance to USPTO patent examiners and applicants addressing inventorship and the use of AI."[136] But beyond intellectual

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[127] Generative AI differs from predictive AI. *See id.*

[128] *See, e.g.*, Sam Daley, *84 Artificial Intelligence Examples Shaking Up Business Across Industries*, BuiltIn (Feb. 6, 2025), https://builtin.com/artificial-intelligence/examples-ai-in-industry [https://perma.cc/8NLX-SJJ6].

[129] *See generally* Anyoha, *supra* note 125.

[130] *See generally id.*

[131] *See, e.g.*, Josie Cox, *AI Anxiety: The Workers Who Fear Losing Their Jobs to Artificial Intelligence*, BBC (July 13, 2023), https://www.bbc.com/worklife/article/20230418-ai-anxiety-artificial-intelligence-replace-jobs [https://perma.cc/TS85-PJM7].

[132] *See* Jack Kelly, *Workers Who Use Artificial Intelligence Are More Likely To Fear That AI May Replace Them*, Forbes (Jan. 8, 2024, 1:03 PM), https://www.forbes.com/sites/jackkelly/2024/01/08/workers-who-use-artificial-intelligence-are-more-likely-to-fear-that-ai-may-replace-them/?sh=77d9329c16cf [https://perma.cc/YN24-9Q2Q].

[133] *See id.*

[134] *See Fact Sheet: President Biden Issues Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence*, The White House (Oct. 30, 2023), https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/30/fact-sheet-president-biden-issues-executive-order-on-safe-secure-and-trustworthy-artificial-intelligence/ [https://perma.cc/7BAD-Z6AT].

[135] *See id.*

[136] *See Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence*, The White House (Oct. 30, 2023), https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/ [https://perma.cc/KCK4-DTZT].

property law, President Biden's Executive Order called on the Federal Trade Commission to promote competition and innovation in the AI marketplace, the Department of Health and Human Services to advance AI-enabled tools that develop personalized immune-response profiles for patients, and more.[137] There is a clear call for federal decisions and guidelines on AI's societal role.[138] Yet, the fear and anxiety surrounding AI's inevitable and unregulated growth continues to spread amongst individuals in the United States.[139]

Humans have used AI primarily as a *tool* to assist in producing various patentable inventions, especially in science and technology.[140] AI can be classified under traditional computer programs—requiring some level of human involvement—or more complex systems, such as artificial neural networks—which do not require human input or involvement.[141] The artificial neural networks are machine learning programs that make "decisions in a manner similar to the human brain, by using processes that mimic the way biological neurons work together to identify phenomena, weigh options and arrive at conclusions."[142] The artificial neurons' signals that travel from the input layer, which is the first layer, to the output layer, which is the last layer, create a neural network.[143] The artificial neural networks, such as generative AI, present more complications for patent law because they do not require any human labor, thought, or control.[144] Modern AI systems can understand unorganized or unstructured data, reach conclusions and understand rationales, learn automatically, and automate the inventing process.[145] AI systems present a uniquely useful tool for humans but, if left unchecked, could risk eliminating human involvement and labor in invention.[146]

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[137] *See id.*

[138] *See, e.g.*, *id.*

[139] *See* Cox, *supra* note 131.

[140] *See* Enrico Bonadio et al., *Artificial Intelligence as Inventor: Exploring the Consequences for Patent Law*, 1 Intell. Prop. Q. 48, 57 (2021).

[141] *See* Ana Ramalho, *Patentability of AI-Generated Inventions: Is a Reform of the Patent System Needed?*, Inst. Intell. Prop., Found. for Intell. Prop. Japan, 1, 3 (2018).

[142] *What is a Neural Network?*, IBM, https://www.ibm.com/topics/neural-networks [https://perma.cc/Y2V4-3298] (last visited Dec. 1, 2024).

[143] *See* Jim Holdsworth & Mark Scapicchio, *What is Deep Learning?*, IBM (June 17, 2024), https://www.ibm.com/topics/deep-learning [https://perma.cc/4PKV-PHG8].

[144] *Cf.* Ramalho, *supra* note 141 (noting that generative AI can self-improve and may change its behavior based on experience to improve its performance without being programmed to do so).

[145] *See id.*

[146] *See generally* Michael Antone, *Artificial Intelligence (AI) and Intellectual Property (IP): Should AI Be Recognized as an Inventor on Patents?*, Maryland Inno (May 26, 2023), https://www.bizjournals.com/baltimore/inno/stories/partner-content/2023/05/26/

### E. Patent Law and AI

The Federal Circuit's ruling in *Thaler* limited AI and its ability to contribute through inventorship but left open the "question of whether inventions made by human beings with the *assistance* of AI are eligible for patent protection."[147] Currently, patent law lacks any provisions addressing the role of AI,[148] thereby making *Thaler* the highest binding case law addressing this issue in the United States.[149]

From 2002 to 2018, the USPTO saw annual AI patent applications increase over 100%—30,000 to 60,000.[150] Further, in 2018, over 42% of patent applications contained some form of AI technology.[151] Although *Thaler* introduced the issue of AI involvement in patent law, this was not the first time AI generated a novel idea.[152] For example, IBM created a system called "Watson" that invents recipes through user-selected ingredients based on input by the human user.[153] In practice, if a person were to type in a list of ingredients, Watson would respond with an innovative recipe based on those inputted ingredients.[154] Likewise, Google created "LaMDA," an AI system that developed AI robots to converse with humans.[155]

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artificial-intelligence-and-intellectual-property.html [https://perma.cc/9RHD-KWEY]; *see infra* Section III.B.2.

[147] *See* Thaler v. Vidal, 43 F.4th 1207, 1213 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023).

[148] *See generally* 35 U.S.C. §§ 100–212; *see also Thaler*, 43 F.4th at 1213.

[149] *See Thaler*, 43 F.4th at 1211.

[150] Michelle Lavrichenko, Thaler v. Vidal*: Artificial Intelligence–Can the Invented Become the Inventor?*, 44 Cardozo L. Rev. 699, 701 (2022) (citing Off. of the Chief Economist, USPTO*,* Inventing AI: Tracing the Diffusion of Artificial Intelligence with U.S. Patents 4–5 (2020), https://www.uspto.gov/sites/default/files/documents/OCE-DH-AI.pdf [https://perma.cc/6VPW-HNNR]).

[151] Off. of the Chief Economist, USPTO*,* Inventing AI: Tracing the Diffusion of Artificial Intelligence with U.S. Patents 7 (2020), https://www.uspto.gov/sites/default/files/documents/OCE-DH-AI.pdf [https://perma.cc/6VPW-HNNR].

[152] *See* Lavrichenko, *supra* note 150, at 702.

[153] *See* Alexandra Kleeman, *Cooking with Chef Watson, I.B.M.'s Artificial-Intelligence App*, New Yorker (Nov. 20, 2016), https://www.newyorker.com/magazine/2016/11/28/cooking-with-chef-watson-ibms-artificial-intelligence-app [https://perma.cc/M4KB-JFQ3]; *see* Danny Lewis, *Would You Drink a Cocktail Invented by a Computer?*, Smithsonian Mag. (Oct. 26, 2015) https://www.smithsonianmag.com/smart-news/ibms-watson-can-mix-mean-drink-180957043/ [https://perma.cc/6TZ6-BDFP].

[154] *See* Lewis, *supra* note 153.

[155] Brandon Specktor, *Google AI "Is Sentient," Software Engineer Claims Before Being Suspended*, Live Sci. (June 13, 2022), https://www.livescience.com/?google-sentient-ai-lamda-lemoine [https://perma.cc/6JE7-LS8Z].

The USPTO recognized AI's continuous growth in its 2020 IP Data Highlights:

> [V]olume and diffusion of AI across technologies, inventor-patentees, patent owners, and geography show that AI is increasingly important to U.S. invention. Whether AI turns out to be as revolutionary as electricity or the semiconductor depends, in part, on the ability of innovators and firms to successfully incorporate AI inventions into existing and new products, processes, and services.[156]

Accordingly, the USPTO concluded that AI has the potential to be as "revolutionary as electricity."[157] Although this trend of AI growing across technologies and patent owners has been increasing in recent years, Congress has yet to codify a law informing the USPTO on how to handle this increase in AI representation in patent applications.[158]

With AI becoming more prominent in patent applications, significant discussion has centered on whether current intellectual property law is sufficient to regulate it.[159] In an attempt to solve this ongoing issue, scholars have presented different theories to balance AI and current patent law.[160] The "natural rights theory"[161] states that an inventor should "have natural property rights over the products of her mind,"[162] meaning that individuals deserve protection for their inventions.[163] Another theory is the "incentive theory,"[164] which characterizes patents as an incentive for inventors to innovate to benefit society.[165] According to this theory, creating stricter rules regulating AI would likely diminish innovation and creativity.[166]

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[156] Office of the Chief Economist, USPTO, Inventing AI: Tracing the Diffusion of Artificial Intelligence with U.S. Patents 12 (2020), https://www.uspto.gov/sites/default/files/documents/OCE-DH-AI.pdf [https://perma.cc/6VPW-HNNR].

[157] *See id.*

[158] *See* Brief for Chicago Patent Attorneys, supra note 2; Kevin J. Hickey & Christopher T. Zirpoli, LSB11251, Cong. Rsch. Serv., Artificial Intelligence and Patent Law 6 (2024).

[159] Shlomit Yanisky Ravid & Xiaoqiong Liu, *When Artificial Intelligence Systems Produce Inventions: An Alternative Model for Patent Law at the 3A Era*, 39 Cardozo L. Rev. 2215, 2222 (2018).

[160] *See, e.g.,* Ramalho, *supra* note 141, at 5.

[161] *Id.*

[162] *Id.*

[163] *See id.*

[164] *Id.* at 6.

[165] *Id.*

[166] *See id.*

The Federal Circuit essentially held that AI cannot obtain property rights for its creation.[167] With these underlying principles in patent law, AI complicates the foundational meaning of current patent law because AI does not have a "mind" despite contributing to innovation.[168] With the different theories and perspectives on who or what qualifies as an inventor in the United States, the Federal Circuit must define AI's role in patent law to preserve innovation.

## II. Analysis

There is a significant problem with the lack of regulation surrounding AI in patent law, coupled with the absence of feasible solutions to address this issue. Without proper guidance, innovators, scientists, and others are left to navigate the complexities of the field without direction, essentially the blind leading the blind. How should Congress address the role of AI in patent law, specifically patent inventorship: should AI be prohibited, restricted, or permitted as an inventor? Pending congressional action, how should the Federal Circuit handle AI-related patent matters? Section A addresses why this lack of legal direction is a problem that requires an immediate solution, while Section B considers inadequate solutions that other scholars have presented.

### A. Problem Presented: Why Does the United States Need an AI Solution?

Since the Patent Act was passed in 1952, Congress has made numerous amendments and additional legislation clarifying the law.[169] Yet, it has been silent on the issue of the intersection of AI advancements and patent inventorship.[170] Without explicit instruction from Congress, the public can only rely on *Thaler*; however, *Thaler* did not clarify whether human inventors may *use* AI when creating inventions.[171] The public awaits clear instructions from the courts or Congress on approaching this rapidly spreading technological advancement.[172] Companies will continue to utilize AI in different capacities

[167] *See generally* Thaler v. Vidal, 43 F.4th 1207 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023).

[168] *See generally* Ramalho, *supra* note 141, at 4–5.

[169] For example, in 2012, Congress passed the America Invents Act, changing the U.S. system from a "first-to-invent" approach to a "first-inventor-to-file" one. *See* Leahy-Smith America Invents Act, 125 Stat. 284 (2012). This was a significant change for inventors seeking a patent protection, but it is not material to this Note's discussion or analysis.

[170] *See* 35 U.S.C. § 116.

[171] *See Thaler*, 43 F.4th at 1212.

[172] *See* Ellen Glover, *What Is Artificial Intelligence (AI)?*, BuiltIn. (Dec. 3, 2024), https://builtin.com/artificial-intelligence#:~:text=AI%20works%20to%20simulate%20human,to%20new%20information%20over%20time [https://perma.cc/EL6L-76PU] ("For

without clear legal guidance.[173] This uncertainty leads to confusion amongst the public and congestion within the courts.[174] Therefore, the Federal Circuit must answer how individuals may utilize AI in patent law until Congress passes legislation.

### B. Inadequate Solutions

With new technologies emerging, many scholars have suggested different courses of action for AI's role in patent law.[175] This Section addresses two proposed, yet inadequate, solutions to the novel issue of AI and patent law's intersection: (1) completely barring AI from the patent invention process and (2) allowing AI to complete the majority of the invention process. Congress has not addressed the growing question of how to regulate, prohibit, or permit AI in the patent sphere.[176] This congressional silence has led to the courts absorbing the responsibility of applying out-of-date law to new, contemporary issues.[177] Silence is impractical. Ignoring or avoiding such pressing issues will likely lead to more confusion, ultimately impeding patent inventorship and creativity.[178]

#### *1. Completely Barring AI From the Patent Invention Process*

AI has grown over the decades from its rudimentary beginnings as products like the Roomba robot vacuum[179] to new technologies such as DABUS[180] and ChatGPT.[181] Yet, patent law has failed to "keep pace with developments in technology, specifically as it relates to inventions developed by AI machines," leaving patent law unprepared.[182] Some scholars argue that because human creativity and labor are vulnerable to AI, it should not be permitted in the

now, society is largely looking toward federal and business-level AI regulations to help guide the technology's future.").

[173] *See supra* text accompanying notes 14–15.

[174] *See generally* Antone, *supra* note 146.

[175] *See, e.g.*, Brief for Chicago Patent Attorneys, *supra* note 2.

[176] *See id.*

[177] *See id.*; Thaler v. Vidal, 43 F.4th 1207, 1208–12 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023).

[178] *See generally* Antone, *supra* note 146; Request for Comments on USPTO Initiatives, *supra* note 3.

[179] *What Is The History of Artificial Intelligence (AI)?*, Tableau, https://www.tableau.com/data-insights/ai/history [https://perma.cc/YJ8J-FKRQ] (last visited Mar. 5, 2025).

[180] *Thaler*, 43 F.4th at 1209–11.

[181] *See* Daley, *supra* note 128.

[182] Hayfa Ayoubi, *Artificial vs. Natural: Should AI Systems Be Named as Inventors on Patent Applications?*, 24 N.C. J.L. & Tech. 1, 1 (2022).

patent invention process at all.[183] These scholars would prohibit *any* AI use from patentable inventions through federal legislation or limits by the courts.[184] However, this proposed solution is unrealistic and would complicate inventors' ability to utilize valuable tools and compete with other inventors.[185] Competition naturally encourages innovation.[186] AI will only expand further, so barring it from the invention process only delays and discourages innovation.[187]

Many companies, including Expedia, Wayfair, Schneider Electric, and Mass General Brigham, already use AI to generate ideas and enhance their products and operations.[188] AI is part of the economic landscape now—and is only becoming more widely accepted and normalized.[189] Completely prohibiting the use of AI to help create patented inventions would be counteractive and reduce inventors' willingness to share ideas since those inventions would likely be kept secret rather than shared with the public, ultimately harming the public good.[190]

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[183] *See, e.g.*, Monica Lopez & Irene Gonzalez, *Artificial Intelligence Is Not Human: The Legal Determination of Inventorship and Co-Inventorship, the Intellectual Property of AI Inventions, and the Development of Risk Management Guidelines*, 104 J. Pat. & Trademark Off. Soc'y 135, 139 (2024) ("Because AI cannot create or invent like a human, an AI-enabled system is at most a tool that assists in an invention, or in the discovery of the subject matter of an invention. Therefore, AI is not an entity that can have rights of ownership or authorship in the conventional sense"); Pressley Nietering, *Why Artificial Intelligence Shouldn't Be a Patent Inventor*, 5 Ariz. L.J. Emerging Tech. i, 3 (2022) ("There are numerous problems with permitting AI systems to be inventors for patent purposes. These problems include creating issues with the analogous art requirement, failing to meet the enablement standard, recalibrating who the Person Having Ordinary Skill in the Art is, generating constitutional concerns about incentivizing AI, producing similar incentives to have AIs treated as the authors of copyrighted works, and setting the stage for other non-human entities to have intellectual property rights."); James Grimmelmann, *There's No Such Thing as a Computer-Authored Work—And It's a Good Thing, Too*, 39 Colum. J.L. & Arts 403, 403 (2016) (discussing copyright law but warning against any AI involvement).

[184] *See* Lopez, *supra* note 183; Nietering, *supra* note 183; Grimmelmann, *supra* note 183.

[185] *See generally* Brief for Chicago Patent Attorneys, *supra* note 2, at 12.

[186] *See id.*

[187] *See id.*

[188] *See*, *e.g.*, Belle Lin, *How Did Companies Use Generative AI in 2023? Here's a Look at Five Early Adopters*, Wall St. J., (Dec. 29, 2023, 7:00 AM), https://www.wsj.com/articles/how-did-companies-use-generative-ai-in-2023-heres-a-look-at-five-early-adopters-6e09c6b3.

[189] *See* Request for Comments on USPTO Initiatives, *supra* note 3.

[190] *See e.g.*, Brief for Chicago Patent Attorneys, *supra* note 2, at 12–13 (citing *Pause Giant AI Experiments: An Open Letter*, Future of Life Inst. (Mar. 22, 2023), https://futureoflife.org/open-letter/pausegiant-ai-experiments/ [https://perma.cc/GTA6-X6S5]).

### *2. Allowing AI to Qualify as an Inventor Within Patent Law*

While it is important to recognize the benefits of AI assistance in inventions, limitations must still exist on AI creations to preserve and protect human innovation and creativity.[191] Patent law states that inventors include any individual who has invented or significantly contributed to the invention.[192] Although the Federal Circuit in *Thaler* ruled that AI cannot legally be an inventor, some scholars argue that Congress did not intend for the term "inventor" to be interpreted so narrowly and should pass legislation to permit AI patent eligibility.[193] They argue that Congress and the Supreme Court should overturn the Federal Circuit's decision in *Thaler* and instead permit AI to obtain inventorship.[194] But this proposed solution is unreasonable because it would undermine human creativity and complicate patent law's underlying principles and purpose.[195]

In *Thaler*, the Federal Circuit interpreted numerous federal statutes, especially the Patent Act, to demonstrate that Congress intended inventorship exclusively for humans.[196] The Court found that the statute's plain language demonstrated that "the plain meaning of 'inventor' in the Patent Act is limited to natural persons."[197] Upholding precedent and providing clear guidelines to the public is essential for a functioning system, so Congress and the Federal Circuit should build off *Thaler*'s decision.[198]

Currently, no legal framework exists in the United States that recognizes AI as an inventor.[199] Encouraging the Federal Circuit and Congress to recognize AI as inventors would set a dangerous precedent to replace human labor and creativity with AI.[200] Kathi Vidal,[201] the former Under Secretary

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[191] *See* Ramalho, *supra* note 141, at 5–6.

[192] *See* 35 U.S.C. § 115 (a)–(b); *see* discussion *supra* Section I.C.

[193] *See* Brief for the Chicago Patent Attorneys, *supra* note 2, at 8; Thaler v. Vidal, 43 F.4th 1207 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023).

[194] *See* Brief for the Chicago Patent Attorneys, *supra* note 2, at 8.

[195] *See* Antone, *supra* note 146.

[196] *See Thaler*, 43 F.4th at 1211–13.

[197] *Id.* at 1212.

[198] *See Precedent*, Legal Info. Inst., Cornell L. Sch., https://www.law.cornell.edu/wex/precedent [https://perma.cc/9LDD-KMR8] (last visited Feb. 23, 2025); *see also Thaler*, 43 F.4th at 1211–13.

[199] *See c.f.* Guidance on Use of Artificial Intelligence-Based Tools in Practice Before the United States Patent and Trademark Office, 89 Fed. Reg. 25609 (Apr. 11, 2024) (providing the public with guidelines on how to manage AI in patent law because there is no solid federal legal framework yet).

[200] Antone, *supra* note 146.

[201] Kathi Vidal retired from her role as the Under Secretary of Commerce for Intellectual Property and USPTO Director on December 16, 2024. *Kathi Vidal Departs USPTO for*

of Commerce for Intellectual Property and Director of the USPTO and the named defendant in *Thaler*, stated, "[t]he right balance must be struck between awarding patent protection to promote human ingenuity and investment for AI-assisted inventions while not unnecessarily locking up innovation for future developments."[202] The USPTO suggested building off of the "significant contribution test"[203] established in *Pannu v. Iolab Corporation*; however, doing so would still not allow AI to obtain inventorship status.[204]

Some scholars argue that, because other countries have defined "inventors" in patent law as not strictly human, the United States should do the same.[205] For example, the Federal Court of Australia "interpreted the term 'inventor' . . . as an agent noun to include natural and non-natural persons" while the United States has limited the noun to natural persons.[206] The Full Court of Australia, the Australian court with appellate jurisdiction, later reversed the lower court's decision when it concluded that non-humans could not be inventors.[207] However, interpretations of an "inventor" like the Federal Court of Australia's interpretation suggest a lack of human accountability, decreased human involvement, and disregard of the patent law foundation.[208] The United States should not follow Australia's overturned ruling and should not overturn *Thaler*; rather, the United States should build on the Federal Circuit's conclusion that AI cannot be an inventor under patent law.[209]

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*Private Practice*, Cal. Laws. Ass'n., https://calawyers.org/intellectual-property-law/kathi-vidal-departs-uspto-for-private-practice/ [https://perma.cc/6UH7-CL6V] (last visited Dec. 26, 2024).

[202] Kathi Vidal, *AI and Inventorship Guidance: Incentivizing Human Ingenuity and Investment in AI-Assisted Inventions*, USPTO (Feb. 12, 2024), https://www.uspto.gov/blog/ai-and-inventorship-guidance-incentivizing [https://perma.cc/MW2P-GQTL].

[203] *See id.*

[204] *See id.* (citing Pannu v. Iolab Corp., 155 F.3d 1344 (Fed. Cir. 1998)). The *Pannu* significant contribution test states that: "[a]ll that is required of a joint inventor is that he or she (1) contribute in some significant manner to the conception or reduction to practice of the invention, (2) make a contribution to the claimed invention that is not insignificant in quality, when that contribution is measured against the dimension of the full invention, and (3) do more than merely explain to the real inventors well-known concepts and/or the current state of the art." *Pannu*, 155 F.3d at 1351.

[205] *See, e.g.*, Ayoubi, *supra* note 182, at 6 (citing *Thaler v Comm'r of Patents* [2021] FCA 879 (30 July 2021) (Austl.).

[206] *Thaler v Comm'r of Patents* [2021] FCA 879 (30 July 2021) (Austl.).

[207] *Comm'r of Patents v. Thaler* [2022] FCAFC 62 (13 Apr. 2022) (Austl.).

[208] *See generally* Antone, *supra* note 146.

[209] Thaler v. Vidal, 43 F.4th 1207, 1211 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023).

## III. Proposed Solution: Creating a Two-Part Threshold Test

The Federal Circuit should create and adopt a two-part threshold test, allowing AI to be considered a tool rather than an inventor for patent eligibility. Based on the Federal Circuit's definition of conception,[210] its existing tests to determine inventorship,[211] and the USPTO's current guidelines for a "significant contribution test," the Federal Circuit should (1) analyze the human being's contributions and (2) analyze the relationship between the AI software and the individual, or individuals.

### A. Part One: The Human Being's Contributions

The first part of this two-part test analyzes whether a human being contributed to the invention, and if so, where and how much. This first part acknowledges the Federal Circuit's decision in *Thaler* that there must be a human inventor on a patent application to be eligible for a patent.[212] If no human being contributed to the invention, then the Federal Circuit or patent examiner may easily deny the patent application for failing the first part of the test. Thus, applying the facts of *Thaler* to this test, the Neural Flame and Fractal Container applications would still be denied because no human being contributed to the invention.[213] This test therefore supports the ruling in *Thaler*[214] while adding more guidance.

The first part prompts the court to conduct the Supreme Court's basic conception test.[215] If human applicants list themselves on the patent applications as inventors of an AI-assisted work, they must have contributed significantly and substantially to its conception, ultimately requiring a fact-specific analysis.[216] For example, in *Fina Oil & Chemical Company v. Ewen*,[217] the Federal Circuit emphasized that courts must look at the alleged inventor's "contribution[s]" to that *specific* invention to determine inventorship status.[218] By looking at the particular facts of each case presented when a human applies for inventorship, the Federal Circuit should determine whether the human contributed to the invention's conception using the typical conception test.[219]

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[210] *See* discussion *supra* Section I.B.

[211] *See* discussion *supra* Section I.C.1–3.

[212] *Thaler*, 43 F.4th at 1210.

[213] *See id.* at 1209.

[214] *See id.*

[215] *See, e.g.*, Alice Corp. v. CLS Bank Int'l, 573 U.S. 208, 217 (2014) (citing Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc., 566 U.S. 66, 77 (2012)).

[216] *See, e.g.*, *In re* VerHoef, 888 F.3d 1362, 1366 (Fed. Cir. 2018).

[217] 123 F.3d 1466 (Fed. Cir. 1997).

[218] *See id.* at 1473.

[219] *See id.*

In practice, courts would continue utilizing the same conception definition and application: conception remains the "touchstone of the invention, the completion of the mental part of the invention," not requiring the inventor to build or test the invention to satisfy such requirements.[220]

To demonstrate the first part of the two-part test, consider the facts of the *Thaler v. Vidal*.[221] In the actual case of *Thaler*, DABUS invented the Fractal Container on its own, effectively making DABUS the sole inventor.[222] Subsequently, the USPTO denied DABUS's patent application.[223] Under part one of this threshold test, the application would still be denied because there was no human contribution. However, the outcome would have differed if Thaler had contributed to the invention's conception. Imagine that Thaler developed an idea for a food container that is geometrically structured for robots to stack easily and decided to name it a "Fractal Container."[224] After some trial and error, he created a prototype, but to refine it and avoid potential issues, he used DABUS to test various configurations. Following Thaler inputting the information into DABUS and DABUS's subsequent work, Thaler then files a patent application with the USPTO listing himself as the sole inventor. Based on part one of the test, the court would analyze Thaler's contributions: he thought of the invention's idea, created a prototype, named it, and filed the patent application. Here, using the conception test and inventorship analysis, Thaler would qualify as an inventor. The point of conception is the mental completion of the invention, not the actual production.[225] Similar to *VerHoef*, in which Lamb was considered an inventor because she suggested the essential idea for the dog leash,[226] Thaler would be an inventor based on his significant contributions to the invention's conception. Thus, without even creating the final model, Thaler conceived the claimed invention by thinking of the food container's structure, build, and use, satisfying the first part of the two-part test. The court's next step is to examine whether the AI software was an inventor or a tool.

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[220] Burroughs Wellcome Co. v. Barr Lab'ys, Inc., 40 F.3d 1223, 1227–28 (Fed. Cir. 1994); *accord* CODA Dev. s.r.o. v. Goodyear Tire & Rubber Co., 916 F.3d 1350, 1358 (Fed. Cir. 2019); *VerHoef*, 888 F.3d at 1366.

[221] 43 F.4th 1207 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023).

[222] *Id.* at 1209–10.

[223] *See id.*

[224] Based on the facts of *Thaler*. *See id.*

[225] *E.g.*, *id.*; *CODA Dev. s.r.o.*, 916 F.3d at 1358; *VerHoef*, 888 F.3d at 1366.

[226] *See VerHoef*, 888 F.3d at 1366.

### B. Part Two: What Did the AI System Do?

Once the court determines that a human has substantially contributed to the invention, the court must turn to the AI's contributions. Consequently, the AI system must qualify as a tool rather than an inventor based on its intervention. As discussed above, an inventor is anyone who contributes inventive elements beyond the concepts of natural law to an invention's conception.[227] Thus, the AI system must contribute less than an individual who would have qualified for inventorship status.

Here, the Federal Circuit should analyze the relationship between the human applicant claiming inventorship status and the AI system that contributed to the invention. Applying the same *Thaler* hypothetical, the court would assess the role of DABUS to determine whether DABUS acted as a joint inventor or a tool.[228] Here, Thaler already satisfied part one of the test by conceiving the claimed invention: he created a prototype and *then* used DABUS to scan for errors.[229] Now, the court must look at DABUS's role, in which the court would likely find that Thaler used DABUS as a tool, not as a joint inventor.[230] The court would likely find that DABUS's role was more similar to Weaver's role in *assisting* the invention's development but not contributing to the invention's conception.[231] In *Weaver*, the court held that Weaver had not independently contributed to the invention's conception, similar to DABUS's role here.[232] After satisfying part two of the test, the patent application would likely be granted.

However, if Thaler had merely thought of the idea and entered it into DABUS, after which DABUS made numerous suggestions, changes, and features, the court would be less likely to consider the AI software as a tool. There, DABUS would have acted as an inventor, contributing to the invention's conception, similar to *VerHoef,* where the court found Lamb to be a co-inventor because her suggestion of the figure-eight loop contributed to the invention's conception.[233] Key considerations should include whether the AI software contributed all but the root idea, whether the AI software would

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[227] *See* Alice Corp. v. CLS Bank Int'l, 573 U.S. 208, 217–22 (2014) (citing Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc., 566 U.S. 66, 72–77 (2012)); *see also* Diamond v. Chakrabarty, 447 U.S. 303, 309 (1980).

[228] *See* discussion *supra* Section III.A.

[229] Here, the claimed invention is the Fractal Container.

[230] *See* Weaver v. Houchin, 467 F. App'x. 878, 879–81 (Fed. Cir. 2012).

[231] *See id.* at 880–81.

[232] *See id.*

[233] *See In re* VerHoef, 888 F.3d 1362, 1365–66 (Fed. Cir. 2018).

qualify for inventorship if it were a human, and whether the human inventor was substantially involved in the invention's creation.[234]

As the courts apply this framework,[235] businesses and inventors may assess how their use of AI aligns with Federal Circuit decisions. Case law clarifies the limitations and practice of patent law, and the Federal Circuit's application of this two-part test will provide necessary guidance. Given the frequent delays in congressional action,[236] the courts should begin interpreting existing patent law to address these emerging issues.

## Conclusion

Current patent law is vague and does not account for the technological advancements of the twenty-first century.[237] These technologies, namely AI, are only becoming more popular and widespread, and the intersection between AI and patent law continues to grow.[238] The country is now in a "legal limbo" regarding how to develop AI software and creations.[239] Still, *Thaler* prohibits patenting inventions created by AI.[240] To preserve creativity and innovation while encouraging the development of AI, the Federal Circuit must permit human inventors to use AI as a *tool* in creating their claimed inventions by adopting a fact-specific, two-part test.

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[234] *See generally id.*

[235] *See In re* Hardee, 1984 TTAB LEXIS 220, at *6–7 (T.T.A.B. 1984).

[236] *See, e.g.*, Drew DeSilver, *Congress Has Long Struggled to Pass Spending Bills on Time*, Pew Rsch. Ctr. (Sept. 13, 2023), https://www.pewresearch.org/short-reads/2023/09/13/congress-has-long-struggled-to-pass-spending-bills-on-time/ [https://perma.cc/B52A-EEPW].

[237] *See, e.g.*, Brief for Chicago Patent Attorneys, *supra* note 2, at 8–11.

[238] *See id.*

[239] *See* Brief for Brooklyn Law Incubator & Policy Clinic, *supra* note 3, at 15.

[240] *See* Thaler v. Vidal, 43 F.4th 1207, 1212 (Fed. Cir. 2022), *cert. denied*, 143 S. Ct. 1783 (2023).

# Repairing the Repair-Reconstruction Doctrine

Jonathan Schneider*

## Introduction

Consumers may restore the products they buy to their original condition, but cannot remake them.[1] U.S. patent law recognizes that qualified right as the repair-reconstruction doctrine, which holds that consumers may fix—repair—items but cannot recreate—reconstruct—them.[2] Likewise, the Supreme Court of the United States ("Supreme Court") regards the "restoration of [a] machine to the original use for which it was bought" as permissible repair.[3] Meanwhile, "reconstruct[ing] the entity as to 'in fact make a new article'" is impermissible, constituting patent infringement.[4]

The distinction between repair and reconstruction is highly relevant to patent practitioners—for instance, permissible repair is an affirmative defense to infringement—but also to anyone who values knowing the extent to which they may maintain the efficacy of devices they purchase.[5] However, there is currently no set procedure for courts to decide when a party's actions constitute repair or reconstruction, creating ambiguity around when conduct amounts to permissibly fixing something versus unlawfully reconstructing it.[6]

This Note proposes—and urges the United States Court of Appeals for the Federal Circuit ("Federal Circuit") to adopt—a multifactor test that will

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[2] *See id.*

[3] Aro Mfg. Co. v. Convertible Top Replacement Co. (*Aro I*), 365 U.S. 336, 342 (1961) (citing Wilson v. Simpson, 50 U.S. 109, 123 (1850)).

[4] *Aro I*, 365 U.S. at 346 (quoting United States v. Aluminum Co. of Am., 148 F.2d 416, 425 (2d Cir. 1945)).

[5] *See, e.g.*, Karl Storz Endoscopy-Am. Inc. v. Steris Instrument Mgmt. Servs., 603 F. Supp. 3d 1111, 1122 (N.D. Ala. 2022). For an overview of the so-called *right to repair*, see Thorin Klosowski, *What You Should Know About Right to Repair*, N.Y. Times: Wirecutter (July 15, 2021), https://www.nytimes.com/wirecutter/blog/what-is-right-to-repair/ [https://perma.cc/P7J7-X8QT].

[6] *See* Aktiebolag v. E.J. Co., 121 F.3d 669, 673–74 (Fed. Cir. 1997).

streamline and standardize repair-reconstruction analyses, saving time and litigation costs and ensuring consistent results at the district and appellate court levels.[7] The test asks two preliminary questions that support straightforward findings of repair or reconstruction, respectively: first, whether parts were not replaced, and second, if parts were replaced, whether those parts were patented.[8] If neither of these inquiries is dispositive, the third step of the test offers three factors for courts to determine the key issue in repair-reconstruction cases, whether the element in question was sufficiently individualized to qualify as repair, or if the article was impermissibly reconstructed: the patentee's explicit and implicit intent, the defendant's actions, and formation of a market to provide the element.[9]

Part I introduces concepts fundamental to the proposed test and the current state of the repair doctrine, such as the bases for adopting certain aspects of Supreme Court and Federal Circuit precedent within it. Part II analyzes three aspects crucial to the proposed test, including clarifications concerning the scope of significant terms and the importance of adopting a standard approach to distinguishing between repair and reconstruction. Lastly, Part III details each stage of the proposed three-step approach.

## I. Background

Section I.A establishes the underlying rationale for the repair-reconstruction doctrine and its basis in patent law. Sections I.B.1 and 2 then discuss the Supreme Court and Federal Circuit cases that are most important to the proposed test.

### A. The Fundamentals of the Repair-Reconstruction Doctrine

Patent law permits consumers to repair, but not reconstruct, purchased products.[10] The distinction attempts to balance purchasers' personal property rights with the patentees' exclusive "right to make" the invention.[11] Whereas merely repairing an item is deemed a lawful exercise of the purchaser's right to maintain their property, an infringing reconstruction occurs when there

[7] *See infra* Part III.

[8] *See infra* Sections III.A–B.

[9] *See infra* Section III.C.

[10] *E.g.*, *Aro I*, 365 U.S. 336, 346 (1961) (citing American Cotton-Tie Co. v. Simmons, 106 U.S. 89 (1882)).

[11] Wilson v. Simpson, 50 U.S. 109, 112 (1850). *See also Aro I*, 365 U.S. at 346 ("Mere replacement of individual unpatented parts . . . is no more than the lawful right of the owner to repair his property."); Jazz Photo Corp. v. ITC, 264 F.3d 1094, 1102 (Fed. Cir. 2001) ("The purchaser of a patented article has the rights of any owner of personal property, including the right to . . . repair it.").

is a "second creation of the patented entity," thereby violating the patentee's patent monopoly.[12] That distinction—between conduct that solely involves maintaining something one has purchased versus the essential duplication of the product—is rooted in the exhaustion doctrine, which holds that a patentee that sells an item exhausts their ability to exert the right to exclude others from "making, using, offering for sale, or selling" an invention under the Patent Act.[13] However, the exhaustion doctrine does not grant purchasers the right to remake patented items, giving rise to the fundamental idea of the repair-reconstruction doctrine: that consumers may maintain, but not reproduce.[14]

The Federal Circuit's largely exclusive jurisdiction over cases involving patent law, though limited in certain instances, renders its authority in patent matters secondary only to that of the Supreme Court.[15] Thus, the description of the current repair-reconstruction dichotomy will evaluate Supreme Court and Federal Circuit precedent.

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[12] *Aro I*, 365 U.S. 336, 346 (1961) ("Mere replacement of individual unpatented parts . . . is no more than the lawful right of the owner to repair his property.").

[13] 35 U.S.C. § 154(a)(1). *See generally* Impression Prods. v. Lexmark Int'l, Inc., 581 U.S. 360 (2017) (applying the right to exclude in the context of the exhaustion doctrine).

Some have proposed alternative bases for the repair-reconstruction dichotomy. *See, e.g.*, Mark D. Janis, *A Tale of the Apocryphal Axe: Repair, Reconstruction, and the Implied License in Intellectual Property Law*, 58 Md. L. Rev. 423, 428 (1999) (arguing that an implied license model, under which courts would primarily examine the "reasonable expectations of the patentee and the purchaser concerning use and maintenance of the patented device," would better suit repair-reconstruction analyses).

[14] *See Impression Prods.*, 581 U.S. at 370, 373–74 (concluding that plaintiff-appellee's single-use restriction did not entitle it to retention of the rights granted by the patent monopoly "after ownership [of the product at issue] passes to the purchaser"); *see also Aro I*, 365 U.S. at 369 (Harlan, J., dissenting) ("The underlying rationale of the [repair-versus-reconstruction] rule is of course that the owner's license to use the device carries with it an implied license to keep it fit for the use for which it was intended, but not to duplicate the invention itself.").

[15] *See* 28 U.S.C. § 1295(a)(4)(A)–(B) (1982). For examples of such limitations, see Holmes Group, Inc. v. Vornado Air Circulation Sys., 535 U.S. 826, 831 (2002) (quoting 28 U.S.C. § 1295(a)(1)) (finding that counterclaims containing patent subject matter are insufficient for "'arising under' jurisdiction" if the plaintiff's complaint does not include a claim based on federal patent law); Richardson-Merrell, Inc. v. Koller, 472 U.S. 424, 440 (1985) (quoting 28 U.S.C. § 1291) (holding that pretrial disqualifications of counsel in civil cases are not "subject to appeal as 'final judgments,'" implicitly applying to patent infringement proceedings).

### B. Modern Interpretations of the Repair-Reconstruction Doctrine

When the damage to an item is partial, the Supreme Court recognizes its restoration,[16] refitting,[17] or renovation as permissible repair.[18] Similarly, the Federal Circuit has extended the confines of permissible repair to the disassembly and reassembly of a patented item to clean "patented articles," meaning any product protected by a patent, "accompanied by replacement of unpatented parts" within it,[19] reapplication of a material,[20] rebuilding an item,[21] and the refurbishment of an article.[22] Each finding is based on the principle that underpins the implied license to repair under the exhaustion doctrine: "the right to restore a part of a deficient combination."[23] It is, therefore, understandable why the replacement of individual unpatented elements of a larger item is the most contentious area of the repair-reconstruction doctrine, since replacement arguably strays further from restoration than the aforementioned categories by involving the introduction of non-original components.[24]

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[16] *See* Wilson v. Simpson, 50 U.S. 109, 123 (1850) ("When the wearing or injury [on an item] is partial, then repair is restoration, and not reconstruction.").

[17] *See id.* ("[R]epairing partial injuries, whether they occur from accident or from wear and tear, is only refitting a machine for use.").

[18] *See* Wilbur-Ellis Co. v. Kuther, 377 U.S. 422, 424 (1964) (deeming renovation repair).

[19] Jazz Photo Corp. v. ITC, 264 F.3d 1094, 1103–04 (Fed. Cir. 2001) (citing General Elec. Co. v. United States, 572 F.2d 745 (1978)) (agreeing with the court's holding that the Navy's "large scale 'overhauling' of patented gun mounts" by disassembling them, cleaning and replacing worn unpatented parts, then reassembling them, constituted repair).

[20] *See id.* at 1104 (citing Bottom Line Mgmt. v. Pan Man, Inc., 228 F.3d 1352, 1356–57 (Fed. Cir. 2000)) (agreeing that "reapplying non-stick coating" to a cooking device constitutes repair).

[21] *See id.* (citing Dana Corp. v. Am. Precision Co., 827 F.2d 755 (Fed. Cir. 1987)) ("[T]he court held that the 'rebuilding' of worn truck clutches, although done on a commercial scale, was repair.").

The defendants in *Dana Corp.* "disassemble[d] a particular worn clutch, locate[d] defective parts and replace[d] them with new or salvaged parts, clean[ed] the useable [sic] parts, and then reassemble[ed] that clutch, using as many of its original parts as [were] still serviceable." *Dana Corp.,* 827 F.2d at 756–57. Its use of "rebuild" is therefore akin to the defendant's disassembly and reassembly in *Gen. Elec. Co.*, whereas "rebuild" in the sense that *Aro I* and *Wilson* used it, making an entirely new article based on the original, constitutes impermissible reconstruction. *Compare id.*, *and General Elec. Co.*, 572 F.2d 745, *with Aro I*, 365 U.S. at 353 ("[T]here is no right to rebuild' a patented combination" (quoting *Wilson*, 50 U.S. at 123)).

[22] *Bottom Line Mgmt., Inc.*, 228 F.3d at 1355–57 (affirming the district court's holding that refurbishment is repair).

[23] *Wilson*, 50 U.S. at 123.

[24] *See Jazz Photo Corp.*, 264 F.3d at 1104 (collecting cases, most of which regard the replacement of individual parts in an article).

### *1. The Supreme Court's View of the Repair-Reconstruction Doctrine:* Aro I *and* II

*Aro Manufacturing Co. v. Convertible Top Replacement Co.* (1961)[25] ("*Aro I*") is the leading modern case on the repair-reconstruction doctrine.[26] In *Aro I*, the Supreme Court contended with a question foundational to the distinction between legitimate repair and illegitimate reconstruction: To what extent, if any, does patent law permit the replacement of unpatented component parts in a patented combination?[27] Meanwhile, *Aro Manufacturing Co. v. Convertible Top Replacement Co.* (1964)[28] ("*Aro II*") answered an important question regarding the bounds of permissible repair when the seller of a product lacks the patentee's permission.[29]

The facts leading to *Aro I* and *II* were undisputed.[30] Automobile Body Research Corporation ("ABR") owned a patent for car tops that fit specific Ford and General Motors convertibles, but had only licensed—temporarily granted the right to use—the patented tops to the latter.[31] Ford sold convertibles with ABR's tops regardless.[32] Aro Manufacturing Company, Inc. ("Aro") produced and sold replacements for the fabric elements of ABR's patented convertible tops and sold them to owners of Ford and General Motors cars.[33] Convertible Top Replacement ("CTR"), which owned the patent in Massachusetts through assignment—meaning CTR bought the exclusive right to use the patent within Massachusetts—sued Aro for contributory infringement.[34] The United States District Court for the District of Massachusetts dismissed CTR's complaint, and the United States Court of Appeals for the First Circuit ("First Circuit") reversed.[35] The Supreme Court reversed, holding that manufacturing and selling unpatented parts of a patented combination does not constitute infringement.[36]

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[25] 365 U.S. 336.

[26] *Gen. Elec. Co.*, 572 F.2d at 782.

[27] *See Aro I*, 365 U.S. at 338–39.

[28] 377 U.S. 476.

[29] *See id.* at 479.

[30] *See infra* notes 31–34 and accompanying text.

[31] *See Aro II*, 377 U.S. at 478–79.

[32] *Id.*

[33] *Id.*

[34] *See id. See generally* 35 U.S.C. § 261 (statutory origin of patent assignment).

[35] *See* Convertible Top Replacement Co. v. Aro Mfg. Co., 119 U.S.P.Q. 122 (D. Mass. 1958); Aro Manufacturing Co. v. Convertible Top Replacement Co., 270 F.2d 200 (1st Cir. 1959).

[36] *See Aro I*, 365 U.S. 336, 344 (1961).

On remand, the district court dismissed CTR's complaint, and the First Circuit reversed.[37] As the First Circuit noted, *Aro I* analyzed the repair-reconstruction issue in the context of licensed General Motors cars and did not substantively address the proper approach for distinguishing repair from reconstruction when the alleged direct infringer lacks a license, as in Ford's case.[38] That is, *Aro I* held that Aro did not commit contributory infringement when it supplied replacement convertible tops to a licensed party, but declined to say whether the holding extended to supplying an unlicensed one.[39]

The Supreme Court answered that question three years later in *Aro II*.[40] Clarifying that *Aro I*'s repair-reconstruction analysis applied only to General Motors—which was licensed to sell the original tops—the Court held that repair amounts to infringement if the item was initially sold without the patentee's license.[41] Therefore, Aro was permitted to sell the unpatented component parts of the patented convertible tops to General Motors car owners because ABR had licensed the tops to General Motors, whereas Aro was potentially liable for contributory infringement for selling them to Ford car owners during the period when ABR had not licensed the tops to Ford.[42]

*Aro I* and *II* remain vital to the modern repair-reconstruction doctrine for two reasons. First, *Aro I* recognized the replacement of individual unpatented parts within a patented combination as legitimate repair.[43] Second, *Aro II*'s clarification regarding the inapplicability of *Aro I* to Ford demonstrates that, in selling a patented combination, any repair-reconstruction analysis is preempted by whether the seller is licensed by the patentee.[44] The *Aro I* and *II* Courts acknowledged three essential elements for the replacement of parts to constitute permissible repair: (1) any replaced elements must be "individual"[45] in nature, such that replacing them entails removing only detachable components instead of creating "'a new article,' after the entity, viewed as a whole,

[37] Aro Manufacturing Co. v. Convertible Top Replacement Co., 312 F.2d 52 (1st Cir. 1962).

[38] *See id.* at 56.

[39] *Id.*

[40] *See Aro II*, 377 U.S. 476, 480 (1964).

[41] *See id.* ("The reconstruction-repair distinction is decisive, however, only when the replacement is made in a structure whose original manufacture and sale have been licensed by the patentee, as was true only of the General Motors cars; when the structure is unlicensed, as was true of the Ford cars, the traditional rule is that even repair constitutes infringement.").

[42] *See id.* at 513–14; 35 U.S.C. § 271(c) (describing the circumstances that amount to contributory infringement).

[43] *See Aro I*, 365 U.S. 336, 346 (1961).

[44] *See Aro II*, 377 U.S. at 480.

[45] *See Aro I*, 365 U.S. at 346.

has [been] spent,"[46] meaning it is no longer useful for its intended purpose, (2) the replaced parts are unpatented,[47] and (3) in the context of selling replacements for the unpatented elements of a patented item, the original seller has the patentee's license to do so.[48]

Accordingly, whereas the Supreme Court has accepted the mere "restoration of [a] machine to the original use for which it was bought,"[49] including the replacement of individual and unpatented parts,[50] reconstructing the article, such that one makes "a second creation of the patented entity," permits the patentee to exercise their right to exclude and sue for infringement.[51] Although the Court has recognized specific requirements to find repair in certain circumstances, neither it nor lower courts have adopted a formal set of criteria to distinguish repair from reconstruction, and have expressed skepticism about doing so, leading to lengthy litigation.[52]

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[46] *Id.* (quoting United States v. Aluminum Co. of Am., 148 F.2d 416, 425 (2d Cir. 1945)) (citations omitted); *see also* Aktiebolag v. E.J. Co., 121 F.3d 669, 673–74 (Fed. Cir. 1997) (deeming defendant's retipping of patented drills as reconstruction because the retipping process required heating the spent tips to 1300 Fahrenheit, "effectively . . . [recreating] . . . the patented invention after it [was] spent").

[47] *See Aro I*, 365 U.S. at 346 (holding that maintaining the use of the whole patented combination by replacing a "spent, unpatented element" did not qualify as reconstruction).

[48] *See Aro II*, 377 U.S. at 480.

[49] *Aro I*, 365 U.S. at 342 (citing Wilson v. Simpson, 50 U.S. 109, 123 (1850)).

[50] *See id.* at 346 (deeming the "replacement of individual unpatented parts, one at a time, whether of the same part repeatedly or different parts successively" as legitimate repair).

[51] *Id. See also* Chisum, *supra* note 1, at § SCG-5114 (citing Bowman v. Monsanto Co., 569 U.S. 278, 287 (2013)) (noting the prevention of patent devaluation through copying, protection of the patent monopoly, and avoidance of chilling innovation by discouraging would-be patentees as the three of the primary bases for disallowing reconstruction).

[52] *See Aro I*, 365 U.S. at 345; Jazz Photo Corp. v. ITC, 264 F.3d 1094, 1106 (Fed. Cir. 2001) (quoting *Aro I*, 365 U.S. at 345) (noting that the Supreme Court has "cautioned against reliance on any specific set of 'factors' in distinguishing permissible [repair] from prohibited [reconstruction]"); Goodyear Shoe Machinery Co. v. Jackson, 112 F. 146, 150 (1st Cir. 1901) ("It is impracticable, as well as unwise, to attempt to lay down any rule on [the line between legitimate repair and illegitimate reconstruction], owing to the number and infinite variety of patented inventions."); *see, e.g.*, Impression Prods. v. Lexmark Int'l, Inc., 581 U.S. 360, 364 (2017) (affirming in part, reversing in part, and remanding the Federal Circuit's decision); *see also* Canon, Inc. v. Color Imaging, Inc., WL 11142457 (N.D. Ga. 2015) (leading to two subsequent district court decisions involving repair); James B. Kobak, Lexmark, *The Overruling of* Mallinckrodt *and The Future of Restraints on Alienation For Patented Goods*, 99 J. Pat. & Trademark Off. Soc'y 609, 620 (2017) (discussing *Lexmark*'s potential impact on single-use restrictions).

### *2. The Federal Circuit's View of the Repair-Reconstruction Doctrine:* Aktiebolag v. E.J. Co.

In *Aktiebolag v. E.J. Co.*,[53] the Federal Circuit grappled with whether the technically complex replacement of drill tips constituted reconstruction or repair.[54] The facts were undisputed: Sandvik Aktiebolag ("Sandvik") held patents on a drill that had a drill tip with a "unique carbide tip geometry," which was not separately patented.[55] Although the drill tip was durable, it naturally dulled with use and required resharpening, which Sandvik expected; the company published instructions on how customers could resharpen it.[56] However, resharpening became impossible after a certain number of times due to the tip being damaged from continued use or being irreversibly worn down, at which point the usefulness of the drill ended unless the tip was replaced.[57] E.J. Company ("E.J."), along with resharpening the tips for customers, offered a re-tipping service involving nearly half a dozen highly technical steps.[58] This service effectively extended the drill's usable life past the point at which Sandvik reasonably expected customers would need to purchase a new one—specifically, when the tip could no longer be resharpened.[59]

Sandvik brought suit, alleging that retipping its drills constituted infringing reconstruction, whereas E.J. argued it was permissible repair.[60] The district court granted E.J.'s motion for summary judgment in part, deeming the retipping lawful repair.[61] Following Sandvik's appeal, the Federal Circuit reversed, holding that re-tipping the drills was reconstruction because it amounted to recreating "the patented invention after it [was] spent."[62]

*Aktiebolag* recognized four considerations for determining whether a defendant's actions constitute creating a new article and, thus, reconstruction.[63] First, the Federal Circuit evaluated "the nature of [the defendant's] actions," referring to the degree of work defendants put into the alleged reconstruction or repair.[64] Second, the court weighed the "nature of the device and how it is designed," including whether the part in question was manufactured

[53] 121 F.3d 669 (Fed. Cir. 1997).
[54] *Id.*
[55] *Id.* at 670.
[56] *Id.* at 671.
[57] *Id.*
[58] *Id.*
[59] *Id.*
[60] Aktiebolag v. E.J. Co., 930 F. Supp. 306, 307 (M.D. Tenn. 1996).
[61] *Id.*
[62] *Aktiebolag*, 121 F.3d at 673. *See Aro I*, 365 U.S. 336, 346 (1961).
[63] *See infra* notes 64–68 and accompanying text.
[64] *Aktiebolag*, 121 F.3d at 673.

to be replaceable and whether it had a "shorter useful life than the whole" article.[65] Third, *Aktiebolag* considered the development, or lack thereof, of a market intended to "manufacture or service the part at issue," which could indicate a "reasonable expectation that the part . . . wears out quickly and requires frequent replacement."[66] Finally, the Federal Circuit utilized "objective evidence" of the patentee's intent to determine if the defendant created a new article—namely, whether the patentee clearly demonstrated that an element was intentionally designed to be replaceable.[67] *Aktiebolag* identified two examples of such evidence: a patentee publishing an instruction manual on removing the element, and manufacturing or selling individual replacement parts.[68]

Moreover, the *Aktiebolag* court considered an article's design as an indicator of the patentee's intent, albeit implicitly.[69] As the court observed, "the drill tip was not manufactured to be a replaceable part," which was evidenced by the tip being neither "*intended* or *expected* to have a life of temporary duration in comparison to the drill shank" nor "easily detachable" from the drill.[70] Therefore, although the Federal Circuit did not explicitly hold as much, it acknowledged that an article's design can indicate a patentee's intent.[71]

## II. Analysis

Although the Supreme Court and Federal Circuit have recognized particular factors to consider in repair-reconstruction cases,[72] neither has established

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[65] *Id.* at 673–74.

[66] *Id.*

[67] *See id.* at 674.

[68] *Id.* (noting that the plaintiff-patentee did not "publish instructions on how to retip its patented drills or suggest that the drills could or should be retipped"). *Cf.* Kendall Co. v. Progressive Med. Tech., Inc., 85 F.3d 1570, 1575 (Fed. Cir. 1996) (in which defendant-appellee's replacement of pressure sleeves in medical devices was permissible repair, partially because the appellant "clearly intended to permit its customers to replace the sleeves" given they actually sold replacement sleeves).

[69] *See id.* at 673–74 (finding that the defendant impermissibly reconstructed plaintiff's drills by re-tipping them due, in part, to the nature of the drill's design as demonstrating that plaintiff-patentee did not "intend[] for its drills to be retipped," thus conveying evidence of its intent).

[70] *Id.* at 674 (emphases added).

[71] *See id.* (utilizing the drill's design—specifically, the absence of an intentional usable-life disparity between the tip and the shank and the tip's non-detachability—as reflecting the patentee's intent); *infra* Section II.A.1 (clarifying what constitutes a usable-life disparity).

[72] *See Aro I*, 365 U.S. 336, 346 (1961); *Aktiebolag*, 121 F.3d at 673.

concrete criteria for determining which factors apply in a given situation.[73] Moreover, whereas the Federal Circuit provided the *Aktiebolag* factors to consider whether the defendant created a new article instead of establishing a repair-reconstruction test, the *Aktiebolag* factors could form the backbone of such a test because the creation of a new article is the essential question of repair-reconstruction analyses.[74] However, although *Aktiebolag* endorses using the given factors to evaluate whether the defendant created a new article after the "device has [been] spent," it is first necessary to determine what constitutes a spent article.[75]

### A. What is a "Spent" Article?

Deciding when an article becomes spent is deceptively simple; using *Aktiebolag* as an example, a "drill [was] 'spent' when the tip [could] no longer be resharpened unless it [was] retipped."[76] Therefore, it appears relatively straightforward that an object becomes spent once it can no longer fulfill the purpose for which it was designed.[77] Though technically accurate, that response contains a hidden complexity: What distinguishes a spent article from a spent element within it—with the latter not necessarily constituting the former? In a word, the answer is the *individuality* of the element in question, meaning the degree to which the element is theoretically separable from the whole article.[78]

However, in contrast to *Aro I*'s unambiguous mandate that any replaced parts be unpatented to constitute lawful repair,[79] the individuality—or lack thereof—of a part can be highly subjective, making it potentially difficult for courts to consistently determine when an object or mere constituent element has been spent.[80] *Aktiebolag*'s drills are once again an apt example: the demanding steps needed to replace a drill tip, such as heating the original to 1300 degrees Fahrenheit, arguably made it and the rest of the drill a single

[73] *See Aktiebolag*, 121 F.3d at 674 ("[T]here is no bright-line test for determining whether reconstruction or repair has occurred.").

[74] *See id.*; *Aro I*, 365 U.S. at 356.

[75] *See Aktiebolag*, 121 F.3d at 673.

[76] *Id.*

[77] *See id.*

[78] That is, although *Aro I* permits the replacement of unpatented parts that are both "individual" and "spent," a part cannot plausibly be considered separately spent without also being sufficiently individualized relative to the whole article. *Aro I*, 365 U.S. at 346.

[79] *See id.*; Wilson v. Simpson, 50 U.S. 109, 123 (1850) (insisting that the "wearing or injury" on an article be partial to entail repair, thus requiring the individualized replacement of damaged parts).

[80] *See infra* notes 81–85 and accompanying text.

article in the sense that the tip was not easily detachable, and the drill had no other useful purpose after the tip's expiration.[81] Or, in other words, the end of the tip's useful life also ended that of the drill.[82] On the other hand, though, determining the individuality of a given element solely based on the work necessary to remove it contradicts *Aro I*'s command that the cost or difficulty of replacing an element should not conclusively weigh in favor of extending patent protection to it.[83] Indeed, *Aktiebolag* recognized that the skill and time necessary to replace the tips were not dispositive factors for deciding between repair and reconstruction.[84] Instead, the Federal Circuit indicated that courts should consider the "totality of the circumstances" in distinguishing lawful repair from illegitimate reconstruction.[85]

Accordingly, because of the noted complexities in determining whether the whole article or merely a component element has been spent, there are two topics that warrant discussion concerning individuality analyses.[86] The first regards the dual factors necessary for evaluating individuality—an element's detachability from the whole and consideration of a usable-life disparity between the two.[87] The second is a theoretical evaluation of distinguishable categories of articles that may prove useful to conceptualizing individuality.[88]

### *1. Detachability and Usable-Life Analyses*

The *Aktiebolag* court noted two subfactors to evaluate as part of the *device's design* consideration: (1) the usable life of the element in question relative to the whole object, and (2) said element's detachability.[89] Clarifying the purpose and scope of these analyses will demonstrate the necessity of their inclusion in repair-reconstruction evaluations, and specifically, their role in determining whether an unpatented element is sufficiently individualized from the whole for its replacement to constitute repair.

It is first important to recognize that *usable life* and equivalent language effectively have two meanings, which could be termed *isolated* and *integrated*. In the *isolated* sense, *usable life* refers to an element's period of functionality,

[81] *See Aktiebolag*, 121 F.3d at 671–74.

[82] *See id.* at 673.

[83] *Aro I*, 365 U.S. at 345 ("No element, not itself separately patented, that constitutes one of the elements of a combination patent is entitled to patent monopoly, however essential it may be to the patented combination and no matter how costly or difficult replacement may be.").

[84] *See Aktiebolag*, 121 F.3d at 672.

[85] *See id.* at 673.

[86] *See supra* notes 81–85 and accompanying text.

[87] *See infra* Section II.A.1.

[88] *See infra* Section II.A.2.

[89] *See Aktiebolag*, 121 F.3d at 673–74.

irrespective of the whole article. In *Wilson v. Simpson*,[90] for example, the Court did not need to consider the rest of a planing machine to note that its knives would have to be replaced after "sixty days to three months" of use to maintain their optimal efficacy.[91]

Conversely, *usable life* in the *integrated* sense includes the context of the element's place within the article. For instance, the *Aktiebolag* court used the *integrated* meaning of language equivalent to *usable life* when it noted that the drill tip at issue "was not intended or expected to have a life of temporary duration in comparison to the drill shank."[92] The court was not claiming that the drill tip, viewed in *isolation*, was expected to last approximately as long as the shank.[93] Instead, the court recognized that Sandvik reasonably anticipated the usefulness of the drill as a whole to expire when the tip could no longer be resharpened; that the useful duration of the shank ended, sans retipping, when the tip's did.[94]

The key difference between the alternative meanings of *usable life* is that the integrated sense implicitly accounts for an element's detachability, or lack thereof. Therefore, the usage of *usable life* in the isolated sense is less meaningful than in the integrated sense, because the latter conveys a more complete picture of the object by implicitly considering an element's detachability. Similar to the respective complexities of the "unpatented" and "individual" requirements for finding repair,[95] the detachability analysis is quite straightforward, whereas the usable-life subfactor is more elusive.[96] The ultimate purpose of usable-life analyses, as described, is to discern whether a disparity exists between the element in question and the whole article, with such a disparity possibly indicating that the part was intended to, or reasonably should, be considered replaceable.[97] For example, the replacements in *Aro I* and *Wilson* were deemed permissible because the parts in question were discernable as

[90] 50 U.S. 109 (1850).

[91] *See id.* at 111.

[92] *Aktiebolag*, 121 F.3d at 674.

[93] *Id.*

[94] *See id.*

[95] *See generally Aro I*, 365 U.S. 336, 346 (1961).

[96] While detachability analyses may pose complexities, they are straightforward in that they focus on a single aspect: an element's separability from the whole. Usable-life evaluations, however, are more intricate. They not only assess an element's lifespan relative to the whole, but also incorporate detachability analyses. That additional layer of complexity makes usable-life evaluations more challenging and context-dependent than detachability examinations.

[97] *See* Wilson v. Simpson, 50 U.S. 109, 125 (1850) (justifying the replacement of a planing-machine's knives because they were "liable to be often worn out or to become inoperative for [their] intended effect, which the inventor contemplated would have to be frequently replaced anew, during the time that the machine, as a whole, might last").

truly *replaceable* elements.[98] Therefore, the convertibles and planing machines in *Aro I* and *Wilson* were plainly not manufactured to be disposed of once their less-durable components expired.[99]

However, not every usable-life disparity between an element and the whole article supports finding the element easily replaceable. The original tips in *Aktiebolag*, for example, certainly had a shorter usable life compared to the drill handle or shank, but excepting technical abilities and specialized resources, the whole reasonably expired when the less-durable part did.[100] The drills in *Aktiebolag* were, therefore, plausibly meant to be considered spent once one could no longer sharpen the original tips, with that conclusion requiring consideration of both the usable-life and replaceability elements.[101] Accordingly, the *Aktiebolag* drills demonstrate how overreliance on the usable-life factor could lead one to an improper result, as the tips had a comparatively shorter usable life next to the other components, but their relative non-replaceability distinguishes the drills from the parts at issue in *Aro I* and *Wilson*, for instance.[102]

Comparing *Aro I* and *Wilson* with *Aktiebolag* thus indicates the proper location of usable-life analyses after the detachability evaluation. Notably, the detachability of the parts in *Aro I* and *Wilson* makes their usable-life disparity relative to their respective whole articles significant.[103] Similarly, the comparatively undetachable quality of the drill tips in *Aktiebolag* renders their usable life disparity with the handle and shank meaningless, since the drills were not manufactured to be disassembled.[104]

Even if a particular element of the whole has a shorter lifespan than the rest, a true disparity between a part and whole can only exist if one considers the part and whole practically separable, meaning the part is detachable from

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[98] *See Aro I*, 365 U.S. at 338 (noting that the convertible tops at issue "so suffer[] from wear and tear, or so deteriorate[] in appearance, as to become 'spent,' and normally [are] replaced, after about three years of use"); *Wilson*, 50 U.S. at 125 (noting as proof of the patentee's contemplation of a usable-life disparity between the knives at issue and the planing-machine, "one of [the] machines, properly made, will last in use for several years," whereas the "cutting-knives will wear out and must be replaced at least every sixty or ninety days").

[99] *See Aro I*, 365 U.S. at 338; *Wilson*, 50 U.S. at 125.

[100] Aktiebolag v. E.J. Co., 121 F.3d 669, 671–72 (Fed. Cir. 1997) (describing the technical steps needed to replace the expired drill tips).

[101] *See id.* at 671.

[102] *See id.*; *Aro I*, 365 U.S. at 338; *Wilson*, 50 U.S. at 125.

[103] *See Aro I*, 365 U.S. at 338; *Wilson*, 50 U.S. at 125.

[104] *See Aktiebolag*, 121 F.3d at 671–72. Although the *Aktiebolag* court "question[ed] the district court's finding that the tip [was], in fact, a separate part" of the drill, it did not deem it necessary to address the issue. *Id.* at 673.

the whole.[105] An easy way to conceptualize practicality is to imagine oneself requesting help: Asking someone to exchange the blades on a planing machine or to replace a convertible top, though potentially hazardous and frustrating in their own ways, fall into a different category of requests than asking them to retip a drill by heating the original tip to 1300 degrees Fahrenheit using an acetylene torch, then "braze[] in a rectangular piece of new carbide onto the drill shank," and "recreate[] the patented geometry of the cutting edges by machining the carbide" through five additional steps.[106] Therefore, although a replacement's perceived difficulty or cost is not dispositive, they serve as exemplary benchmarks for detachability analyses by illustrating the degree to which a given element was designed to be detachable.[107]

Accordingly, over-emphasizing the importance of the detachability subfactor risks overblowing the significance of a replacement's cost or difficulty, just as over-emphasizing the usable-life consideration risks its improper application to a single-object article.[108] Thus, the detachability and usable-life disparity subfactors are necessary for repair-reconstruction analyses because neither captures the totality of considerations needed to evaluate whether a new article was created.[109] Moreover, the usable-life inquiry must follow the detachability analysis, as the presence of a usable-life disparity is only meaningful if the element in question is practically separable from the article.

### *2. The Theory of Individual Elements: Canes versus Axes*

Categorizing objects as falling into two categories may aid in the conceptualization of an element being individual. To borrow iconography from patent law, these classes may be termed *canes*[110] and *axes*.[111]

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[105] One could hardly call the *Aktiebolag* drill tips genuinely separable, for instance, due to the steps necessary for their removal. *See Aktiebolag*, 121 F.3d at 671.

[106] *Aktiebolag*, 121 F.3d at 671–72.

[107] *See id.* at 672 (citing *Aro I*, 365 U.S. at 345).

[108] *See id.*

[109] *See id.* at 673 (acknowledging both factors as elements of the repair doctrine).

[110] *See* Mark D. Janis, *Mr. Nicolson's Cane*, 59 Ariz. L. Rev. 647, 647–50 (2017) (citing City of Elizabeth v. Am. Nicholson Pavement Co., 97 U.S. 126, 133 (1877)) (describing the crucial role Samuel Nicholson's testing of his patented street paving method, which he conducted partially by hitting it with his cane, played in *City of Elizabeth v. American Nicholson Pavement Co.*, creating the experimental use exception to the public-use bar to patentability).

[111] *See* Janis, *supra* note 13, at 424 (quoting FMC Corp. v. Up-Right, Inc., 816 F. Supp. 1455, 1464 n.15 (N.D. Cal. 1993)) (recounting the story of the apocryphal axe, a rendition of the Ship of Theseus thought experiment, in which the owner of an axe proudly proclaims: "This is my great-grandfather's original axe, although the handle has been replaced five times, and the head twice").

*Canes* refer to single-part articles that do not have component elements. For example, a *cane* that lacks decorations or additions constitutes a single, irreducible object. The singularity of such items makes them difficult to analyze under a repair-reconstruction test because the factors utilized to evaluate an element's individuality logically do not apply if the article in question is both practically and technically a single object.[112] Instead, it is sufficient to simply label any replacement regarding a *cane* as reconstruction—because replacing a particular aspect of a cane regards the entirety of the article by definition, such replacement reasonably amounts to recreation of the article itself.[113]

*Axes* refer to articles that are largely considered single-part items but contain distinguishable constituent pieces, such as an axe handle and head.[114] *Axes* constitute the more complicated category because they exist on a spectrum; for example, the planing machines in *Wilson*, the cars in *Aro I* and *II*, and the drills in *Aktiebolag* all constitute *axes*, but the drill bits' non-detachability—and the corresponding absence of a usable-life disparity—distinguishes *Aktiebolag* from the former two.[115] Therefore, the difficulty in determining the individuality of an *axes*' components lies in determining precisely how to delimit the meaning of *individual*, since they are primarily regarded as single units yet contain elements that are removable with sufficient force or skill.[116] However, deciding when an object falls on the *Aktiebolag* side of the *axe*

[112] *See supra* Section II.A.1. The degree to which a distinct element is detachable, and the presence of a useful-life disparity are both plainly inapplicable to *canes*, as such objects do not have parts separable even with significant skill or force. The patentee's intent is irrelevant along similar grounds, as the article remains a singular object regardless.

[113] *Cf. Aro I*, 365 U.S. 336, 346 (1961).

[114] The ultimate issue with replacing elements of certain *axes* is that such replacements may be deemed to be essentially recreating the object itself, as the elements in question seem less like truly distinct parts of a patented whole and more akin to a less durable dimension of a single article. *See Aktiebolag*, 121 F.3d at 673 (regarding defendant's replacement of the drill tips as a "re-creation of the patented invention after it is spent"). Contrast, for example, the evident difference in intended replaceability of an axe with interchangeable axe heads versus an axe with a head welded to the handle; replacing the former's head is plainly anticipated whereas replacing the latter's head arguably constitutes a recreation of the original. *See* Janis, *supra* note 13, at 424.

[115] *See* Wilson v. Simpson, 50 U.S. 109 (1850); Aktiebolag v. E.J. Co., 121 F.3d 669 (Fed. Cir. 1997); *Aro I*, 365 U.S. at 345.

[116] Such complication is furthered by modern technology and the efforts of some companies to hinder self-repair by consumers, involving not only more esoteric tamper proofing parts but blurring the degree to which those parts may be considered detachable. *See* Lloyd Alter, *The Pentalobe Screw, and Apple's War Against Self-Repair*, Treehugger (Oct. 11, 2018), https://www.treehugger.com/the-pentalobe-screw-and-apples-war-against-self-repair-4857481 [https://perma.cc/29KP-QBGJ].

spectrum, such that extracting and replacing an element from it constitutes the creation of a new article, and thereby reconstruction, must not depend on examination of the force or skill necessary to separate the element.[117] Instead, that decision depends on a fact-intensive individuality analysis by utilizing the detachability and usable life.[118]

### B. Clarifying the Patentee's Intent Factor

*Aktiebolag* offers "objective evidence" of a patentee's intent and a device's design as distinct considerations when deciding whether a defendant created a new article.[119] However, a device's design arguably constitutes implicit evidence of the patentee's intent, warranting its relocation under the *patentee's intent* factor.[120] Including a device's design under the umbrella of the patentee's intent element supports clarifying the nature of implicit versus explicit evidence of the patentee's intent.[121]

Including a device's design, the factors within the patentee's intent evaluation are divisible as *implicit* and *explicit* evidence. Explicit evidence refers to undeniable demonstrations of the patentee's contemplation of parts as replaceable or not, such as selling unpatented replacements for the parts at issue and overtly identifying a part as non-replaceable, respectively.[122] Meanwhile, implicit evidence—such as a device's design—arguably, but does not necessarily, speak to the degree to which the patentee intended for a part to be replaceable.[123]

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[117] *See Aro I*, 365 U.S. at 345.

[118] *See Aktiebolag*, 121 F.3d at 673–74 (suggesting an element's detachability, the existence of a sufficient usable life disparity between it and the whole article, market formation for the part in question, and the patentee's explicit intent as the factors to use in determining whether the defendant created a new article).

[119] Aktiebolag v. E.J. Co., 121 F.3d 669, 673 (Fed. Cir. 1997).

[120] *See id.* at 673–74 (analyzing the "device's design" factor as conveying the patentee's intent).

[121] *See infra* notes 122–129 and accompanying text.

[122] *See supra* note 68 and accompanying text (describing *Aktiebolag*'s consideration of a patentee selling replacement parts as evincing their intent for consumers to replace those parts).

[123] For example, the design of the planing machine's knives in *Wilson* arguably warranted the conclusion that the patentee intended for them to be replaceable, as they were both easily detached and had a shorter usable life compared to the rest of the machine. *See* Wilson v. Simpson, 50 U.S. 109, 125 (1850). However, consideration of the device's design as only implicit evidence of the patentee's intent is warranted by the potential for patentees to make parts more or less replaceable than they intended or otherwise indicated. Hypothetically, for instance, the presumption that the knives in *Wilson* were intended to be replaceable may have been countered by evidence that the relative usable life and detachability of the knives were unintentional. *See id.*

Although the *implicit* and *explicit* categorizations themselves are relatively uncomplicated, their consideration must be balanced to avoid unwanted results. For one, explicit evidence of the patentee's intent is, reasonably, only relevant if it is present, since its occurrence constitutes positive evidence of the patentee's intent, whereas its non-occurrence does not.[124] Moreover, failing to disregard the explicit factors when they do not happen would create absurd results. For instance, take a scenario in which the device's design evaluation greatly supports the defendant in that the part at issue is highly detachable, and there is a significant usable-life discrepancy between it and the whole article. The mere non-occurrence of an explicit factor, such as the patentee not selling instructions on how to replace the part, does not detract from the replaceability of the part itself, and thus should not control the *patentee's intent* evaluation. In other words, accepting evidence that a patentee clearly intended for a given part to be replaceable is supported by the patentee reasonably knowing that their conduct would signal as much to consumers, but the absence of such evidence is justifiably unimportant, because it indicates only the patentee's neutrality on the replaceability of a part, at least facially.

The presence of explicit evidence could even override the *device's design* examination. For example, if a given part were quite non-detachable and no notable usable-life disparity existed between the part and whole, then there is no significant gap between the respective useful periods of a part and the whole item.[125] Although those determinations would plainly benefit the patentee, explicit evidence that the patentee *intended* for the part to be more replaceable than the evaluation of a device's design might suggest counters that implicit evidence. For example, introducing explicit evidence that the part was intended to be replaceable, such as the patentee selling replacements for it and publishing instructions on how to do so, counters the conclusion that the patentee intended for it not to be replaceable, as presumed based on the implicit evidence.[126]

To illustrate the proper balancing between *implicit* and *explicit* evidence, consider a contrived scenario where the analysis of a device's design favors the defendant, but the patentee explicitly identifies the part as non-replaceable. For instance, imagine the facts of *Wilson*, but with the added detail that the patentee states expressly in a manual—only accessible after purchase—that

[124] For example, while a patentee publishing instructions on how to exchange a given element qualifies as explicit evidence of their intent to allow such replacement, the non-publication of said instructions only amounts to the patentee's silence on the matter. *See Aktiebolag*, 121 F.3d at 674.

[125] *See supra* Section II.A.1.

[126] *See Aktiebolag*, 121 F.3d at 674 (observing the non-occurrence of both factors as supporting the conclusion that the patentee did not intend for the drill tips to be replaced).

the knives were not meant to be replaceable.[127] This scenario contains two opposing pitfalls. On the one hand, ignoring the patentee's explicit statement as a post-sale restraint overlooks a crucial nuance: the given statement is not offered here for the sake of binding a consumer to a post-sale restraint, such as preventing the replacement of worn-out knives—that falls outside of the patent monopoly. [128] Instead, the statement merely indicates the patentee's intent regarding the knives' non-replaceability. Thus, one conducting a repair-reconstruction analysis would err by immediately dismissing a single-use restriction when, for example, the patentee seeks not to enforce the restriction itself but merely to illustrate their intent concerning the part's non-replaceability.

However, granting excessive deference to the patentee's explicit intent risks absurd results, even if a statement is only offered to indicate intent. For example, it is easy to imagine instances in which deeming reconstruction the replacement of an exceedingly detachable part with a pronounced usable-life disparity compared to the whole would be ludicrous.[129] Simply put, explicit evidence of the patentee's intent should generally override implicit evidence of their intent, but the non-occurrence of the former should not refute the latter, nor should that general principle support incontrovertible deference.

### C. The Value of a Repair-Reconstruction Test

Although the value of a multifactor repair-reconstruction test may seem diminished by the inevitable "deep dive into the facts" relevant cases require—meaning courts need to analyze the factual record extensively—there are several reasons why adopting such a test is necessary.[130]

The first reason for adopting an established procedure for repair-reconstruction cases is the benefit of streamlining reconstruction-repair analyses. Particularly since the dichotomy continues to dominate certain cases, especially among the district courts, cementing a formal approach for handling when a defendant's actions constitute reconstruction or repair would prevent wasting time on unnecessary analyses.[131] For example, adopting a repair-

[127] *See Wilson*, 50 U.S. at 109.

[128] *See* Impression Prods. v. Lexmark Int'l, Inc., 581 U.S. 360, 370 (2017).

[129] If, for instance, the *Aktiebolag* drills contained built-in gaps for interchangeable drill bits. *See Aktiebolag*, 121 F.3d at 671.

[130] Varex Imaging Corp. v. Richardson Elecs., Ltd., U.S. Dist. LEXIS 144935, 13 (N.D. Ill. 2019). *See also* Standard Havens Prods. v. Gencor Indus., 953 F.2d 1360, 1376 (Fed. Cir. 1991) (deeming repair-reconstruction analyses as warranting evaluation "case by case based on all the circumstances").

[131] *See Standard Havens Prods.*, 953 F.2d at 1376; Karl Storz Endoscopy-America, Inc. v. Steris Instrument Mgmt. Servs., 603 F. Supp. 3d 1111 (N.D. Ala. 2022); Alpha Res., Inc.

reconstruction test with preliminary questions for easily finding repair or reconstruction would remove the need for a "deep dive into the facts" of the case for the same ultimate result.[132] Another notable reason in favor of adopting a repair-reconstruction test is that the doctrine currently lacks an established route of analysis—not merely anything approaching a multifactor test, but quite literally what to examine when distinguishing between repair and reconstruction.[133] Repair-reconstruction analyses therefore proceed in halting, haphazard fashion, with some courts paying almost exclusive deference to *Aktiebolag*,[134] while others utilize a relatively comprehensive sweep of the doctrine's caselaw.[135]

Thus, although the Supreme Court and lower courts have reason to be cautious about a set repair-reconstruction test, the risks of inconsistent analyses are far greater to both consumers and patentees than the occasional erroneous result.[136] Moreover, any potential misgivings about a set repair-reconstruction test are further reconciled by the accepted inevitability of altering the test as cases demonstrate potential flaws.

## III. Proposal

The Federal Circuit can avoid the potential ramifications of leaving the repair-reconstruction doctrine unchanged by adopting a standardized approach with the flexibility to apply to any patent, yet the rigidity to provide a set procedure for relevant cases.[137] The first two steps of this approach ask preliminary questions that support outright findings of repair and reconstruction, respectively: whether parts were not replaced, and whether any replaced parts were patented. The third step incorporates *Aro I*'s fundamental requirements for finding permissible repair—that the parts replaced are "individual," as opposed to constituting the article's recreation—and the factors *Aktiebolag* utilized to determine as much.[138]

v. Leco Corp., WL 7542435 (W.D. Mich. 2016).

[132] *Varex Imaging Corp.*, LEXIS 144935 at 13.

[133] *See id.*

[134] *See id.*

[135] *See Karl Storz Endoscopy-America*, 603 F. Supp. 3d at 1122–25.

[136] *See* Jazz Photo Corp. v. ITC, 264 F.3d 1094, 1106 (Fed. Cir. 2001) (observing the Supreme Court's hesitance to adopt a firm repair-reconstruction test); Goodyear Shoe Machinery Co. v. Jackson, 112 F. 146, 150 (1st Cir. 1901).

[137] *See* discussion *supra* Section II.C.

[138] *Aro I*, 365 U.S. 336, 346 (1961); *Aktiebolag*, 121 F.3d 669, 673–74 (Fed. Cir. 1997).

### A. Step One: Did Replacement Occur?

The first step concerns perhaps the most basic question for any repair-reconstruction analysis: did the supposed repair or reconstruction involve replacing an article's elements? The question is fundamental, as the lack of replacement supports an easy finding of repair due to the predicative distinction between repair and reconstruction—whether a new article was created—itself depends on whether the defendant introduced any non-original parts to the article, either by replacement or addition.[139] For instance, a defendant's tightening of a loose bolt on an article would doubtlessly be considered repair, since one cannot seriously allege that anything was done to "in fact make a new article."[140] Awareness of that bar, whether by popular intuition or legal advice, arguably contributes to why repair-reconstruction cases "rarely reside at the poles" wherein the two are "readily distinguished."[141] Therefore, although such cases are rare,[142] it is worthwhile for a repair-reconstruction test first to dismiss as repair any case in which replacement was not present and the article in question contained multiple parts.[143]

Moreover, this step is the appropriate place for *cane* repair-reconstruction cases to diverge from the remainder of the test, as replacement of a part is largely impossible, or obviously reconstruction, if the part and whole are the same.[144] The crucial question for resolving *cane* cases is to ask whether the defendant's actions are more akin to replacing an element that was clearly not designed as replaceable, trending toward reconstruction, or if they appear closer to mere restoration of the original article, trending toward repair.[145]

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[139] *See id.* at 343.

[140] *Id.* (quoting United States v. Aluminum Co. of Am., 148 F.2d 416, 425 (2d Cir. 1945)).

[141] Jazz Photo Corp. v. ITC, 264 F.3d 1094, 1102 (Fed. Cir. 2001).

[142] *See id.* at 1104 (largely citing cases involving replacement).

[143] That is not to say determining whether replacement occurred is simple; indeed, likely the most difficult repair-reconstruction cases arise from circumstances in which replacement is more arguable than a defendant merely fixing an article without introducing anything more than the security of a tightened bolt. *See, e.g.,* Bottom Line Mgmt. v. Pan Man, Inc., 228 F.3d 1352, 1356–57 (Fed. Cir. 2000) (determining that the reapplication of a non-stick coating to an article was repair, thus implicitly deciding whether such reapplication constituted replacing the original). Instead, it is to suggest that the nonoccurrence of replacement as a question of fact should lead to a finding of repair.

[144] One cannot replace part of an irreducible object and, to the extent one could, such as by purposefully snapping off the original handle of a cane and somehow putting on another, a finding of reconstruction is reasonable.

[145] *See Aro I*, 365 U.S. 336, 342 (1961) (citing Wilson v. Simpson, 50 U.S. 109, 123 (1850)).

### B. Step Two: Were the Replaced Parts Unpatented?

Replacement of patented elements with parts sold by a third party supports an easy finding of reconstruction.[146] However, replacing patented elements with parts sold by the patentee supports the creation of a narrow caveat to the general rule for two primary reasons.[147] First, deeming the replacement of patented elements permissible repair only when the patentee sells them would encourage patentees to produce such parts, benefitting consumers by allowing them to permissibly replace patented components, extending the product's useful life. Second, creating a "sold-by-patentee" exception to the prohibition on replacing patented components would not encroach on the patent monopoly, because patentees would retain exclusive control over their patents. Moreover, to the extent that such an exception did impact the patent monopoly, it would be expansive, since patentees would only be able to decide one way or the other without risking their right to exclude third-party replacements for patented elements.[148]

### C. Step Three: Were the Replaced Parts Individualized?

Replacement of unpatented elements,[149] or patented parts for which the patentee produces replacements, leads to step three of the proposed test, concerning whether such parts were individual or instead

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[146] *See Wilson*, 50 U.S. at 123–124 (justifying prohibiting replacement of patented parts).

[147] The given exception is not mutually exclusive with other proposals regarding the right to repair. For an overview of recent developments regarding the recognition of a broad right to repair, see Irene Calboli, *The Right to Repair: Recent Developments in the USA*, WIPO Magazine (Aug. 2023) https://www.wipo.int/wipo_magazine_digital/en/2023/article_0023.html [https://perma.cc/AY8W-W5K6]. Instead, the sold-by-patentee exemption solely concerns the replacement of patented elements, whereas the campaign for the right to repair regards replacing unpatented parts. *See id.*

[148] That is, patentees would be given the ability to decide whether to produce replacement parts for their patented elements, in which case they would be the sole vendor, or decline to produce them, in which case any replacement parts would remain reconstruction. Notably, would-be purchasers and licensees would also only gain from this arguable expansion of the patent monopoly, as third-party replacements for patented components constitute infringement regardless, whereas each would gain the ability to legitimately repair articles for which the patentee produced patented replacement parts. *See Aro II,* 377 U.S. 476 (1964).

[149] The replacement of unpatented elements is noted as straightforward for the purpose of the proposed repair-reconstruction test, but patentees have numerous ways of blocking and delaying the implementation of such replacements. *See* Aaron Perzanowski, *Consumer Perceptions of the Right to Repair*, 96 Ind. L.J. 361, 369–70 (2021) (noting that companies "tightly control access to diagnostic tools necessary to identify malfunctions" and that software enables corporations to require the "authentication" of replacement parts before the article accepts them).

"effectively . . . [recreated] . . . the patented invention after it [was] spent."[150] As noted, *Aktiebolag* identified the patentee's intent, the defendant's actions, the device's design, and market formation when asking whether the defendant created a new article.[151] However, a repair-reconstruction test may successfully utilize the court's factors because of that question's central importance to repair-reconstruction analyses. The essential question behind whether a defendant creates a new article, whether the replaced part is "individual"[152] or instead "make[s] a new article," can thus be satisfactorily answered using the *Aktiebolag* factors.[153]

The Federal Circuit discusses the device's design as a distinct factor, but as observed above, it functions better as a subpart of the "patentee's intent" factor since the design of an article logically speaks to the patentee's intent,[154] and the court has already used it for that purpose.[155] Application of the given test should, therefore, analyze the device's design under that presumption, granting patentees the opportunity to counter the assumption and creating a more streamlined repair-reconstruction analysis by folding a device's design into the *patentee's intent* factor.[156] The presumption that the device's design conveys the patentee's intent leaves the latter, the defendant's actions, and market formation as the three factors to analyze when determining whether the replaced part is sufficiently "individual."[157]

#### *1. Step Three (A): The Patentee's Intent*

The Federal Circuit's criteria under the device's design element—the "detachab[ility]" of the part and its usable life relative to the whole article—warrant retention as implicit considerations, due to their relevance to the broader repair-reconstruction test.[158] In *Wilson*, for instance, the element in question was deemed sufficiently detachable from the whole article and there was a useful-life disparity between the element and the whole, overriding the patentee's proffered intent.[159] Likewise, *Aktiebolag* contains comparable facts to

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[150] Aktiebolag v. E.J. Co., 121 F.3d 669, 673 (Fed. Cir. 1997).

[151] *See id.*

[152] *Aro I*, 365 U.S. 336, 346 (1961).

[153] *Id.* (quoting United States v. Aluminum Co. of Am., 148 F.2d 416, 425 (2d Cir. 1945)).

[154] *Aktiebolag*, 121 F.3d at 673.

[155] *See id.* (discussing plaintiff-patentee's drill-tip design as indicating that it was not "manufactured to be a replaceable part," thus implicitly conveying their intent).

[156] *See infra* Section III.C.1.

[157] *Aro I*, 365 U.S. at 346.

[158] *Aktiebolag*, 121 F.3d at 674.

[159] *See* Wilson v. Simpson, 50 U.S. 109, 123, 125 (1850) (describing the equivalent of the former by acknowledging the permissibility of replacing a part when the "wearing or injury is partial," thus not regarding the whole article by definition, and the equivalent of

*Wilson*, with the exception of the detachability factor switching from opposing the patentee's submitted intent to supporting it.[160] Therefore, *Wilson* and *Aktiebolag* support the notion that the patentee's submitted intent should control unless the relative duration and detachability of the component in question both oppose it.[161]

Moreover, Federal Circuit precedent supports recognizing two explicit considerations under the patentee's intent, wherein the key question is whether the patentee, in fact, suggested that the part at issue could or should be replaced by the purchaser: whether the patentee sold individual replacement parts[162] and whether the patentee indicated, through some other action, that it contemplated their replacement.[163]

### *2. Step Three (B): Defendant's Actions*

Step Three then considers whether the defendant created a new article by evaluating their actions. The previous analysis of the detachability and relative duration of a part is relevant to this factor, though with more focus on the defendant's perspective instead of the patentee's intent.[164] For example, this factor's application is the appropriate place to weigh the relative complexity of a given article, since such complexity is necessarily tied to the identity of the defendant, particularly with respect to highly technical devices.[165] In addition, these alterations require more preparation and steps taken to achieve the end goal, justifiably indicating the defendant's contemplation of their actions and the possibility that it constitutes reconstruction.[166]

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the latter in terms of legitimately replacing a part that must be "frequently replaced anew, during the time that the machine, as a whole, might last").

[160] *See Aktiebolag*, 121 F.3d at 673 (describing the time- and skill-intensive steps defendants had to take to affix a new drill tip).

[161] *See id.*; *Wilson*, 50 U.S. at 123.

[162] *See Aktiebolag*, 121 F.3d at 674 (quoting Kendall Co. v. Progressive Med. Tech., Inc., 85 F.3d 1570, 1575 (Fed. Cir. 1996)) (noting plaintiff-patentee's sale of replacement parts as "clearly intend[ing] to permit its customers to replace" the components).

[163] *See id.* (noting that plaintiff-patentee "did not publish instructions" guiding the replacement of the part at issue as evidence that the patentee did not indicate it was replaceable).

[164] *See* discussion *supra* Section III.C.1.

[165] *See Aktiebolag*, 121 F.3d at 674. For instance, whereas the plaintiff-patentee's product in *Aktiebolag* certainly reached a wide consumer base, there was still "no evidence of large numbers of customers" altering the product as the defendant did, nor of many companies other than the defendant offering to do so for them, therefore speaking to the nature of the defendant's actions relative to their peers. *Id.*

[166] That is, the longer a defendant spends separating a given element from the whole article, the longer they have to realize that the patentee may not have meant for the part to be replaceable. Once more, the court's consideration of the highly complex steps taken by the defendants in *Aktiebolag* support that reasoning. *See id.*

### *3. Step Three (C): Market Formation*

The final factor utilized by the proposed repair-reconstruction test, market formation, is also the least significant. Given the "number and infinite variety of patented inventions," many are esoteric or merely serve too small a consumer base to merit serious consideration of market formation as significant.[167] For example, no notable market formed for the replacement parts partially at issue in *General Electric Co. v. United States*,[168] a United States Court of Claims case concerning the Navy's "overhauling" of patented naval gun mounts, but that is plausibly due to the complex nature of the technology in question.[169] Therefore, although the formation of a market may indicate the part's replaceability, the lack of one should not be deemed indicative of the part's irreplaceability, as *Aktiebolag* suggests.[170]

## Conclusion

Although the Supreme Court and Federal Circuit have identified various approaches to replacing parts of patented combinations as permissible repair or impermissible reconstruction,[171] there is no formal test for resolving when such replacement constitutes one or the other.[172] However, precedent in both courts, and the factors utilized by the Federal Circuit in *Aktiebolag* to evaluate whether the defendant in that case created a new article, support the establishment of a set repair-reconstruction test.[173] That test, constituted by two preliminary inquiries and an analysis of whether replaced parts were sufficiently individualized using a streamlined version of the *Aktiebolag* factors, coheres with precedent, settles an unresolved question in patent law, and would prevent costly and time-consuming litigation.[174]

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[167] *See* Goodyear Shoe Machinery Co. v. Jackson, 112 F. 146, 150 (1st Cir. 1901).

[168] 572 F.2d 745 (1978).

[169] *See id.* at 783. Highly complex machinery, such as naval guns, predictably inspire a smaller market relative to less technical and more-widespread products.

[170] *See Aktiebolag*, 121 F.3d at 673 (emphasis added) (noting "whether a market *has* developed to manufacture or service the part at issue" as a consideration when evaluating if a new article was created).

[171] *See supra* notes 16–22 and accompanying text.

[172] *See Aktiebolag*, 121 F.3d at 673–74 ("[T]here is no bright-line test for determining whether reconstruction or repair has occurred.").

[173] *See id.* at 673 (listing the "factors in determining whether a defendant has made a new article").

[174] For an early look at this question, see William Lesser, *Bowman v. Monsanto and Self-Replicating Seeds; David v. Goliath or Don Quixote v. Windmills?*, 13 J. High Tech. L. 508 (2013).

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