NO. 16-712

In the Supreme Court of the United States

OIL STATES ENERGY SERVICES, LLC,

Petitioner,

v.

GREENE'S ENERGY GROUP, LLC, ET AL.,

Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF OF AMICI CURIAE GARY LAUDER, PAUL MORINVILLE, ROBERT SCHMIDT, NATIONAL SMALL BUSINESS ASSOCIATION, SMALL BUSINESS TECHNOLOGY COUNCIL, UNITED INVENTORS ASSOCIATION, MCM PORTFOLIO LLP, SUMVENTURES GROUP, LTD., ACCESSIS LLC, FLOCEL INC., GREAT LAKES NEUROTECHNOLOGIES, MONASHEE MARKETING, AND NEUROWAVE SYSTEMS, POWERTOOL INNOVATION SUPPORTING PETITIONER

J. Carl Cecere
Counsel of Record
CECERE PC
6035 McCommas Blvd.
Dallas, TX 75206
(469) 600-9455
ccecere@cecerepc.com

Counsel for Amici Curiae

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Cases

Constitutional Provisions

Statutes and Regulations

Legislative Materials

Other Authorities

INTEREST OF AMICI CURIAE[1]

Amici, who are listed in the attached appendix, include inventors, venture capitalists, angel investors, small-business owners, and advocacy organizations, all of whom have first-hand experience with America's patent system. Their ranks include people who have spent substantial portions of their lives working to ensure that the very real flaws in that system are addressed, but in a manner that preserves the features that have made that system one of the driving forces of the world's most powerful economy. Some have also personally spoken out against the administrative regime at issue in this case.[2] *Amici*'s extensive experience with that administrative system, its place within the larger U.S. patent system, and the ties between both and the health of the American economy, make them well situated to explain the importance of the issues presented in this case.

---

[1] Petitioner and the private respondents have lodged letters with the Court consenting to the filing of amicus curiae briefs in support of either party. The Solicitor General has consented to the filing of this brief in a letter that has been filed along with the brief. No counsel for any party authored this brief in whole or in part, and no entity, other than amici, their members, or their counsel, made a monetary contribution to the preparation or submission of this brief.

[2] E.g., Gary Lauder, *New Patent Law Means Trouble for Tech Entrepreneurs*, Forbes, Sept. 20, 2011, <http://onforb.es/1Z8Yj0b>; Paul Morinville, *How patent laws are harming children and America's innovative future*, IPWatchdog Blog (Mar. 26, 2016), <http://bit.ly/1VqYZis>; *Hr'g Before the Senate Small Bus. & Entrepreneurship Comm.* (Mar. 19, 2015), <http://1.usa.gov/1snX17d> (testimony of Robert N. Schmidt, Small Bus. Tech. Council).

SUMMARY OF THE ARGUMENT

Defenders of the inter partes review (IPR) procedure that Congress created in the Leahy-Smith America Invents Act, Pub. L. 112-29, 125 Stat. 284 (2011) always rely on a common premise: that patents are a matter of administrative largesse, mere "public rights" to be granted or revoked in any manner the government sees fit. This meager conception of patent rights contravenes centuries of English jurisprudential tradition, which guards patents as one of the most fundamentally important forms of private property, to be revoked only under the disinterested eye of a court at law, with access to a jury to resolve any fact disputes. Our constitutional understanding under both Article III and the Seventh Amendment is built on these traditional foundations, and thus in our system, patents can only be revoked in Article III courts with access to a jury. Subjecting patent owners to IPR's administrative procedures thus violates their constitutional rights.

This view of patent rights as creatures of purely federal creation is likewise incomplete. Inventors enjoy property rights under state law in their inventions from the moment they conceive of an idea. These may take the forms of trade secrets or other categories of confidential, proprietary information receiving legal protection. These rights exist in the invention regardless of whether a patent is ever obtained. Patents merely augment and reinforce these rights with greater power to exclude others from using the invention.

Yet these legal rights become irrevocably connected to the patent once granted, and their existence tied to its fate. These rights lose independent significance the moment the patent is granted and the invention is disclosed,

destroying the secrecy needed for their independent enforcement. Invalidating a patent post-grant thus represents more than the loss of the patent's exclusivity guarantee. It also means the irretrievable loss of these other rights that preceded the patent's existence. As these rights do not owe their existence to the Patent Act—or any other federal law—they cannot be considered "public rights." Congress cannot permit these rights to be revoked through IPR's administrative procedure and remain faithful to patent owners' rights under Article III or the Seventh Amendment.

IPR's unfair, uncertain, and burdensome procedures also impose more practical kinds of harms on patent owners. In the uphill battle of innovation, patents level the playing field for upstarts against their better-armed competitors, and are key to inducing others to take chances on new ideas. The company founders that must leave safe jobs, investors who risk total losses, and early customers who hitch their businesses—and their reputations—to unproven products, all stake their livelihoods on the stability that meaningful patent protection provides. Congress's creation of IPR harms all these participants in the innovation marketplace by introducing expense and uncertainty into *all* patents, measurably diminishing their utility as a durable asset on which new businesses, new industries—and indeed, the entire American economy—all depend.

The necessity of affirming the vital property interests at stake in this case, recognized since before the Founding, requires that IPR be struck down as unconstitutional. And the need to protect future innovators, entrepreneurs, and property owners counsels in favor of doing so in a manner that will halt Congress's progression toward bu-

reaucratizing the business of adjudicating private property rights—a trend in which IPR is only the most recent, and most malign development. Halting that trend will protect patent owners' rights under Article III and the Seventh Amendment. It will realign U.S. patent law with the Court's precedents, the Constitution, and the Anglo-American traditions that guided the Founders. And it will protect patents as the engine of the greatest economy the world has ever known.

ARGUMENT

I. IPR violates precedent and common law traditions mandating that patent owners' property rights be protected by courts of law and juries.

Defenses of IPR's transfer of power from judges and juries to the political appointees of the PTAB always flow from a single faulty premise: that "patent rights 'exist only by virtue of statute,'" Gov't Br. in Opp. at 10 (quoting *Sears, Roebuck & Co.* v. *Stiffel Co.*, 376 U.S. 225, 229 n.5 (1964)); *see also MCM Portfolio LLC* v. *Hewlett-Packard Co.*, 812 F.3d 1284, 1290 (Fed. Cir. 2015) ("The patent right 'derives from a federal regulatory scheme,' *** and is created by federal law." (quoting *Stern* v. *Marshall*, 564 U.S. 462, 490 (2011)); Greene's Br. in Opp. 8 (quoting *MCM Portfolio*, 812 F.3d at 1290). To IPR's defenders, this makes patents "quintessential public rights," Gov't Br. in Opp. at 9, Greene's Br. in Opp. at 7, to be revoked in any manner Congress sees fit. This idea is fundamentally at odds with the historical roots of patent rights, which establish patents for inventions to be "as much property as a patent for land." *Consolidated Fruit Jar Co.* v. *Wright*, 94 U.S. 92, 96 (1876). That makes them quintes-

sentially *private*, and, in the Anglo-American judicial tradition, requires that they be protected by courts of law and juries.

U.S. patents on inventions are the direct descendants of a broader family of English patents, whereby the Crown conferred various monopolies on favored subjects. In English practice, actions for patent infringement were adjudicated in the courts, where any factual determinations related to the patent's validity were decided by juries. *See Markman* v. *Westview Instruments, Inc.*, 52 F.3d 967, 992–993 (Fed. Cir. 1995) ("An action for patent infringement is one that would have been heard in the law courts of old England **** In such cases, the jury has been entrusted with ruling on the ultimate question of infringement, as well as any factual disputes that arise subsidiary to the determination of the legal question of patent validity." (Mayer, J., concurring) (internal quotation omitted)). In English infringement proceedings however, determinations regarding the patent's validity were personal to the parties, and did not foreclose the patentholder from later asserting the patent against other infringers.[3]

Yet procedures to permanently revoke patents were also available in England. Until the late Eighteenth Century, such revocations were conducted by the Privy Council, because patents were seen as a royal prerogative, to be given and taken away by the King's grace, under a right the Crown reserved for itself under a specification within the patent itself. In such proceedings, the Privy Council

---

[3] Compare *Arkwright* v. *Mordaunt* (1781) (unreported) (cited in *Rex v. Arkwright*, Dav. Pat. Cas. 61, 69 (C.P. 1816) (finding specification insufficient), with *Arkwright* v. *Nightingale*, Dav. Pat. Cas. 37, 37-39, 60 (C.P. 1785) (finding specification of the same patent sufficient).

served as the King's representative. Oren Bracha, *Owning Ideas: The Intellectual Origins of American Intellectual Property, 1790–1909* 21–22 (2016).

Over time, however—and by the Founding of the United States Constitution—patent revocation came to be understood as a matter that should be decided in courts at law. As early as 1602, in *Darcy* v. *Allen* (also known as the *Case of Monopolies*), "none of the parties disputed that the common law court had jurisdiction to decide the validity of the patent." Bracha 33. That case dealt with a different sort of patent—a monopoly right to manufacture and import playing cards. But it embodied a trend toward adjudication of patent validity in the courts.

By the time the Statute of Monopolies was enacted in 1624, it had become understood that the revocation of patents could *only* be done in common law courts. The Statute of Monopolies declared that "all monopolies, *and all* *** *letters patents* *** shall be "examyned heard tryed and determined by and accordinge to the Cōmon Lawes of this Realme & not otherwise." 21 Jac.1, c. 3, § 2 (emphasis added). If the power to revoke patents was considered a royal prerogative before that statute's enactment, it could no longer be so after that point. To be sure, the Privy Council continued to *assert* the King's prerogative to revoke patents even after the Statute of Monopolies came into force, but it exceeded its constitutional powers in doing so. E. Wyndham Hulme, *Privy Council Law and Practice of Letters Patent for Invention from the Restoration to 1794,* 33 L.Q.R. 63, 181 (1917). And as two historians, Thomás Gómez-Arostegui and Sean Bottomly have demonstrated through an extensive historical analysis, revocation proceedings in the Privy Council gradually fell out of favor, and occurred only rarely by the end of the

Eighteenth Century. *See Br. for H. Thomás Gómez-Arostegui and Sean Bottomley as* Amici Curiae *in Support of Neither Party* at 33–37, No. 16-712.

By that time, the overwhelmingly dominant procedure for revoking a patent had become the writ of *scire facias*, essentially a common law writ to show cause why a patent should not be annulled. 4 Edward Coke, *Institutes of the Law of England*, Cap. 8, 79 (1853). A writ of *scire facias* was normally filed in Chancery, *ibid.*—but at that time, Chancery heard both equity cases and certain limited legal matters, and patent revocation proceedings took place only in the law side. H. Tomás Gómez-Arostegui, *The Untold Story of the First Copyright Suit under the Statute of Anne in 1710*, 25 Berkeley Tech. L.J. 1247, 1332–1334 (2010). The Chancery forum was a natural choice, as it was the location of the Petty Bag, where patent records were held. *United States* v. *Am. Bell Tel. Co.* (*American Bell II*), 167 U.S. 224, 360 (1897). In such proceedings, invalidity was one of three grounds for revocation, along with double patenting and fraud. *Mowry* v. *Whitney*, 81 (14 Wall.) U.S. 434, 440 (1871).

Chancery lacked the power to empanel juries, but patentees nevertheless were ensured the right to trial by jury in *scire facias* proceedings.[4] Chancery's sole role was to consider the pleadings and decide whether equitable relief was appropriate. Jones, *supra* note 4 at 887. But if the case could not be disposed of on the pleadings, and a party

---

[4] John Paxton Norman, *The Law and Practice Relating to Letters Patent for Inventions* 149 (1853); W. I. Jones, *An Introduction to Petty Bag Proceedings in the Reign of Elizabeth I*, 51 Cal. L. Rev. 882, 886-87 (1963).

demanded trial by jury, the case would then be transferred to the King's Bench, a court that possessed the power to empanel juries. *Ibid.*[5] Once the jury returned a verdict, the case would be transferred back to Chancery, and "the verdict of the jurors at law determin[ed] the fact" for the proceeding initiated in that forum. 3 William Blackstone, *Commentaries on the Law of England* 452 (1768). Thus in England, while courts in equity could decide *certain* matters in *scire facias* proceedings, such as whether to award injunctive relief, the patent could not actually be revoked without providing the patentholder with the core protection of a common law court: the right to a jury.

Accordingly, as the "thrust of the [Seventh] Amendment was to preserve the right to jury trial as it existed" in England "in 1791," *Curtis* v. *Loether*, 415 U.S. 189, 193 (1974), and Article III prevents the "subject of a suit at the common law" from being withdrawn from the federal courts, *Stern*, 564 U.S. at 484 (quoting *Murray's Lessee* v. *Hoboken Land & Improvement Co.*, 18 How. 272, 284 (1855)), then at the Founding of the Republic, the use of juries and courts of law in patent validity cases went from being a traditional English practice to become a constitutionally protected American one.

---

[5] *See also* Norman 203 n.15 ("The Chancellor, though a common law judge, has no power to summon a jury. Therefore, if there are issues in fact, the Court of Chancery cannot try the issues, but the Lord Chancellor delivers the record by his proper hands into the common law Court *** to be tried there."); Harold Chesnin & Geoffrey C. Hazard Jr., *Chancery Procedure and the Seventh Amendment: Jury Trial of Issues in Equity Cases Before 1791*, 83 Yale L.J. 999, 1101 (1974) (discussing that prior to 1800, all issues of fact arising in Chancery were tried to juries in the King's Bench).

It is thus unsurprising that the Court has rejected all efforts to have a patentholder's right to a jury taken away. These efforts begin with *Ex Parte Wood & Brundage*, 22 U.S. (9 Wheat.) 603 (1824), in which Justice Story held that Congress could not import the writ of *scire facias*, in Section 10 of the Patent Act of 1793, without bringing along with it the associated right of access to a jury. Recognizing that "[t]he inventor has *** a property in his inventions *** which is often of very great value," and that a proceeding under the writ was one under "common law," the Court held that proceedings under the writ were permissible only if "the issue so joined be an issue of fact, then the trial thereof [would] be by a jury." *Id.* at 608, 614–15. And even in *Markman* v. *Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996), which held that patent claim construction was a matter to be decided by a federal district court, not a jury, the Court affirmed the existence of a right to a jury in infringement actions. It determined that matters of claim construction belonged to courts only because claim construction involves "purely legal" issues, the traditional province of courts, rather than matters of fact for the jury. *Id.* at 391. And the Court did not even entertain the possibility that these detailed matters of claim construction could be referred to an administrative proceeding for final determination. The Court has thus prevented any incursion on a patentholder's Seventh Amendment right that would be inconsistent with patentholders' rights at common law.

The Court has likewise been vigilant in prohibiting executive officials from making final binding decisions regarding patent validity post-grant. In *McCormick Harvesting Mach. Co.* v. *C. Aultman & Co.*, 169 U.S. 606, 609

(1989), the Court noted that a patent once issued, "has become the property of the patentee, and as such is entitled to the same legal protection as other property." Accordingly, when Congress created a procedure allowing for patent "reissuance," in which a patent owner could apply to the Patent Office to have a patent reissued to correct certain errors, the Court held that the Patent Office had no power to reconsider the validity of the patent during that reissuance process. In doing so, the Court determined that such action would not merely exceed the statutory power conveyed to the office by Congress, it would also constitute an "invasion of the judicial branch of government by the executive." *Id.* at 612. The Court thus made clear that adjudicating patent validity was a power belonging solely to the judiciary, in keeping with the long-respected idea that the power to permanently dispose of an individual's legal claim to "life, physical liberty, or traditional forms of property" was at the core of the "judicial" power exercised exclusively by federal district courts under Article III. Caleb Nelson, *Adjudication in the Political Branches*, 107 Colum. L. Rev. 559, 559–560 (2007).

And in the *American Bell* cases, the Court held that the United States lacked standing to challenge the validity of its issued patents "on the mere ground of error of judgment" in issuing them, *American Bell II*, 167 U.S. at 269, because the power to annul or correct a patent "is vested in the judicial department of the government, and this can only be effected by proper proceedings taken in the courts of the United States." *United States v. Am. Bell Tel. Co. (American Bell I)*, 128 U.S. 315, 364 (1888). All of these matters have thus been reserved for Article III courts.

Even in judicial proceedings, Executive Branch officials have been permitted only limited power to challenge

the validity of issued patents, and *no* power to revoke them on their own. Federal agencies may argue in court that a patent is invalid when enforcing it would result in violations of the federal antitrust laws, as required to vindicate the public's interest in fair competition. *United States* v. *U.S. Gypsum Co.*, 333 U.S. 364, 367 (1948); *United States* v. *Glaxo Grp. Ltd.*, 410 U.S. 52, 57 (1973). But in such judicial proceedings, it was ultimately the court, not the agency, that did the invalidation. Courts have likewise properly endorsed procedures, such as before the International Trade Commission, 19 U.S.C. § 1337, in which administrative tribunals may render decisions refusing to enforce patent rights. E.g., *Tex. Instruments, Inc.* v. *Cypress Semiconductor Corp.*, 90 F.3d 1558, 1569 (Fed. Cir. 1996). But what makes these administrative adjudications constitutionally permissible—and distinguishes them from PTAB adjudications in IPR—is that they do not lead to a complete revocation of the patent. *Ibid.* A refusal to enforce the patent extends no further than the boundaries of the particular proceeding at issue, and has no collateral estoppel effect that would prevent enforcement of the patent in other circumstances.

Congress's decision to deprive patentholders of any right to a disinterested, life-appointed judge or a jury of their peers in patent revocation actions thus runs directly counter to more than two-and-a-half centuries of Anglo-American legal tradition and an unbroken line of this Court's precedents—under both Article III and the Seventh Amendment—stretching nearly as long.

II. IPR unconstitutionally permits administrative tribunals to revoke property rights that preexist issuance of a patent.

There is a second fatal misconception in the view advanced IPR's defenders that the rights in a patent "exist only by virtue of [federal] statute." Gov't Br. in Opp. at 10. This conception of patent rights also ignores that many of the property rights embodied in a patent *preexist* issuance of the patent, and emanate from *no* federal statute.

An inventor enjoys legal rights in an invention long before acquiring a patent to protect it. These may take the form of trade secrets or other categories of confidential, proprietary information, which, despite their "intangible nature," are recognized to be protected interests under both contract and property law, based upon the commercial value of the information, and the measures taken to protect it from disclosure. *Ruckelshaus* v. *Monsanto Co.*, 467 U.S. 986, 1002 (1984).

"Trade secrets have many of the characteristics of more tangible forms of property." *Id.* at 989. They may be licensed, e.g., *Kewanee Oil Co.* v. *Bicron Corp.*, 416 U.S. 470, 475 (1974), and assigned, e.g., *Dr. Miles Medical Co.* v. *John D. Park & Sons Co.*, 220 U.S. 373, 401–402 (1911). And they are counted among a business's assets for federal income-tax purposes. *E.I. Du Pont De Nemours & Co.* v. *United States*, 288 F.2d 904, 913–914 (Ct. Cl. 1961).

For these reasons, the Court has treated trade secrets and similar interests as personal property under federal law on numerous occasions. *Ruckelshaus*, 467 U.S. at 1003 (trade secrets in health, safety, and environmental data protected under state trade-secret law are property protected under the Fifth Amendment); *Carpenter* v. *United*

States, 484 U.S. 19, 25–26 (1987) (confidential information is property for purposes of the federal mail and wire fraud statutes, 18 U.S.C. §§ 1341, 1343); *Dirks* v. *SEC*, 463 U.S. 646, 653 n.10 (1983) (recognizing a "duty" not to "mismanage corporate assets" under the securities laws, "of which confidential information is one"). Such property interests may exist in several aspects of an invention, not only in the "[p]rocesses, machines, manufactures, compositions of matter and improvements thereof," but also in the more prosaic matters of bringing the invention to market, such as "customer lists or advertising campaigns." *Kewanee Oil*, 416 U.S. at 483. Thus, the ideas embodied in an invention are the inventor's own private property long before patent protection is obtained.

The Founders recognized the existence of these rights in inventions, which is why they empowered Congress only to "secure[] for limited times" the ownership rights that inventors *already had* in their inventions rather than *grant* them new rights that did not yet exist. U.S. Const. Art. I, § 8, cl. 8. The Court too has recognized that "[t]he thing patented [is] not something which belonged to the Government" before it awards a patent to the inventor. And the patent does not convey to the inventor anything "he did not have before." *American Bell II*, 167 U.S. at 254. An inventor "could have kept the discovery secret to himself. He need not have disclosed it to anyone," yet he would still own his invention and would still enjoy legal protections for the property rights associated with his invention. *Id.* at 239.

Inventors seek patent protection because they frequently determine the protections given these property and contractual rights to be inadequate by themselves.

Contractual commitments of confidentiality are only binding between the parties. Trade secret law only protects against "disclosure or unauthorized use" of the trade secret, by those who gain knowledge of it "under the express or implied restriction of nondisclosure or nonuse," *Kewanee Oil*, 416 U.S. at 475, or who obtain it by some "improper means," such as "theft, wiretapping, or even aerial reconnaissance," *id.* at 476 (quoting *Restatement of Torts* § 757(a)). It offers no protection "against discovery by fair and honest means, such as by independent invention, accidental disclosure, or *** reverse engineering." *Id.*; *see also* Uniform Trade Secrets Act § 1 cmt. (1985).

Patent law augments these imperfect property and contract rights with a more powerful right to exclude others from using the invention. 35 U.S.C. § 271(a). "[P]atent law operates 'against the world,' forbidding any use of the invention for whatever purpose for a significant length of time." *Kewanee*, 416 U.S. at 490 (quoting *Painton & Co.* v. *Bourns, Inc.*, 442 F.2d 216, 224 (2d Cir. 1971)). Trade-secret law thus "functions relatively as a sieve" when compared to the "barrier" of patent law. *Id.* at 490.

Nevertheless, because many of the property rights in an invention preexist patent protection and entail far more than the protections provided by federal law alone, they cannot be considered public rights. These rights are not "derived" "from a federal regulatory scheme." *Stern*, 564 U.S. at 490. And their vindication "is not 'completely dependent upon' adjudication of a claim created by federal law." *Ibid.* (quoting *Commodity Futures Trading Comm'n v. Schor*, 478 U.S. 833, 856 (1986)). While the Defend Trade Secrets Act of 2016, Pub. L. No. 114-153, 130 Stat. 376 (codified at 18 U.S.C. § 1836) now provides some federal protection for trade secrets, the protection of

these property rights still comes predominantly via state law.

Yet the fate of these property rights preceding the patent are bound up with the fate of the federally granted patent. This is because the government ultimately demands, "in return for the right of exclusion" granted to the patentee, "a requirement of disclosure." *Kewanee Oil*, 416 U.S. at 480–481. This disclosure is not necessarily required during the process of applying for a patent. The invention is kept confidential by the PTO during the first 18 months of the patent application process, 35 U.S.C. § 122(a) & (b)(1); 37 C.F.R. § 1.14. Although patent applications are generally made public after that point, the applicant can still take measures to ensure that trade secrets and other confidential information contained in an application remain protected from disclosure during the remainder of the application process. This can be accomplished by requesting redactions before the application is made public, 37 C.F.R. § 1.14(a)(1)(A)(iii), or by requesting that that the entire file remain private under the conditions described in 35 U.S.C. § 122(b)(2)(B)(i). And if it seems likely that the patent application will be denied, the inventor can preserve these rights in the invention by withdrawing the application entirely. *Id.* § 122(b)(2)(A)(i). Thus "the filing of a patent application does not in itself preclude continued protection of the invention as a trade secret," *Restatement (Third) Unfair Competition* § 39 cmt. c (1985), and when the inventor initiates an application, he has a legitimate expectation that his rights will be preserved throughout the application process.

Things change, however, once an application has been granted and a patent issues. At that point, the specification and other materials comprising the patent file become

available to all the world, 37 C.F.R. § 1.11, which destroys the secrecy required to continue trade-secret protection. *See Restatement (Third) Unfair Competition* § 39 cmt. f (1985). Indeed, the word "patent" itself is "so called, because [patents] are not sealed up, but exposed to open view, with the great seal pendant at the bottom." 2 William Blackstone, *Commentaries on the Laws of England* 316–317 (Robert M. Kerr ed., 4th ed., 1876) (1768)).

This is the grand bargain between inventors and the government that patent law creates: The government promises exclusivity for a limited period of time to induce inventors to allow the public to make use of their inventions "to promote the Progress of Science and useful Arts" as the Constitution directs. U.S. Const. Art. I, § 8, cl. 8. And the inventor relies on that promise in giving up the secrecy of his invention. If the USPTO (through the PTAB) later reneges on the government's end of that bargain and invalidates the patent post-grant, it thus means far more than the revocation of the patent's exclusivity guarantee—itself an unconstitutional deprivation of property. It also means the irretrievable loss of all the inventor's private property rights to the invention—rights that the inventor could have enjoyed in perpetuity had he not been lured into disclosure by the government's promises of exclusivity. Because these rights are adjudicated along with the validity of the patent, this provides yet another reason why questions regarding the validity of a patented invention are "[in]appropriate for agency resolution." *Thompson* v. *Union Carbide Agr. Prods. Co.*, 473 U.S. 568, 594 (1985).

It was particularly inappropriate for Congress to resposit the adjudication of these issues with the PTO. The

PTO possesses no statutory authority regarding trade secrets or similar property interests. Its only relevant authority concerns patents. USPTO has no special "expertise" concerning such matters either—certainly none "superior to that of a court," *Schor*, 478 U.S. at 844–845—such that it should be afforded special license to adjudicate those rights, *Stern*, 564 U.S. at 490.

Even the PTO's congressionally assigned responsibilities over patents are part of no larger "public regulatory scheme" that would make adjudicating patent validity "a matter appropriate" for the agency's sole determination. *Stern*, 564 U.S. at 490. By constitutional mandate, the power of Congress concerning patents (and thus the power of the PTO, which derives its power from Congress) extends only to "secur[ing]" inventors' rights. U.S. Const. Art. I, § 8, cl. 8. Those responsibilities are exhausted once the patent is granted, to the point that the PTO does not even possess standing to challenge a patent in court once the patent issues. *American Bell II*, 167 U.S. at 269. The granting and securing of patent rights is thus the sum total of the PTO's responsibilities—and indeed the whole point of the Patent Act.

Accordingly, the "federal regulatory scheme" regarding patents thus exists to facilitate and protect patent rights. Patent rights do not exist to facilitate the federal scheme. As patents thus are not mere stepping stones along the way to some other regulatory object, there is no compelling reason why they might be subject to post-grant administrative revocation, by the PTO or any other agency.

III. Inter partes review devalues patent rights in ways that harm inventors, product-creators, entrepreneurs, and the entire innovation economy.

IPR's disrespect of patent rights is not isolated to the rationales offered to defend its existence. That disrespect also creeps into IPR's slanted design, which discards many of the protective features of federal district court litigation, only to replace them with administrative procedures uniquely unfavorable to patentholders. These changes are deemed necessary by a perceived need to combat the alleged abuses of so-called "patent trolls,"[6] but they actually cause harm to *all* patentholders, making it far more difficult for product-producers to get to market.

A. IPR proceedings lack Article III protections and are heavily stacked against the patentholder.

PTAB proceedings discard many of the structural protections enjoyed by district court litigants. Not only are judges and juries replaced with the PTAB's political appointees, but IPR also discards rules obeyed by Article III courts that place limits on a patentholder's ultimate legal exposure. The results of PTAB proceedings are binding on the patentholder, but have only limited estoppel effect against petitioners. A particular petitioner might be barred from filing an IPR petition if the party has already sued in district court to invalidate the patent. 35 U.S.C. § 315(a)(1). And petitioners are likewise estopped from

---

[6] Brian T. Yeh, Cong. Research Serv., R42668, *An Overview of the "Patent Trolls" Debate* 2 (Aug. 2012) <http://bit.ly/1TRz42h> (noting "[t]he proliferation of PAEs" as one of the factors leading to the AIA).

raising in future litigation any grounds for invalidity they raised or should have raised in a failed IPR. *Id.* § 315(e)(2). But other potential petitioners (who might be working in combination with the original petitioner) are free to challenge the patent's validity, in court or in a future IPR proceeding, even on the same grounds as the initial petition.

Moreover, the circle of potential IPR petitioners is limitless. Unlike plaintiffs in district court, who must be personally aggrieved by a patent in order to challenge it, any person may petition to have a patent invalidated, regardless of whether its alleged infirmity affects them in any way. 35 U.S.C. § 311(a). This lifting of standing limitations is often abused. The evidence from only the first few years of IPR proceedings shows that they are frequently utilized by larger competitors to weaken smaller, more innovative ones, as well as by vultures seeking to extract nuisance settlements. Gregory Dolin, *Dubious Patent Reform*, 56 B.C. L. Rev. 881, 932–933 (2015). Indeed, IPR's usefulness as a patent-attacking tool has fostered a cottage industry of hedge funds that make money by shorting a company's stock, then attacking its patents to bring the company's stock price down.[7]

IPR proceedings also offer less substantive protections for patentholders than previous reexamination processes. Instead of reexamination's iterative process, where patentholders and examiners engage in an open, constructive exchange of challenges, defenses, and ulti-

---

[7] Joseph Walker & Rob Copeland, *New Hedge Fund Strategy: Dispute the Patent, Short the Stock*, Wall St. J., Apr. 7, 2015, <http://on.wsj.com/1GJSjDE>.

mate compromises, PTAB proceedings are purely adversarial. *See* 37 C.F.R. § 42.100(a) ("An inter partes review is a trial."); *Google Inc. v. Jongerius Panoramic Techs., LLC*, IPR2013-00191, Paper 50, at 4 (PTAB Feb. 13, 2014) (explaining that the proceedings are "a trial, adjudicatory in nature."). In PTAB proceedings, the parties take discovery and then present their arguments and evidence to the PTAB panel, which determines the validity of the challenged claims. Patent examiners are not involved in the process. Moreover, although patentees have a formal opportunity to file a single motion seeking permission to amend their claims, 35 U.S.C. § 316(a)(9); 37 C.F.R. § 42.121(a), such requests are almost never granted.

IPR procedures also impose administrative burdens on patentholders that undermine patent property rights. IPR proceedings take a long time—easily taking 3 years, between the time spent at the petition stage, 35 U.S.C. § 314(b); the time (up to 18 months) allowed after review is instituted, 37 C.F.R. § 42.100(c), and the time for an appeal, 35 U.S.C. § 141(c).[8] And they are expensive, with a typical defense campaign costing more than $500,000. *Ibid.*

These burdens are multiplied by the fact that many challenged patents will be subjected to multiple IPR petitions, making IPR proceedings lasting five years or longer likely. Torpedoing Patent Rights, *supra* note 8. Because

---

[8] *See* Judge Paul Michel, *Torpedoing Patent Rights*, IPWatchdog Blog (July 10, 2011), <http://bit.ly/1qW5z3y> (Torpedoing Patent Rights); Gene Quinn, *Judge Michel says Congress stuck in a time warp on patent reform*, IPWatchdog Blog (May 12, 2015), <http://bit.ly/1JbVoxX>.

most litigation in district court will be stayed for the duration of an IPR proceeding, *id.* § 315(a)(2), a patent is effectively unenforceable during that period, eating years off the patent's 20-year life—a large portion of which will have already elapsed even before the patent is granted, *id.* § 154(a)(2). This adds time and expense which deprives investors and inventors of chances to recoup their investments. It also fosters abuse, offering opportunities for infringers to delay being held liable for damages, increase their settlement leverage, retaliate against the patentholder,[9] or simply play out the clock on the patent's life.

Making matters worse, IPR procedures are also heavily stacked against the patentholder. An IPR petitioner need only prove invalidity by a preponderance of the evidence, 35 U.S.C. § 316(e), rather than the "clear and convincing evidence" standard required in court, *Microsoft Corp.* v. *i4i Ltd. P'ship*, 564 U.S. 91, 111 (2011). And the PTAB's often-dispositive findings made in the course of claim construction are accorded deferential substantial evidence review. *In re Morsa*, 713 F.3d 104, 109 (Fed. Cir. 2013). The PTAB also gives a patent claim its broadest reasonable interpretation in an IPR proceeding, rather than its ordinary meaning, which makes an invalidity finding more likely by bringing into play a larger share of the prior relevant art. 37 C.F.R. § 42.100(b).

---

[9] Gary Lauder, *Venture Capital: "The Buck Stops Where?"*, 2 Med. Innovation & Bus. 14, 18 (2010) (*Venture Capital*), <http://bit.ly/2xzoAhi>.

As a result, the judges of the PTAB have earned monikers as "death squads, killing property rights,"[10] a feature which has attracted petitioners like magnets, and made the PTAB America's most popular patent court.[11]

The rates of invalidation are staggering. As of July 2017, of the 1,674 IPRs that have reached a final decision, 65% resulted in every challenged claim being invalidated; 17% resulted in some claims being invalidated; and only 18% resulted in all of the challenged claims being upheld.[12] This is a far higher rate of invalidation than in federal district court, where patents are held invalid in only about 46% of cases. Dolin 927. And this disparity is all the more striking because in litigation, unlike IPR, patents can be invalidated on grounds aside from novelty and obviousness, such as inequitable conduct.[13]

The casual observer might contend that these high reversal rates reflect the weakness of the patents that might be expected to provoke an IPR petition. But the evidence is to the contrary. IPR review is often instituted on patents that have already survived district court review, *ex*

---

[10] Peter J. Pitts, *'Patent Death Squads' vs. Innovation*, Wall St. J., June 10, 2015, <http://on.wsj.com/1MsqErB>.

[11] Scott A. McKeown, *PTAB Quickly Becomes Busiest Patent Court in U.S.*, Patents Post-Grant Blog (July 25, 2013), <http://bit.ly/1NXKm4L>.

[12] U.S. Patent & Trademark Office, *Patent Trial and Appeal Board Statistics* 11 (July 2017), <http://bit.ly/2wKNe0Z>.

[13] 35 U.S.C. § 282(b); *Therasense, Inc.* v. *Becton, Dickinson & Co.*, 649 F.3d 1276, 1285 (Fed. Cir. 2011) (en banc) (noting the defense of "[i]nequitable conduct").

parte reexamination proceedings, or both, and are invalidated at roughly the same rate as all other petitions: 83%. Dolin 927–928. IPRs are also initiated most often against product-producing companies, rather than the non-practicing entities that include the supposed "trolls."[14] And the invalidity rates are roughly the same for each type of patent holder. *Ibid.*

Adding further to IPR's institutional unfairness for patentholders, the political appointees of the PTAB are often pulled from the same industries and companies that most often institute IPR proceedings against competitors. And they bring with them a demonstrated tendency to favor the interests of their former employers and clients when they ascend to the bench.[15] Worse still, USPTO representatives admit to "stacking" PTAB panels with judges known to have views aligned with the Director on particular issues in order to ensure that administration's favored outcomes are achieved in particular cases.[16] This is the precise opposite of the fair, unbiased decisionmaking that patentholders deserve.

---

[14] Brian J. Love & Shawn Ambwani, Inter Partes *Review: An Early Look at the Numbers*, 81 U. Chi. L. Rev. Dialogue 93, 103 (2014).

[15] *See, e.g.*, Steve Brachmann, *Apple, APJ Clements and final written decisions: a lethal cocktail for patents* IPWatchdog Blog (June 22, 2017), <bit.ly/2g63xi8> (demonstrating through statistical evidence Administrative Patent Judge Matt Clements's tendency to favor the interests of Apple, his former client, in IPR proceedings).

[16] Gene Quinn, *USPTO admits to staking PTAB panels to achieve desired outcomes* IPWatchdog Blog (Aug. 23, 2017) <bit.ly/2iE9mnS>.

B. The risk and expense associated with inter partes review proceedings impedes inventors, startups, and small businesses.

The harms of IPR are not isolated to patentholders that must suffer through them. The administrative costs and uncertainty of IPR review have "significantly depressed"[17] the transactional value of patents across the board—both good and bad. In the two years after the institution of IPR, the gross value of patent sales was down 83%,[18] contributing a net $1 trillion loss to the U.S. economy.[19] Thus, an IPR procedure ostensibly designed to target "patent trolls" has instead introduced layers of expense and uncertainty into all patent rights, which makes it harder for startups to attract investors, employees, and many other critical resources.

Turning an idea into a product—including developing the idea, patenting it, testing it, debugging it, building prototypes, scaling it into a product, and then building production facilities, distribution channels, and a marketing apparatus to support it—all these steps are costly. The initial investment required to bring innovative ideas to

---

[17] Jack Lu, IP Mkt. Advisory Partners, *Patent Portfolio Valuation as Reflected by Market Transactions: Market Dynamics and the Impact of AIA and* Alice 149 (Sept. 2015), <bit.ly/1sWuAh2>.

[18] Gene Quinn, *Is the Patent Market Poised for Rebound in 2015?*, IPWatchdog Blog (Dec. 11, 2014), <bit.ly/1usZqrl> (utilizing estimates provided by Richard Baker, an intellectual-property-licensing expert).

[19] Richard Baker, *America Invents Act Costs the U.S. Economy over $1 Trillion,* Patently-O Blog (June 8, 2015), < bit.ly/1Udw5wV>.

market is particularly high for high-tech products in industries like clean energy and life sciences, frequently reaching into the billions.[20]

Where such technology is developed by a start-up company, with no revenues to invest and no assets against which to borrow, it would be impossible to attract the investment necessary to develop an innovative product without convincing investors that the enterprise was viable. In many cases, a new company's only chance of success lies in the protection that a patent affords to the company's new technology.

Patents are thus critical to the growth and viability of innovation-oriented start-ups whose inventions might otherwise easily be copied. A system of durable, stable, and cheaply obtained patent rights enables startups to connect to critical capital resources. A patent can be used as leverage for financing, either as security for loans or through licensing, because it ensures that the innovative concept embodied in an invention will survive even if the business itself proves unsuccessful. Patents thus set startups on a growth path through which they can expand, create jobs,

---

[20] Tufts Ctr. for the Study of Drug Dev., *Cost to Develop and Win Marketing Approval for a New Drug Is $2.6 Billion* (Nov. 18, 2014), <bit.ly/1Hfvx6G>; *Climate for Innovation: Hr'g Before H. Select Comm. on Energy Independence and Global Warming*, 111th Cong. 31, 33 (2009) (testimony of Robert T. Nelsen, ARCH Venture Partners).

and generate further innovations.[21] Adding to their durability, patents can be sold and collateralized, further ensuring the availability of stable funding sources, a practice that contributes an estimated $80 billion in annual growth to the U.S. economy.[22]

Patents also help to level the playing field for individual inventors, startups, and small companies, enabling them to compete against more-established companies. These larger companies enjoy all the benefits of incumbency, including better marketing networks, manufacturing facilities, economies of scale and name recognition that creates customer confidence and loyalty, advantages these companies employ against less-established rivals to prevent the "creative destruction" that so benefits the economy but harms their vested interests.[23] These advantages, and the competition-destroying ends to which they can be employed, are often difficult to overcome unless the startup has patents protecting its key innovations. It is thus unsurprising that the likelihood of growth for start-up firms is 35 times greater for those that avail

---

[21] J. Farre-Mensa et al., USPTO, Office of the Chief Economist, *The Bright Side of Patents* 3, 6 (USPTO Working Paper No. 2015-2, Jan. 2016), <http://bit.ly/2p4RnIG>.

[22] Robert Litan & Hal Singer, Economists Inc., *Unlocking Patents: Costs of Failure, Benefits of Success* 18 (2014), <bit.ly/1U6tXY6>.

[23] *See Patent Reform Impact on Small Venture-Backed Companies: Hearing Before the H. Small Bus. Comm.*, 110th Cong. 98 (2007) (testimony of John Neis, Venture Investors).

themselves of the patent system.[24] Patents also more than double the probability that a startup will grow to sufficient size to be listed on a stock exchange. Farre-Mensa *supra* note 21 at 5.

But the value of a patent depends almost entirely on its validity—the "determinative" factor in whether it will attract funding.[25] Providing venture capital for start-ups is inherently risky, because three out of four startups will fail.[26] Thus, the attendant uncertainty as to patent validity introduced by the creation of IPR substantially weakens patents' value in the eyes of angel investors and venture capitalists, with devastating effects on the availability of capital for startup businesses. This is not speculation. It has been the personal experience of *amici*, who have had businesses destroyed because the mere *existence* of IPR made patent rights so uncertain that funding became impossible—even though IPR petitions were never filed against the patents at issue.

A patent under IPR can be held up for years. During that process, it is unlikely to attract investment, and even the threat of such review could cause investors to turn elsewhere. *See* Farre-Mensa *supra* note 21 at 25. Indeed,

---

[24] C. Fazio et al., MIT Innovation Initiative, *A New View of the Skew: A Quantitative Assessment of the Quality of American Entrepreneurship* 9 (2016), <http://bit.ly/1X8MF8r>.

[25] Press Release, Nat'l Venture Capital Ass'n, *National Venture Capital Association Encourages Congress to Support Innovators in Patent Reform Legislation* 1 (Oct. 25, 2007).

[26] Deborah Gage, *The Venture Capital Secret: 3 Out of 4 Start-ups Fail*, Wall St. J., Sept. 20, 2012, <http://on.wsj.com/1FpKaG6>.

the institution of an IPR proceeding can disrupt the development of ventures that have already gotten funding, by making it harder to attract the second or third rounds of investment necessary to survive, each of which require greater investments from increasingly risk-adverse investors. *Venture Capital supra* note 9.

Moreover, the potential for IPR review to weaken property rights saps patentholders of their chance to compete on level footing with more-established rivals. Indeed, larger companies, with their greater resources to devote to litigation, will find IPR proceedings to be particularly effective anti-competitive weapons. The ability to weaken patent rights through administrative challenges to competitors' patents makes it easier for them to destroy smaller companies, and leaves them free to copy patented technologies without serious risk of suffering legal consequences.[27] It is thus unsurprising that large companies led the push for the AIA's patent reforms and the creation of IPR.[28]

C. These threats to innovators are harming the American economy as a whole.

IPR's destabilizing effects on patent rights and the development of small and start-up businesses threaten the economy as a whole, because growth in the American

---

[27] Joe Nocera, *the Patent Troll Smokescreen*, N.Y. Times, Oct. 23, 2015, <http://nyti.ms/1PJRz7j> (outlining the business strategy of "'efficient infringing'").

[28] E.g., CQ Press, *First Street Report: Lobbying the America Invents Act* 4, 11-12 (2011), <http://bit.ly/24fgdjg> (noting that the "Coalition for 21st Century Patent Reforms," comprised of some of America's largest companies, "actively lobbied" for enactment of the AIA).

economy depends on advances from small startups supported by strong patent rights.

Patent-driven innovations from startups and individual inventors have nourished much of the creative disruption that has fueled innovation and the American economy, spurring developments in industries as diverse as computer software, semiconductors, online businesses, life sciences, and emerging clean technologies. Nat'l Venture Capital Ass'n, *Venture Impact: The Economic Importance of Venture-Backed Companies to the U.S. Economy* 9–10 (5th ed. 2009), <http://bit.ly/1X8wBmZ>. The small businesses in the SBA's "Small Business Innovation Research Program" alone have received almost 132,300 patents.[29] Aside from the life-enhancing innovations small businesses provide, they also create over 63% of all private sector jobs,[30] and employ over 37% of all scientists and engineers.[31] At present, net job growth in the U.S. is attributable entirely to jobs created by small startup firms, because companies that are more than one year old actually destroy, on average, more jobs than they create.[32] Innovative industries also create jobs that pay approximately 60 percent more than non-IP-intensive industries,

---

[29] http://www.inknowvation.com/sbir/sbir-stats.

[30] Small Bus. Admin., Off. of Advocacy, *Frequently Asked Questions* 1, <http://1.usa.gov/1y1jgOO>.

[31] Nat'l Sci. Bd., Nat'l Sci. Found., *Science and Engineering Indicators*, fig. 3-12 (2016), <http://1.usa.gov/1m7gkxG>.

[32] Ewing Marion Kauffman Found., *The Importance of Startups in Job Creation and Job Destruction* 4 (Jul. 2010), <http://bit.ly/1eODvIy>.

and their products drive the majority of U.S. exports.[33] Patent-ownership was found to be the leading indicator of regional wealth, more important than education or infrastructure.[34]

Recently, however, the startup and small-business environment has begun to suffer, in no small part due to the weakening of patent property rights. Since the 1990s, the number of technology-related startups is down nearly 40%.[35] For the first time, more companies are going out of business than starting up.[36] The creation of IPR, and the cloud that it casts over the validity of patents, risks tilting the balance still further, inhibiting startup growth and innovation, and depriving the economy of good, high-paying jobs. For this reason, along with all the others mentioned above, IPR should be struck down.

---

[33] Nam D. Pham, NDP Consulting, *The Impact of Innovation and the Role of Intellectual Property Rights on U.S. Productivity, Competitiveness, Jobs, Wages, and Exports* 5 (2010), <http://bit.ly/2vKShtG>.

[34] Fed. Reserve Bank of Cleveland, Ann. Rep., *Altered States: A Perspective on 75 Years of State Income Growth* 17-18 & fig. 6 (2005), <http://bit.ly/1RDNkG7>.

[35] J. Haltiwanger et al., Ewing Marion Kauffman Found., *Declining Business Dynamism in the U.S. High-Technology Sector* 7 (Feb. 2014), <http://bit.ly/1OWNUPp>.

[36] J.D. Harrison, *More businesses are closing than starting. Can Congress help turn that around?*, Wash. Post, Sept. 17, 2014, <http://wapo.st/1Parrns>.

CONCLUSION

The judgment of the court of appeals should be reversed.

Respectfully submitted,

J. Carl Cecere
Counsel of Record
CECERE PC
6035 McCommas Blvd.
Dallas, TX 75206
(469) 600-9455
ccecere@cecerepc.com

Counsel for Amici Curiae

August 31, 2017

APPENDIX

INDEX

APPENDIX

Gary Lauder is the Managing Director of Lauder Partners LLC, a Silicon Valley-based venture capital firm. He has been a venture capitalist since 1985, investing in over 80 private companies, and serving on many of their boards. As Chairman of 2 companies in the past 4 years, he has been forced to defend against 4 "patent troll" actions, and has been a patent plaintiff once in his career.

Paul Morinville is an inventor and entrepreneur with 9 issued patents and approximately 20 pending patent applications. Paul is a former Human Resources executive at Dell, Inc and Founder of OrgStructure, LLC, a seed-stage enterprise middleware software provider.

Robert N. Schmidt is the founder and chairman of six technology-based firms in Cleveland, OH. He is a patent attorney, professional engineer, and an inventor on 31 US Patents, and his firms control more than 150 patent assets.

The National Small Business Association is the nation's oldest small-business advocacy organization, with over 65,000 members representing every sector and industry of the U.S. economy. It is a nonpartisan organization devoted solely to representing the interests of the small businesses, which provide almost half of private sector jobs to the economy.

The Small Business Technology Council advocates for the 6,000 currently active, highly inventive firms that participate in the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs.

The United Inventors Association is a non-profit educational foundation with over 15,000 members dedicated to providing educational resources and opportunities to the independent inventing community, while encouraging honest and ethical business practices among industry service providers.

MCM Portfolio LLC develops and commercializes important innovations in the area of computer Memory Control and Management, such as its CORE Flash™ technology – innovations which form the technological building blocks responsible for portable flash media cards, and enable a whole range of products that make it easier and more convenient to share photos, music, movies and other digital data between our many consumer devices such as cameras, media players, printers, TVs and digital picture frames. MCM was the first company to challenge the constitutionality of IPR in 2013, after the validity of one of its patents was contested in a PTAB proceeding – 13 years after the issuance of the patent and following two separate unsuccessful validity challenges at the ITC, and licensing to over 50 multi-national corporations.

SumVentures Group Ltd. is a coalition of technology-based enterprises dedicated to the development, management and commercialization of proprietary technology, and the design, manufacture and sale of proprietary products based on those IP assets. Among the advanced products brought to the market by SumVenture Group companies are multi-core microprocessors, memory management and control devices, advanced hearing and listening solutions, energy efficient computing architectures, encryption storage products,

sub-wavelength acoustic transducers, wafer-level packaging, and solderless PCB-assembly technology.

Flocel Inc. is the first blood-brain barrier (BBB) company in the US. It offers an array of preclinical tools to study and understand the blood-brain barrier and its function. Flocel also offers consulting services for research or clinical studies related to the BBB. These include but are not limited to drug delivery, alternatives to animal studies, non-invasive measurements of BBB function in human subjects and detection of concussions.

Great Lakes NeuroTechnologies Inc.'s (GLNT) line of bioinstrumentation products includes physiological monitors and patient-centered diagnostic and therapy systems integrated with wireless, remote, and web-based applications sold on all seven continents. Our activities include R&D, engineering, manufacturing, distribution and the export of research systems and medical devices. Our major markets include physiological monitoring for research and education, movement disorders such as Parkinson's disease, telemedicine and in-home health monitoring. Our customers include physicians, medical technicians, healthcare practitioners, researchers, universities and hospitals.

Monashee Marketing is a company that provides Open Innovation programs that connect inventors and product developers with Lifetime Brands, the largest manufacturer and distributor of housewares kitchen utensils in the US.

NeuroWave Systems is an ISO 13485 medical device company, dedicated to developing innovative, state-of-the-art signal processing technologies for the next generation

of brain monitors for improved and safer patient care. NeuroWave is proud to offer the NeuroSENSE®Monitor, the latest generation of brain monitors for patient-customized anesthesia and sedation, now cleared for sale in markets recognizing the CE mark. It is also developing closed-loop anesthesia and sedation systems for the US military.

Power Tool Innovation operates an Open Innovation program connecting inventors and product developers with the largest power tool company in the US, Techtronics Industries, which manufactures and distributes products under the Ryobi and Ridgid brand names.