

No. 19-353

In The
Supreme Court of the United States

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
Petitioner,

v.

IBG, LLC AND INTERACTIVE BROKERS, LLC,
Respondents.

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

BRIEF OF *AMICUS CURIAE*
INTERNATIONAL GAME TECHNOLOGY PLC
IN SUPPORT OF PETITIONER

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QUESTIONS PRESENTED

1. Whether computer-implemented inventions that provide useful user functionality but do not improve the basic functions of the computer itself are categorically ineligible for patent protection.

2. Whether the Court should overrule its precedents recognizing the “abstract idea” exception to patent eligibility under the Patent Act of 1952.

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INTEREST OF AMICUS CURIAE

IGT is the world leader in gaming technology creation and development. IGT and its related companies holds thousands of patents to gaming innovation, including patents covering innovative features of gaming systems, gaming machines and, lottery gaming systems. IGT has licensed portfolios of its patents to other noteworthy companies in the gaming industry. This case presents questions about the eligibility of software as patentable subject matter under 35 U.S.C. § 101 (“Section 101”) which may impact patents for certain features of IGT’s products. The Court’s decision in this case could have an impact on patents that IGT owns and has licensed to other companies.¹

SUMMARY OF ARGUMENT

This case presents an important opportunity for the Court to address the serious damage being inflicted on a large swath of American industry that relies on software innovation including agriculture, artificial intelligence, computer security, education, energy, healthcare, gaming, financial services, internet and telecommunications, brought about by the Federal Circuit’s tortured and inconsistent application of the patent eligibility requirements of Section 101. Contrary to this Court’s precedents and clear and binding statutory law, the Federal Circuit has created

¹ Pursuant to SUP. CT. R. 37.6, IGT affirms that no counsel for a party authored this brief in whole or in part and that no person other than IGT and its counsel made a monetary contribution to its preparation or submission. Counsel of record for all parties received notice at least 10 days prior to the due date of the intention of amicus to file this brief. All parties consented to the filing of this brief.

an improper *per se* test for patent eligibility for software-based inventions under Section 101, viz., that software innovations are eligible for patent protection only if such innovations improve the basic functions of the computer itself. This test has no basis in law, thwarts the fundamental intent of Article I, Section 8 of the Constitution and its implementation leaves extremely important software innovations with significantly reduced protection under U.S. patent law.

The situation is so dire that Federal Circuit judges have implored intervention and guidance to clarify Section 101 jurisprudence. The need for this guidance, so deeply felt across nearly every aspect of the American economy in the years since the Court's decision in *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208 (2014), has now been expressed by the sole Court of Appeals charged with interpreting U.S. patent law. Respectfully, it is time for this Court to once again clarify Section 101 eligibility as it applies to software innovations.

The Federal Circuit's deeply irreconcilable precedents in this area prove that this Court's judicially-created "abstract idea" exception to Section 101 patentability is unworkable in its present form. The current test is so completely subjective and unpredictable that it has reduced the once vaunted and valuable U.S. Letters Patent to a highly questionable property right that at times is not worth the paper it is printed on. For example, by conflating the novelty requirements of the Patent Act with the eligibility requirements, the Court has created confusion in a fundamental area of patent law. This disregard for the structure of the Patent Act is but one of many issues

plaguing Section 101 jurisprudence. The Court should reconsider or clarify the “abstract idea” exception.

REASONS FOR GRANTING THE PETITION

I. The Court Should Grant Review to Restore Consistent Patent Protection to Software Innovations.

A. The Federal Circuit Has Created Chaos in the Field of Software Patents.

As explained in the petition for certiorari, the Federal Circuit’s decision below demonstrates that the court has effectively created a *per se* test for Section 101 eligibility as to software innovations – A software-based invention is patentable only if it improves the basic functions of the computer itself. Not only is the *per se* test itself improper under this Court’s precedents, but the test has not been applied consistently, creating chaos among American innovators.

A sample of recent decisions from the Federal Circuit applying Section 101 to software illustrates the inconsistency of that court’s jurisprudence. For example, patents directed to the following technologies have been rejected under the “abstract idea” test: a “system and method for electronically processing paper checks,”² “processing data sent from a user of a client computer over a network,”³ “implementing a

² *Solutran, Inc. v. Elavon, Inc.*, 931 F.3d 1161, 1164 (Fed. Cir. 2019).

³ *Bridge and Post, Inc. v. Verizon Comms., Inc.*, No. 2018-1697, 2019 WL 2896449, at *4 (Fed. Cir. July 5, 2019).

multi-dimensional interpolation,”⁴ “using a desktop interface to access an application server,”⁵ “converting [a] physiologic treatment data from a machine specific format into a machine independent format within a computing device remotely located from said bedside machines,”⁶ and “entering, transmitting, locating, compressing, storing, and displaying data (including text and image data) to facilitate the buying and selling of items.”⁷

In other cases, however, similar technologies have been upheld as at least potentially patentable notwithstanding the “abstract idea” exclusion. These include: “hierarchical event monitoring and analysis within an enterprise network,”⁸ “capturing and transmitting data from one device to another,”⁹ “limiting a computer’s running of software not authorized for that computer to run,”¹⁰ and “data processing system for designing, creating, and importing data into, a viewable form viewable by the user of the data processing system.”¹¹

⁴ *In re Gitlin*, 775 Fed. Appx. 689, 690 (Fed. Cir. June 13, 2019).

⁵ *Uniloc USA, Inc. v. ADP, LLC*, 772 Fed. Appx. 890, 899 (Fed. Cir. May 24, 2019).

⁶ *Univ. of Fla. Res. Found., Inc. v. General Elec. Co.*, 916 F.3d 1363, 1368 (Fed. Cir. 2019).

⁷ *Voit Techs., LLC v. Del-Ton, Inc.*, 757 Fed. Appx. 1000, 1002 (Fed. Cir. Feb. 8, 2019).

⁸ *SRI Int’l, Inc. v. Cisco Sys., Inc.*, 930 F.3d 1295, 1301 (Fed. Cir. 2019).

⁹ *Cellspin Soft, Inc. v. Fitbit, Inc.*, 927 F.3d 1306, 1315 (Fed. Cir. 2019).

¹⁰ *Ancora Techs., Inc. v. HTC Am., Inc.*, 908 F.3d 1343, 1344 (Fed. Cir. 2018).

¹¹ *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1123 (Fed. Cir. 2018).

There are many more decisions, but this sampling illustrates the core lack of consistency among the Federal Circuit's decisions. Legal principles that place "entering, transmitting, locating, compressing, storing, and displaying data" and "designing, creating, and importing data into a viewable form" on opposite sides of the patent eligibility divide do not provide the courts, the U.S. Patent and Trademark Office ("USPTO"), or inventors with the proper guidance to make a determination whether or not a software innovation is eligible for a patent. The Federal Circuit's "basic functions" test attempts to provide guidance, but that test is unclear in its application. For example, must a patent claim an improvement to the core functions and components of a computer itself (e.g., the processor, memory, input/output devices, etc.), or is it sufficient that a patent claim an improvement on a function that a computer is designed to do (e.g., process data or monitor security)? *Compare Bridge and Post*, 2019 WL 2896449 at *5 (rejecting the eligibility of the use of a computer to track users) *with SRI Int'l*, 930 F.3d at 1304 (affirming the eligibility of an improved use of a computer to monitor network security). These questions have baffled inventors and their attorneys, as well as Federal Circuit judges, district court judges, and USPTO examiners, in the years since this Court's *Alice* decision due to the unpredictable nature of Federal Circuit decisions.

No innovator studying these irreconcilable precedents could approach any court, let alone the USPTO, with sufficient confidence that their innovation would be afforded reliable predictability of patent eligibility by the U.S. legal system. Such unpredictability dissuades innovators from not only

seeking patents from the USPTO but also investing the substantial resources in research and development necessary to create the invention in the first place, and, even if they are granted a patent, from enforcing their rights in the courts. This situation is untenable and must be corrected.

Even Federal Circuit judges are having difficulty implementing, and note the inconsistency resulting from, the *per se* test for Section 101 eligibility, as illustrated by the fact that many of these decisions have come from split panels. In *SRI Int'l*, for example, Judge Lourie criticized the majority for drawing a distinction from precedent that he believed did not exist. *SRI Int'l*, 930 F.3d at 1313 (Lourie, J., dissenting). Likewise, in *Bridge and Post*, Judge Bryson differed from the majority as to one of the patents deemed ineligible, identifying a string of that court's precedents that found similar claims eligible. *Bridge and Post*, 2019 WL 2896449 at *11 (Bryson, J., concurring in part and dissenting in part). Such splits reaching diametrically opposite conclusions from strings of precedential citations have become commonplace in the Federal Circuit's Section 101 decisions. And as a result, the outcome of a Section 101 appeal depends largely on the composition of the panel. The learned judges of the Federal Circuit have diligently sought to apply this Court's precedents in *Alice* and other decisions, but unfortunately the varying tests and analyses applied by different panels have created a miasma of confusion in a fundamental area of patent law. The uniformity of U.S. patent law intended by Congress in establishing the Federal Circuit as the nation's sole Court of Appeals for patent matters is thwarted by this inconsistency, and this

Court should exercise its supreme authority to restore this lost uniformity.

Judges of the Federal Circuit have explicitly requested guidance regarding Section 101 on numerous occasions. For example, Judge Plager lamented that Section 101 law “renders it near impossible to know with any certainty whether the invention is or is not patent eligible,” and invited clarification of the law “by a higher authority, perhaps by Congress, to work its way out of what so many in the innovation field consider are § 101 problems.” *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1348, 1353 (Fed. Cir. 2018) (Plager, J., concurring-in-part and dissenting-in-part) (quoting *Berkheimer v. HP Inc.*, 890 F.3d 1364, 1374 (Fed. Cir. 2017) (Lourie, J., concurring)). Judge Plager echoed an earlier sentiment expressed by Judge Lourie who, in an opinion concurring in the denial of *en banc* review, stated that “Section 101 issues certainly require attention beyond the power of this Court.” *Berkheimer*, 890 F.3d at 1374. Similarly, in an earlier concurrence, Judge Linn noted that the inventions at issue were “the result of human activity and facilitate the use of bankcards for a new purpose heretofore considered practically foreclosed.” *Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 876 F.3d 1364, 1383 (Fed. Cir. 2017) (Linn, J., dissenting in part and concurring in part). But because, “[r]egrettably . . . our precedent leaves no room for such an argument,” Judge Linn concurred with the majority’s decision barring the invention from patent protection under the “abstract idea” exception. *Id.* Judge Linn “disagree[d] with such a categorical exclusion” but was “constrained to concur with the majority’s holding of patent ineligibility.” *Id.* Implicit

in Judge Linn’s grudging concurrence was a desire for this Court to set Section 101 jurisprudence back on track.

Most recently, the frustration of Federal Circuit judges with the judicially-created Section 101 exceptions was on display regarding the closely-related “natural law” exception to patent eligibility. As explained in the pending Petition for a Writ of Certiorari in *Athena Diagnostics, Inc. v. May Collaborative Servs., LLC*, Case No. 19-430, “[a]cross eight separate opinions in which the court divided 7-5 on denying *en banc* review, the Federal Circuit issued an unprecedented cry for help from this Court to clarify the patent eligibility of medical diagnostic tests.” The Petitioner in that case, like the Petitioner here, invites the Court to provide “much-needed guidance on the proper application of the judicially-created exceptions to Section 101 of the Patent Act.” *Id.* The Federal Circuit has thus made clear that guidance from this Court is required to clarify the “abstract idea” test and related judicial exceptions to patent eligibility.

The situation regarding patent eligibility has also drawn the attention of Congress, with two Senators and three Representatives proposing possible legislative reforms to Section 101.¹² The text of the proposal includes a clear statement that “[t]he provisions of section 101 shall be construed in favor of eligibility,” and even explicitly abolishes the “abstract

¹² *Sens. Coons and Tillis and Reps. Collins, Johnson, and Stivers Release Section 101 Patent Reform Framework*, Apr. 2019, <https://www.coons.senate.gov/news/press-releases/sens-coons-and-tillis-and-reps-collins-johnson-and-stivers-release-section-101-patent-reform-framework>.

ideas,” “laws of nature” and “natural phenomena” exceptions to eligibility under Section 101.¹³ This proposal indicates that frustration with Section 101 jurisprudence has reached Congress. However, America’s innovators cannot and should not await Congressional action on a statute that is clear on its face and can be easily clarified with appropriate guidance from the Court. The problem of Section 101 resides in the federal judiciary and the solution lies before this Court. In particular, the “abstract idea” exception is a judicially-created doctrine and thus the Court is better positioned to correct the application of the test, rather than compelling inventors and industry to await an overhaul of Section 101 by Congress.

B. The Federal Circuit’s Section 101 Chaos Is Harming American Innovation.

The operation of Section 101 is fundamental to patent law, defining the category of human innovations that might *possibly* be patented before the additional requirements such as novelty and non-obviousness are reached. But the Federal Circuit’s decisions have caused innovators to stumble at this threshold, creating concrete, real-world harm in the American economy.

As a pioneer in the gaming industry, IGT has felt the strain of the Federal Circuit’s jumbled and over-reaching Section 101 precedents. As a provider of gaming systems, gaming machines and lottery gaming systems, IGT and its related companies’ business relies heavily on software innovations. For

¹³ See <https://www.tillis.senate.gov/services/files/E8ED2188-DC15-4876-8F51-A03CF4A63E26>.

example, casino floor of today is far more technologically sophisticated than the casino floor of 50 years ago. While gaming systems such as slot machines have been a fixture for the entire time, the standard slot game with three mechanical reels that paid winnings based on symbols appearing along one horizontal line in the center have been largely replaced by a nearly endless variation of more complex video-based slot and other gaming machines. Led by companies like IGT, the gaming industry has developed a multitude of new features and game-play improvements that have made slot machines more exciting, more enticing, and more engaging for players. Many of these innovations rely on software for implementation and points of novelty, whether they comprise improvements in game functionality, display, security, or other aspects of the user experience. These inventions represent concrete and particularized improvements that have had a tangible and meaningful impact on the industry.

Since its founding, IGT has regularly filed for and obtained U.S. patent protection on its inventions, and IGT now leads the gaming industry with over 3,200 U.S. patents covering new game machines with new functionality and/or features, new player award systems and new lottery innovations. IGT's substantial investment in innovation has been recognized through numerous awards and numerous licenses with its competitors. The unpredictability of whether a particular software innovation is eligible for patent protection poses a significant risk to IGT's business.

Companies like IGT make significant investments in research and development directed toward

primarily software-based innovations in the gaming industry. The consumer appeal of complex video-based gaming relies heavily on user experience, which is highly visible to the outside world and thus subject to reverse-engineering. Accordingly, effective patent protection is critical to protect these innovations from competitors who can easily copy and imitate successful software-based games.

Fundamental to the American patent system is the understanding that protections against copying are necessary to “promote the progress of science and useful arts.” Patent Clause of the U.S. CONST. ART. I § 8 Cl. 8. That is, without patent protection creators will be disincentivized to innovate because their creations will simply be copied by competitors without a comparable investment in development. Not only will such a situation inhibit the ability of creators and inventors to maintain gainful employment, but consumers will be harmed by a lack of access to new and innovative products and services. The Court has recognized these fundamental principles of patent law numerous times. *See, e.g., Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1937 (2016) (Breyer, J., concurring) (“Through a complex system of incentive-based laws, patent law helps to encourage the development of, disseminate knowledge about, and permit others to benefit from useful inventions.”); *Federal Trade Comm’n v. Actavis, Inc.*, 570 U.S. 136, 161 (2013) (Roberts, C.J., dissenting) (“The point of patent law is to grant limited monopolies as a way of encouraging innovation.”); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 92 (2012) (“[T]he promise of exclusive rights provides monetary incentives that lead to creation, invention, and discovery.”); *Eldred v. Ashcroft*, 537 U.S. 186, 216

(2003) (“Patents are not given as favors ... but are meant to encourage invention by rewarding the inventor with the right, limited to a term of years fixed by the patent, to exclude others from the use of his invention.”) (quoting *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 229 (1964)).

Indeed, the Court has recognized that the Patent Clause ensures a robust economy to the benefit of American citizens. As Chief Justice Burger explained:

The stated objective of the Constitution in granting the power to Congress to legislate in the area of intellectual property is to ‘promote the Progress of Science and useful Arts.’ The patent laws promote this progress by offering a right of exclusion for a limited period as an incentive to inventors to risk the often enormous costs in terms of time, research, and development. The productive effort thereby fostered will have a positive effect on society through the introduction of new products and processes of manufacture into the economy, and the emanations by way of increased employment and better lives for our citizens.

Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 480 (1974); *see also Mazer v. Stein*, 347 U.S. 201, 219 (1954) (“The economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors in ‘Science and useful Arts.’”).

The relationship between federal patent law precedent and innovation is not simply a matter of economic theory. Its real-world effects are well-established. For example, in *State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1372 (Fed. Cir. 1998), the Federal Circuit held that any claimed software invention that involved some practical application and “produce[d] a useful, concrete and tangible result” is eligible for patent protection. In particular, the court affirmed the patentability of “the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price,” which “constitutes a practical application of a mathematical algorithm, formula, or calculation.” *Id.* This broad formulation of patent eligibility confirmed the patentability of software innovations.

The *State Street* decision came amid the technology boom of the 1990s, when technical innovations – many in the form of software applications – permanently transformed the U.S. economy. The decision led directly to a sharp increase in the number of software-related patents granted each year, from approximately 25,000-35,000 per year before *State Street* to approximately 50,000-75,000 per year in the ensuing years, increasing to approximately 125,000 per year by 2011. U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-13-465, INTELLECTUAL PROPERTY: ASSESSING FACTORS THAT AFFECT PATENT INFRINGEMENT LITIGATION COULD HELP IMPROVE PATENT QUALITY 12 (2013). It is undeniable that the increase in software patents was connected to a dramatic increase in software-based technological innovation. “According to legal commentators, the number of software-

related patents grew as computers were integrated into a greater expanse of everyday products.” *Id.* at 12-13. Thus, the *State Street* decision enabled the USPTO to reward increased innovation in computer technology with robust patent protection. *Id.* at 13 (“According to PTO officials, the agency interpreted [*State Street* and *Diamond v. Diehr*, 450 U.S. 175 (1981)] as limiting their ability to reject patent applications for computer processes.”).

Today’s Section 101 jurisprudence is undoing these economic gains in the software industry by injecting uncertainty into the fabric of software patent protection. The state of Federal Circuit law leaves the software industry with sharply curtailed legal protections for its innovations solely due to the form those innovations take – software. This cannot have been the intent of Congress in passing Section 101, and this Court should return American patent law to its proper course.

C. Review by this Court is Necessary to Clarify Section 101 Law.

The Federal Circuit’s confounding Section 101 framework is flatly contrary to statutory law and this Court’s precedents, and thus correction and clarification by this Court is appropriate. The Federal Circuit is ignoring this Court’s clear precedent counseling against an overly rigid and expansive, exclusionary application of Section 101.

For example, in *Alice*, the Court in discussing the “abstract idea” exception admonished that “we tread carefully in construing this exclusionary principle lest

it swallow all of patent law.” *Alice*, 573 U.S. at 217. The Court further advised that “an invention is not rendered ineligible for patent simply because it involves an abstract concept.” *Id.* Likewise, the Court in *Mayo* “recognized . . . that too broad an interpretation of this exclusionary principle could eviscerate patent law.” *Mayo*, 566 U.S. at 70. Indeed, the Court’s decisions concerning “abstract ideas” and related exceptions to patent eligibility generally include caveats against applying the rule to broadly. *See, e.g., Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013) (“The rule against patents on naturally occurring things is not without limits . . .”). The Court has also counseled against *per se* rules in this area, recognizing that “The line between a patentable ‘process’ and an unpatentable ‘principle’ is not always clear.” *Parker v. Flook*, 437 U.S. 584, 589 (1978). Despite these precedents, the Federal Circuit has expanded the exclusionary effects of Section 101 and applied it in such a broad and rigid manner that has swallowed the patent law as cautioned by this Court, to the detriment of American software innovators.

The chaos of the Federal Circuit’s Section 101 framework is not limited to federal courts. Rather, the USPTO has struggled to apply binding statutory law as interpreted by the courts, leading to even more confusion. Indeed, the Federal Circuit’s struggles with Section 101 have created a direct conflict between the USPTO – charged with granting patent rights – and the federal courts – charged with protecting them. For example, in *Cleveland Clinic Found. v. True Health Diagnostics LLC*, 760 Fed. Appx. 1013 (Fed. Cir. Apr. 1, 2019), the patent holder

relied in part on official guidance from the USPTO regarding Section 101 eligibility that was published in 2016, after *Alice* was decided. *Id.* at 1020. The Federal Circuit acknowledged that under the USPTO's guidance, the claims at issue would be patent eligible. *Id.* Nonetheless, applying its own Section 101 principles, the Federal Circuit reached the opposite conclusion, stating, "While we greatly respect the PTO's expertise on all matters relating to patentability, including patent eligibility, we are not bound by its guidance." *Id.*

That case, decided in April 2019, involved a set of USPTO guidelines published in 2016, and thus innovators and their attorneys and representatives spent three years relying upon one set of guidelines in obtaining patents only to have those guidelines disregarded by a single panel of the sole Court of Appeals empowered to interpreting patent law. While that case was pending, in January 2019, the USPTO published an updated set of guidelines, titled *2019 Revised Patent Subject Matter Eligibility Guidance*. 84 Fed. Reg. 4, 50 (Jan. 7, 2019). While the Federal Circuit has yet to weigh in on the revised guidelines, it is clear from the *Cleveland Clinic* decision that any faith in the USPTO's guidelines is entirely misplaced, leaving inventors with even less confidence that their investments will be adequately protected even if the USPTO grants patent protection.

In sum, the Federal Circuit requires the direction of this Court in the area of Section 101 patent eligibility, and this Court's intervention is respectfully requested to provide that guidance.

II. The Court Should Revisit the “Abstract Idea” Exception.

The first question presented by Petitioner applies to a specific error of patent law arising from the judicially-created doctrine that “abstract ideas” are not eligible for patent protection. Even if this error is corrected such that “abstract ideas” are eligible, a greater danger lurks in U.S. patent law in the age of innovations related to software, data, and other information technology. Recent decisions by the Federal Circuit have demonstrated that the judicially-created “abstract idea” exception to patent eligibility is unworkable in its present form.

In a string of recent decisions, the Federal Circuit has inexplicably determined that various concrete, material objects are in fact “abstract ideas” not eligible for patent protection. In *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 775 (Fed. Cir. 2019), the court held that a “vehicle charging station” was an abstract idea. In *Chamberlain Group, Inc. v. Techtronic Indus. Co.*, 935 F.3d 1341, 1347 (Fed. Cir. 2019), the court reached the same conclusion regarding a garage door opener. And in *American Axle & Mfg., Inc. v. Neapco Holdings LLC*, ___ F.3d ___, 2019 WL 4865832 (Fed. Cir. 2019), a drive shaft was deemed to be an unpatentable abstract idea. The *American Axle* decision drew a public rebuke from Representative Doug Collins, one of the authors of the proposed reforms to Section 101.¹⁴ These are only the latest, and perhaps most egregious, examples of the

¹⁴ Collins calls for new patent eligibility test following flawed court ruling, <https://mailchi.mp/7577d6bb6612/collins-calls-for-new-patent-eligibility-test-following-flawed-court-ruling>.

Federal Circuit’s overzealous application of the “abstract idea” exception.

The Federal Circuit’s determination that pieces of physical machinery are abstract ideas illustrate not only that court’s improper application of U.S. patent law but the untenable nature of the “abstract idea” exception itself and, specifically, the extent to which the test has departed from its simpler formulation in *Diehr*. In that case, nearly forty years ago the Court recognized the limited nature of the “abstract idea”, holding that a claim on an invention does not become unpatentable “simply because it uses a mathematical formula, computer program, or digital computer.” *Diehr*, 450 U.S. at 187. For nearly two decades, *Diehr* stood for the proposition that the *application* of a mathematical formula was patentable, establishing the broad patentability of software innovations later recognized by the Federal Circuit in *State Street*. But later decisions of this Court restricted the holding in *Diehr* and confused the issue of software patentability, creating the confusion burdening the Federal Circuit today.

In *Bilski v. Kappos*, 561 U.S. 593 (2010), the Court held the presence of “the concept of hedging” and a related mathematical formula in the claims at issue rendered those claims unpatentable, notwithstanding the holding in *Diehr* that the mere use of a mathematical formula does not render a claim unpatentable provided that there is some claimed application of the formula. Four years later, in *Alice*, the Court developed the two-part test effectively importing a novelty requirement to the “abstract idea” analysis. These later precedents conflict with

Diehr and have injected uncertainty into U.S. patent law, sowing confusion in the lower courts.

The lower courts' struggles with the judicial "abstract idea" exception were highlighted in an opinion by Judge Plager last year. Concurring in part and dissenting in part from a panel decision rejecting patent claims as ineligible under Section 101, Judge Plager endorsed the majority's reasoning but could express no confidence that the result was correct given the state of the law, as the "abstract idea" exception "fails to provide the kind of specificity and clarity that makes it useful for future prediction of outcome." *Interval Licensing*, 896 F.3d at 1348 (Fed. Cir. 2018) (Plager, J., concurring-in-part and dissenting-in-part). As discussed *supra*, he wrote separately to "highlight the number of unsettled matters as well as the fundamental problems that inhere in this formulation of 'abstract ideas,'" and invited clarification of the law "by a higher authority, perhaps by Congress, to work its way out of what so many in the innovation field consider are § 101 problems." *Id.* at 1353 (quoting *Berkheimer*, 890 F.3d at 1376 (Linn, J., concurring-in-part and dissenting-in-part)).

The "abstract idea" exception in its present form is not only difficult to apply consistently, it is fundamentally at odds with the statutory structure of patent law. In contrast to the principles of *Diehr*, which focused on the narrow question of whether the invention reflected an "application" (and thus patent-eligible subject matter) the "abstract idea" test of today improperly conflates the *eligibility requirement* Section 101 with the *novelty* requirements of Section

102 and Section 103. In *Alice*, the Court held that an invention premised upon an “abstract idea” is patentable if the claimed implementation of the abstract idea is not a set of “well-understood, routine, conventional activit[ies]’ previously known to the industry.” *Alice*, 573 U.S. at 225 (quoting *Mayo*, 566 U.S. at 73). The Federal Circuit has made this “conventionality” test central to its eligibility analysis. *See, e.g., Berkheimer*, 881 F.3d at 1369 (Fed. Cir. 2018). But the problem with this test is clear from the words that embody it: Whether something is “well-understood,” whether it is “routine,” whether it is “conventional,” and whether it was “*previously known* in the industry” are all questions of *novelty*, not subject matter eligibility.

Justice (later Chief Justice) Rehnquist in *Diehr* warned that “[t]he ‘novelty’ of any element or steps in a process, or even of the process itself, is of *no relevance* in determining whether the subject matter of a claim falls within the § 101 categories of possibly patentable subject matter.” *Diehr*, 450 U.S. at 188-189 (emphasis added). But the present “abstract idea” test eschews this warning by building a novelty inquiry into the eligibility inquiry. This incongruity has been recognized, with frustration, by numerous legal commentators, as well as judges of the Federal Circuit. *See, e.g., Berkheimer*, 890 F.3d at 1375 (“The Supreme Court whittled away at the § 101 statute in *Mayo* by analyzing abstract ideas and natural phenomena with a two-step test, including looking for an ‘inventive concept’ at step two, thereby bringing aspects of §§ 102 and 103 into the eligibility analysis.”) (Lourie, J., concurring). Thus, the judicially-created “abstract idea” test in its current form is contrary to the statutory structure of U.S.

patent law and should be revisited to separate eligibility from novelty as intended by Congress.

The current “abstract idea” exception is particularly inapplicable in the computer industry, where cutting-edge innovations are implemented using existing computer technology that may be considered “conventional” because the innovation is not to the basic structure of a computer system (i.e., a processor, memory, and input/output devices) . Declaring a software innovation unpatentable because it can be implemented on a “conventional” processor is like declaring a work of art uncopyrightable because it was painted on a “conventional” canvas. The “abstract idea” exception has lost its utility in the modern world of software innovation.

The present “abstract idea” test not only arises from an inconsistent set of judicial precedents, but it is also contrary to the legislative intent behind Section 101. The Court has recognized that “[t]he Committee Reports accompanying the 1952 Act inform us that Congress intended statutory subject matter to ‘include anything under the sun that is made by man.’” *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980) (quoting S. Rep. No. 1979, 82d Cong., 2d Sess., 5 (1952); H.R. Rep. No. 1923, 82d Cong., 2d Sess., 6 (1952)). In the modern era, excessive prohibitions on the patenting of “abstract ideas” is curtailing patent protection for new and innovative inventions “made by man.” IGT is thus amenable to Petitioner’s argument that the “abstract idea” exception should not have survived the 1952 Patent Act. However, this issue can be largely resolved simply by restoring the “application” test in *Diehr*.

Importantly, curtailing the “abstract idea” exception will not lead to preemption of abstract ideas, the chief concern underlying the Court’s “abstract idea” test. This is because *all* patents will still be limited by the need for a “practical application,” a requirement recognized in *State Street* as rooted in this Court’s *Diehr* decision. *State Street*, 149 F.3d at 1373 (“In *Diehr*, the Court explained that certain types of mathematical subject matter, standing alone, represent nothing more than abstract ideas until reduced to some type of practical application.”). This principle – that a “practical application” is required for patent protection – is also recognized in the USPTO’s revised Section 101 guidelines. 84 Fed. Reg. 4 at 51. Accordingly, because patents will still be limited to “practical applications” of ideas, no patent could preempt *all* possible uses of ideas.

In sum, eschewing the two-step *Alice* test in favor of a “practical application” approach will largely reinstate the clarity of *Diehr* and *State Street*, recognizing that ideas, mathematical principles, and algorithms are patentable provided that they are (1) embodied in a *practical application* that is (2) *new* and *non-obviousness*. By abrogating the hostility to conceptual inventions in *Bilski* and the difficult two-step test in *Alice* in favor of a simplified “practical application” principle, all of the confusing “conventionality” inquiries of the *Alice* test – inquiries that have no bearing on whether a “practical application” of an abstract idea is embodied in the claims – will be transposed to the novelty and non-obviousness analysis where they belong. This restoration of the proper statutory regime of the Patent Act will enable U.S. patent law to once again respect software-based applications embodying abstract ideas.

CONCLUSION

American innovators, patent practitioners and the Federal Circuit itself have struggled under a miasma of conflicting and inapplicable precedents concerning Section 101 eligibility. The fundamentals of U.S. patent law require clarification and correction by this Court. IGT thus respectfully urges the Court to grant certiorari.

Respectfully submitted,

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