

IN THE
Supreme Court of the United States

TDE PETROLEUM DATA SOLUTIONS, INC.,

Petitioner,

v.

AKM ENTERPRISE, INC., DBA MOBLIZE, INC.,

Respondent.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED
STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

**BRIEF OF 15 LAW PROFESSORS AS
AMICI CURIAE IN SUPPORT OF PETITION
FOR A WRIT OF CERTIORARI**

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INTEREST OF *AMICUS CURIAE*

The *amici curiae* are 15 law professors who teach and write on patent law and policy, and are thus concerned with the integrity of the legal system that secures innovation to its creators and to the companies that commercialize it in the marketplace. The *amici* are listed in the Appendix. Although *amici* differ amongst themselves on modern patent law and policy, they agree in their professional opinion that the lower courts' decisions in this case undermine the function of the patent system to promote and to legally secure twenty-first-century innovation. They have no stake in the parties or in the outcome of the case.¹

SUMMARY OF ARGUMENT

In recent years, this Court has repeatedly reminded the Court of Appeals for the Federal Circuit, district courts, and the United States Patent & Trademark Office (“PTO”) that § 101 of the Patent Act is a key requirement in assessing the validity of both patent applications and issued patents. In doing so, this Court set forth a two-part test for assessing whether an invention is patentable subject matter (the “*Mayo-Alice* test”). See *Alice Corp. Pty. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014); *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 132 S. Ct. 1289 (2012). These cases build upon prior cases

1. Pursuant to Supreme Court Rule 37.6, *amici curiae* state that no counsel for any party authored this brief in whole or in part, and that no person or entity other than *amici curiae* or its counsel made a monetary contribution to the preparation or submission of this brief. Petitioner and Respondent have consented to the filing of this brief.

such as *Diamond v. Diehr*, 450 U.S. 175 (1981), which held that a software-based method for operating a rubber mold is patent eligible under § 101.

Unfortunately, the lower courts and the PTO have misunderstood how to apply the *Mayo-Alice* test. Specifically, the lower courts and the PTO have adopted an *indeterminate* and *overly restrictive* approach, invalidating legitimate patented innovation under § 101 with little predictability for inventors or patent attorneys. This frustrates the constitutional function of the patent system in promoting the “Progress of . . . useful Arts.” U.S. CONST. art. 1, § 8, cl. 8.

This case exemplifies both of these fundamental problems—indeterminacy and over-restrictiveness—because the lower courts held that a claim is patent *ineligible* as an “abstract idea” even though it is identical in all relevant respects to the claim deemed patent *eligible* by this Court in *Diehr*, 450 U.S. at 192-93.

Petitioner details the substantial confusion in the application of the *Mayo-Alice* test in this case, as well as at the PTO and in the lower courts. *Amici* here identify a further key insight: when lower courts and the PTO apply the *Mayo-Alice* test to only a portion of a claim and do not evaluate the claimed invention as a whole, they are using a methodological approach that conflicts with this Court’s existing precedents on determining patent eligibility under § 101.

In this case, the Federal Circuit held that a software-based method of operating an oil-drilling rig is an “abstract idea.” It reached this conclusion by dissecting

the claim into its separate elements and ignoring other key elements, ultimately finding the claimed invention is ineligible under § 101. Because Dependent Claim 30 in TDE Petroleum’s patent precisely parallels the claim held to be patent eligible in *Diehr*, *Amici* consider this case to be a paradigm example of the serious legal problems caused by the misapplication of the *Mayo-Alice* test by the lower courts and the PTO.²

This Court can easily remedy this problem by (1) reversing the decision in this case that contradicts the settled law set forth in *Diehr*, and (2) providing further instructions to lower courts and to the PTO that they should apply the *Mayo-Alice* test only to the *claimed invention as a whole*. This is a predicate legal requirement in assessing novelty under § 102 and in assessing nonobviousness under § 103 of the Patent Act. It is also a fundamental legal requirement for asserting patents for both literal and equivalents infringement under § 271. In all of these other patent doctrines, this Court has maintained the basic requirement of assessing patentability or limiting assertion of patents to the *claimed invention as a whole*, as this avoids the same policy problems of indeterminacy and over-restrictiveness (or over-inclusiveness, depending on the perspective) in these other patent doctrines. Thus, this Court should grant the petition for *certiorari*, reverse the Federal Circuit, and provide further instructions for applying the *Mayo-Alice* test only to the “claimed invention as a whole.”

2. Petitioner focuses on Independent Claim 1, as this a typical approach in most patent cases, although the lower courts’ decisions also apply equally to invalidating Claim 30.

ARGUMENT

I. The Lower Courts And The PTO Have Misunderstood The *Mayo-Alice* Test And Have Created Indeterminate And Overly Restrictive Patent Eligibility Doctrine Under § 101

Courts have applied the *Mayo-Alice* test in 405 cases in the past several years. *See Robert R. Sachs, Alice Brings a Mix of Gifts for 2016 Holidays*, Bilski Blog (Dec. 23, 2016), at <http://www.bilskiblog.com/blog/2016/12/alice-brings-a-mix-of-gifts-for-2016-holidays.html>. Unfortunately, many judges have misapplied this test by analytically breaking up patent claims piecemeal and then invalidating them by finding underlying laws of nature, natural phenomena, or abstract ideas contained in these separate elements. *See Mayo*, 132 S.Ct. at 1293 (recognizing that “all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas”). Some of these decisions, including the Federal Circuit’s decision in this case, fail to even consider relevant portions of the claim at any stage of their analyses.

The lower courts have misread a portion of the *Alice* opinion in which this Court stated that “we consider the elements of each claim both individually and ‘as an ordered combination,’” *Alice*, 134 S. Ct. at 2355. Importantly, they have failed to follow this Court’s requirement of assessing a claim “as an ordered combination,” i.e., the claimed invention as a whole, focusing instead *solely* on the individual elements of each claim. This problem is not confined to the courts, as examiners at the PTO and administrative law judges at the Patent Trial & Appeal Board (PTAB) are committing the same fundamental error in applying the *Mayo-Alice* test.

Inventors, patent attorneys, and commercial firms working in the innovation industries are thus left wondering how courts will analytically break up a claim into its individual elements (which of course are often comprised of unpatentable laws of nature or abstract ideas) and whether courts will simply ignore other claim elements in the claimed invention as a whole. *See Mayo*, 132 S.Ct. at 1293. There is no *ex ante* notice as to the specific legal analysis that judges or patent examiners will employ under the *Mayo-Alice* test. Moreover, when judges and examiners apply the test to only some of the individual elements in a claim, it becomes easy to find these individuated elements unpatentable, as evidenced in this case.

A. This Case Exemplifies Indeterminacy In § 101 Analyses Because The Claimed Process Deemed Patent *Ineligible* Is Identical To The Claimed Process Deemed Patent *Eligible* In *Diamond v. Diehr*

This case exemplifies a fundamental error in the lower courts' application of the *Mayo-Alice* test, which has produced harmful indeterminacy in patent law. *Amici* here identify a key insight into the nature of this legal indeterminacy: the district court and the Federal Circuit applied the *Mayo-Alice* test in a way that would invalidate the process claim this Court deemed to be *patent eligible* in *Diehr*. While the Petitioner focuses on Claim 1, *Amici* focus instead on Claim 30 because it precisely parallels the patented process this Court held to be patent eligible in *Diehr*. Thus, Claim 30 epitomizes the legal conflict that now exists between this Court's patentable eligibility jurisprudence and the lower courts' misapplications of the *Mayo-Alice* test.

The *Diehr* patent and TDE Petroleum’s patent are essentially the same: both patents claim a software-based method for operating an industrial process. The *Diehr* patent claimed a new process for curing rubber in a machine using a computer program. *Diehr*, 450 U.S. at 177. TDE Petroleum’s patent claims a new process for operating an oil drill on an oil rig using a computer program.

These two patents parallel each other beyond generally covering industrial processes. They are also similar in both their form and substantive elements. The patent claim at issue in *Diehr* had four steps: (1) a definition of initial data, (2) collection of new data from the machine implementing the industrial process, (3) analysis of the data, and (4) control of the industrial process. *See Diehr*, 450 U.S. at 179 n.5. In this case, TDE Petroleum’s process patent has essentially the same steps as the *Diehr* patent; after a preamble explicitly stating that the claim is directed to running a “well operation,” it details steps in a process for operating an oil-drilling operation on an oil rig using a computer program. As this Court recognized in *Diehr*, industrial processes like drilling oil or curing rubber are clearly patent eligible under § 101. *See Diehr*, 450 U.S. at 184 (“The respondents’ claims describe in detail a step-by-step method for accomplishing [a rubber-curing process]. *Industrial processes* such as this are the types which have historically been eligible to receive the protection of our patent laws.”) (emphasis added).

The claimed invention as a whole in both cases—operating a rubber-curing machine and running an oil-drilling operation on an oil rig—make clear they are industrial processes. The claims require the collection of

data necessary to properly guide the industrial process to its commercial objective, whether a molded rubber product or industrial oil to be taken to a refinery. *Diehr*, 450 U.S. at 184; '812 Patent at 14:34-60. For the rubber-curing process, the initial data included the temperature of the molding compound and a predetermined final temperature based on the shape of the final product. *See Diehr*, 450 U.S. at 177. For the oil-drilling operation on the oil rig, the initial data is the specific nature of the oil-drilling operation for that well and the types of sensors supplying data. '812 Patent at 4:21-26, 10:38-56 and claim 1.

In order for both industrial processes to work, new data must be collected throughout the operation in order to control the process. Only two pieces of data were collected in the rubber-molding process: time and temperature. *See Diehr*, 450 U.S. at 187. The data collected by the oil-drilling process are more extensive, encompassing mechanical and hydraulic data from the well being drilled deep in the ground underneath the oil rig. '812 Patent at 5:22-60 and claim 1. As with all industrial processes, data is necessary for successfully guiding the process' operation. This is why the *Diehr* Court recognized as patent eligible the claimed invention as a whole operating the rubber-molding process. *See Diehr*, 450 U.S. at 192-93. The same is true in this case. Neither the *Diehr* patent nor TDE Petroleum's patent claims either a generic computer or disembodied software; instead, the claims address real-world, industrial processes that have always been patent eligible, as this Court recognized in *Diehr. Id.*

The last element in Claim 30 of TDE Petroleum's patent further clarifies it is an industrial process patent. As such, it should be patent eligible just like the industrial

process patent affirmed in *Diehr*. Both the *Diehr* patent and TDE Petroleum’s patent require using the data acquired and analyzed throughout the process to control the industrial process. In *Diehr*, when the software program determined by its data analysis that the rubber was cured, the machine was automatically opened, producing perfectly cured rubber products. *Diehr*, 450 U.S. at 187. In this case, operational data analysis of the oil-drilling operation by the software program provides for control of the oil well and thus proper oil extraction. ’812 Patent, claim 30.

The claimed inventions as a whole in *Diehr* and in this case are essentially identical. Both claim a method of running an industrial process—curing rubber in machine molds and drilling for oil using an oil rig. Given this Court’s decision in *Diehr*, that alone should make TDE Petroleum’s invented process eligible for a patent under § 101. *See Diehr*, 450 U.S. at 184.

B. The Lower Courts Erred in This Case by Analyzing Only Some Claim Elements And Ignoring The Claimed Invention As A Whole

In order to reach a contrary result in this case, both the district court and the Federal Circuit did what this Court has cautioned against: “dissect[ing] the claims into old and new elements and then [ignoring] the presence” of other elements in the claimed invention as a whole that make it patent eligible. *Diehr* 450 U.S. at 188. The courts below ignored the basic requirement that they must assess the *claimed invention as a whole* under § 101. In this case, the claimed invention as a whole is an industrial oil-drilling operation on an oil rig. Like the rubber-curing

process at issue in *Diehr*, 450 U.S. at 184 n.8, industrial oil-drilling processes have historically been secured under the patent laws. *See, e.g., Roberts v. Dickey*, 20 F. Cas. 880, 884-85 (C.C.W.D. Pa. 1871) (holding as patent eligible an oil-drilling patent and rejecting defendant’s argument it is unpatentable subject matter); U.S. Patent 850,037 (issued Apr. 9, 1907) (Method of Raising Liquids From Wells); U.S. Patent 6,528 (reissued Jan. 26, 1875) (Method of Increasing Capacity of Oil-Wells).³

The district court’s analysis exemplifies the failure of lower courts to properly evaluate the claimed invention as a whole. While admitting that “the use of an oil rig is *central* to the claims,” the district court nonetheless concluded that the use of an oil rig “does nothing to impose meaningful limits on the claim’s scope.” *TDE Petrol. Data Solutions v. AKM Enter., Inc.*, 2015 WL 5311059 at *8 (S.D. Tex. 2015), *aff’d*, 657 Fed. Appx. 991 (Fed. Cir. 2016) (emphasis added). This conclusion effectively deletes a key element from the claim as a whole: a process for running an oil-drilling “well operation” on an “oil rig.” ’812 Patent, claim 30. It defies logic to assert that limiting terms in a claim—which are admitted to be “central” to limiting the industrial process to the exact machine on which it is used—do not meaningfully limit the claim.

The district court’s dismissive attitude toward the limiting language included in TDE Petroleum’s claim

3. If the allegation against TDE Petroleum’s patent is that it is not new or is obvious, then this should be analyzed under § 102 (novelty) or § 103 (nonobviousness), in which this Court and Congress have expressly adopted the requirement that this analysis must be of the claimed invention as a whole. This was adopted in §§ 102 and 103 for exactly the reasons identified by *Amici*, *see* Part II, *infra*.

is no different than if this Court had said in *Diehr* that the rubber-mold machine did not meaningfully limit the process claim at issue in that case. But the control of the industrial rubber-molding machine is exactly what differentiated Diehr's claimed invention as a whole from the prior process patents that this Court had found patent ineligible under § 101. *See Diehr* at 450 U.S. at 185-88 (citing *Gottschalk v. Benson*, 409 U.S. 63 (1972); *Parker v. Flook*, 437 U.S. 584 (1978)) (distinguishing a patentable rubber-molding process from a pure algorithm and mathematical formula that is unpatentable).

The Federal Circuit's analysis of TDE Petroleum's claimed invention suffers from the same methodological error that infected the district court's opinion: dissecting the claim into separate elements and ignoring the express limitations that comprise the claimed invention as a whole. Unlike the district court, which at least acknowledged some of the claim elements reciting the oil-drilling operation, the Federal Circuit disregarded these entirely. *See TDE Petrol. Data Solutions v. AKM Enter., Inc.* 657 Fed. Appx. 991, 993 (Fed. Cir. 2016). The Federal Circuit's claim analysis focused solely on a single data step element, asserting that TDE Petroleum's claimed invention is only "generic computer functions." *Id.* Thus, the Federal Circuit disintegrated the claimed invention into a single element—reducing it to the single abstract idea of data analysis—and ignored the elements of "well operation" and other language in the claimed invention as a whole that made it absolutely clear that TDE Petroleum's patent is for an industrial process in running an oil-drilling operation on an oil rig.

In *Bilski v. Kappos*, 561 U.S. 593, 605-606 (2010), this Court held that patent eligibility tests under § 101 should not be restricted to only those tests that worked for assessing nineteenth-century inventions in the Industrial Revolution. The Federal Circuit’s approach in this case turns *Bilski* on its head, effectively concluding that nineteenth-century industrial processes like oil drilling are now *ineligible* for patent protection. In *Diehr*, the data analysis step in the claim was a well-known equation used in the curing of rubber, *see Diehr*, 450 U.S. at 188. (“Arrhenius’ equation is not patentable in isolation . . .”), and this Court held the claimed invention to be patent eligible under § 101 precisely because the *claimed invention as a whole* was for the application of this equation in operating an industrial process. *Id.* at 192-93. If this Court had restricted its analysis in *Diehr* to only the Arrhenius’ equation used in the process, as the Federal Circuit did here by focusing only on the data analysis element in TDE Petroleum’s process, then the rubber-molding process in *Diehr* would also have been patent ineligible.

Unfortunately, the improper analysis in this case is not an anomaly, as evidenced by the inordinately high rates of rejections of patent applications and invalidations of issued patents in recent years. *See infra* Part I.C. Patent owners can no longer rely on their claims as a whole to define their invention, and lower courts and the PTO are using a methodology that makes the *Mayo-Alice* test highly indeterminate. As in this case, courts are now willy-nilly disintegrating claims into their separate elements and are ignoring important limitations.

This trend directly contradicts this Court’s patent eligibility decisions. *See Diehr*, 450 U.S. at 188 (“It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis.”). Only this Court can correct the key legal error in this case and fix the indeterminacy and over-restrictiveness that has come to infect patent eligibility doctrine. This Court can do so by expressly incorporating into the *Mayo-Alice* test a bedrock rule of patent law: judges and examiners must evaluate the claimed invention as a whole in assessing patent eligibility under § 101. *See Bilski*, 561 U.S. at 606 (rejecting a past patent eligibility rule adopted by the Federal Circuit because it “create[s] uncertainty as to the patentability of software, advanced diagnostic medicine techniques, and inventions based on linear programming, data compression, and the manipulation of digital signals”).

C. Lower Courts And The PTO Have Made The *Mayo-Alice* Test Overly Restrictive for § 101 Patent Eligibility And Thus Are Invalidating Legitimate Patented Innovation

Lower courts and the PTO have fundamentally misapplied this Court’s *Mayo-Alice* test in recent years, invalidating and rejecting patents at extraordinarily high rates. While this test prohibits patenting laws of nature, abstract ideas, or natural phenomena, *Diehr*, 450 U.S. at 185, lower courts have applied it to invalidate a wide range of legitimate twenty-first-century innovation deserving of patent protection. As of the end of December 2016, the invalidation rate under the *Mayo-Alice* test in federal courts is 67.7%. *See Sachs, Alice Brings a Mix of Gifts for 2016 Holidays, supra.* (averaging an invalidation rate of

89% in the Federal Circuit and 63% in the district courts). This follows naturally from the lower courts' mistaken belief that the *Mayo-Alice* test requires them to assess each individual claim element, and thereby ignore the claimed invention as a whole. These high invalidation rates are not a selection effect from a small data set, either, as courts have applied the *Mayo-Alice* in 405 cases since this Court decided *Alice Corp. v. CLS Bank* in 2014. *See id.*

The PTO has similarly high rejection and invalidation rates in applying the *Mayo-Alice* test. The § 101 invalidation rate at the PTAB in its Covered Business Method program is 97%. *See id.* This problem is not limited to business methods or software programs. Shortly after *Alice* was decided in 2014, anecdotal reports indicated that many patent applications covering innovative therapeutic treatments and diagnostic tests were being rejected under the *Mayo-Alice* test. *See* Bernard Chao & Lane Womack, *USPTO is Rejecting Potentially Life-Saving Inventions*, Law360 (Dec. 18, 2014), at <http://www.law360.com/articles/604808/uspto-is-rejecting-potentially-life-saving-inventions>. More recent empirical data confirms these concerns. For example, one examination unit at the PTO responsible for reviewing personalized medicine inventions (art unit 1634) is rejecting 86.4% of all applications under the *Mayo-Alice* test. *See* Bernard Chao & Amy Mapes, *An Early Look at Mayo's Impact on Personalized Medicine*, 2016 Patently-O Patent L. J. 10, 12, at <http://patentlyo.com/media/2016/04/Chao.2016.PersonalizedMedicine.pdf>.

D. Indeterminate And Overly Restrictive Application Of The *Mayo-Alice* Test Undermines Twenty-First-Century Innovation That The Patent System Is Designed To Promote

The lower courts and PTO's indeterminate and overly restrictive application of the *Mayo-Alice* test matters because it contravenes the *Bilski* Court's admonition that § 101 should not impede the progress of future innovation. *See Bilski*, 561 U.S. at 605 (Section 101 is a "dynamic provision designed to encompass new and unforeseen inventions."). Twenty-first-century innovation in software programs and in new software-run processes—like the process controlling the oil-drilling operation in this case—exemplify the "Progress of . . . useful Arts" the patent system is intended to promote and secure to its creators. U.S. CONST. art. 1, § 8, cl. 8.

Given their misunderstanding of the *Mayo-Alice* test, courts are disintegrating claims into their individual elements and, as a result, are assessing haphazardly the eligibility of many patents on industrial and commercial processes that use software programs. *See Diehr*, 450 U.S. at 188 ("It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis."). Today, in the untold number of patents that employ a software program as one element in a claim, there is no meaningful basis to differentiate those patents deemed eligible under § 101 from those that are deemed ineligible under § 101.

For example, the district court and Federal Circuit concluded that TDE Petroleum's patented process using a software program to guide an oil-drilling operation on

an oil rig is patent ineligible as an “abstract idea” under § 101. Yet, a district court deemed patent *eligible* under § 101 a process using a computer software program to prepare a dental implant. *See Zicore, LLC v. Strauman Manufacturing, Inc.*, 2-15-cv-01557 (E.D. Tex., Jan. 20, 2017). Another district court held that a process using a computer software program for making colored glass is patent *eligible* under § 101. *Green Mountain Glass, LLC v. Saint-Gobain Containers, Inc.*, 01-14-cv-00392 (D. Del., Oct. 11, 2016).

There is no reasonable legal principle or patent policy to justify why processes using software programs are valid under § 101 when curing rubber, preparing dental implants, or making colored glass, but invalid “abstract ideas” when running an oil-drilling operation on an oil rig. *See Bilski*, 561 U.S. at 606.

More troubling, and directly raising the specter of indeterminacy in this case, is another district court’s decision in 2015 that a patented process using a software program to determine the angle of a drill in an oil-drilling operation is *eligible* under § 101. *See Canrig Drilling Tech. Ltd. v. Trinidad Drilling L.P.*, 4-15-cv-00656 (S.D. Tex., Sept. 17, 2015). The contrast between the lower courts’ analysis of TDE Petroleum’s claimed invention and *Canrig Drilling Tech* is stark. It confirms the indeterminacy that arise when courts can choose freely either to analyze a claim’s individual (patent ineligible) elements or to analyze a claimed invention as a whole.

The difference between *Canrig Drilling Tech* and this case makes clear the degree to which courts are failing to heed this Court’s guidance when it crafted the

Mayo-Alice test. If there is no reason in legal principle or patent policy to differentiate between patent eligible processes for curing rubber or making colored glass and patent ineligible processes for running an oil-drilling operation on an oil rig, there certainly is no such principle or policy to differentiate solely as a matter of § 101 patent eligibility between two different processes for running an oil-drilling operation on an oil rig. For this reason, this Court should correct the fundamental error in this case, securing the classic industrial processes of oil drilling as patent eligible under § 101. It should also provide further guidance to lower courts and the PTO that they should apply the *Mayo-Alice* test under § 101 only to the claimed invention as a whole. *See Alice*, 134 S. Ct. at 2355 (claim elements should be evaluated “both individually and ‘*as an ordered combination*’”) (emphasis added).

II. Adopting A “Claimed Invention As A Whole” Requirement Provides A Solution To The Indeterminate And Overly Restrictive Application Of The *Mayo-Alice* Test Under § 101

There are many possible solutions to the problems of indeterminacy and overly restrictive patent eligibility requirements that have infected the lower courts’ and PTO’s application of the *Mayo-Alice* test. In addition to those offered by Petitioner, *Amici* here offer one more solution: this Court should instruct the lower courts and the PTO to apply the *Mayo-Alice* test only to *the claimed invention as a whole*. In *Alice*, this Court instructed lower courts and the PTO to do exactly this, *see Alice*, 134 S. Ct. at 2355, because this is a basic tenet of patent jurisprudence repeatedly and consistently affirmed by this Court. *See also Parker v. Flook* 437 U.S. 584, 594

(1978) (“[A] patent claim must be considered as a whole.”); *Mercoid Corp. v. Minneapolis-Honeywell Regulator Co.*, 320 U.S. 680, 684 (1944) (“[A] patent on a combination is a patent on the assembled or functioning whole, not on the separate parts.”).

Granting *certiorari* and reversing the Federal Circuit is necessary in this case for the same reason this Court granted *certiorari* in *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 535 U.S. 722 (2002). This Court needs to prevent lower courts from undermining the basic function of the patent system—promoting new innovation—by failing to follow the legal rules and tests set forth in past Supreme Court decisions. *Id.* at 739 (chastising the Federal Circuit for having “ignored the guidance of *Warner-Jenkinson*, which instructed that courts must be cautious before adopting changes that disrupt the settled expectations of the inventing community” (citing *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 28 (1997))).

A. The “Claimed Invention As A Whole” Requirement Is Fundamental To The Patentability Requirements In §§ 102 And 103 Of The Patent Act

An express “claimed invention as a whole” requirement already exists in many of the key legal doctrines crafted by Congress and the courts for the patent system. This has been a long-standing legal test in all of the patentability requirements for all types of inventions. For this reason, to instruct the lower courts and the PTO that they must apply this same requirement in applying the *Mayo-Alice* test under § 101 is merely to ask them to do something

they have long understood to be a basic legal requirement in applying all other legal tests under the other sections of the Patent Act.

For example, in assessing whether an invention is novel under § 102 of the Patent Act, courts have long applied an “identity” requirement, which mandates that a court or the PTO find that an *entire claim* is preempted in the prior art by a single example. *See Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 715 (Fed. Cir. 1984). The “identity” requirement in § 102 for assessing an invention’s novelty requires that an examiner at the PTO or a court match “each and every element as set forth in the claim . . . in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987). In sum, there must be a one-to-one symmetry between a *claimed invention as a whole* and a single pre-existing example of the alleged invention in the prior art. It is impermissible to either ignore or focus singularly on *any* individuated claim element.

Similarly, in determining nonobviousness under § 103, the Patent Act expressly requires courts to find that “the differences between the claimed invention and the prior art are such that *the claimed invention as a whole* would have been obvious before the effective filing date . . .” 35. U.S.C. § 103 (emphasis added). Tellingly, Congress adopted this statutory language in 1952 to redress a similar problem that the innovation industries now face under § 101: courts had created an insuperable barrier to patentability by analytically breaking up patent claims into their component parts, observing that each single element did not “reveal a flash of genius,” *Cuno Engineering Corp. v. Automatic Devices Corp.*, 314

U.S. 84, 92 (1941), and thus concluding that the patents were merely obvious developments over the prior art. As Justice Robert Jackson wryly observed in 1949 in language that could easily have been written today about the lower courts' and the PTO's application of the *Mayo-Alice* test: "the only patent that is valid is one which this Court has not been able to get its hands on." *Jungersen v. Ostby & Barton Co.*, 335 U.S. 560, 572 (1949) (Jackson, J., dissenting).

The solution to this indeterminate and overly restrictive approach in determining obviousness was in part the adoption of the "claimed invention as a whole" requirement in § 103 in the 1952 Patent Act. This has been a basic requirement of applying nonobviousness doctrine since then. See *Graham v. John Deere Co.*, 383 U.S. 1, 15 (1966). This basic requirement is central to the objective determination of the nonobviousness of a claimed invention, because, as Justice Anthony Kennedy recently observed "inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418-19 (2007).

The same concern about analytically breaking up and reducing all inventions down to "already known" individuated elements in the prior art under §§ 102 and 103 is precisely what the *Mayo* Court referred to when it warned that "too broad an interpretation of this exclusionary principle [under § 101] could eviscerate patent law." *Mayo*, 132 S. Ct. at 1293. This is why this Court in both *Mayo* and in *Alice* instructed lower courts and the PTO to consider not just individual elements, but also the

claim elements “as an ordered combination.” *Alice*, 134 S. Ct. at 2355. For the similar reasons that the “claimed invention as a whole” requirement has been adopted under the novelty and nonobviousness requirements in the Patent Act, this Court should instruct the lower courts and the PTO that they must also apply the same “claimed invention as a whole” requirement in applying the *Mayo-Alice* test under § 101.

B. This Court Adopted A “Claimed Invention As A Whole” Requirement To Solve The Similar Problems Of Indeterminacy And Over-Inclusiveness In Patent Infringement Lawsuits

This Court has long maintained doctrinal symmetry in the “claimed invention as a whole” requirement between the patentability requirements and the assertion of patents against infringers. In the late nineteenth century, for example, this Court laid down the now-famous aphorism: “That which infringes, if later, would anticipate, if earlier.” *Peters v. Active Mfg. Co.*, 129 U.S. 530, 537 (1889). In sum, to assert a patent against an infringer, each and every element in *the claim as a whole* must be found in the allegedly infringing product or process. Overly restricting the claim to only one or two elements in asserting it against an alleged infringer is improper. This Court has explained that “if anything is settled in the patent law, it is that the combination patent covers only the totality of the elements in the claim and that no element, separately viewed, is within the grant.” *Aro Manufacturing Co. v. Convertible Top Replacement Co.*, 365 U.S. 336, 344 (1961). Just as the “claimed invention as a whole” requirement ensures proper limits in assessing patentability, the same requirement prevents indeterminacy and over-

inclusiveness from self-aggrandizing assertions by patent-owners against alleged infringers.

More recently, this Court was faced directly with the same concern about indeterminacy and over-inclusiveness in the assertion of patents against “equivalents,” in which an alleged infringing product or process has merely formal differences from a patented invention and thus substantially performs the same function in the same way and achieves the same result. *See Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29-30 (1997). Justice Hugo Black famously referred to the doctrine of equivalents as “treating a patent claim ‘like a nose of wax.’” *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, 339 U.S. 605, 614 (1950) (quoting *White v. Dunbar*, 119 U.S. 47, 51 (1886)). In *Warner-Jenkinson*, this Court acknowledged this legitimate policy concern about indeterminacy and over-inclusiveness that arises when going beyond the literal terms of a patent claim. *Warner-Jenkinson*, 520 U.S. at 28-29 (“We do . . . share the concern . . . that the doctrine of equivalents, as it has come to be applied since *Graver Tank*, has taken on a life of its own, unbounded by the patent claims.”).

Although this Court reaffirmed the validity of the doctrine of equivalents in *Warner-Jenkinson*, Justice Clarence Thomas’s opinion for the unanimous Court responded to these concerns by expressly adopting what has come to be known as the “all elements rule” for an assertion of equivalent infringement. *Id.* at 29-30. Similar to the same rule for literal infringement, an assertion of infringement by equivalents requires assessing the substantial similarity of an allegedly infringing product or process by reference to every element *in a claim as a*

whole. See, e.g., *Deere & Co. v. Bush Hog, LLC*, 703 F.3d 1349, 1356 (Fed. Cir. 2012) (“[T]he doctrine of equivalents must be applied . . . so that *every claimed element* of the invention—or its equivalent—is present in the accused product.”) (citing *Warner-Jenkinson*, 520 U.S. at 40) (emphasis added).

Similar to the situation before the adoption of § 103 in the 1952 Patent Act, this Court adopted a *claim as a whole* requirement in response to legitimate concerns about indeterminacy and over-inclusiveness in the lower courts’ application of patent infringement doctrines, both for literal infringement and for the doctrine of equivalents. Thus, just like the patent validity analyses under §§ 102 and 103, this Court has held that infringement analysis under § 271 contains a predicate legal requirement that a *claimed invention as a whole* must be applied to a third-party’s product or process in order to support a finding of infringement.

In order to solve the indeterminate and overly restrictive application of the *Mayo-Alice* test, the same predicate legal requirement of construing a *claimed invention as a whole* that runs throughout all of the patentability and infringement doctrines in the patent system should be applied in the *Mayo-Alice* test under § 101.

CONCLUSION

Amici urge this Court to grant the petition for a writ of *certiorari*, to reverse the Federal Circuit, and to clarify for the lower courts and the PTO the meaning of the *Mayo-Alice* test by requiring its application to only a “claimed invention as a whole.”

Respectfully submitted,

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