No. 13-298

IN THE
Supreme Court of the United States

ALICE CORPORATION PTY. LTD.,
Petitioner,

v.

CLS BANK INTERNATIONAL AND CLS SERVICES LTD.,
Respondents.

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

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QUESTION PRESENTED

Whether claims to computer-implemented inventions—including claims to systems and machines, processes, and items of manufacture—are directed to patent-eligible subject matter within the meaning of 35 U.S.C. § 101 as interpreted by this Court?

PARTIES TO THE PROCEEDING

All parties to the proceeding are identified in the caption.

RULE 29.6 STATEMENT

The sole parent corporation or publicly held company that owns 10 percent or more of the stock of Petitioner Alice Corporation Pty. Ltd. is National Australia Bank Limited.

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The district court's opinion is reproduced in the appendix to the petition (Pet. App.) at 172a-238a, and reported at 768 F. Supp. 2d 221. The Federal Circuit panel decision is reproduced at Pet. App. 132a-71a, and reported at 685 F.3d 1341. The order granting rehearing en banc is reproduced at Pet. App. 239a-41a, and is available at 484 F. App'x 559. The opinions of the Judges of the Federal Circuit sitting en banc are reproduced at Pet. App. 1a-131a, and reported at 717 F.3d 1269.

JURISDICTION

The en banc court entered judgment on May 10, 2013. Pet. App. 1a. On July 22, 2013, the Chief Justice granted petitioner Alice Corporation Pty. Ltd. ("Alice") an extension of time to and including September 6, 2013, within which to file a petition for a writ of certiorari. A timely petition was filed on September 4, 2013, and granted on December 6, 2013. This Court has jurisdiction under 28 U.S.C. § 1254(1).

STATUTORY PROVISION INVOLVED

Section 101 of the Patent Act provides: "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101.

STATEMENT OF THE CASE

A. Statutory and Case Law Background

"[A]ny new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof," is eligible for a patent.

35 U.S.C. § 101. Claims involving patent-eligible subject matter fall into two general categories: claims that cover products and claims that cover methods. See 1 Donald S. Chisum, *Chisum on Patents* § 1.02 (2013). Product claims relate to tangible items—*i.e.*, in the terms of § 101, "machine[s], manufacture[s], or composition[s] of matter." *Id.* Claims to machines are often called "system" or "apparatus" claims. Unlike product claims, "method" claims (also known, in the terms of § 101, as "process" claims) do not claim tangible matter, but instead recite a series of steps that produce a useful result. See *id.* § 1.03.

This Court has identified "three specific exceptions to § 101's broad patent-eligibility principles: 'laws of nature, physical phenomena, and abstract ideas.'" *Bilski* v. *Kappos*, 130 S. Ct. 3218, 3225 (2010). The "abstract ideas" exception provided the basis for the decision in this case.

Subject matter that fits within the scope of § 101 is merely *eligible* for a patent—not necessarily entitled to patent protection. Even a patent-eligible claim will not be granted, and if granted will be held "invalid," unless it satisfies additional Patent Act requirements.

Sections 102 and 103 establish the novelty or inventiveness requirement. If a claim covers what already has been done or disclosed, it is "anticipated," and invalid for lack of novelty. See 35 U.S.C. § 102. And if a claim covers obvious modifications to what previously has been done or disclosed, it is invalid for "obviousness." *Id.* § 103; see *KSR Int'l Co.* v. *Teleflex, Inc.*, 550 U.S. 398, 417-18 (2007). As Judge Rich, one of the drafters of the 1952 Patent Act, explained: "[a]chieving the ultimate goal of a patent … involves, to use an analogy, having the separate keys to open in succession the three doors of sections 101, 102, and

103." *Application of Bergy*, 596 F.2d 952, 960 (C.C.P.A. 1979), *vacated as moot*, *Diamond* v. *Chakrabarty*, 444 U.S. 1028 (1980). Section 101 "deal[s] with the question of kind, as distinguished from the qualitative conditions which make the invention patentable," and is "broad and general." *Id.* Sections 102 and 103 "guard[ ] the public interest by assuring that patents are not granted which would take from the public that which it already enjoys (matters already within its knowledge whether in actual use or not) or potentially enjoys by reason of obviousness from knowledge which it already has." *Id.* Only if an inventor "holds the three different keys to the three doors" does the invention "qualif[y] for a patent." *Id.* at 962.

Even if the inventor holds these "keys," however, no valid patent can issue unless the inventor "meet[s] still other statutory requirements in the preparation and prosecution of his patent application." *Id.* In particular, under § 112, the applicant must provide the public disclosures that are "'the quid pro quo of the right to exclude.'" *J.E.M. Ag Supply, Inc.* v. *Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124, 142 (2001) (quoting *Kewanee Oil Co.* v. *Bicron Corp.*, 416 U.S. 470, 484 (1974)). Thus, patent specifications must describe the invention sufficiently to permit one of ordinary skill in the art to implement the full scope of what is claimed without undue experimentation; otherwise, the claim is invalid for lack of enablement. 35 U.S.C. § 112(a). Similarly, the specification must provide a "written description" that establishes that the inventor actually had possession of what he or she has claimed. See *Ariad Pharm., Inc.* v. *Eli Lilly & Co.*, 598 F.3d 1336 (Fed. Cir. 2010) (en banc). And, claims must "particularly point[ ] out and distinctly claim[ ] the subject matter which the inventor or joint

inventor regards as the invention." 35 U.S.C. § 112(b). To assess whether a claim satisfies this "definiteness" requirement, the claim language is examined to determine whether it conveys to one of ordinary skill in the relevant field the precise boundaries of the claimed invention. *Permutit Co.* v. *Graver Corp.*, 284 U.S. 52, 60 (1931). These independent disclosure requirements ensure that the scope of the rights a patent confers on an inventor correspond to, and are limited to, what the inventor actually has contributed to the public.

B. Alice's Inventions

Ian Shepherd, Alice's founder, devised computer-performed operations that reduce "settlement risk"—a risk associated with transactions involving currencies and financial instruments. These transactions are typically structured to require the parties to exchange different assets at a future date. For example, if an investor expects the value of the dollar to rise relative to the yen, and another investor expects the opposite, they might agree to trade a predetermined number of dollars for a predetermined number of yen at some time in the future. One risk associated with such transactions is that only one side will perform the exchange. The exchange is known as "settlement," and so the risk of one-sided performance is referred to as "settlement risk."

Mr. Shepherd invented, and subsequently patented, computer systems, computerized methods, and computer products (*i.e.*, computer media) to eliminate this settlement risk for electronically executed transactions involving electronically traded currencies and instruments. The claims recite an electronic intermediary "supervisory institution" that facilitates settlement between the parties to an executory transaction. The patents disclose "automated infra-

structure," JA249, that maintains "shadow accounts"—a "shadow credit record" and "shadow debit record"—which correspond to, but are maintained independently from, the parties' "real-world" bank accounts. See Pet. App. 71a-72a.[1] At the start of each "day" (the time between when the contract is formed and when it is settled), the shadow accounts are set to reflect the balances of the corresponding real-world accounts. *E.g.*, JA384. Throughout the "day," as the parties enter into additional transactions that create additional exchange obligations, the shadow accounts are adjusted on a "real-time basis," JA296, to reflect those additional obligations—but the supervisory institution allows only those transactions that will not cause the value reflected in the shadow credit record to exceed that in the shadow debit record. JA384. When it comes time for settlement, the automated system issues irrevocable instructions to the parties' "real-world" banks to make the required transfers, and settlement occurs. Because the system ensures that the parties incur only exchange obligations that they will be able to settle, settlement risk is eliminated.

Mr. Shepherd applied for and received four patents on his invention: U.S. Patent Nos. 5,970,479; 6,912,510; 7,149,720; and 7,725,375.[2] These patents, which were assigned to Alice, include system, method, and media claims.

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[1] These "shadow accounts" are sometimes referred to in the patents as "first" and "third" accounts. The bank accounts are sometimes referred to as "second" and "fourth" accounts.

[2] The '720, '510, and '375 patents are continuations or continuations-in-part of the '479 patent.

1. System Claims

The system claims disclose the computer system that Mr. Shepherd invented, and include all claims of the '720 patent, and claims 1 through 38 and 42 through 47 of the '375 patent. Claim 26 of the '375 patent is representative:

> A data processing system to enable the exchange of an obligation between parties, the system comprising:
>
> a communications controller,
>
> a first party device, coupled to said communications controller,
>
> a data storage unit having stored therein
>
> (a) information about a first account for a first party, independent from a second account maintained by a first exchange institution, and
>
> (b) information about a third account for a second party, independent from a fourth account maintained by a second exchange institution; and
>
> a computer, coupled to said data storage unit and said communications controller, that is configured to
>
> (a) receive a transaction from said first party device via said communications controller;
>
> (b) electronically adjust said first account and said third account in order to effect an exchange obligation arising from said transaction between said first party and said second party after ensuring that said first party and/or said second party have

> adequate value in said first account and/or said third account, respectively; and
>
> (c) generate an instruction to said first exchange institution and/or said second exchange institution to adjust said second account and/or said fourth account in accordance with the adjustment of said first account and/or said third account, wherein said instruction being an irrevocable, time invariant obligation placed on said first exchange institution and/or said second exchange institution.

JA1259-61. The claim thus recites a computer and other hardware, as well as the structural configuration of that hardware, specifically programmed to solve, in a particular way, the complex problem of settlement risk to which the invention is directed.

The computer in claim 26 is configured to receive transactions from the parties to an exchange, to make adjustments electronically to the shadow accounts independently maintained by the computer after ensuring that those accounts reflect "adequate value," and to generate instructions to the exchange institutions to implement the exchange in the separate real-world accounts maintained by those institutions. *Id.* The common specification that underlies all of the patents, including the '375 patent, contains flowcharts that provide algorithm support for the specific programming required to implement the operations recited in the claims. *E.g.*, JA1023, 1031-35.

2. Method Claims

The method claims are claims 33 and 34 of the '479 patent, and all claims of the '510 patent. Claim 33 of the '479 patent is representative:

> A method of exchanging obligations as between parties, each party holding a credit record and a debit record with an exchange institution, the credit records and debit records for exchange of predetermined obligations, the method comprising the steps of:
>
> (a) creating a shadow credit record and a shadow debit record for each stakeholder party to be held independently by a supervisory institution from the exchange institutions;
>
> (b) obtaining from each exchange institution a start-of-day balance for each shadow credit record and shadow debit record;
>
> (c) for every transaction resulting in an exchange obligation, the supervisory institution adjusting each respective party's shadow credit record or shadow debit record, allowing only these transactions that do not result in the value of the shadow debit record being less than the value of the shadow credit record at any time, each said adjustment taking place in chronological order; and
>
> (d) at the end-of-day, the supervisory institution instructing ones of the exchange institutions to exchange credits or debits to the credit record and debit record of the respective parties in accordance with the adjustments of the said permitted transactions, the credits and debits being irrevocable, time invariant

> obligations placed on the exchange institutions.

JA383-84.

The claimed computer-implemented method involves electronically creating shadow accounts; making adjustments to the shadow accounts, in chronological order, to reflect those exchange obligations that will not impede settlement; and irrevocably ordering settlement at the end of the period. There is no dispute that the method claims require the use of a computer. Pet. App. 28a. The specification makes clear that the claimed method uses an "automated infrastructure," JA249, that works on a "real-time basis," JA296, to implement irrevocable financial exchanges. The record confirms that a person of skill in the art would understand the methods, as claimed, to require use of a computer. See JA128 ¶ 26 (explaining that "the methods claimed" would be understood to require electronic implementation "using some type of computer processor and memory"); JA124 ¶ 17 ("the terms 'shadow credit record' and 'shadow debit record'" would be understood "to require the electronic storage of data files in a data storage unit.").

Of course, despite claiming a computer-implemented method, and despite containing in their specifications a detailed discussion and multiple diagrams regarding how to implement the claimed inventions, Alice's patents are not limited to precise strings of computer code. In this regard, Alice's patents are no different from the vast majority of patents on computer-implemented inventions. Claims to computer-implemented inventions are written this way out of necessity. Were it otherwise—if software patents claimed only specific code—it would be both difficult for patent examiners and the public to

interpret their scope, and trivial to evade the patents and practice their inventions by making inconsequential alterations to that code or simply using a different computer language. The U.S. Patent and Trademark Office recognizes this, and encourages patentees "to functionally define the steps the computer will perform rather than simply reciting source or object code instructions." *Examination Guidelines for Computer-Related Inventions*, 61 Fed. Reg. 7478, 7486 (Feb. 28, 1996) ("*Examination Guidelines*"). Moreover, this form of disclosure is sufficient to enable software inventions: "[w]riting computer programming code for software to perform specific functions is normally within the skill of the art once those functions have been adequately disclosed." *Manual of Patent Examining Procedure* § 2161.01(I), at 2100-178 (rev. Aug. 2012).

3. Media Claims

Media claims are claims "to a computer readable medium (e.g., a disk, hard drive, or other data storage device) containing program instructions for a computer to perform a particular process." *Cyber-Source Corp.* v. *Retail Decisions, Inc.*, 654 F.3d 1366, 1373 (Fed. Cir. 2011). Alice's media claims are claims 39 through 41 of the '375 patent. They each claim a "computer program product comprising a computer readable storage medium," *i.e.*, a physical structure, "having computer readable program code embodied in the medium" that computers use to operate the systems and implement the methods outlined above. JA1262-63.

C. CLS

Respondents CLS Bank International and CLS Services Ltd. ("CLS") provide a settlement service designed to eliminate settlement risk. D.D.C. Dkt. 51

Ex. 39, at 3. Its "members" maintain multi-currency accounts with the bank. Fed. Cir. J.A. 91. When members agree to a future exchange, CLS "receives and processes instructions, carries out the steps in the settlement process, and issues [i]nstructions to effect payouts" to the appropriate member accounts. *Id*. The entire process is computer-implemented. *Id*. (describing CLS's service as "implemented in computer hardware and software").

"The impetus behind the creation of CLS came from regulatory concerns regarding the potential for [foreign-exchange] settlement risk to be a major source of systemic risk …." *About Us*, http://www.cls-group.com/About/Pages/default.aspx (last visited Jan. 17, 2014). Publications like *The Economist* reported CLS's formation in 2002—almost ten years after Mr. Shepherd filed his first patent application and three years after it was granted—as a significant new development, claiming that it would "change the relationship that banks have with their biggest customers and with each other." *Plumbing Revolution*, The Economist (Nov. 14, 2002), *available at* http://www.economist.com/node/1441975. IBM, which partnered with CLS to create its complex technological infrastructure, described CLS's mission as requiring CLS "to radically rethink the way [foreign-exchange] markets work." *CLS transforms worldwide foreign exchange trading with IBM* (2006), http://tinyurl.com/pvznu3z. CLS itself has described its service as "chang[ing] the way the financial services industry operates." D.D.C. Dkt. 51, Ex. 19, at 1. In short, CLS's service—like the systems, methods, and media claimed in Alice's patents—involves using computer technology in a particular way to eliminate settlement risk for electronically effected transactions.

D. Procedural History

1. District Court Proceedings

CLS filed a complaint on May 25, 2007 seeking a declaratory judgment of non-infringement, invalidity, and unenforceability of the '479, '510, and '720 patents. Alice filed counterclaims for infringement of all three patents. After the '375 patent issued in May 2010, both parties amended their filings to include this patent.

Following this Court's decision in *Bilski* v. *Kappos*, 130 S. Ct. 3218 (2010), Alice and CLS filed cross-motions for summary judgment as to the eligibility of the asserted claims. The district court held every asserted claim invalid as directed to ineligible subject matter. Pet. App. 172a. "At the heart of these claims," according to the court, was

> the fundamental idea of employing a neutral intermediary to ensure that parties to an exchange can honor a proposed transaction, to consummate the exchange simultaneously to minimize the risk that one party does not gain the fruits of the exchange, and then irrevocably to direct the parties, or their value holders, to adjust their accounts or records to reflect the concluded transaction.

Id. at 214a. This, the court reasoned, was an abstract idea not eligible for patent protection. *Id.*; see also *id.* at 235a.

2. Proceedings Before The Federal Circuit Panel

A panel of the Federal Circuit reversed. In an opinion by Judge Linn, joined by Judge O'Malley, the court recognized the breadth of the eligible subject matter defined by § 101, see*, e.g.*, Pet. App. 142a, and

noted that exceptions to this broad grant "should arise infrequently," *id.* at 143a. The court held, in light of the specific claim limitations in Alice's patents, that the claims covered "the practical application of a business concept in a specific way," *id.* at 159a, and therefore easily satisfied the subject-matter requirements of § 101. Judge Prost, who characterized the claims as covering only the "literally ancient" idea of using "an intermediary in a financial transaction," dissented. *Id.* at 163a.

3. Proceedings Before The En Banc Federal Circuit

The Federal Circuit granted CLS's petition for en banc rehearing, Pet. App. 240a, but was unable to issue any majority opinion. Seven of the ten judges voted to affirm the district court's decision that the method and media claims were not directed to eligible subject matter, but there was no majority as to the reasoning. As for the system claims, there was no majority as to reasoning or result, and the judgment was affirmed by an equally divided court.

Writing for the plurality, Judge Lourie set forth a multi-step test for assessing subject-matter eligibility. Under this approach, after determining whether the claimed invention "fits within one of the four statutory classes," Pet. App. 20a, courts should ask "whether the claim" at issue "raises § 101 abstractness concerns at all." *Id.* The next step is to look past the claim's language "to identify and define whatever fundamental concept appears wrapped up in the claim." *Id.* Courts then look to the "balance of the claim" to determine whether it contains "additional substantive limitations that narrow, confine, or otherwise tie down the claim so that, in practical terms, it does not cover the full abstract idea itself." *Id.* at 20a-21a. Applying this test to

Alice's method claims, the plurality found they were drawn to "the abstract idea of reducing settlement risk by effecting trades through a third-party intermediary (here, the supervisory institution) empowered to verify that both parties can fulfill their obligations before allowing the exchange." *Id.* at 28a. And having established that this was the abstract idea "wrapped up" in the method claims, the plurality concluded that the claim limitations, including the computer-implementation requirements, were insufficient to render those claims eligible. *Id.* at 31a. The system and media claims were said to be invalid on similar grounds.

The court produced five other opinions. Chief Judge Rader wrote a partial-concurrence, joined in full by Judge Moore, and in part by Judges Linn and O'Malley. Pet. App. 41a. This opinion emphasized that, contrary to the plurality's approach, claims must be considered "*as a whole*," *id.* at 54a, not stripped of limitations until "something that could be characterized as an abstract idea" reveals itself. *Id.* Chief Judge Rader concluded, and all three judges who joined his opinion agreed, that reviewed as a whole, Alice's system claims were patent-eligible: They covered "the use of a computer and other hardware specifically programmed to solve a complex problem"; the specification disclosed multiple figures providing "detailed algorithms for the software with which the hardware is to be programmed"; and the system claims were not co-extensive with the abstract idea of using a financial intermediary, but rather involved one particular application of financial intermediation. *Id.* at 73a. However, in a part of his opinion joined only by Judge Moore, Chief Judge Rader concluded that the media and method claims were invalid as abstract ideas. *Id.* at 82a.

Judge Moore penned a partial dissent, joined by Chief Judge Rader and Judges Linn and O'Malley, Pet. App. 85a, which criticized the plurality's approach of "stripping away all known elements from the asserted system claims and analyzing only whether what remains, as opposed to the claim as a whole, is an abstract idea." *Id.* at 90a. This, she said, was "inconsistent with the 1952 Patent Act, and years of Supreme Court, CCPA, and Federal Circuit precedent that abolished the 'heart of the invention' analysis for patentability." *Id.*

Judge Newman filed a dissent, Pet. App. 99a, arguing that the proper approach is to "return to the statute, and hold that when the subject matter is within the statutory classes in section 101, eligibility is established." *Id.* at 111a. She would have held all of the claims eligible. *Id.* at 113a.

In a separate dissent, Pet. App. 113a, Judges Linn and O'Malley wrote that because all of the claims were "grounded by the same meaningful limitations," *id.*, the method and media claims were directed to patent-eligible subject matter for the same reasons Chief Judge Rader gave with respect to the system claims.

Finally, Chief Judge Rader filed "[a]dditional reflections," Pet. App. 126a, in which he expressed disappointment that the question of subject-matter eligibility had departed so greatly from the text of § 101. *Id.* at 129a.

SUMMARY OF ARGUMENT

The deep and multiple splits in the Federal Circuit's en banc ruling illustrate the confusion in the lower courts regarding the patent eligibility of computer-implemented inventions. As shown by the

divergent opinions in this case, that confusion largely stems from uncertainty over how to determine whether a claim to a computer-implemented invention runs afoul of the judicial exception for "abstract ideas."

Resolving that uncertainty requires answering three questions: (1) What is an "abstract idea"? (2) What is the proper analysis for determining whether a claim recites an abstract idea? And (3) if a claim does recite an abstract idea, what is the proper analysis for determining whether the claim simply defines the abstract idea itself, in which case it is ineligible under § 101, or whether the claim defines an invention that is an application—specifically, a computer-implemented application—of the idea? The answers to each of these questions can be found in this Court's case law on the abstract ideas exception.

First, the Court has explained that the abstract ideas exception applies only to those preexisting fundamental truths, such as mathematical formulas, that are "equivalent" to a law of nature and that "exist[ ] in principle apart from any human action." *Mayo Collaborative Servs.* v. *Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1297-98 (2012). The purpose of the abstract ideas exception, like the other exceptions this Court has identified, is to avoid foreclosure of the "basic tools of scientific and technological work." *Gottschalk* v. *Benson*, 409 U.S. 63, 67 (1972). Thus, the abstract ideas exception does not extend to any and all disembodied concepts, but only to fundamental truths—*i.e.*, "mathematical formulas and the like," *Mayo*, 132 S. Ct. at 1303. The Court reaffirmed this understanding of abstract ideas in *Bilski*, 130 S. Ct. at 3225, and held ineligible a claim to a "'fundamental economic practice'" that had been "reduced to a mathematical formula," *id.* at 3231.

Indeed, this is the only understanding of the abstract ideas exception that is "consistent with" and does not "deviate from" the statutory text. *Id.* at 3225-26.

Second, assessing whether a claim recites an abstract idea requires reviewing claim language as it is written and in its totality. Because patent claims granted by the U.S. Patent and Trademark Office have legal significance, in that they inform both the patentee and the public of the boundaries of the patent grant, claim language may not be modified or dissected by a reviewing court. See *Diamond* v. *Diehr*, 450 U.S. 175, 188-89, 193 n.15 (1981). Nor should courts consider the novelty of individual limitations—or the claim as a whole—when applying § 101, because this erodes both the claims' critical notice function and the purpose of other patentability criteria.

Third, a claim directed to one of § 101's four statutory categories that does not, on its face, recite a fundamental truth is patent-eligible. Patent claims that require a computer—both process claims that require use of a computer and machine claims that include a computer—are drawn to statutory subject matter. Thus, so long as such claims do not recite a fundamental truth, they are patent-eligible. Where a claim does recite a fundamental truth, such as a mathematical formula, and uses a computer to *apply* that formula in a specific way to achieve a useful result, the claim is also patent-eligible. *Diehr*, 450 U.S. at 187. But where the claim recites a mathematical formula and simply uses a computer to perform the formula's mathematical operations, the claim is ineligible. See *Parker* v. *Flook*, 437 U.S. 584, 594-95 (1978). In the latter case, the claim would effectively preempt the use of the formula—a "basic tool" free for all to use, *Benson*, 409 U.S. at 67—in an

array of possible applications that the patentee did not invent.

Application of these principles confirms that Alice's claims recite eligible subject matter. Each claim is directed to one of § 101's four categories. And the claims' language, on its face, does not recite any fundamental truth. The plurality concluded otherwise only by improperly paraphrasing and dissecting the claim language to conclude that the claims are drawn to a supposed abstract idea of using third-party intermediation to reduce settlement risk. But the supposed abstract idea does not appear in the claim language—and the plurality's analysis ignores the limitations that *do* appear in the claims. Moreover, even if Alice's claims could somehow be read as directed to an abstract idea, they do not preempt all use of any such idea. To the contrary, the specific claim limitations—including in particular the limitations calling for a particular form of computer implementation—preclude any conclusion that the invention as claimed is directed to an idea in itself. The claims do not foreclose the use of any abstract idea, but instead prescribe one particular way of reducing a particular kind of settlement risk by using a computer in a particular way.

Clarifying the three principles described here will advance not only this litigation, but also patent litigation, patent examination, and technological innovation nationwide. The confusion surrounding both abstract ideas and the proper way to analyze claim language in assessing the abstract ideas exception has imposed substantial costs on the patent system and its participants. Those costs accrue disproportionately in connection with computer-implemented inventions, which are routinely perceived (often incorrectly) to recite abstract ideas.

Further explicating the principles this Court has already established for the application of § 101—not creating new rules for computer-implemented inventions—will alleviate this problem. Indeed, should any computer-specific rule be warranted, it is the role of Congress—not the courts—to provide it.

ARGUMENT

I. COMPUTER-IMPLEMENTED INVENTIONS RARELY FIT WITHIN THE NARROW SCOPE OF THE "ABSTRACT IDEAS" EXCEPTION AS DEFINED BY THIS COURT.

A. The Judicial Exception For "Abstract Ideas" Extends Only To Preexisting, Fundamental Truths Equivalent To A Law Of Nature.

1. The Judicial Exceptions To § 101 Are Narrow And Were Created To Implement The Statute's Purpose Of Awarding Patents Only To Products Of Human Ingenuity.

Section 101 of the Patent Act defines the subject matter that is eligible to be patented:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

35 U.S.C. § 101. This Court has made clear that the scope of § 101 is broad: "In choosing such expansive terms … modified by the comprehensive 'any,' Congress plainly contemplated that the patent laws would be given wide scope." *Diamond* v. *Chakrabarty*,

447 U.S. 303, 308 (1980). "Congress took this permissive approach to patent eligibility to ensure that "'ingenuity should receive a liberal encouragement.'" *Bilski*, 130 S. Ct. at 3225 (quoting *Chakrabarty*, 447 U.S. at 308-09).

This Court has also made clear, however, that "§ 101's broad patent-eligibility principles" are subject to specific judicially created exceptions: "'[L]aws of nature, physical phenomena, and abstract ideas,'" even if newly discovered, are not eligible for a patent. *Id.* Accordingly, even if an invention appears to fit within one of the four statutory categories of eligible subject matter, a claim to subject matter within one of the three exceptions is nonetheless ineligible. See*, e.g.*, *Mayo*, 132 S. Ct. at 1294. These exceptions originated in the Court's case law more than a century ago, *e.g.*, *Le Roy* v. *Tatham*, 55 U.S. (14 How.) 156, 175 (1852); *O'Reilly* v. *Morse*, 56 U.S. (15 How.) 62, 112-21 (1853), and have been repeatedly reaffirmed in the decades since, *e.g.*, *Mayo*, 132 S. Ct. at 1293; *Bilski*, 130 S. Ct. at 3225; *Diehr*, 450 U.S. at 185.

The first two exceptions—laws of nature and physical phenomena—have created little interpretive difficulty. These exceptions follow plainly from the statutory text, in that § 101 requires that a patent-eligible invention be "new"—*i.e.*, not preexisting, as a law of nature or physical phenomenon is. See *Bilski*, 130 S. Ct. at 3225 (these exceptions are "consistent with the notion that a patentable process must be 'new and useful'"); *Ass'n for Molecular Pathology* v. *Myriad Genetics, Inc.*, 133 S. Ct. 2107, 2116 (2013) ("Products of nature are not created, and manifestations … of nature [are] free to all men and reserved exclusively to none") (internal quotation marks omitted); *Mayo*, 132 S. Ct. at 1297 (law of

nature "exists in principle apart from any human action").

By contrast, the connection between the third exception, for abstract ideas, and the statutory text is less apparent. Perhaps for this reason, the scope of the exception has been the source of considerable confusion. Mark A. Lemley et al., *Life After* Bilski, 63 Stan. L. Rev. 1315, 1316 (2011) ("Put simply, the problem is that no one understands what makes an idea 'abstract.'"); Pet. App. 145a ("The abstractness of the 'abstract ideas' test to patent eligibility has become a serious problem ...."). This confusion is largely responsible for the disarray in § 101 jurisprudence, particularly as it relates to computer-implemented inventions.

2. This Court's Cases Have Limited The "Abstract Ideas" Exception, Consistent With The Statute, To Patents That Claim Preexisting, Fundamental Truths.

The problem may stem from the fact that the term "abstract ideas" is ambiguous. One possible meaning is the literal, dictionary definition: "abstract," meaning "[c]onsidered apart from concrete existence," and "idea," meaning "[s]omething, such as a thought or conception, that potentially or actually exists in the mind as a product of mental activity." *The American Heritage Dictionary of the English Language* 8, 870 (4th ed. 2001). An abstract idea in this sense is simply a thought divorced from any physical object or activity or any practical application; a pure mental conception. As explained below, a claim defining such an abstraction presents no difficulty under § 101—it is simply not one of the four categories of inventions authorized for patenting under § 101.

That is not, however, the meaning this Court has applied in discussing the abstract ideas exception to patent eligibility. Instead, this Court has used the term as a synonym for a fundamental truth—a preexisting concept analogous to a law of nature, such as, for example, a mathematical formula or relationship. See*, e.g.*, *Diehr*, 450 U.S. at 185. In explaining why "abstract ideas" are, as a category, ineligible for patenting, the Court has explained that they are substantively the same as a law of nature, and thus not "new" within the meaning of § 101. *Mayo*, 132 S. Ct. at 1298 ("abstract ideas" within the scope of the judicial exception are those that are "the equivalent of natural laws"). A fundamental truth in the sense of a mathematical formula "reveals a relationship that has always existed," whereas "'[p]atentable subject matter must be new … not merely heretofore unknown.'" *Flook*, 437 U.S. at 593 n.15. Thus, like a law of nature, an "abstract idea," as the Court has used the term, is "'part of the storehouse of knowledge of all men … free to all men and reserved exclusively to none.'" *Bilski*, 130 S. Ct. at 3225 (quoting *Funk Bros. Seed* v. *Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948)), and one of the "basic tools of scientific and technological work," *Benson*, 409 U.S. at 67, that belongs to the public.

For these reasons, an abstract idea in the fundamental truth sense cannot be made the property of any individual—even one who is the first to discover its existence or recognize its value. When a patent claim recites such an abstract idea, it can be patented only if the claim includes other elements or steps that go beyond the fundamental truth itself, thus limiting the claimed invention to a specific application and preserving public access to the fundamental truth. See *Diehr*, 450 U.S. at 188

("Arrhenius' equation is not patentable in isolation, but when a process for curing rubber is devised which incorporates in it a more efficient solution of the equation, that process is at the very least not barred at the threshold by § 101."); *Flook*, 437 U.S. at 594. Nor is it enough simply to claim the use of a fundamental truth in a particular field; such a field-of-use limitation cannot change the fact that what has been claimed is still a preexisting, fundamental truth. No one is entitled to the exclusive use of such a principle, as such, in any field, no matter how narrow. A fundamental truth, like a law of nature, belongs to the public, for use in any and every field, and no one can prevent the public from using it—even one who first recognizes its utility in a particular field.

This Court's § 101 cases make clear that it is only this form of "abstract idea"—a preexisting, fundamental truth, *i.e.*, "mathematical formulas and the like," *Mayo*, 132 S. Ct. at 1303—that is one of the three judicially crafted exceptions that bars patenting of products and processes that § 101 otherwise declares eligible for patenting. For example, in *Diehr*, the Court assessed a process for curing rubber using a mathematical formula (the Arrhenius equation) and a programmed computer. The claimed process was patent-eligible because, although it "admittedly employ[ed] a well-known mathematical equation," the inventors did "not seek to pre-empt the use of that equation. Rather, they [sought] only to foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process," including "installing rubber in a press, closing the mold, constantly determining the temperature of the mold, constantly recalculating the appropriate cure time through the use of the formula and a digital

computer, and automatically opening the press at the proper time." 450 U.S. at 187. Throughout the analysis, the Court explicitly equated "abstract ideas" with the notion of a mathematical "algorithm," which the Court defined as a "procedure for solving a given type of mathematical problem," *id.* at 186—not with generic, disembodied concepts or any other kind of "abstract idea." See *id.* at 191-92 ("We recognize, of course, that when a claim recites a mathematical formula (or scientific principle or phenomenon of nature), an inquiry must be made into whether the claim is seeking patent protection for that formula in the abstract.").

Similarly, in both *Flook* and *Benson*, the Court applied the abstract ideas exception to mathematical algorithms. In *Flook*, the Court considered a claimed process for computing an updated "alarm limit" value by measuring the alarm limit, then calculating a new alarm limit using a mathematical formula, then adjusting the alarm limit based on the calculation. 437 U.S. at 596-97. The Court acknowledged that the claimed method was limited to a certain field (catalytic conversion of hydrocarbons) and called for "'post-solution' activity" (adjusting the alarm limit to reflect the calculations), *id.* at 590, but nonetheless held it ineligible because to grant a patent would foreclose "one of the 'basic tools of scientific and technological work.'" *Id.* at 591-92. In *Benson*, the Court held ineligible a method for using a computer to implement a mathematical algorithm to convert binary-coded decimal numerals into pure binary numerals because "the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself." 409 U.S. at 71-72. And in both cases, the Court treated the "abstract ideas" exception as directed to such

fundamental truths, not simply pure concepts. See *Flook*, 437 U.S. at 589 (explaining that *Benson* "[r]eason[ed] that an algorithm, or mathematical formula, is like a law of nature … [and] a law of nature cannot be the subject of a patent."); *id.* at 595 n.18 ("[O]ur holding today is that a claim for an improved method of calculation … is unpatentable subject matter under § 101."); *Benson*, 409 U.S. at 71-72 (declaring ineligible a claim that "would wholly pre-empt the mathematical formula").

Most recently, in *Bilski*, the Court again held ineligible as an "abstract idea" a patent claim directed to a fundamental truth. The key claims at issue in *Bilski* described "a series of steps instructing how to hedge risk" (claim 1) and that series of steps "articulated … into a simple mathematical formula" (claim 4). 130 S. Ct. at 3223-24. Claim 1 recited:

> "(a) initiating a series of transactions between said commodity provider and consumers of said commodity wherein said consumers purchase said commodity at a fixed rate based upon historical averages, said fixed rate corresponding to a risk position of said consumers;
>
> "(b) identifying market participants for said commodity having a counter-risk position to said consumers; and
>
> "(c) initiating a series of transactions between said commodity provider and said market participants at a second fixed rate such that said series of market participant transactions balances the risk position of said series of consumer transactions."

Id. at 3223-24. Thus, step (a) described a provider entering into contracts to sell a commodity to consumers at some fixed price, step (b) described the

provider finding someone who wants to supply the commodity, and step (c) described the supplier selling the commodity to the provider at a fixed price designed to "'balance[ ] the risk'" of the step (a) transaction. *Id.* at 3224. Claim 1 therefore was directed simply to a fundamental or mathematical truth: risk from one fixed price transaction can be avoided by engaging in an offsetting fixed price transaction. That the claimed invention was nothing more than such a fundamental truth is evident given that, as this Court emphasized, the steps of claim 1 were "put[ ] … into a simple mathematical formula" in claim 4. *Id.* at 3223, 3231. The character of the claims, which involved no computer implementation or other use of physical instrumentalities, led the Court to conclude that "[t]he concept of hedging, described in claim 1 and reduced to a mathematical formula in claim 4, is an unpatentable abstract idea, *just like the algorithms at issue in* Benson *and* Flook." *Id.* at 3231 (emphasis added). And the Court explained that its rationale for declaring the claims ineligible was to permit continued public access to the "'fundamental economic practice'" the applicants had claimed: "Allowing petitioners to patent risk hedging would pre-empt use of this approach in all fields, and would effectively grant a monopoly over an abstract idea." *Id.*; see also *id.* at 3227 (plurality) (describing "the larger object" of the patent law to be "securing patents for valuable inventions without transgressing the public domain").

Thus, in each of these cases, the Court applied the "abstract ideas" exception solely to fundamental or mathematical truths, which, whether known or unknown, "exist[ ] in principle apart from any human action," *Mayo*, 132 S. Ct. at 1297; see also *Flook*, 437 U.S. at 593 n.15 (abstract ideas "reveal[ ] a relation-

ship that has always existed"). Indeed, it is only with this understanding of "abstract ideas" that the abstract ideas exception can be reconciled with the text of § 101, and with the Court's stated rationale for creating exceptions to that statutory text. See *Bilski*, 130 S. Ct. at 3225-26 (explaining that the three judicial exceptions "are consistent with" the text of § 101 and rejecting a construction under which "the Patent Act's terms deviate from their ordinary meaning"). Fundamental, preexisting truths are not "new" within the meaning of § 101, and are therefore properly deemed an "exception[ ] to § 101's broad patent-eligibility principles." *Id.* at 3225.

3. The "Abstract Ideas" Exception Does Not Extend To All Disembodied Concepts.

Confusion persists, however, because the term "abstract ideas" can also be understood to mean a disembodied concept or pure mental conception. A claim to this form of "abstract idea," standing alone, would also be ineligible under § 101—but for a very different reason. A disembodied concept, standing alone, does not fall within any of the four statutory categories. That is, a pure concept, with no practical application, is not a machine, manufacture, or composition of matter, nor is it a process, understood as an ordered series of steps to produce a practical result. See *Rubber-Tip Pencil Co.* v. *Howard*, 87 U.S. (20 Wall.) 498, 507 (1874) ("An idea of itself is not patentable").

The rationale this Court has articulated for the abstract ideas *exception* has no role to play in finding disembodied "abstract ideas" ineligible for patenting. That is because it cannot be said that each and every mental conception is a "basic tool[ ] of scientific and technological work," *Benson*, 409 U.S. at 67, that is

"equivalent" to a law of nature like $E = mc^2$ or the law of gravity, *Mayo*, 132 S. Ct. at 1293, 1298. Moreover, a disembodied concept is not necessarily preexisting, and may well be "new" within the meaning of § 101. See, *e.g.*, *United States* v. *Dubilier Condenser Corp.*, 289 U.S. 178, 188 (1933) (describing "an inventive act" as "the birth of an idea and its reduction to practice"); *Richmond Screw Anchor Co.* v. *United States*, 275 U.S. 331, 339 (1928) (patentee "developed a new idea").

It also would make little sense to craft an abstract ideas "exception" to subject-matter eligibility for disembodied concepts. Such abstractions, standing alone, are *already* excluded by the plain language of § 101, which limits patents to four defined types of inventions. And the fact that a claim directed to one of the four statutory categories incorporates, in some fashion, a disembodied concept is entirely *un*exceptional. Every invention can be portrayed in conceptual terms, and every inventor begins the inventive process with an "abstract idea" in this sense. See *Dubilier Condenser Corp.*, 289 U.S. at 188; cf. *Bonito Boats, Inc.* v. *Thunder Craft Boats, Inc.*, 489 U.S. 141, 149 (1989) ("[T]he federal patent scheme creates a limited opportunity to obtain a property right in an idea."). Thus, to ask, as the plurality here did, whether a disembodied concept is "wrapped up" in a claim directed to one of the four statutory categories, Pet. App. 20a, yields no useful insight, as the answer will in all cases be yes—particularly if, as the lower courts have done, claims are dissected and distilled until some "core" concept is revealed. This cannot be the province of a judicially crafted exception to a legislative enactment. See, *e.g.*, *United States* v. *Rutherford*, 442 U.S. 544, 559 (1979) ("Whether, as a policy matter, an exemption should

be created is a question for legislative judgment, not judicial inference.").

While this Court's cases have consistently established that the abstract ideas exception extends only to preexisting, fundamental truths, that message has become garbled in communication—likely because the term "abstract idea" can have these two distinct meanings. Kevin E. Collins, Bilski *and the Ambiguity of "An Unpatentable Abstract Idea*," 15 Lewis & Clark L. Rev. 37, 41 (2011). The problems plaguing the lower courts in applying the abstract ideas exception can be traced directly to their failure to distinguish disembodied concepts from fundamental truths—and their application of the same analysis and rationale to both. As discussed more fully below, *infra*, at 45-48, that conflation was at the heart of the plurality opinion here. This Court should clarify that the abstract ideas exception is far narrower in scope than the Federal Circuit has understood, and re-tether that judicially created exception to the statutory text.

B. In Determining Whether A Claim Recites An Abstract Idea, The Claim Must Be Read As A Whole And According To Its Terms.

A patent contains two parts: a written description and claims. The purpose of the written description is to "describ[e] the invention 'in such full, clear, concise, and exact terms as to enable any person skilled in the art … to make and use the same.'" *Markman* v. *Westview Instruments, Inc.* 517 U.S. 370, 373 (1996) (quoting 35 U.S.C. § 112(a)). The claims play a different role: they provide notice to the public of the metes and bounds of patent protection. See 35 U.S.C. § 112(b). As this Court has explained, it is the claims that "'define[ ] the scope of a patent grant.'"

Markman, 517 U.S. at 373. Thus, the claims determine the scope of both the patentee's right to exclude and the public's right to "use[ ] or manufacture[ ]" technology "without a license" from the patentee. *Permutit Co.*, 284 U.S. at 60; see also *Cont'l Paper Bag Co.* v. *E. Paper Bag Co.*, 210 U.S. 405, 419 (1908) ("the claims measure the invention"); *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 365 U.S. 336, 339 (1961) ("the claims made in the patent are the sole measure of the grant").

For this reason, this Court has explained that claim language, *as written*, is definitive:

> The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and it is unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms.

White v. *Dunbar*, 119 U.S. 47, 51-52 (1886); see also *McCarty* v. *Lehigh Valley R.R.*, 160 U.S. 110, 116 (1895) ("if we once begin to include elements not mentioned in the claim, in order to limit such claim …, we should never know where to stop"). It is, therefore, improper to look to the "heart" or "gist" of an invention, rather than the actual invention as described in the claim's language. See *Aro*, 365 U.S. at 345 ("[T]here is no legally recognizable or protected 'essential' element, 'gist' or 'heart' of the invention ….").

A corollary to the principle that claims must be read as written is that claims must be considered as a whole. The scope of a patent claim—the scope of the patentee's right to exclude—is determined by *all* of the claim limitations in combination. Looking at any individual limitation or subset of limitations in

isolation creates a distorted picture of the claimed invention, because it distorts the boundaries of what the PTO has actually found deserving of a patent and what the public may not use. *Bilski*, 130 S. Ct. at 3230 (claims must be considered "as a whole, rather than 'dissect[ing] the claims into old and new elements and then ... ignor[ing] the presence of the old elements in the analysis'") (quoting *Diehr*, 450 U.S. at 188) (alterations and omission in original); *Warner-Jenkinson Co.* v. *Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997) ("Each element contained in a patent claim is deemed material to defining the scope of the patented invention.").

In particular, the eligibility of a claim under § 101 does not turn on whether any individual element of the claim is itself patent-eligible or "novel." See *Diehr*, 450 U.S. at 188-89, 193 n.15; *Mercoid Corp.* v. *Mid-Continent Inv. Co.*, 320 U.S. 661, 667 (1944) ("The patent is for a combination only. … [N]one of the separate elements of the combination is claimed as the invention"). "The '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 188-89 (emphasis added). Instead, the relevant inquiry is whether a claim, on its face, recites an abstract idea, such as a mathematical formula, and, if it does, whether it "implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect." *Id.* at 192.

The Court undertook just this inquiry in *Diehr*. The Court rejected the notion that the claim could be split up, such that the abstract idea recited in the claim—there, the Arrhenius equation—was examined sepa-

rately from the claim's other elements. *Id.* at 188-89. Instead, "claims must be considered as a whole. *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.*" *Id.* at 188 (emphasis added). The Court explained that the contrary approach "would, if carried to its extreme, make all inventions unpatentable because all inventions can be reduced to underlying principles of nature which, once known, make their implementation obvious." *Id.*; see also *Mayo*, 132 S. Ct. at 1293 ("[T]oo broad an interpretation of [the exceptions to subject-matter eligibility] could eviscerate patent law. For all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.").

Despite this Court's analysis in *Diehr*—reaffirmed in both *Mayo*, 132 S. Ct. at 1298-99, and *Bilski*, 130 S. Ct. at 3229-30—the plurality in this case took a different approach. The plurality first undertook to "unambiguously identif[y]" the abstract idea that is supposedly "wrapped up" in Alice's claims. Pet. App. 20a, 28a. In doing so, the plurality did not, as this Court did in *Diehr*, review the actual claim language to determine whether, on their face, the claims "recite[ ] a mathematical formula (or scientific principle or phenomenon of nature)." 450 U.S. at 191. Instead, the plurality undertook its own deconstruction of the claim to find the supposed heart of the invention. Pet. App. at 28a. The plurality then undertook a separate review of "the balance of the claim," in order to determine whether any other, individual limitations were sufficiently "'inventive'"—*i.e.*, representative of a "human contribution" that is not "merely tangential, routine, well-understood, or conventional." *Id.* at 20a-23a. By paraphrasing the

claim language rather than looking at its express terms, separating the claim into its constituent parts, and reviewing individual elements for novelty instead of considering whether the claim as a whole described statutory subject matter, the plurality departed dramatically from the § 101 analysis that this Court has prescribed.

The plurality suggested (Pet. App. 21a-22a) that its approach was dictated by the statement in *Mayo* that an "inventive concept" is needed if a claim is to survive § 101. 132 S. Ct. at 1294. But the plurality misread *Mayo*.

The invention in *Mayo* was a method for determining, based on the level of a metabolite in a patient's blood, whether the patient had received a therapeutically effective dose of a thiopurine drug. *Id.* at 1294-95. The sole steps recited were "'administering'" the drug and "'determining'" (by unspecified means) the resulting metabolite level in the patient's blood; and the claim concluded with two "'wherein'" clauses stating which metabolite levels indicated a need to either increase or decrease the dosage. *Id.* at 1295 (quoting patent).

In reviewing the claims, the Court first looked to the claim language as written—not to a paraphrasing of the supposed heart of the claims—and determined that the claims on their face recited a law of nature (the correlation between blood metabolite level and therapeutic efficacy). *Id.* at 1296-97. The Court then looked to whether the claims contained an "'inventive concept,'" which the Court defined as "other elements or a combination of elements … sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the natural law itself." *Id.* at 1294. In other words, the Court sought to determine whether the claim reflected "more than a

drafting effort designed to monopolize the law of nature itself"—"more than simply stat[ing] the law of nature while adding the words 'apply it.'" *Id.* at 1294, 1297. The Court looked at all of the claim limitations and found that they were "not sufficient to transform an unpatentable law of nature into a patent-eligible application of such a law." *Id.* at 1298 (quoting *Flook*, 437 U.S. at 590). The Court made clear that "to consider the three steps as an ordered combination," *id*. (citing *Diehr*, 450 U.S. at 188), demonstrated that the claim indeed described nothing more than the recited law of nature because "[a]nyone who wants to make use of these laws must" perform the claimed steps, "and so the combination amounts to nothing significantly more than an instruction to doctors to apply the applicable laws when treating their patients." *Id*. The Court later emphasized this same point again, stating that "since they [the claim steps] are steps that must be taken in order to apply the laws in question, the effect is simply to tell doctors to apply the law somehow when treating their patients." *Id*. at 1299-1300; see also *id*. at 1302 ("the steps add nothing of significance to the natural laws themselves.").

The Court in *Mayo* thus did not purport to overrule or limit *Diehr* and other precedents, but instead made clear that *Diehr* continues to govern the analysis. *Id.* at 1298-99. And the Court did not, by using the term "inventive concept," license courts to disregard the actual claim language, or to dissect the claim for purposes of examining the novelty of individual limitations. Instead, the "inventive concept" inquiry asks whether additional steps in a claim that on its face recites a law of nature or fundamental truth do anything more than simply say "apply it." Steps that anyone using the law or truth necessarily must

employ are just another version of "apply it," whereas steps that go beyond such essential ancillary steps reflect an "inventive concept," whether or not those steps might already have been known.

C. Claims To Computer-Implemented Inventions Are Patent-Eligible Unless They Recite No More Than A Fundamental Truth And The Instruction To "Apply It" Using A Computer.

Much of the confusion regarding computer-implemented inventions is clarified with an understanding of the proper meaning of "abstract ideas." Computers are simply a form of machine, and they function through the physical manipulation of switches. Thus, a computer-implemented invention necessarily has a physical embodiment, and cannot be an abstract idea in the sense of a disembodied concept, any more than would be an electric-motor-implemented invention or compressed-air-implemented invention.

However, unlike electric motors or air compressors, computers can be used to perform mathematical calculations. And, as shown above, this Court has recognized that mathematical formulas are abstract ideas, in the fundamental truth sense, and a claim that would preempt use of a mathematical formula is outside the scope of § 101. Thus, a computer-implemented invention that would preempt use of a mathematical formula or other fundamental truth—as did the inventions in *Benson* and *Flook*—is ineligible for patenting. Computer-implemented inventions that do *not* preempt use of a mathematical formula or other fundamental truth are eligible. Judge Rich well explained this dichotomy some 30 years ago:

> The problem here … is not one of computer-related inventions per se; it is one of mathematics-related inventions.…
>
> A computer is not mysterious to one skilled in the art; it is merely a distinct type of machine. It will facilitate understanding the applicability of patent law to computer-arts inventions if it is kept in mind that the issues under § 101 in this area have arisen because the function of the computer has been to perform mathematical operations. The problems revolve about the role of mathematics in the claimed inventions.

Application of Walter, 618 F.2d 758, 764 (C.C.P.A. 1980), *abrogated by In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008). Explicating the distinct meanings of "abstract ideas" will help to resolve these problems.

1. Computer-Implemented Inventions Are Not Disembodied Concepts.

First, a computer-implemented invention that is either a system (in § 101 terms, a "machine") or a process cannot be an abstract idea in the disembodied concept sense. That is because a computer—whether a general purpose computer or a computer specifically constructed to perform a particular function—is a machine. See *Application of Chatfield*, 545 F.2d 152, 157 (C.C.P.A. 1976) ("we find no basis for treating methods of operating computing machine systems differently from methods of operating any other form of machine system"). And a machine, or a process that requires use of a machine, is not a disembodied concept or an idea divorced from any real-world steps or components. *Burr* v. *Duryee*, 68 U.S. (1 Wall.) 531, 570 (1863) ("A machine is not a principle or an idea."). To the contrary, a "machine" is one of the types of inventions deemed eligible for patenting

under the express terms of § 101.[3] And this Court has stated that use of a machine in a process is "an important and useful clue" to patent eligibility. *Bilski,* 130 S. Ct. at 3226; see also Pet. App. 70a (stating, in discussing Alice's system claims, "[i]f tying a method to a machine can be an important indication of patent eligibility, it would seem that a claim embodying the *machine itself*, with all its structural and functional limitations, would rarely, if ever, be an abstract idea.").

Computers may seem different from other machines because they can be programmed or "configured" to perform a wide variety of functions, and because they seem to perform those functions in non-machine-like ways—*i.e.*, without gears, levers, or visibly moving parts. Indeed, as denoted by the name "computer," there is a common perception that computers function by performing computations, *i.e.*, mathematical operations, to produce numerical results that somehow are translated into other forms. But this is largely a misperception of how computers work and what they do. In fact, every computer operation involves using software to manipulate microscopic switches within computer hardware to bring about a particular result.

"Hardware" refers to the "physical components of a computer system." *Microsoft Computer Dictionary* 246 (5th ed. 2002). Among these physical components are millions of on-off switches. Ron White, *How Computers Work* 63 (9th ed. 2008). Today, these switches take "the form of microscopic transistors etched into a slice of silicon," *id.*, which switch on or off in response to the application of voltage. *See* David

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[3] Notably, none of the claims this Court has declared to be an ineligible abstract idea claimed a machine.

A. Patterson & John L. Hennessy, *Computer Organization and Design* 25 (5th ed. 2013) ("A transistor is simply an on/off switch controlled by electricity."); Neil Randall, *Dissecting the Heart of Your Computer*, PC World Magazine, June 9, 1998, at 255 ("When voltage is applied to [a transistor], it reacts by turning the circuit either on or off."). Every operation performed by a modern computer, however complex, is the result of switching transistors on or off in different combinations. See White, *supra*, at 63. "[I]t is the careful configuration of these on-off switches that produces the complex and varied functionality of modern computers." Br. for Microsoft Corp. et al., as Amici Curiae at 10, *Bilski* v. *Kappos*, 130 S. Ct. 3218 (2010) ("*Bilski* Br. for Microsoft").

The "instructions that make hardware work" are referred to as "software." *Microsoft Computer Dictionary* at 489. In the past, computers had no software; instructions were entered manually by individuals flipping switches, which created "a pattern of on and off electrical currents the computer then used to activate more electrical switches in the form of vacuum tubes." White, *supra*, at 84; see also Patterson & Hennessey, *supra*, at 1.12-3, *available at* http://tinyurl.com/PHs-1-12-3. Today, instructions are entered using computer code, which is received by the computer in the form of binary (or "machine" or "object") code, and that code causes the computer to manipulate its internal electrical connections in particular ways. White, *supra*, at 68-69. "[W]hen stored as electrical charges, the ones and zeros of the binary code produce electrical currents that literally (but temporarily) reconfigure the electronic pathways running between transistors in the same way that human operators reconfigured the wiring of [early computers] by hand." *Bilski* Br. for Microsoft at 12

n.4. Only by reconfiguring these electronic pathways can the hardware be made to perform any useful operations.

In short, computer hardware contains millions of electronic pathways that can be configured to perform different operations. Software causes the hardware to manipulate these electronic pathways such that those operations can actually be carried out. Thus, systems that contain a computer, and methods that are implemented with a computer, necessarily exist in the physical, rather than purely conceptual, realm. A claim that recites specific use of a computer therefore cannot be an abstract idea in the disembodied concept sense of the term.

The plurality agreed that "[a] particular computer system, composed of wires, plastic, and silicon, is no doubt a tangible machine.… Claims to computers were, and still are, eligible for patent." Pet. App. 40a. The plurality went on, however, to say, "[we] have before us not the patent eligibility of specific types of computers or computer components, but computers that have routinely been adapted by software consisting of abstract ideas, and claimed as such, to do all sorts of tasks that formerly were performed by humans." *Id.* In this, the plurality erred on multiple counts. Software does not "consist[ ] of abstract ideas"—it is, rather, the "instructions that make hardware work." *Microsoft Computer Dictionary*, *supra*, at 489. The "tasks" actually specified in Alice's claims were never, and could not have been, "formerly performed by humans." And, whatever software may be used to adapt a computer cannot change the fact that a computer system, or a method that uses a computer, necessarily involves a physical implementation—not merely a disembodied concept. See *In re Alappat*, 33 F.3d 1526, 1545 (Fed. Cir. 1994)

(en banc); Pet. App. 93a ("A claim to a computer running particular software is no less a claim to a computer.").

Moreover, like any patent claim, a claim to a computer-implemented invention must be read as a whole and according to its express terms. Thus, when considering a claim that recites a computer or use of a computer, it is improper to focus solely on the software's instructions while ignoring the computer's physical components that implement those instructions. That would be so even if it were true that the recited computerized functions "formerly were performed by humans." Pet. App. 40a. Because computers are indisputably "tangible," *id.*, and function through physical means, computer-implemented inventions do not fall outside the four § 101 categories on the ground that they are disembodied concepts.

2. Computer-Implemented Inventions May Be Ineligible If They Claim No More Than A Fundamental Truth.

A claim to a computer-implemented invention may, however, be ineligible if it would preempt the use of a fundamental truth. This can occur in several ways. If a claimed invention uses a computer simply to execute a mathematical formula, the claim is ineligible, because limiting the claim to use of the formula on a computer, like limiting it to use in catalytic conversion or some other field, does not change the fact that the claim would preempt use of the formula as such. See *Benson*, 409 U.S. at 71-72; *Mayo*, 132 S. Ct. at 1298. Similarly, claims that recite only insignificant pre- or post-solution activity, such as steps necessary to any practical use of the formula—*i.e.*, inputting numbers into a mathematical formula, *Bilski*, 130 S. Ct. at 3231, or reporting the

results of a mathematical calculation, *Flook*, 437 U.S. at 590—cannot "transform" an ineligible abstract idea "into a patent-eligible application" of the idea. *Mayo*, 132 S. Ct. at 1298. To allow such a claim would effectively preempt use of the mathematical formula itself, thus removing a "basic tool[ ]," *Benson*, 409 U.S. at 67, from the "storehouse of knowledge," *Funk Bros. Seed*, 333 U.S. at 130.

That is precisely why the Court deemed ineligible the claims at issue in *Benson* and *Flook*. In *Benson*, the Court explained that "[t]he mathematical formula involved here has no substantial practical application except in connection with a digital computer, which means that if the judgment below is affirmed, the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself." 409 U.S. at 71-72. Similarly, in *Flook*, the Court explained that "Respondent's application simply provides a new and presumably better method for calculating alarm limit values.… [I]f a claim is directed essentially to a method of calculating, using a mathematical formula, even if the solution is for a specific purpose, the claimed method is nonstatutory." 437 U.S. at 594-95 (internal quotation marks omitted). The process claimed in *Diehr*, however, preempted only a specific application of a mathematical formula:

> [T]he respondents here do not seek to patent a mathematical formula. Instead, they seek patent protection for a process of curing synthetic rubber. Their process admittedly employs a well-known mathematical equation, but they do not seek to pre-empt the use of that equation. Rather, they seek only to foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process.

450 U.S. at 187.

These precedents demonstrate that the patent eligibility of computer-implemented inventions is determined using the same principles as other inventions. Simply put, if the claim would preempt the use of a mathematical formula or the like as such, the claim is ineligible. See *Examination Guidelines*, 61 Fed. Reg. at 7484 ("A claimed process that consists solely of mathematical operations is non-statutory whether or not it is performed on a computer."). That is, if the claim recites a mathematical formula and an instruction to "apply it on a computer" (or an equivalent instruction), or to take other steps inherent to use of the formula, it fails § 101. If the claim does not, on its face, recite a mathematical formula or other fundamental truth, it is eligible. And, if the claim recites a particular application of a mathematical formula, such that others would not be foreclosed from using the formula in other practical applications, it is eligible.

Of course, even a claim directed to eligible subject matter must satisfy other requirements. See *Bilski*, 130 S. Ct. at 3225 (§ 101 is "only a threshold test"). Thus, to gain patent protection, a computer-implemented invention must be novel under § 102 and nonobvious under § 103, and must also fulfill the disclosure requirements of § 112. Section 112 can play a particularly important role in ensuring that claims to computer-implemented inventions are not so broad or vague that they grant unjustified monopolies over entire fields of endeavor. See Exec. Office of the President, *Patent Assertion and U.S. Innovation* 7-8, 13 (June 2013), *available at* http://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf (problems of overbroad claims using "functional" language are "especially acute for soft-

ware patents"; recommending "clearer patents with a high standard of novelty and non-obviousness"); Mark A. Lemley, *Software Patents and the Return of Functional Claiming*, 2013 Wis. L. Rev. 905. As explained above (*supra*, at 3-4), under § 112 a patent application's specification must establish that the applicant actually has possession of, *i.e.*, actually invented, what he or she claims. It must describe the claimed invention in sufficient detail to enable those of ordinary skill in the field to practice the claimed invention, thus ensuring that the public will have the full benefit of the invention when the patent expires. And, it must identify the precise scope of the claimed invention, so that the public knows "which features may be safely used or manufactured without a license and which may not." *Permutit Co.*, 284 U.S. at 60. Strict compliance with § 112's requirements—which this Court will soon address in *Nautilus, Inc.* v. *Biosig Instruments, Inc.*, No. 13-369—will ensure that patents granted for computer-implemented inventions will "leave room for later entrants to design around the patent and develop different" ways to achieve the same result. Lemley, 2013 Wis. L. Rev. at 947.

II. ALICE'S CLAIMS ARE DIRECTED TO ELIGIBLE SUBJECT MATTER.

Unlike the unsuccessful patent applicants in *Benson*, *Flook*, and *Bilski*, Alice holds issued patents. The claims are therefore presumed valid, and the burden to present clear and convincing evidence to establish their invalidity rests on CLS. 35 U.S.C. § 282; *Microsoft Corp.* v. *i4i Ltd. P'ship*, 131 S. Ct. 2238, 2245 (2011). Applying the principles set forth above leaves no doubt that CLS cannot carry that burden.

Under a proper analysis, a claim that on its face recites a statutory category of invention, and does not on its face recite a law of nature or a fundamental truth like a mathematical formula, passes muster under § 101, and its ultimate patentability is determined by the other statutory criteria. That is true of Alice's claims. The claims do not, as written, recite any fundamental truth. Moreover, even if they were somehow found to incorporate a fundamental truth, the claims—read as a whole—do not preempt the use of any fundamental truth as such, but instead apply it in a narrow and specific way.

A. Alice's Claims Do Not Recite An Abstract Idea.

Alice has not claimed any fundamental truth. This is evident from the claim language. Nowhere do the claims recite a mathematical formula, a "'fundamental economic practice'" that can be "reduced to a mathematical formula," *Bilski*, 130 S. Ct. at 3231, or any other form of fundamental truth that "exists in principle apart from any human action," *Mayo*, 132 S. Ct. at 1297. To the contrary, the claims recite a specific series of steps, a specific configuration of computer hardware, or a specific computer program product, for establishing electronic shadow accounts held by a supervisory institution, electronically adjusting those shadow accounts, and irrevocably instructing exchange institutions to provide delivery. *Supra*, at 6-10. Because the claims do not even *recite* a fundamental truth, they cannot, *a fortiori*, "tie up" all practical uses of any fundamental truth. *Mayo*, 132 S. Ct. at 1301. The claims, by their terms, are directed to eligible subject matter under § 101.

Despite the claim language, the plurality concluded that the claims "draw on the abstract idea of reducing settlement risk by effecting trades through a third-

party intermediary … empowered to verify that both parties can fulfill their obligations before allowing the exchange—*i.e.*, a form of escrow." Pet. App. 28a. According to the plurality, this "is an abstract idea because it is a 'disembodied' concept, a basic building block of human ingenuity, untethered from any real-world application. Standing alone, that abstract idea is not patent-eligible subject matter." *Id.* (citation omitted). The plurality's analysis was doubly flawed.

First, the plurality conflated the two different meanings of abstract idea, purporting to apply the preemption-focused analysis this Court has prescribed for claims that recite fundamental truths, even though Alice's claims do not do so. Indeed, not even the plurality suggested that the supposed "abstract idea" it identified in Alice's claims was a preexisting fundamental truth akin to a mathematical formula or law of nature that "reveals a relationship that has always existed," *Flook*, 437 U.S. at 593 n.15. And it is evident that the alleged "abstract idea" the plurality identified bears no resemblance to the fundamental, mathematical truths at issue in this Court's prior cases.

Instead, the plurality found Alice's claims ineligible by holding the "concept" upon which they supposedly "draw" to be "an abstract idea *because it is a 'disembodied' concept.*" Pet. App. 28a (emphasis added).[4] But, as explained above, the Court's cases addressing the abstract ideas exception apply that analysis only to *fundamental truths*—not disembodied concepts. It is only claims directed to fundamental truths that raise the preemption risks the Court described in *Benson*, *Flook*, *Bilski*, and *Mayo*—

[4] Chief Judge Rader's opinion made much the same error in analyzing the method claims. *See* Pet. App. 82a.

and only those claims can, consistent with the statutory text, be deemed ineligible despite fitting within the four statutory categories.[5]

Indeed, the approach taken by the plurality is not only nonstatutory, but nonsensical. Every process claim can be characterized as "draw[n] to," at bottom, a disembodied concept. Claims that recite a statutory process do not fall outside the scope of § 101 merely because a reviewing judge can craft a conceptualization of an invention. Instead, it is only when the claims are *indistinguishable* from a disembodied concept that they fail § 101, and they do so because disembodied concepts, *standing alone*, do not fit within the four categories of § 101. But, of course, Alice's claims are not directed to disembodied concepts *standing alone*. And neither the plurality nor the district court suggested they were, finding instead that Alice's claims as a whole fall within the four statutory categories. The plurality's conflation of the two forms of abstract ideas doomed its analysis.

Second, the plurality erred by paraphrasing and dissecting the language of Alice's claims in its hunt for a disembodied concept, instead of reviewing the claims as a whole and as written. The plurality began by extracting the supposed abstract idea from the balance of the claim, and reviewing that idea "[s]tanding alone." Pet. App. 28a; see also *id.* at 82a (Rader, C.J.). According to the plurality, "[t]he concept of reducing settlement risk by facilitating a trade through third-party intermediation is an abstract idea because it is a 'disembodied' concept … *untethered from any real-world application*." *Id.* at

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[5] The lower courts agreed that Alice's claims are directed to the four statutory categories. *See* Pet. App. 28a, 33a, 36a, 40a, 194a, 226a-27a.

28a (emphasis added). But it was the plurality's dissection of the claims that "untethered" that concept from the "real-world application" called for by the actual claim language. Alice did not purport to claim "the concept of reducing settlement risk by facilitating a trade through third-party intermediation," but instead claimed systems and methods using computers specifically configured to, *inter alia*, create electronic shadow accounts, electronically adjust those shadow accounts, and ultimately issue irrevocable instructions to exchange institutions to provide delivery.

Indeed, the repeated references in the Federal Circuit's opinions to Alice's claims as a form of "escrow," Pet. App. 28a, 30a, 34a, 77a, 78a, 79a, 82a, 83a, 84a, 110a, 112a, 118a, 141a, highlight the flaws in the approach taken below. The dictionary definition of escrow is "[m]oney, property, a deed, or a bond put into the custody of a third party for delivery to a grantee only after the fulfillment of the conditions specified." *American Heritage Dictionary*, *supra*, at 608. Nothing in the concept of escrow requires electronic shadow records, much less the particular use of electronic shadow records required by Alice's claims. Moreover, Alice's claims do not prescribe that the electronic intermediary (or any other third party) receives any money or property, and the only "deliveries" required by Alice's claims occur to the accounts of the actual parties after the transaction has been effected. Alice's invention and the concept of escrow may both seek to mitigate transactional risk, but they do so in materially different ways. See Lemley, 2013 Wis. L. Rev. at 955 ("It is the way, not the function, that patent law is supposed to protect."). As the lower court's faulty analysis illustrates, approaching § 101 by first

stripping a claim of its actual limitations to isolate some supposed abstract idea at its core so thoroughly divorces the analysis from the actual invention that the way the invention as a whole functions is lost, and the "abstract idea" that is left standing when the limitations are removed has little or nothing to do with the actual invention. That is precisely the result this Court rejected in *Diehr*, when it explained that "claims *must be considered as a whole*. 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." 450 U.S. at 188 (emphasis added).

B. Even If Alice's Claims Could Somehow Be Read To Recite An Abstract Idea, They Do Not Claim An Abstract Idea In Itself.

But even if the claims could somehow be read to recite the supposed "abstract idea" of "third-party intermediation," Pet. App. 29a, they are directed to a specific application of that idea—not to the idea itself. The claim limitations—including in particular those requiring computer implementation—mean that the invention as claimed is not an abstract idea.

Alice's claims require a substantial and meaningful role for the computer—beyond merely performing computations more quickly or accurately than a person could do with pencil and paper—in performing the recited steps. The computer *is itself the intermediary*. See JA958 (reciting, *inter alia*, "a computer … that is configured to (a) receive a transaction; (b) electronically adjust [accounts] …; and (c) generate an instruction"); JA383-84 (reciting computer-implemented steps, including "creating" shadow records, "obtaining" balance information, "adjusting" the shadow records in chronological order, and "instructing" exchange institutions to provide

delivery). The use of the computer to track multiple transactions, in chronological order, and to issue simultaneous instructions at the appropriate time—regardless of the geographic locations of the parties, their time zones, or the particular exchange institutions they employ—is central to the claimed methods. The invention as claimed will not function without a computer configured (*i.e.*, programmed) to carry out the claim steps. Moreover, a computer and other hardware specifically structured and configured to perform the recited functions are essential to the claimed systems.

Alice's claims also cannot be interpreted to recite generically the idea of third-party intermediation applied on a computer. The claims do not recite this idea, and, in any event, they include steps or elements other than those necessary to any use of the idea. That is, the claims recite specific *ways* of accomplishing third-party intermediation—while leaving all other ways available. For instance, the claims require that the computer maintain two shadow accounts that are "independent" from the parties' real-world accounts. *E.g.*, JA1260. A differently designed computer system could implement exchanges in other ways. It could, for example, track the parties' real-world accounts rather than creating independent shadow accounts housed on the patented system. Or it could require a different configuration of shadow accounts, with, for example, a new shadow account created with each new exchange obligation rather than a single shadow account that is adjusted throughout the "day." Similarly, the claims require that the computer "adjust" the shadow accounts chronologically, and do not permit *any* transaction that will even temporarily create a net debit balance. *E.g.*, JA384. A differently designed system could, for

example, adjust the shadow accounts based on the size rather than timing of the transactions, could adjust the shadow accounts for a wider variety of other transactions, could adjust the shadow accounts only at specified times rather than for every transaction, and so on. The claims also require that the system issue "an irrevocable, time invariant obligation" to provide delivery at the end of a period of time. JA1260. A differently designed system could, for example, simply report that the conditions for delivery had been met, rather than issue an irrevocable, time invariant instruction that causes delivery to occur. These few examples demonstrate that the limitations recited in Alice's claims define an invention very different, and far narrower, than simply "applying" the idea of third-party intermediation on a computer.

Alice's claims thus stand in stark contrast to the claims at issue in *Benson*, *Flook*, *Bilski*, and *Mayo*. In each of those cases, the Court made clear that the claims recited nothing more than an abstract idea or law of nature and—at most—entirely insignificant post-solution activity. In *Flook*, the post-solution activity was simply "adjust[ing]" the alarm limit (itself simply a number) to reflect the result of the computer's calculations. 437 U.S. at 585. In *Mayo*, the post-solution activity was simply to "apply" the law of nature to the patient. 132 S. Ct. at 1298. And in *Benson* and *Bilski*, there was no post-solution activity to speak of. *Benson*, 409 U.S. at 64; *Bilski*, 130 S. Ct. at 3223-24. Unlike the claims at issue in those cases, Alice's claims *do* require other steps not inherent to the idea of third-party intermediation.

Alice's claims are therefore far more similar to the claims in *Diehr*, which, like Alice's, recited multiple steps beyond use of an abstract mathematical

formula. 450 U.S. at 187. In *Diehr*, the only use of the Arrhenius equation that was foreclosed as a result of the patent was "use of that equation in conjunction with all of the other steps in their claimed process.… includ[ing] installing rubber in a press, closing the mold, constantly determining the temperature of the mold, constantly recalculating the appropriate cure time through the use of the formula and a digital computer, and automatically opening the press at the proper time." *Id.* Likewise, here, the only uses of the concept of third-party intermediation that are foreclosed are those meeting *all of the specific limitations* in Alice's claims—*inter alia*, using the required configurations of computer hardware; using the required independent shadow accounts; and performing the continuous, chronological adjustment of the shadow accounts and issuing irrevocable instructions.

The plurality reached a different conclusion by misreading the claim language and improperly dissecting the claims. For example, in reviewing Alice's method claims, the plurality began with the statement that "[u]nless the claims require a computer to perform operations that are not merely accelerated calculations, a computer does not itself confer patent eligibility," and concluded that the computer recited in Alice's claims did not "materially narrow[ ] the claims relative to the abstract idea they embrace." Pet. App. 29a-30a. The plurality then *separately* addressed the functions of creating and adjusting shadow records and providing end-of-day instructions—without acknowledging that Alice's claims require that those functions be performed *by a*

computer. *Id.* at 30a-31a.[6] The plurality also dismissed the requirement for independent shadow records by characterizing the term "shadow record" as "extravagant language to recite a basic function required of any financial intermediary in an escrow arrangement—tracking each party's obligations and performance." *Id.* at 30a. But the plurality simply ignored the requirement that the shadow records be "independent[ly]" maintained on a "data storage unit" and "electronically adjust[ed]" by the claimed computer—thereby ignoring that "tracking each party's obligations and performance" could be accomplished in other ways without any of those required elements. And the plurality dismissed the requirement for an irrevocable instruction as "trivial," stating that "[w]hether the instructions are issued in real time, every two hours, or at the end of every day, there is no indication in the record that the precise moment chosen to execute those payments makes any significant difference in the ultimate application of the abstract idea." *Id.* at 30a-31a. With this statement, the plurality confirmed that the actual claim language and actual claim limitations were entirely irrelevant to its analysis, simply because the claimed method accomplished the supposed abstract idea the plurality had projected onto it.

The plurality compounded its error with regard to Alice's system claims. Although the plurality recognized that a computer system is "a tangible machine," Pet. App. 40a, it concluded that Alice's system claims were not directed to such a machine because the claimed systems do "tasks that formerly were performed by humans," and "merely adding

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[6] Again, Chief Judge Rader made much the same error in assessing the method claims. Pet. App. 83a-84a.

existing computer technology to abstract ideas—mental steps—does not as a matter of substance convert an abstract idea into a machine." *Id.* at 40a-41a. Again, however, the plurality simply overlooked the actual limitations in Alice's claims and corresponding specification. As Chief Judge Rader explained, the system claims recite specific hardware, configured to perform the specific computerized functions of creating shadow accounts, adjusting them in a particular way, and then issuing instructions. And the specification lays out how to program a computer system to perform these functions. See *id.* at 73a-78a; see also, *e.g.*, JA1023, 1031-35. While the claims must still be evaluated under §§ 102, 103, and 112, and it will be CLS's burden to establish that these issued claims fail those statutory tests, they plainly pass the "threshold test" of § 101. *Bilski*, 130 S. Ct. at 3225.

III. ARTICULATING THE PROPER APPLICATION OF THE ABSTRACT IDEAS EXCEPTION WILL PROVIDE MUCH-NEEDED CLARITY TO COURTS, LITIGANTS, AND INNOVATORS.

Clear standards are essential in patent law. See, *e.g.*, *Bilski*, 130 S. Ct. at 3231 (Stevens, J., concurring in the judgment) ("In the area of patents, it is especially important that the law remain stable and clear."); *Festo Corp.* v. *Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 730-31 (2002). The lower courts, however, have proved unable to derive clear guidance from this Court's statements concerning the abstract ideas exception. In particular, lower courts have misinterpreted some of the Court's decisions—particularly *Flook* and *Mayo*—to authorize a dissection of claims to search for an abstract idea, vaguely defined, at their core. See, *e.g.*, Pet. App. 20a

(citing *Mayo*, 132 S. Ct. at 1302-03); Pet. App. 214a; *Accenture Global Servs., GmbH* v. *Guidewire Software, Inc.*, 728 F.3d 1336, 1341 (Fed. Cir. 2013).

Such an approach is not just contrary to this Court's case law and the statutory text. It is entirely unworkable, because if the "true invention" is to be defined other than by the actual language of the claims, the § 101 analysis becomes untethered to anything other than a party's or judge's subjective views concerning the supposed heart of the claim. This approach inevitably becomes result-driven—the "heart" of the invention is defined, consciously or not, to fit the definer's preconceived idea concerning the invention's eligibility. Such uncertainty imposes real costs on courts, litigants, innovators, and the broader economy.

Indeed, the costs of the current confusion can be vividly seen in this case. CLS initiated this action in 2007, nearly seven years ago. But with the exception of one discrete issue having to do with extra-territoriality, the *only* issue thus far addressed is patent eligibility. And, even as to that issue, after seven years of litigation, the reviewing judges have been unable to reach consensus as to what supposedly abstract idea is contained in the claims, with the district court offering one formulation, Pet. App. 214a, various Federal Circuit judges others, *id.* at 28a (Lourie, J.), *id.* at 82a (Rader, C.J.), and CLS still others, Br. of CLS at 7-8, *Alice*, 685 F.3d 1341 (Fed. Cir. filed Sept. 9, 2011). And, not one of these supposed abstract ideas is actually recited in the claims.

Improved clarity as to the abstract ideas exception is of particular importance in the area of computer-implemented inventions. As the Court has recognized, any claim can be reduced to seemingly abstract

principles or laws of nature, *Mayo*, 132 S. Ct. at 1293, and this is particularly true in the case of computer-implemented inventions, which can be made to appear (incorrectly) to be nothing more than collections of mathematical calculations with data-gathering and post-solution-output steps that are readily deemed "insignificant." An approach to § 101 that fails to recognize that a computer is a physical machine that operates in the physical world by employing physical operations to produce physical results—even if some of the physical aspects (*e.g.*, electrical signals, configurations of semiconductor circuits, *etc.*) are not readily observable—will decimate entire sectors of the economy and stifle innovation. See Pet. App. 85a-86a & n.1.

While some commentators may clamor for further limits on the nature of inventions eligible for patent protection, that is a job for Congress—not the courts. Congress has, where it deemed necessary, addressed perceived problems with patents on particular technologies. See, *e.g.*, 42 U.S.C. § 2181(a) (nuclear weapons); 35 U.S.C. § 287(c) (medical activities); Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 18, 125 Stat 284, 329-30 (2010) (business methods). If Congress deems it necessary to create specific rules for computer-implemented inventions, it can do so. The courts, in contrast, are neither constitutionally empowered, nor institutionally equipped, to conduct the sorts of inquiries needed to set national economic and industrial policy. See *i4i*, 131 S. Ct. at 2252; see also *Pavelic & LeFlore* v. *Marvel Entm't Grp.*, 493 U.S. 120, 126 (1989) ("Our task is to apply the text, not to improve upon it.").

CONCLUSION

For the foregoing reasons, the Court should reverse the judgment below and remand the case for further proceedings.

Respectfully submitted,

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