

No. 19-353

In the Supreme Court of the United States

TRADING TECHNOLOGIES INTERNATIONAL, INC.,
PETITIONER

v.

IBG LLC, ET AL.

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

BRIEF FOR THE UNITED STATES IN OPPOSITION

NOEL J. FRANCISCO
*Solicitor General
Counsel of Record*

JOSEPH H. HUNT
Assistant Attorney General

MARK R. FREEMAN
SCOTT R. MCINTOSH
WEILI J. SHAW
Attorneys

*Department of Justice
Washington, D.C. 20530-0001
SupremeCtBriefs@usdoj.gov
(202) 514-2217*

QUESTIONS PRESENTED

Section 101 of the Patent Act provides that “any 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. The questions presented are as follows:

1. Whether the court of appeals correctly affirmed the Patent Trial and Appeal Board’s determinations that the relevant claims of petitioner’s patents encompass subject matter that is not patent-eligible under 35 U.S.C. 101.

2. Whether the Court should overrule its precedents recognizing an exception to patent-eligibility for patents that claim abstract ideas.

ADDITIONAL RELATED PROCEEDINGS

United States Court of Appeals (Fed. Cir.):

Trading Techs. Int'l, Inc. v. IBG LLC, Nos. 17-2257,
17-2621, 18-1063 (Apr. 18, 2019)

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OPINIONS BELOW

The opinion of the court of appeals (Pet. App. 1-23) is reported at 921 F.3d 1084. The decision of the United States Patent and Trademark Office's Patent Trial and Appeal Board in No. CBM-2015-179 (Pet. App. 24-92) is unreported. The decisions of the Board in Nos. CBM-2016-51 and CBM-2016-32 (Pet. App. 93-118, 119-150) are not published in the United States Patents Quarterly but are available at 2017 WL 3394061 and 2017 WL 3479474, respectively.

JURISDICTION

The judgment of the court of appeals was entered on April 18, 2019. On July 15, 2019, the Chief Justice extended the time within which to file a petition for a writ of certiorari to and including September 15, 2019,

and the petition was filed on September 16, 2019 (Monday). The jurisdiction of this Court is invoked under 28 U.S.C. 1254(1).

STATEMENT

1. a. The Constitution authorizes Congress “[t]o promote the Progress” of “useful Arts, by securing for limited Times to * * * Inventors the exclusive Right to their * * * Discoveries.” U.S. Const. Art. I, § 8, Cl. 8. Exercising that authority, Congress has directed that “[w]hoever 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.

By “defin[ing] the subject matter that may be patented,” *Bilski v. Kappos*, 561 U.S. 593, 601 (2010), Section 101 confines patents to particular types of innovations. To obtain a patent, an inventor “must also satisfy” additional requirements under the Patent Act of 1952, 35 U.S.C. 1 *et seq.*, “includ[ing] that the invention be novel, nonobvious, and fully and particularly described.” *Bilski*, 561 U.S. at 602 (citing 35 U.S.C. 102, 103, 112 (2006)). Those requirements complement Section 101 but serve different functions. The novelty requirement, for example, ensures that a patent applicant cannot obtain exclusive rights for another’s previous discovery.

An invention thus might satisfy the Act’s other requirements but not Section 101, or vice versa. See *Kewanee Oil Co. v. Bicron Corp.*, 416 U.S. 470, 483 (1974) (“[N]o patent is available for a discovery, however useful, novel, and nonobvious, unless it falls within one of the express categories of patentable subject matter.”). For example, a new way of structuring real-estate transactions might be novel and nonobvious, but it would not

be patent-eligible under Section 101 because it would not be the *type* of innovation that has traditionally been viewed as falling within the “useful Arts.” Conversely, an application for a patent on Alexander Graham Bell’s telephone would satisfy Section 101, but it would fail today for lack of novelty.

b. Although Section 101’s text is “expansive,” *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980), it is not limitless, *ibid.* The Court has long recognized, for example, that “phenomena of nature” are not patent-eligible if materially unaltered by humankind. *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948) (citing *Le Roy v. Tatham*, 55 U.S. (14 How.) 156, 175 (1853)). A “nonnaturally occurring manufacture or composition of matter,” such as a newly created “micro-organism,” is patent-eligible, but “a new mineral discovered in the earth or a new plant found in the wild is not.” *Chakrabarty*, 447 U.S. at 309. Newly discovered “manifestations of . . . nature,” such as Newton’s “law of gravity” or Einstein’s “law that $E=mc^2$,” likewise are not patent-eligible. *Ibid.* (citation omitted).

Until 2010, the Court’s decisions recognizing that such discoveries are not patent-eligible were best understood as interpreting the specific terms (“process, machine, manufacture, [and] composition of matter,” 35 U.S.C. 101) contained in Section 101’s list of patent-eligible inventions, based in part on history and statutory context. See *Diamond v. Diehr*, 450 U.S. 175, 184 (1981) (“process”); *Corning v. Burden*, 56 U.S. (15 How.) 252, 267 (1854) (“machine”); *American Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1, 11 (1931) (“manufacture”); *Chakrabarty*, 447 U.S. at 308 (“composition of matter”). The terms “machine” and “manufacture” clearly refer to products constructed through human effort. And while

the term “composition of matter” might be construed in isolation to encompass newly discovered naturally occurring organisms, the Court has long held that “patents cannot issue for the discovery of the phenomena of nature,” *Funk Bros.*, 333 U.S. at 130, and it has construed Section 101 to carry forward that traditional understanding, see *Chakrabarty*, 447 U.S. at 308-310.

The Court likewise has interpreted “process” in Section 101 based on traditional usage of that term and its precursor (“art”) in the patent context. *Diehr*, 450 U.S. at 182; see *id.* at 182-184. It took as its touchstone “[i]ndustrial processes” of “the types which have historically been eligible to receive the protection of our patent laws.” *Id.* at 184. That approach aligned with the placement of “process” (or “art”) alongside “machine,” “manufacture,” and “composition of matter.” 35 U.S.C. 101; see *The Telephone Cases*, 126 U.S. 1, 533-534 (1888); see also Antonin Scalia & Bryan A. Garner, *Reading Law: The Interpretation of Legal Texts* 196 (2012). It also avoided the “comical” result that Section 101 would encompass “[a] process for training a dog, a series of dance steps, [or] a method of shooting a basketball.” *Bilski*, 561 U.S. at 624 (Stevens, J., concurring in the judgment).

The Court’s recent decisions, however, have applied a different approach. In *Bilski*, the Court held that patent claims for a method of hedging financial risk in energy markets were not patent-eligible under Section 101. 561 U.S. at 601-604, 606-608, 609-613. But the Court did not ground that conclusion in traditional patent-law understandings of the term “process,” or in the Framers’ conception of the “useful Arts.” It stated instead that ““process”” and Section 101’s other terms

should bear their general-purpose “dictionary definitions,” but that Section 101 is nevertheless limited by three “exceptions” that “are not required by the statutory text”: “laws of nature, physical phenomena, and abstract ideas.” *Id.* at 601, 603 (citation omitted). The Court held that the method-of-hedging claims at issue were patent-ineligible “attempts to patent abstract ideas.” *Id.* at 609; see *id.* at 609-613.

In *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66 (2012), the Court applied *Bilski*’s new approach and held that “patent claims covering processes that help doctors who use thiopurine drugs to treat patients with autoimmune diseases determine whether a given dosage level is too low or too high” were patent-ineligible attempts to claim a natural law. *Id.* at 72; see *id.* at 77-92. The Court stated that the claims “set forth laws of nature—namely, relationships between concentrations of certain metabolites in the blood and the likelihood that a dosage of [the] drug will prove ineffective or cause harm.” *Id.* at 77. It concluded that the claims did not “do significantly more than simply describe these natural relations,” but instead merely instructed practitioners “to engage in well-understood, routine, conventional activity previously engaged in by scientists who work in the field.” *Id.* at 77, 79. The Court contrasted those claims with “a typical patent on a new drug or a new way of using an existing drug,” which might “confine [its] reach to particular applications of those laws.” *Id.* at 87; see *Association for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589-596 (2013) (holding that DNA sequences isolated from human genome were patent-ineligible “product[s] of nature,” but that synthetically created DNA sequences not found in nature were patent-eligible).

The Court subsequently described *Mayo*'s approach as a two-step inquiry. First, a court determines whether a claim is “directed to” a “law[] of nature, natural phenomenon[on], [or] abstract idea[.]” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 217 (2014). “If so,” the court then “ask[s], ‘what else is there in the claims,’” considering “the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Ibid.* (quoting *Mayo*, 566 U.S. at 78-79) (brackets omitted); see *id.* at 212, 217-227 (applying that rubric to conclude that “a computer-implemented scheme for mitigating ‘settlement risk’ * * * by using a third-party intermediary” was a patent-ineligible attempt to claim an abstract idea).

2. a. Petitioner owns patents—U.S. Patent No. 7,533,056 ('056 patent), No. 7,904,374 ('374 patent) and No. 7,212,999 ('999 patent)—relating to user interfaces for electronic-trading software. Pet. App. 3. The patents claim methods of formatting financial information for display on a computer screen and then accepting trade orders based on that information. *Id.* at 5-8, 11-13. Among other benefits, the patents asserted that the user interfaces allow a trader to “view trends in the orders for an item, and provide[] the trading information in an easy to see and interpret graphical format,” *id.* at 179; “allow[] the trader to trade quickly and efficiently,” *id.* at 263; and “present[] * * * information in an intuitive format, allowing the trader to make informed decisions quickly,” *id.* at 315.

b. In 2010, petitioner filed a patent-infringement suit against several competitors. See generally *Compl., Trading Techs. Int’l, Inc. v. BGC Partners, Inc.*,

No. 1:10-cv-715 (N.D. Ill. Feb. 3, 2010). Several of those competitors—including the private respondents, IBG LLC and Interactive Brokers LLC—then filed petitions with the United States Patent and Trademark Office (USPTO) for covered-business-method reviews of the three patents at issue. Pet. App. 4. Covered-business-method review, established by the Leahy-Smith America Invents Act (AIA), Pub. L. No. 112-29, § 18, 125 Stat. 329-331, permits the USPTO to review the validity of issued patents that “claim[] a method * * * for performing data processing or other operations used in the practice, administration, or management of a financial product or service.” § 18(d)(1), 125 Stat. 331. The AIA excludes “patents for technological inventions” from the definition of “covered business method.” *Ibid.*

The USPTO’s Patent Trial and Appeal Board (Board) instituted review on certain claims of each of the three patents. Pet. App. 25, 94, 120. The Board subsequently issued a final written decision in each proceeding. *Id.* at 24-92, 93-118, 119-150. The Board determined that each of the patents was properly subject to covered-business-method review because at least one claim of each patent is directed to a covered business method as defined in the AIA and does not fall within the exclusion for patents that claim “technological inventions.” *Id.* at 29-35, 99-105, 126-138. The Board further determined that the claims at issue in this Court are not patent-eligible under 35 U.S.C. 101. Pet. App. 42-54, 105-117, 138-149.

Applying the two-step approach for determining patent-eligibility that this Court articulated in *Mayo* and *Alice*, the Board concluded at the first step of that approach that the relevant independent claims of each patent are directed to abstract ideas. Pet. App. 43-50,

107-113, 140-147. The Board found that the independent claim in the '056 patent is “directed to the abstract idea of graphing (or displaying) bids and offers to assist a trader to make an order, which is a fundamental economic practice.” *Id.* at 45. Similarly, the Board found that the independent claim in the '999 patent is directed to “the abstract idea of graphing (or displaying) bids and offers to assist a trader to make an order,” which “is a fundamental economic practice or a process that can be performed using pen and paper.” *Id.* at 143. And it found that the independent claims in the '374 patent are directed to the “fundamental economic practice” and “abstract idea” of “receiving user input and placing a trade order,” *id.* at 113, and “are drafted at such a high level of abstraction that it is difficult to imagine the bounds of their application,” *id.* at 109 (citation omitted).

At the second step of the *Mayo/Alice* approach, the Board determined that the additional elements of the relevant independent claims in each patent “do not transform the nature of the claims into a patent-eligible application” because they “do not add significantly more to the abstract idea or fundamental economic practice” to which the Board had determined those claims were directed. Pet. App. 54; see *id.* at 50-53, 113-116, 147-149. The Board also concluded that nothing in the dependent claims saved them from patent-ineligibility. *Id.* at 53-54, 116-117, 149. The Board further determined that the relevant claims of the '056 patent are unpatentable for the additional reason that they are obvious in light of the prior art. *Id.* at 54-87; see 35 U.S.C. 103.

3. Petitioner appealed each of the Board's decisions to the Federal Circuit. Pet. App. 4. In addition to challenging the Board's decisions on the merits, petitioner also asserted, for the first time in the proceedings, that covered-business-method review is unconstitutional. 17-2257 Pet. C.A. Corrected Br. 75; see 17-2257 C.A. Doc. 62, at 2 (June 8, 2018); 17-2257 C.A. Doc. 63, at 3 (June 12, 2018). The United States intervened in the appeals pursuant to 28 U.S.C. 2403(a) "to defend the constitutionality of the" AIA provisions that establish covered-business-method review. 17-2257 C.A. Doc. 67, at 2 (July 9, 2018); 17-1732 C.A. Doc. 99, at 10 (July 31, 2018). The government's brief addressed petitioner's constitutional challenge, but it did not address the patentability of the claims of the three patents at issue. See 17-2257 Gov't C.A. Br. 20-47.

The court of appeals issued a consolidated decision affirming the Board's decisions in all three proceedings. Pet. App. 1-23. The court upheld the Board's determination that the three patents at issue were properly subject to covered-business-method review because at least one claim in each patent is directed to a covered business method. *Id.* at 5-15. It rejected petitioner's contention that the relevant claims recite "technological inventions" and therefore are excluded from the definition of covered business methods. *Id.* at 5; see *id.* at 5-15. The court explained that the relevant claims of the '056 and '999 patents "are directed to a financial trading method used by a computer," and it "s[aw] no technological invention in th[at] software method." *Id.* at 8. The court reasoned that the invention recited in those claims "simply displays information that allows a trader to process information more quickly," and thus "makes the trader faster and more efficient, not the computer."

Id. at 10-11. The court “[s]aw] no meaningful difference between” those claims and the relevant claim of the ’374 patent. *Id.* at 13.

Turning to the patent-eligibility of the relevant claims, the court of appeals concluded at the first step of the *Mayo/Alice* approach that representative claims in each patent are directed to abstract ideas. Pet. App. 16-21. The court “agree[d]” with the Board that the representative claim of the ’999 patent “is directed to ‘the abstract idea of graphing (or displaying) bids and offers to assist a trader to make an order.’” *Id.* at 16 (citation omitted). The court acknowledged that the claim “also recites sending an order by ‘selecting’ and ‘moving’ an order icon to a location,” but it viewed that fact as irrelevant to the Section 101 inquiry. *Id.* at 17. It observed that, “[a]s the Board determined, placing an order based on displayed market information is a fundamental economic practice,” and “[t]he fact that the claims add a degree of particularity as to how an order is placed” did not “impact [the court’s] analysis.” *Ibid.* The court rejected petitioner’s contention that implementing such a method on a computer “render[s] the claims non-abstract” by “provid[ing] an improvement in the way a computer operates.” *Id.* at 17-18. The court reasoned that “[t]he claims of the ’999 patent do not improve the functioning of the computer, make it operate more efficiently, or solve any technological problem,” but merely “recite a purportedly new arrangement of generic information that assists traders in processing information more quickly.” *Id.* at 18. The court reached the same conclusion with respect to the ’999 patent. *Id.* at 19.

The court of appeals similarly concluded at the first *Mayo/Alice* step that a representative claim of the ’374

patent is directed to the abstract idea of “receiving a user input to send a trade order.” Pet. App. 21. The court explained that “[m]uch of [petitioner’s] argument at step one” concerning that patent “is the same as its argument that the patent is for a technological invention,” which the court had rejected in addressing petitioner’s contention that the ’374 patent was not subject to covered-business-method review. *Ibid.* Petitioner contended that the invention recites “an improvement over prior art interfaces” that “inherently improves the functioning of a computer.” *Ibid.* The court found that argument to be inconsistent with the Board’s understanding of the claims, and it noted that “[petitioner] had an opportunity to dispute the Board’s characterization of the claims after institution but chose not to do so.” *Ibid.*

At the second step of the *Mayo/Alice* approach, the court of appeals upheld the Board’s determinations that the elements of the relevant claims of each patent, considered “both individually and as an ordered combination,” did not “transform the nature of the claim[s] into * * * patent-eligible application[s].” Pet. App. 15-16 (quoting *Alice*, 573 U.S. at 217) (citation and internal quotation marks omitted); see *id.* at 18-22. As to the ’999 patent, the court agreed with the Board that “receiving market information is simply routine data gathering,” and that “displaying information as indicators along a scaled price axis” and “selecting and moving an icon” are all “well-understood, routine, conventional activity that does not add something significantly more to the abstract idea.” *Id.* at 18; see *id.* at 19.

As to the ’056 patent, the court of appeals likewise “s[aw] no merit” to petitioner’s challenge to the Board’s determination at the second *Mayo/Alice* step. Pet. App.

20. Petitioner “argue[d] [that] the claims improve computer functionality by improving on the intuitiveness and efficiency of prior [graphical-user-interface] tools.” *Ibid.* The court rejected that contention, explaining that “[t]he specification makes clear that this invention helps the trader process information more quickly” and thus “is not an improvement to computer functionality, as alleged by [petitioner].” *Ibid.* The court also found unpersuasive petitioner’s contentions that “additional limitations of” certain “dependent claims * * * render the claims eligible.” *Ibid.* The court noted that those limitations entailed “simply displaying all the bids and offers in the aggregate,” which the court concluded “is not enough.” *Ibid.*

As to the ’374 patent, the court of appeals likewise upheld the Board’s determination that the elements of the representative claim did not satisfy the second *Mayo/Alice* step. Pet. App. 21-22. Petitioner “repeat[ed] its argument that [the claim] improves computer functionality by solving technological problems with prior art electronic trading interfaces.” *Id.* at 22. The court again disagreed, stating that the claim “does not solve any purported technological problem.” *Ibid.*

The court of appeals “decline[d] to address [petitioner’s] constitutional challenges” to the AIA’s covered-business-method review framework, concluding that petitioner had not properly preserved those arguments. Pet. App. 23; see *id.* at 22 (holding that petitioner’s “conclusory assertion” in “four sentences” of its brief “with no analysis” of “the underlying challenge is insufficient to preserve the issue for appeal”).

ARGUMENT

Petitioner challenges (Pet. 16-27) the court of appeals' affirmances of the Board's decisions deeming the subject matter of certain claims of three of petitioner's patents to be patent-ineligible. Specifically, petitioner asserts (Pet. 16, 23) that the court in this case applied a "categorical" rule "that software innovations that provide useful functionality to users and improve on prior art are not patent eligible if they do not improve the 'basic functions' of the computer itself in a manner akin to improved computer hardware." The court of appeals neither articulated nor applied such a rule in this case. The court's decision instead rests on the uncontroversial proposition that, if a claimed invention is otherwise not patent-eligible, merely implementing that invention on a computer does not transform it into patent-eligible subject matter. The court's application of that principle to the particular claims in the patents at issue here does not warrant further review.

Petitioner additionally contends (Pet. i) that the Court should grant review to consider "overrul[ing] its precedents recognizing the 'abstract idea' exception to patent eligibility." See Pet. 27-34. As explained in the government's brief filed in response to this Court's invitation in *Hikma Pharmaceuticals USA Inc. v. Vanda Pharmaceuticals Inc.*, No. 18-817 (petition for cert. filed Dec. 27, 2018), although the Court has construed Section 101 and its precursors for well over a century, its recent decisions have introduced substantial uncertainty regarding the proper Section 101 inquiry. See U.S. Amicus Br. at 8-21, *Hikma, supra* (No. 18-817) (*Hikma* Invitation Br.). This case, however, would be an unsuitable vehicle to address those broader issues. The confusion that lower courts confront in applying Section 101 ultimately

stems in large part from the Court’s reconceptualization of inherent, long-recognized limitations on Section 101’s affirmative scope as freestanding, atextual “exceptions,” *Bilski v. Kappos*, 561 U.S. 593, 601 (2010), and from the methodology the Court developed in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66 (2012), and *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208 (2014), to implement that new understanding of Section 101. But the inventions claimed in petitioner’s patents, as the court of appeals characterized them, would fall outside Section 101’s reach even under the approach the Court historically applied before its decision in *Bilski*. And to the extent petitioner disagrees with the court of appeals’ understanding of the patents at issue here, that case-specific antecedent dispute might complicate or impede efforts to clarify broader Section 101 principles if the Court granted review in this case.

1. The relevant claims of petitioner’s patents “relate[] generally to a graphical user interface * * * for electronic trading.” Pet. App. 3. The court of appeals explained that “[t]he ’056 and ’999 patents, which share a specification, disclose ‘a user interface for an electronic trading system that allows a remote trader to view trends in the orders for an item, and provides the trading information in an easy to see and interpret graphical format.’” *Ibid.* (citation omitted). The court further explained that “[t]he ’374 patent * * * discloses ‘a display and trading method to ensure fast and accurate execution of trades by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market prices fluctuate[.]’” *Id.* at 3-4 (citation omitted; second set of brackets in original).

Applying the “two-step framework” that this Court distilled in *Alice*, 573 U.S. at 217-218, from its earlier decision in *Mayo*, the court of appeals upheld the Board’s decisions concluding that the relevant claims of all three patents are directed to patent-ineligible subject matter. Pet. App. 15-22. At the first *Mayo/Alice* step, the court concluded that the claims are drawn to abstract ideas: “graphing (or displaying) bids and offers to assist a trader to make an order” and “receiving a user input to send a trade order.” *Id.* at 16, 21 (citation omitted). The court agreed with the Board that “placing an order based on displayed market information is a fundamental economic practice,” and “[t]he fact that the claims add a degree of particularity as to how an order is placed” and call for implementing that concept on a computer did not “impact [the court’s] analysis.” *Id.* at 17; see *id.* at 17-18.

At the second *Mayo/Alice* step, the court of appeals upheld the Board’s determinations that the elements of the relevant claims of each patent, considered “both individually and as an ordered combination,” do not “transform the nature of the claim[s] into * * * patent-eligible application[s].” Pet. App. 15-16 (quoting *Alice*, 573 U.S. at 217) (citation and internal quotation marks omitted); see *id.* at 18-22. With respect to the ’999 patent, for example, the court agreed with the Board that “receiving market information is simply routine data gathering,” and that “displaying information as indicators along a scaled price axis is well-understood, routine, conventional activity” that does not suffice under the second step of the *Mayo/Alice* approach. *Id.* at 18; see *id.* at 19. The court further held that the claimed inventions do not improve the functioning of a computer and do not purport to solve any technological problem. See *id.* at 20, 22.

The court’s application of the *Mayo/Alice* approach to the relevant claims of the three patents at issue here does not warrant further review.

2. Petitioner contends (Pet. 16, 23) that the court of appeals misapplied the *Mayo/Alice* framework by articulating and imposing a “categorical bar” on the patent-eligibility of “software innovations that provide useful functionality to users and improve on prior art” unless those innovations “improve the ‘basic functions’ of the computer itself in a manner akin to improved computer hardware.” See Pet. 16-27. That contention does not warrant review because its central premise is mistaken. The court of appeals did not articulate or apply any such categorical rule in this case.

a. The court of appeals’ analysis rests primarily on the basic principle that simply implementing a patent-ineligible concept on a generic computer does not render the concept patent-eligible. See *Diamond v. Diehr*, 450 U.S. 175, 191 (1981) (patentability principles “cannot be circumvented by attempting to limit the use of the formula to a particular technological environment”); see also *Alice*, 573 U.S. at 221 (“[M]ethod claims, which merely require generic computer implementation, fail to transform that abstract idea into a patent-eligible invention.”). Both the Board and the court of appeals viewed the patents at issue here as directed to ways of charting or graphing financial data that are not specific to computers. See, e.g., Pet. App. 45 (characterizing claim 1 of the ’056 patent as directed to “the abstract idea of graphing (or displaying) bids and offers to assist a trader to make an order, steps that can be performed using pen and paper, or even in a trader’s mind”); *id.* at 143 (same as to ’999 patent). The Board cited a sample page from a paper trader’s book in which the trader had manually

recorded buy or sell orders by plotting them along a price axis, similar to the '056 and '999 patents. See *id.* at 143; see also *id.* at 27, 142. The court agreed with that assessment. *Id.* at 16, 19, 21.

The Board and the court of appeals thus concluded that methods of graphically representing financial data are not patent-eligible subject matter, and that merely implementing such methods on a computer, without more—such as an improvement to the functionality of a computer itself—does not alter that conclusion. See, *e.g.*, Pet. App. 17 (“The fact that this is a ‘computer-based method’ does not render the claims non-abstract.”). A new method to draw pie charts with a pencil and paper would not be a patent-eligible “process” within the meaning of 35 U.S.C. 101, and the same is true of a patent that calls for the same method of drawing pie charts on a computer screen. The fundamental problem the court identified with the invention claimed by petitioner’s patents was not that they pertain to software, but instead that the claims merely recite a generic computer implementation of a patent-ineligible real-world concept.

To the extent petitioner’s argument rests on its disagreement with the Board’s and the court of appeals’ characterization of the claims in petitioner’s patents as reciting implementation on a generic computer of such patent-ineligible concepts, that disagreement does not warrant further review. As the court noted, petitioner “had an opportunity to dispute the Board’s characterization of the claims after institution but chose not to do so.” Pet. App. 21. And even if petitioner had properly preserved a challenge to the Board’s characterization of the claims, that fact-dependent, case-specific issue would not warrant this Court’s review. See Sup. Ct. R. 10.

b. Petitioner describes (Pet. 16-27) the court of appeals' opinion as adopting a categorical rule that software innovations can be patent-eligible only if they result in improvements to the functionality of a computer. That characterization is inaccurate. The portion of the court's opinion that petitioner cites for that proposition responded to an argument that petitioner had raised repeatedly. See Pet. 19 (citing Pet. App. 20). Specifically, petitioner had argued that its claims are patent-eligible even if they are directed to the abstract idea of graphing financial information because they include an inventive concept—namely, that the claims “improve computer functionality by improving on the intuitiveness and efficiency of prior [graphical-user-interface] tools.” Pet. App. 20; see also *id.* at 22 (“[Petitioner] repeats its argument that [the representative claim] improves computer functionality by solving technological problems with prior art electronic trading interfaces.”).

In the passage petitioner cites, the court of appeals rejected petitioner's argument on its own terms. See Pet. App. 20, 22. The court explained that “[t]he specification makes clear that this invention helps the trader process information more quickly,” which “is not an improvement to computer functionality, as alleged by” petitioner. *Id.* at 20. That conclusion echoed the court's analysis in an earlier portion of its opinion in which it had considered and rejected petitioner's contention that the patents are directed to “technological inventions” and therefore are not subject to covered-business-method review. *Id.* at 5; see *id.* at 5-15. The court's analysis of petitioner's patents does not address the patent-eligibility of other software inventions, including those directed to concepts that would otherwise be patent-eligible, or those that contain additional elements that

transform the abstract idea into a patent-eligible application. This case would not provide a suitable vehicle for the Court to address those broader questions because the inventions claimed by petitioner's patents would remain patent-ineligible for the more particularized reasons the court of appeals identified.

3. Petitioner additionally contends (Pet. i) that the Court should grant review to consider whether to "overrule its precedents recognizing the 'abstract idea' exception to patent eligibility." See Pet. 27-34. As the government explained in its brief in response to the Court's invitation in *Hikma, supra*, this Court's review is warranted in an appropriate case to clarify the substantive standards for patent-eligibility under Section 101. This case, however, is not a suitable vehicle in which to undertake such clarification.

a. Although the Court has construed Section 101 and its precursors for well over a century, its recent decisions have introduced substantial uncertainty regarding the proper Section 101 inquiry. See *Hikma* Invitation Br. at 8-21. Section 101, like its predecessors, enumerates several categories of patent-eligible subject matter, authorizing the issuance of a patent for "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof." 35 U.S.C. 101. The Court has long recognized that those terms, while broad, are not boundless. *E.g., Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980). They do not encompass, for example, newly discovered natural phenomena that are unaltered by humankind. See, *e.g., Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130-131 (1948); *Hikma* Invitation Br. at 2-4.

Until 2010, the Court’s decisions recognizing that such discoveries are not patent-eligible were best understood as interpreting the terms enumerated in the statute in light of their history and statutory context. See *Diamond v. Diehr*, 450 U.S. 175, 184 (1981) (“process”); *Corning v. Burden*, 56 U.S. (15 How.) 252, 267 (1854) (“machine”); *American Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1, 11 (1931) (“manufacture”); *Chakrabarty*, 447 U.S. at 308 (“composition of matter”). Beginning with *Bilski*, however, the Court has applied a different approach. The *Bilski* Court stated that those terms should instead be given their general-purpose “dictionary definitions,” but that Section 101’s scope is nevertheless limited by three “exceptions” that “are not required by the statutory text”: “laws of nature, physical phenomena, and abstract ideas.” 561 U.S. at 601, 603 (citation omitted).

In *Mayo* and subsequent cases, the Court developed and applied its current two-step framework for determining whether a particular patent claim is rendered patent-ineligible by one of the *Bilski* exceptions. See 566 U.S. at 77-92; *Alice*, 573 U.S. at 217-218. That new framework has generated substantial uncertainty in the lower courts concerning the scope of the exceptions that *Bilski* articulated and the proper methodology for determining whether a particular patent implicates them. *Hikma* Invitation Br. at 10-16. And although *Mayo* and *Alice* are the most immediate sources of confusion, the difficulties lower courts face ultimately derive in substantial part from the *Bilski* Court’s new conception of Section 101’s scope—as defined by generic dictionary definitions of its terms narrowed by atextual exceptions, rather than by the terms’ context and historical understanding. *Id.* at 17-21.

b. This case, however, is not a suitable vehicle to address those broader issues. Although the Court should consider in an appropriate case whether to return to its pre-*Bilski* conceptualization of Section 101's boundaries—as inherent limitations on its affirmative scope grounded in its text and context, rather than atextual exceptions superimposed despite the text and context, see *Hikma* Invitation Br. at 17-21—that question appears to have no practical significance in this case. Applying this Court's current *Mayo/Alice* approach, both the Board and the court of appeals determined that the relevant claims of petitioner's patents recite patent-ineligible subject matter. See pp. 7-12, *supra*. The approach this Court applied before *Bilski* would produce the same result. As noted above, the Court traditionally interpreted “process” in Section 101 based on historical usage of that term and its precursor (“art”) in the patent context, looking to “[i]ndustrial processes” of “the types which have historically been eligible to receive the protection of our patent laws” as guideposts. *Diehr*, 450 U.S. at 182, 184; see *id.* at 182-184; see also pp. 3-4, *supra*. There is no sound reason to suppose that a method of graphing financial data falls within that historical understanding of a “process,” 35 U.S.C. 101, in a statute implementing Congress's constitutional prerogative to authorize the issuance of patents to promote the “useful Arts,” U.S. Const. Art. I, § 8, Cl. 8.

To the extent petitioner instead contends that, instead of returning to its pre-*Bilski* understanding of the limits of Section 101's coverage, the Court should abandon some or all of those limits altogether, that contention lacks merit. Petitioner observes (Pet. 29) that the “exception[.]” the *Bilski* Court posited for “abstract ideas,” 561 U.S. at 601 (citation and internal quotation marks

omitted), has no grounding in Section 101's text. That observation has considerable force and was acknowledged by the *Bilski* Court itself. See *ibid.* (observing that the exceptions the Court recognized for “‘laws of nature, physical phenomena, and abstract ideas’ * * * are not required by the statutory text” (citation omitted)). But the absence of any textual foundation for the abstract-ideas exception does not justify disregarding limitations that were well-settled before *Bilski* and that *are* rooted in Section 101's text, history, and context.

Petitioner appears to suggest (Pet. 28) that, whatever limitations this Court had previously recognized on the scope of patent-eligible methods, Congress signaled its intention to eradicate those limitations by replacing the word “art” in Section 101's predecessor with “process” in the Patent Act of 1952. Petitioner asserts that “[t]he point” of that modification, “apparent from the text itself and confirmed by the legislative history, was to reach anything under the sun that is made by man.” *Ibid.* (citation and internal quotation marks omitted). But this Court has held that Congress's replacement of “art” with “process” in 1952 did not alter the provision's purpose or scope. *Diehr*, 450 U.S. at 182; see *id.* at 182-184. Petitioner's contention (Pet. 28) that the 1952 amendment “subsumed the term ‘art’ in a new one, ‘process’”—to which petitioner ascribes greater “breadth”—has things backwards. “Although the term ‘process’ was not added to 35 U.S.C. § 101 until 1952, a process has historically enjoyed patent protection because it was considered a form of ‘art’ as that term was used in the 1793 Act.” *Diehr*, 450 U.S. at 182. “Analysis of the eligibility of a claim of patent protection for a ‘process’” accordingly “did not change with the addition of that term to § 101.” *Id.* at 184.

c. The fact that this case arises in the context of software systems may make it a particularly unsuitable vehicle to provide broader clarity regarding the scope and nature of the Section 101 inquiry. In the context of other, more familiar types of innovations—such as industrial processes or methods of medical treatment—courts have confronted patent-eligibility questions for many decades and can draw on historical practice and precedent to aid in distinguishing patent-eligible processes from patent-ineligible aspirations. In contrast, courts (and this Court in particular) have less experience addressing such questions in the context of software systems. It may be unclear how principles developed to address the patent-eligibility of innovations that involve human intervention in the physical world translate to improvements in software architecture.

That is likely to be especially true where, as in this case, the parties dispute the proper characterization of the claimed invention. Petitioner argued in the court of appeals that the disputed patent claims are “analogous to a physical device,” not to a graphing method, “because the claims recite a [graphical user interface] that a user can see and interact with.” 17-2257 Pet. C.A. Corrected Br. 47. In contrast, the private respondents argued that the claims’ “‘character as a whole’ is directed to the long-standing, economic practice of graphing (or displaying) bids and offers to assist a trader to make an order.” 17-2257 IBG Resps. C.A. Br. 36 (citation omitted). The private respondents supported that characterization with (*inter alia*) expert testimony and evidence that in practice “humans actually plotted, by hand, bids and offers along a price axis to facilitate trading,” *id.* at 38, and they argued that petitioner’s contrary characteriza-

tion rested in part on features described in the specification but not included in the claim limitations, *id.* at 38 n.5. A search for appropriate analogies to more familiar innovations would be particularly difficult where, as here, the content of the claimed software invention is itself contested.

To be sure, in any technological context, borderline cases will inevitably arise in which text, history, and tradition provide no clear answer to the question whether particular claimed inventions are patent-eligible under Section 101. Yet neither petitioner's second question presented (concerning *Bilski's* abstract-ideas exception) nor petitioner's legal arguments are limited to software inventions. Petitioner instead asks the Court to grant review in this case to announce principles that will govern Section 101 analysis more generally. And attempting to clarify those overarching principles in a comparatively unfamiliar context might prove especially challenging.

CONCLUSION

The petition for a writ of certiorari should be denied.

Respectfully submitted.

NOEL J. FRANCISCO
Solicitor General
JOSEPH H. HUNT
Assistant Attorney General
MARK R. FREEMAN
SCOTT R. MCINTOSH
WEILI J. SHAW
Attorneys

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