

No. 19-522

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

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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. 18-1105,
18-1302, 18-1438, 18-1443 (May 21, 2019)

Trading Techs. Int'l, Inc. v. IBG LLC, No. 18-1489
(July 1, 2019)

TABLE OF CONTENTS

	Page
Opinions below	1
Jurisdiction	2
Statement	2
Argument.....	12
Conclusion	28

TABLE OF AUTHORITIES

Cases:

<i>Alice Corp. Pty. Ltd. v. CLS Bank Int’l</i> , 573 U.S. 208 (2014).....	6, 13, 14, 15, 19, 23
<i>American Fruit Growers, Inc. v. Brogdex Co.</i> , 283 U.S. 1 (1931)	4, 23
<i>Association for Molecular Pathology v. Myriad Genetics, Inc.</i> , 569 U.S. 576 (2013).....	6
<i>Bilski v. Kappos</i> , 561 U.S. 593 (2010).....	3, 5, 13, 23, 25
<i>Corning v. Burden</i> , 56 U.S. (15 How.) 252 (1854)	4, 23
<i>Diamond v. Chakrabarty</i> , 447 U.S. 303 (1980).....	3, 4, 23
<i>Diamond v. Diehr</i> , 450 U.S. 175 (1981).....	<i>passim</i>
<i>Electric Power Grp., LLC v. Alstom S.A.</i> , 830 F.3d 1350 (Fed. Cir. 2016).....	11
<i>Funk Bros. Seed Co. v. Kalo Inoculant Co.</i> , 333 U.S. 127 (1948).....	3, 4, 23
<i>Kewanee Oil Co. v. Bicron Corp.</i> , 416 U.S. 470 (1974)	3
<i>Le Roy v. Tatham</i> , 55 U.S. (14 How.) 156 (1853)	4
<i>Mayo Collaborative Servs. v. Prometheus Labs., Inc.</i> , 566 U.S. 66 (2012).....	5, 6, 13, 23
<i>The Telephone Cases</i> , 126 U.S. 1 (1888)	5

IV

Cases—Continued:	Page
<i>Trading Techs. Int’l, Inc. v. IBG LLC:</i>	
921 F.3d 1084 (Fed. Cir. 2019), petition for cert. pending, No. 19-353 (filed Sept. 16, 2019)	<i>passim</i>
921 F.3d 1378 (Fed. Cir. 2019)	<i>passim</i>
Constitution, statutes, and rules:	
U.S. Const. Art. I, § 8, Cl. 8	2, 25
Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284:	
§ 18, 125 Stat. 329-331	7
§ 18(d)(1), 125 Stat. 331	7, 8
Patent Act of 1952, 35 U.S.C. 1 <i>et seq.</i>	
35 U.S.C. 101	<i>passim</i>
35 U.S.C. 102 (2006)	3
35 U.S.C. 103 (2006)	3
35 U.S.C. 103	9
35 U.S.C. 112 (2006)	3
28 U.S.C. 2403(a)	9
Fed. Cir. R. 36	11
Sup. Ct. R. 10	20
Miscellaneous:	
Antonin Scalia & Bryan A. Garner, <i>Reading Law:</i> <i>The Interpretation of Legal Texts</i> (2012)	
	5

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OPINIONS BELOW

The opinion of the court of appeals in Nos. 18-1105 and 18-1302 (Pet. App. 1-5) is not published in the Federal Reporter but is reprinted at 767 Fed. Appx. 1006.¹ The summary order of the court of appeals in No. 18-1489

¹ The court of appeals also entered the same opinion in Nos. 18-1438 and 18-1443. Pet. App. 1-5. Although petitioner's application to extend the time within which to file a petition for a writ of certiorari encompassed those cases, see 19A171 Appl. 1-3, the petition for a writ of certiorari does not refer to those cases or to the patents at issue in those cases, see Pet. 8 n.1 (identifying patents at issue in the petition). The appendix to the petition for a writ of certiorari also does not include the United States Patent and Trademark Office's Patent Trial and Appeal Board's underlying decisions in those cases. Petitioner thus does not appear to seek review of the court of appeals' judgments in Nos. 18-1438 and 18-1443 and appears to have abandoned any argument as to the patents at issue in those cases.

(Pet. App. 6-7) is not published in the Federal Reporter but is reprinted at 771 Fed. Appx. 493. The decision of the United States Patent and Trademark Office's Patent Trial and Appeal Board in No. CBM-2016-9 (Pet. App. 12-65) is unreported. The decisions of the Board in Nos. CBM-2016-54 and CBM-2016-90 (Pet. App. 66-149, 150-200) are not published in the United States Patents Quarterly but are available at 2017 WL 4708078 and 2017 WL 6210830, respectively.

JURISDICTION

The judgment of the court of appeals in Nos. 18-1105 and 18-1302 was entered on May 21, 2019. A petition for rehearing in No. 18-1302 was denied on September 3, 2019 (Pet. App. 8-9).

The judgment of the court of appeals in No. 18-1489 was entered on July 1, 2019. A petition for rehearing in that case was denied on September 18, 2019 (Pet. App. 10-11).

On August 13, 2019, the Chief Justice extended the time within which to file a petition for a writ of certiorari with respect to the court of appeals' judgment in No. 18-1105 to and including October 18, 2019, and the petition was filed on that date. 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 Nos. 7,685,055 (’055 patent), 7,693,768 (’768 patent), and 7,725,382 (’382 patent)—relating to user interfaces for electronic-trading software. Pet. 8 & n.1. The patents claim methods of formatting financial information for display on a computer screen and then accepting trade orders based on that information. Pet. App. 15-17, 69-74, 153-157. The ’055 patent, for example, claims the process of repositioning price information displayed on a computer screen when new market information is received. *Id.* at 247-248. The ’768 patent claims a method of displaying bids and asks with corresponding prices. *Id.* at 368-369. The ’382 patent is similar but claims a method for cancelling a trade order. *Id.* at 434-435, 454.

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). Some 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. 13, 67, 151. 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. 13, 67, 151. The Board subsequently issued a final written decision in each proceeding. *Id.* at 12-65, 66-149, 150-200. 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 25-36, 80-92, 162-174. The Board further determined that the claims at issue in this Court are not patent-eligible under 35 U.S.C. 101. Pet. App. 37-51, 92-108, 174-190.

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 representative claims of each patent are directed to abstract ideas. Pet. App. 39-47, 95-104, 177-186. The Board held that representative claim 1 of the ’055 patent is directed to “the abstract [i]dea of providing a trader with financial information to facilitate market trades, a fundamental economic practice,” and the steps of which “can be performed using pen and paper, or even in a trader’s mind.” *Id.* at 41. Similarly, the Board held that representative claim 1 of the ’768 patent is directed to “placing an order based on displayed market information * * * as well as updating the market information,” “a fundamental economic and conventional business practice.” *Id.* at 99. The Board found “that the method of claim 1 could be performed in

the human mind or with the aid of pen-and-paper with little difficulty because the claim requires plotting only a few data points (i.e., the inside market).” *Id.* at 99-100. The Board relied on the same reasoning with respect to the ’382 patent. *Id.* at 181-182.

At the second step of the *Mayo/Alice* approach, the Board determined that the additional elements of the representative claims in each patent “do not transform the nature of the claims into a patent-eligible application” because, whether viewed individually or as an ordered combination, they “do not add significantly more to the abstract [i]dea or fundamental economic practice” to which the Board had determined those claims were directed. Pet. App. 50; see *id.* at 48-50, 104-107, 186-189. The Board also concluded that nothing in the dependent claims saved them from patent-ineligibility. *Id.* at 51, 107-108, 189. The Board further held that certain claims of the ’055 and ’382 patents were not obvious in light of the prior art, *id.* at 52-61, 190-199, but that certain claims of the ’768 patent were obvious, *id.* at 108-145; see 35 U.S.C. 103.

3. a. Petitioner appealed each of the Board’s decisions to the Federal Circuit. Pet. App. 1-3, 6. 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. 18-1105 Pet. C.A. Br. 79; 18-1302 Pet. C.A. Br. 92; 18-1489 Pet. C.A. Br. 78-80; see 18-1105 C.A. Doc. 36, at 1 (June 8, 2018); 18-1105 C.A. Doc. 37, at 2 (June 12, 2018); 18-1302 C.A. Doc. 41, at 1 (June 8, 2018); 18-1489 C.A. Doc. 27, at 1 (June 8, 2018); 18-1489 C.A. Doc. 28, at 2 (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 establishing covered-business-method review. *E.g.*, 18-1105 C.A. Doc. 40, at 1-2 (July 9, 2018); see 17-1732 C.A. Doc. 99, at 10 (July 31, 2018). The government’s briefs addressed petitioner’s constitutional challenge, but it did not address the patentability of the claims of the patents at issue. See 18-1105 Gov’t C.A. Br. 20-47; 18-1302 Gov’t C.A. Br. 20-47; 18-1489 Gov’t C.A. Br. 15-54.

b. While these appeals were pending, the Federal Circuit issued two precedential decisions in separate appeals that involved the same parties and presented issues concerning the patent-eligibility of certain other of petitioner’s “related patents.” Pet. App. 4 (citing *Trading Techs. Int’l, Inc. v. IBG LLC*, 921 F.3d 1084 (Fed. Cir. 2019) (*IBG I*), petition for cert. pending, No. 19-353 (filed Sept. 16, 2019), and *Trading Techs. Int’l, Inc. v. IBG LLC*, 921 F.3d 1378 (Fed. Cir. 2019) (*IBG II*)). In each of those decisions, the court of appeals affirmed the Board’s determination that the patents at issue were properly subject to covered-business-method review. See *IBG I*, 921 F.3d at 1087-1091; *IBG II*, 921 F.3d at 1382-1383. In each case, the court applied this Court’s *Mayo/Alice* approach and concluded that the claims were patent-ineligible. See *IBG I*, 921 F.3d at 1091-1095; *IBG II*, 921 F.3d at 1383-1385. At the first *Mayo/Alice* step, the court held that the relevant claims are directed to patent-ineligible abstract ideas; at the second *Mayo/Alice* step, the court held that the claims’ elements did not transform the claims into patent-eligible applications. See *ibid.*

c. The court of appeals subsequently affirmed the Board decisions that are at issue in this case.

In Nos. 18-1105 and 18-1302—which involved the ’055 and ’768 patents—the court of appeals issued a consolidated unpublished opinion affirming the Board’s decisions. Pet. App. 1-5. The court held that the outcomes of those appeals were controlled by the court’s earlier decisions in *IBG I* and *IBG II*. *Id.* at 5. The court was “not persuaded by [petitioner’s] arguments that the patents at issue” in this case “are distinguishable from the patents invalidated” in those prior decisions. *Ibid.* As in those cases, the court reasoned, “the challenged patents” in this case “focus[] on improving the trader, not the functioning of the computer.” *Ibid.* (quoting *IBG II*, 921 F.3d at 1383) (brackets in original). The court explained that, “[a]lthough these patents may provide different information than” the patents at issue in *IBG I* and *IBG II* provided, the “particular content” of information “does not change its character as information.” *Ibid.* (quoting *Electric Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016)). The court also held that petitioner had waived its constitutional challenges to covered-business-method review. *Ibid.*

In No. 18-1489, which concerned the ’382 patent, a different panel of the court of appeals entered a summary order affirming the Board’s decision pursuant to Federal Circuit Rule 36. Pet. App. 6-7. Rule 36 permits affirmance without opinion if an opinion would have no precedential value and the decision on review warrants affirmance. See Fed. Cir. R. 36.

d. The court of appeals denied petitions for panel rehearing and rehearing en banc in Nos. 18-1302 and 18-1489 without recorded dissent. Pet. App. 8-9, 10-11.

ARGUMENT

Petitioner challenges (Pet. 18-29) 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. 18, 25) that the court has adopted 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 did not articulate or apply such a rule either in its nonprecedential decisions here, or in the earlier, precedential decisions on which the panels here relied. Instead, the court's decisions rest 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 patent claims at issue in this case 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. 29-36. 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 Board 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. a. In its unpublished opinion in Nos. 18-1105 and 18-1302, addressing the '055 and '768 patents, the court of appeals determined that the outcome of those appeals was controlled by two of the court's recent precedential decisions, which had addressed disputes involving the same parties and certain related patents owned by petitioner. Pet. App. 5 (citing *Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1084 (Fed. Cir. 2019), petition for cert. pending, No. 19-353 (filed Sept. 16, 2019), and *Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1378 (Fed. Cir. 2019)). The court rejected petitioner's contentions that the patents at issue here are distinguishable from the patents in those earlier cases. *Ibid.* The court's application of its precedents to the particular patents at issue in this case does not warrant further review.

i. In *IBG I*, the court of appeals addressed certain claims of three of petitioner's patents that "relate[d] generally to a graphical user interface * * * for electronic trading." 921 F.3d at 1087. Two of the patents at issue "disclose[d] '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 third patent "disclose[d] '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[.]'" *Ibid.* (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 in *IBG I* upheld the Board's decisions concluding that the relevant claims of all three patents are directed to patent-ineligible subject matter. 921 F.3d at 1093-1095. 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 1092, 1094. 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 1092.

At the second *Mayo/Alice* step, the court of appeals in *IBG I* 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].” 921 F.3d at 1093 (quoting *Alice*, 573 U.S. at 217) (citation and internal quotation marks omitted); see *id.* at 1093-1095. For example, in analyzing 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 is well-understood, routine, conventional activity” that does not suffice under the second step of the *Mayo/Alice* approach. *Id.* at 1093.

Petitioner argued in *IBG I* that the claimed innovations should be patent-eligible because they assertedly “improve computer functionality” in various ways and “solv[e] technological problems.” 921 F.3d at 1094, 1095. The court of appeals rejected that argument based on its disagreement with petitioner’s premise, finding that the claimed inventions do not improve the functioning of a computer and do not purport to solve any technological problem. See *id.* at 1093-1095. The court’s decision in *IBG I* does not warrant further review. See Gov’t Br. in Opp. at 13-24, *Trading Techs. Int’l, Inc. v. IBG LLC*, No. 19-353 (filed Dec. 18, 2019). The court’s conclusion that its *IBG I* decision leads to the same result in this case likewise does not warrant this Court’s review.

ii. *IBG II* is similar. In that case, the relevant patent claims related to “displaying market information on a screen,” and specifically to displaying “values that are derivatives of price” such as a trader’s “profit and loss.” 921 F.3d at 1381 (citations omitted). At the first *Mayo/Alice* step, the court of appeals held that the claims are directed to “providing a trader with additional

financial information to facilitate market trades, an abstract idea.” *Id.* at 1384. The court noted that information such as “price values or [profit-and-loss] values[] * * * is abstract,” and that “the claimed steps for calculating the [profit-and-loss] values * * * is nothing more than ‘mere automation of manual processes using generic computers,’ which ‘does not constitute a patentable improvement in computer technology.’” *Ibid.* (citation omitted).

The court of appeals in *IBG II* also rejected petitioner’s contention that the patent claims at issue in that case are not directed to an abstract idea because they improve computer functionality. 921 F.3d at 1384-1385. The court concluded that the “claims are focused on providing information to traders in a way that helps them process information more quickly, not on improving computers or technology.” *Id.* at 1384 (citation omitted). The court further held that “the claims [in that case] fail because arranging information along an axis does not improve the functioning of the computer, make it operate more efficiently, or solve any technological problem.” *Id.* at 1385.

At the second *Mayo/Alice* step, the court of appeals in *IBG II* held that the claim elements individually and as an ordered combination failed to “‘transform the nature of the claim’ into a patent eligible application.” 921 F.3d at 1385 (citations omitted). The court explained that the claimed invention “simply takes the prior art trading screen * * * and adds [profit-and-loss] values along the axis,” which does not provide significantly more than the abstract idea itself. *Ibid.*

b. In No. 18-1489, which involved the ’382 patent, a different panel of the court of appeals issued a summary order affirming the Board’s decision without opinion.

Pet. App. 6-7. The court's summary order does not disclose the court's particular reasoning, which itself renders that judgment a poor vehicle for plenary review.

In any event, the Board's reasoning in its underlying decision accords with the court of appeals' analysis in *IBG I* and *IBG II*. Claim 1 of the '382 patent is directed to "a method of canceling an order entered for a commodity at an electronic exchange," including "steps of displaying market information, bid and ask quantities, and an entered order indicator in regions along a static price axis." Pet. App. 178 (citation omitted). The displayed information is the "inside market," or "the highest bid price" and "the lowest ask price." *Ibid.* The claim "does not recite any limitation that specifies how the computer implements the steps or functions." *Id.* at 179.

The Board found at the first *Mayo/Alice* step that claim 1 is directed to "placing an order based on displayed market information, such as the inside market and a few other orders, as well as updating the market information," a "fundamental economic and conventional business practice." Pet. App. 181-182. The Board found that "the method of claim 1 could be performed in the human mind or with the aid of pen-and-paper with little difficulty because the claim requires plotting only a few data points (i.e., the inside market)." *Id.* at 182. Petitioner contended that the claims did not have a "pre-electronic equivalent" and therefore are not directed to a fundamental economic practice. *Ibid.* (citation omitted). The Board rejected that argument, explaining that petitioner's characterization was "not commensurate with the scope of the claims." *Ibid.*

The Board also rejected petitioner's argument that claim 1 improves computer functionality and therefore is not directed to an abstract idea. Pet. App. 185-186.

The Board explained that “the claim[] merely organize[s] existing market information so that it is displayed or plotted along a price axis,” and that “[p]lotting bids and asks along a price axis is not a specific improvement to the functioning of a computer.” *Ibid.*

At the second *Mayo/Alice* step, the Board determined that the claim elements “do not transform the nature of the claim into a patent-eligible application.” Pet. App. 189. The Board explained that, “[e]ssentially, these limitations require plotting the inside market along a price axis,” and that “[p]lotting information along an axis is a well-understood, routine, conventional, activity.” *Id.* at 187. It noted that other elements “require merely a rearrangement of market information that was known to be displayed in corresponding columns on a [graphical user interface].” *Id.* at 188. The Board likewise found that still other elements, such as “single action entry of an order,” are “known technology.” *Id.* at 188-189. The Board further observed that “the specification of the ’382 patent treats as well-known all potentially technical aspects of the claims.” *Id.* at 187. The court of appeals’ summary order affirming the Board’s determination does not warrant further review.

2. Petitioner contends (Pet. 18, 25) that the court of appeals has 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. 18-29. 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 either of the decisions

below. Nor did the court do so in *IBG I* or *IBG II*, on which the panel in Nos. 18-1105 and 18-1302 relied.

a. The court of appeals' decisions in *IBG I* and *IBG II* rest 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."). The court viewed the patents at issue in those cases as directed to ways of plotting financial data or accepting trade orders that are not specific to computers. See *IBG I*, 921 F.3d at 1092, 1094 (concluding that claims were drawn to "'graphing (or displaying) bids and offers to assist a trader to make an order,'" and to "receiving a user input to send a trade order"); *IBG II*, 921 F.3d at 1384 (concluding that "the claimed steps * * * [are] nothing more than 'mere automation of manual processes using generic computers,' which 'does not constitute a patentable improvement in computer technology'" (citation omitted)).

The Board reached similar conclusions with respect to the patents at issue in the petition. See, e.g., Pet. App. 181-182 (concluding that claims are drawn to "placing an order based on displayed market information, such as the inside market and a few other orders, as well as updating the market information"). The Board determined that the claims are directed to methods that had previously been executed using pen and paper. The Board noted, for example, that long before the patents at issue, "traders maintained [paper] books that plotted

bids and asks (e.g., the market depth) along a price axis,” much as claimed in the patents. *Id.* at 42; see *id.* at 43, 98-99, 180-181. The Board concluded that “the method of claim 1” of the ’382 patent “could be performed in the human mind or with the aid of pen-and-paper with little difficulty because the claim requires plotting only a few data points (i.e., the inside market).” *Id.* at 182.

The Board and the court of appeals thus concluded that methods of graphically representing financial data or accepting orders 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., *IBG I*, 921 F.3d at 1093 (“The fact that this is a ‘computer-based method’ does not render the claims non-abstract.”). A new method of drawing pie charts with a pencil and paper, or accepting orders using a paper form, 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 or accepting orders 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. And 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 fact-dependent, case-specific issue does not warrant this Court’s review. See Sup. Ct. R. 10.

b. Contrary to petitioner’s contention (Pet. 18-22), the court of appeals has not adopted a categorical rule

that software innovations can be patent-eligible only if they result in improvements to the functionality of a computer. The court's decisions in *IBG I* and *IBG II* discussed improvements to computer functionality principally in response to an argument raised repeatedly by petitioner.

In *IBG I*, petitioner argued that its claims are patent-eligible even if they are directed to the abstract idea of graphing financial information because they “improve computer functionality by improving on the intuitiveness and efficiency of prior [graphical-user-interface] tools.” 921 F.3d at 1094; see also *id.* at 1095 (“[Petitioner] repeats its argument that claim 1 improves computer functionality by solving technological problems with prior art electronic trading interfaces.”). The court of appeals rejected petitioner's argument on its own terms. 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 1094. 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 here are directed to “technological invention[s]” and therefore were not properly subject to covered-business-method review at all. *Id.* at 1087; see *id.* at 1089-1091.

In *IBG II*, the court of appeals likewise found the claims to be directed to an abstract idea before rejecting petitioner's argument that claimed improvements to computer functionality rendered the claims patent-eligible. 921 F.3d at 1384-1385. The court explained that “the claims here fail because arranging information along an axis does not improve the functioning of the computer,

make it operate more efficiently, or solve any technological problem.” *Ibid.*

In the decision below in Nos. 18-1105 and 18-1302, the court of appeals relied on *IBG I* and *IBG II* without announcing any new principle of patent-eligibility. See Pet. App. 1-5. The court’s summary order in No. 18-1489 likewise did not articulate any categorical rule. *Id.* at 6-7. The Board’s underlying decision in that appeal also did not apply such a rule; it addressed whether the claimed invention resulted in an improvement to computer functionality only in response to petitioner’s argument that the invention did so. *Id.* at 184-186. The court’s and the Board’s reasoning 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.

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. 29-36. 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 *Diehr*, 450 U.S. at 184 (“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 here, the Board determined that the relevant claims of petitioner's patents recite patent-ineligible subject matter, and the court of appeals affirmed those determinations. See pp. 8-11, *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. 3-5, *supra*. There is no sound reason to suppose that a method of plotting financial data or accepting trade orders 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, rather than 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. 29-31) 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. 30) 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. 30) 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. For example, petitioner argued in the court of appeals that the claims of the ’382 patent are “analogous to a physical device,” not to a method of plotting financial data, “because the claimed [graphical user interface] provides an interface that a user can see and interact with.” 18-1489 Pet. C.A. Br. 62. In contrast,

the private respondents argued that the claims are directed to the “fundamental economic practice of placing an order (a cancel order) based on observed, dynamically updated market information.” 18-1489 IBG Resps. C.A. Br. 32. The private respondents supported that characterization with (*inter alia*) evidence that traders’ pre-electronic trading books “arrange[d] the same market information in the same format” as petitioner’s claims, and that a specialist using such a book “could track the market, erase, and update the bid and ask quantities with new information received by the specialist in the same way that the claimed computerized [graphical user interface] displays and updates (moves) information on the screen.” *Id.* at 34-35 (emphasis omitted). They also cited various purported paper and electronic implementations of the same methods. *Id.* at 35-36. 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.

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