

No. _____

In the
**Supreme Court of the
United States**

IMPACT ENGINE, INC.,
Petitioner,

v.

GOOGLE LLC,
Respondent.

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

PETITION FOR WRIT OF CERTIORARI

JASON M. WILCOX
Counsel of Record
KIRKLAND & ELLIS LLP
1301 Pennsylvania Ave., N.W.
Washington, DC 20004
(202) 389-5000
jason.wilcox@kirkland.com

Counsel for Petitioner

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QUESTION PRESENTED

Section 101 of the Patent Act provides that “any new and useful process, machine, manufacture or composition of matter” is eligible for a patent. This Court has added a judicial exception that excludes “laws of nature, natural phenomena, and abstract ideas.” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 217 (2014). The Federal Circuit held Impact Engine’s patent claims for dynamically creating and distributing online ads are an unpatentable abstract idea.

A different provision of the Patent Act, 35 U.S.C. § 112(f), authorizes a patent to claim “a specified function without the recital of structure,” in which case the claim must “be construed to cover the corresponding structure” in the specification. When considering whether a subset of Impact Engine’s claims written in § 112(f) form are patent-eligible, the Federal Circuit analyzed the function without considering the structure. That analysis all but assured the claims will be viewed as abstract.

The questions presented are:

1. Whether the lodestar for determining patent eligibility under this Court’s two-step framework is whether the patent claims preempt basic technological or scientific building blocks.
2. Whether, when a court is determining if an invention claimed in purely functional terms under § 112(f) is patent-eligible under § 101, it must consider not just the functional claim language but also the specific corresponding structure defining the patent claim’s scope under § 112(f).

PARTIES TO THE PROCEEDING

Petitioner Impact Engine, Inc. was appellant in the court of appeals and plaintiff in the district court.

Respondent Google LLC was appellee in the court of appeals and defendant in the district court.

RULE 29.6 DISCLOSURE STATEMENT

Impact Engine, Inc. has no parent corporation, and no publicly held company has a 10% or greater ownership interest in Impact Engine.

STATEMENT OF RELATED PROCEEDINGS

This case arises from the following proceedings:

- *Impact Engine, Inc. v. Google LLC*, No. 22-2291 (Fed. Cir.) (judgment entered July 3, 2024).
- *Impact Engine, Inc. v. Google LLC*, No. 3:19-cv-1301 (S.D. Cal.) (judgment entered August 31, 2022).

There are no other proceedings in state or federal trial or appellate courts, or in this Court, directly related to this case within the meaning of this Court's Rule 14.1(b)(iii).

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PETITION FOR WRIT OF CERTIORARI

Impact Engine, Inc. respectfully submits this petition for a writ of certiorari to review the judgment of the United States Court of Appeals for the Federal Circuit in this case.

OPINIONS BELOW

The Federal Circuit's decision is not reported but is available at 2024 WL 3287126 (Fed. Cir. July 3, 2024). Pet.App. 1a-33a. The Federal Circuit's order denying Impact Engine's petitions for panel rehearing and rehearing en banc is not reported but is available at Pet.App. 92a-93a.

The decision of the United States District Court for the Southern District of California granting defendant's motion for summary judgment is reported at 624 F. Supp. 3d 1190 (S.D. Cal. 2022). Pet.App. 81a-91a. The decision of the United States District Court for the Southern District of California granting in part, and denying in part, defendant's third motion to dismiss is not reported but is available at 2021 WL 5234415 (S.D. Cal. Nov. 10, 2021). Pet.App. 62a-80a.

JURISDICTION

The Federal Circuit entered judgment on July 3, 2024. Pet.App. 1a-33a; Pet.App. 94a. It subsequently denied Impact Engine's petitions for panel rehearing and rehearing en banc on September 6, 2024. Pet.App. 92a-93a. On November 21, 2024, this Court extended Impact Engine's deadline to petition for a writ of certiorari to and including February 3, 2025. This Court has jurisdiction under 28 U.S.C. § 1254(1).

CONSTITUTIONAL & STATUTORY PROVISIONS INVOLVED

The Intellectual Property Clause of the United States Constitution provides that “[t]he Congress shall have Power ... [t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” U.S. Const. art. I, § 8, cl. 8.

The relevant provisions of the Patent Act of 1952, 35 U.S.C. §§ 101 and 112(f), are reproduced in the Appendix at Pet.App. 95a.

INTRODUCTION

This case concerns the scope of the judge-made “abstract idea” exception to the patent-eligible subject matter set forth in 35 U.S.C. § 101, and its interplay with another important provision of the Patent Act, 35 U.S.C. § 112(f). Notwithstanding the broad scope of patentable subject matter under § 101’s text, this Court has recognized that three categories—laws of nature, natural phenomena, and abstract ideas—are not eligible for patenting. The courts below distorted this Court’s § 101 jurisprudence and, in doing so, expanded the abstract-idea exception not only to prevent § 101 from reaching a prototypical technological innovation, but also effectively to nullify § 112(f).

Impact Engine invented a web-based advertisement system that revolutionized online advertising. Before Impact Engine’s innovation, companies were often forced to hire expensive professionals to create and edit advertisements, which

were typically static and resulted in massive file sizes that sapped consumers' internet speed and bandwidth when the ads were downloaded for viewing. Impact Engine's invention solved these problems, using technological tools in specific, novel ways. Impact Engine obtained patents to protect its invention.

After Google took Impact Engine's invention and used it in Google's own products, Impact Engine sued Google for patent infringement. The Federal Circuit deemed all but three of the patent claims Impact Engine asserted were "abstract ideas" that were not patent-eligible under § 101. In reaching that result, the Federal Circuit did not consider whether the claims preempt basic technological building blocks or methods of organizing human activity, even though this Court has said those "pre-emption" concerns "undergird [its] § 101 jurisprudence," *Alice*, 573 U.S. at 223. The court instead reduced Impact Engine's claims to a caricature directed to "the abstract idea of processing information." Pet.App. 16a.

That reasoning vividly illustrates the Federal Circuit's broken approach to patent eligibility under § 101. This Court has made clear that its judicially crafted exceptions to § 101's otherwise broad scope—including the exception that bars patent claims directed to "abstract ideas" without something more—are based on an overarching concern of preemption: that allowing patent monopolies on basic building blocks of human ingenuity will impede rather than foster innovation. That concern plainly is not implicated by Impact Engine's web-based advertisement system. The Federal Circuit, however, has expanded the "abstract idea" exception's narrow

ambit by substituting this Court's preemption concern with a standardless approach to assessing patent eligibility. In doing so, the Federal Circuit has wrongly used this Court's exceptions to patentable subject matter to bar § 101 from reaching quintessentially technological inventions like the one at issue here, while simultaneously threatening to eliminate other provisions of the Patent Act.

One of those provisions is § 112(f). That provision allows a patent to recite claim elements based solely on the functions they perform. Those claim elements are then limited to the corresponding structures (or software algorithms) in the patent specification that describe how to perform those functions. Among the asserted patent claims here are several that required a "project viewer," which the parties do not dispute is a means-plus-function claim element subject to § 112(f). The Federal Circuit identified over 300 lines of specific structure in the specification implementing the project-viewer functionality. Yet, when analyzing the "project viewer" claims under § 101, the Federal Circuit ignored all of that structure. It instead focused solely on the claimed functions.

Almost every § 112(f) claim will flunk § 101 under that approach, effectively rendering § 112(f) a dead letter. A function divorced from its corresponding structure is inherently abstract. The detailed corresponding structure should put a heavy thumb on the scale that a § 112(f) claim is patent-eligible, not make the claim presumptively abstract. Congress could not have intended that result when it enacted both § 101's threshold eligibility requirement and approved means-plus-function claiming in § 112(f) at

the same time in the same Act. Because the Federal Circuit’s expansion project corrupts this Court’s § 101 precedent, ignores the constitutional purposes of the Patent Act, and imperils innovation, this Court should grant Impact Engine’s petition. This case presents a critical opportunity to restore balance in patent law and clarify § 101’s scope so it invites rather than impedes innovation.

STATEMENT OF THE CASE

A. Statutory Background

Section 101 of the Patent Act of 1952 defines the scope of patent-eligible subject matter, which broadly encompasses “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” 35 U.S.C. § 101. This Court has recognized three judicial exceptions: “[l]aws of nature, natural phenomena, and abstract ideas.” *Alice*, 573 U.S. at 216. In *Alice*, this Court “described the concern that drives this exclusionary principle as one of pre-emption,” because allowing monopolization of those concepts—which are “the basic tools of scientific and technological work”—threatens to inhibit future innovation rather than promote it. *Id.*

Even if a claimed invention constitutes patentable subject matter under § 101, it does not qualify for patent protection unless it also clears several additional hurdles, including being new (§ 102), nonobvious (§ 103), and adequately described in and enabled by the specification (§ 112(a)). The patent specification is the inventors’ description of their invention, including the title, abstract, summary of the invention, drawings, written detailed description,

and claims. 37 C.F.R. §§ 1.71-1.75. The numbered claims at the end of the patent specification—like a deed to piece of real property—define the scope of the invention. *Id.* § 1.75; *see* 35 U.S.C. § 112(b); *Amgen Inc. v. Sanofi*, 598 U.S. 594, 610 (2023).

Section 112(f) of the Patent Act allows inventors to claim their innovations based on the function performed without reciting in the claim the structures necessary to perform it. 35 U.S.C. § 112(f). However, such patent elements defined by their “function” must be construed to cover only the specific corresponding structure or algorithm (i.e., “means”) described in the specification for performing that claimed function and equivalent structures. *Id.* Patent claims written in § 112(f) form are often called “means-plus-function” claims.

B. Factual Background

Impact Engine invented a web-based advertisement system that changed the way companies and consumers interact with the internet. *See* Pet.App. 3a-4a. Before Impact Engine’s innovation, online advertising was a slow and cumbersome experience for companies and consumers alike. C.A.App. 1263-1265. For example, to make and revise media-rich online advertisements (also called “communications”), companies often had to resort to hiring expensive professional graphic designers and advertising agencies. C.A.App. 47(1:12-23), 7999. Moreover, each ad had to be created from scratch for every version and size. C.A.App. 1263, 8000, 11321.

Media-rich advertisements were bulky and resulted in large file sizes that slowed consumers’ internet experience to a crawl. C.A.App. 7999, 8009-

8010, 11062, 11318, 11321. Further, because many companies were unable to easily modify and update their online advertisements, consumers often viewed out-of-date ads. C.A.App. 1263.

Impact Engine recognized these problems and revolutionized internet advertising with a web-based advertisement system that—for the first time—allowed lay users to create, edit, and distribute their own dynamic and media-rich online advertisements. Pet.App. 3a-4a; C.A.App. 47(2:49-63).

At a high level, the web-based system works as follows: users access an online communication builder engine through a browser window. C.A.App. 31(fig.1), 47-48(2:49-3:8), 8019-8022. Through the communication builder engine, users can access a media repository housed on a remote server that contains different assets and templates, and select combinations of these assets to create their custom advertisement. C.A.App. 31(fig.1), 48(3:9-29), 8025; Pet.App. 96a.

Impact Engine's inventive system had many tangible benefits. One was that it allowed dynamic, media-rich advertisements to be easily updated live and transmitted to internet users using less bandwidth, thereby eliminating long download times. C.A.App. 1264-1265, 8026, 11333-11336. This benefit came at least in part from the unique layered compartmentalized structure of online advertisements created using Impact Engine's invention, and from the server-based structure of the system. *Id.*; C.A.App. 47(1:41-52), 48(3:30-41). Advertisements made using the web-based system can be crafted as "slides," which are layered on top of one

another. C.A.App. 48(3:30-41). And each slide can be compartmentalized with individual media assets housed and pulled from a remote server accessed over a network connection. C.A.App. 48(3:42-4:26), 11334-11335. These slides allow for easier iterative updates for companies and lower bandwidth use for consumers because slides and their components are transmitted to viewers at the time of viewing in bite-size pieces rather than large, difficult-to-download chunks. C.A.App. 47(1:44-51), 8026, 11333-11336.

Another major benefit of Impact Engine's invention was that it decreased the cost of running advertising campaigns by eliminating the need for expensive professionals. C.A.App. 11186. Instead, businesses and consumers enjoyed more flexible, cheaper ways to create, edit, and view advertisements. *Id.*; C.A.App. 11329-11330, 11334.

Impact Engine applied for and obtained patents from the U.S. Patent and Trademark Office to protect its innovative web-based advertisement system. Seven of those patents were at issue in the appeal below.¹ Pet.App. 3a. Each one covers different aspects of Impact Engine's invention. *Id.*

Google used Impact Engine's patented technology to make Google Ads, Google Display & Video 360, and YouTube Video Builder.

¹ These seven patents are U.S. Patent Nos. 7,870,497 ("497 patent"); 8,356,253 ("6,253 patent"); 8,930,832 ("832 patent"); 9,361,632 ("632 patent"); 10,068,253 ("8,253 patent"); 10,565,618 ("618 patent"); and 10,572,898 ("898 patent").

C. Proceedings Below

In July 2019, Impact Engine sued Google for infringing its patents. Pet.App. 7a. After court-ordered patent claim narrowing, Impact Engine asserted sixteen claims across seven of its patents: claims 1 and 9 of the '497 patent; claim 1 of the '6,253 patent; claims 14 and 18 of the '832 patent; claims 4, 21, and 25 of the '632 patent; claims 1, 7, and 12 of the '8,253 patent; claims 14, 16, 22, and 23 of the '618 patent; and claim 30 of the '898 patent. Pet.App. 3a.

Claim 1 of the '497 patent provides one example of the specific structures and steps required by Impact Engine's patented invention. That patent claim stakes rights to:

1. A multimedia communication system comprising:

- a media repository storing communication project templates and media assets of a number of content types, the project templates and media assets being accessible by a graphical user interface on a client computer via a network; and

- a project builder providing the graphical user interface for the client computer via the network for local display of the graphical user interface on the client computer, the graphical user interface comprising controls to receive user input for selecting at least one communication project template from the media repository and one or more media assets, and assembling a communication based on the at least one communication project template, the project builder further

including an interactive interview for display on the graphical user interface, the interactive interview providing a plurality of questions to a user for eliciting a user response pertaining to user preferences, and further receiving the user preferences about the at least one communication project template and one or more media assets to assemble the communication.

Pet.App. 96a. There are other examples of detailed claims requiring specific components, such as claim 14 of the '618 patent. Pet.App. 97a-98a.

A subset of ten asserted claims further require a “project viewer.” For example, claim 9 of the '497 patent requires *all* the elements of claim 1 above *plus* a particular “project viewer”:

9. A multimedia communication system in accordance with claim 1, further comprising a project viewer that renders an assembled communication and transmits the rendered communication via the network to the client computer for viewing in the graphical user interface.

Pet.App. 96a-97a.

The “project viewer” can perform several different functions in Impact Engine’s system (as reflected among the various asserted patent claims), including allowing the user to (1) view and select online templates and media assets for assembly into one communication; (2) render or serialize the communication; (3) display the communication using auto-play functionality; and (4) send the rendered

communication over the network for previewing in a graphical user interface. Pet.App. 5a-6a, 8a-9a.

In the district court, Google argued the asserted claims were not patent eligible and not infringed. With respect to patent eligibility under § 101, Google moved three times to dismiss the asserted patent claims as invalid because—despite their recitation of specific structures to implement a particular technological advance—they supposedly are directed to an abstract idea and recite only well-known, conventional components. On its first attempt, Google argued based on claim 1 of the '497 patent that every asserted claim was not patent eligible. Pet.App. 34a-35a. The district court denied that motion because Google failed to show the single patent claim it picked was representative of every asserted patent claim and Impact Engine plausibly asserted “that the claim sets forth technical elements functioning in a non-conventional or non-routine manner.” *Id.*

On its second attempt, Google identified four claims—each requiring a “project viewer”—as representative of all the asserted patent claims. Pet.App. 60a-61a. The Court denied Google’s motion. *Id.* At Google’s own insistence, the district court construed the claimed “project viewer” as a means-plus-function term under § 112(f) that has no known meaning in the art and is thus limited to all the specific structures or their equivalents recited in over 300 lines of the patent specification at Col. 4:27 through Col. 9:19 of the '497 patent. Pet.App. 55a-58a. Based on this claim construction, the district court rejected Google’s patent ineligibility challenge because the “project viewer” was not “a known generic

program construct” and was instead “limit[ed]” to the particular “structures disclosed in the specification to create the claimed communications (i.e., collections of slides that consist of layers and content containers) and how they function.” Pet.App. 60a-61a.

On Google’s third attempt, it targeted claim 1 of the ’497 patent, claims 14, 16, and 23 of the ’618 patent, and claim 30 of the ’898 patent (none of which recite a “project viewer”). Pet.App. 64a. The district court granted Google’s motion to dismiss as to the ’497 and ’618 patents, holding those challenged claims (despite their specific components and steps) were directed at an “abstract idea of a system for generating customized or tailored computer communications based on user information” and “recite[d] only generic computer components functionality in their known conventional manner.” Pet.App. 72a-76a.

At summary judgment, the district court again addressed patent eligibility under § 101. In a reversal of its ruling on Google’s second motion to dismiss and ignoring its claim construction order, the district court held the “project viewer” claimed in the ’832, ’632, and ’8,253 patents was “a known programming construct” that “operate[s] in its known and familiar capacity,” and that those claims were thus not patent eligible. Pet.App. 87a-88a. But as to the “project viewer” in claim 9 of the ’497 patent and claim 1 of the ’6,253 patent, the district court took a different approach, acknowledged that they were limited to the structures in the patent specification and thus patent-eligible under § 101, but found that Google’s products did not infringe them. Pet.App. 85a-87a.

The district court entered final judgment, and Impact Engine appealed to the United States Court of Appeals for the Federal Circuit. Pet.App. 3a. A divided panel of the Federal Circuit affirmed over a vigorous dissent.

The majority compounded the district court's errors. The panel—without finding any preemption concern and by reducing the patent claims to merely “turning user-provided input into user-tailored output”—concluded the claims the district court found patent ineligible were directed to “the abstract idea of processing information.” Pet.App. 16a. The majority further determined those claims did not “recite an inventive concept” because “they recite unordered arrangements of generic functional components” that “use generic computer-related components” in a “conventional” way. Pet.App. 17a. Moreover, without resolving their actual scope under § 112(f), the majority chalked the “project viewer” claims up as also directed to nothing more than an abstract idea despite the district court's conclusion that they are limited to over 300 lines of specific structure in the specification. Pet.App. 18a. The majority labeled the “project viewer” as “well-known, routine, and conventional computer functionality.” *Id.* At the same time, the majority affirmed the district court's noninfringement finding, which unlike the § 101 determination, was predicated on the relevant “project viewer” claims being limited to specific structures under § 112(f) that allegedly were not shown to be present in Google's accused products. Pet.App. 19a-23a.

Judge Reyna recognized the majority's errors and therefore dissented in part. Pet.App. 27a. He said he

would have vacated the district court's grant of summary judgment of patent ineligibility under § 101 for the claims in the '8,253 patent, '832 patent, and '632 patent, and of noninfringement on claim 9 of the '497 patent and claim 1 of the '6,253 patent. *Id.* In his view, the district court had given an “underdeveloped” claim construction of “project viewer” that left the parties and the appellate court “no basis” to resolve patentability and infringement issues. Pet.App. 27a-28a. In other words, as Judge Reyna recognized, by failing to first assess the scope of the “project viewer” claims and the specific structures it requires under § 112(f), patent validity and infringement could not possibly be determined. Pet.App. 29a-30a.

On August 5, 2024, Impact Engine filed a combined petition for rehearing and rehearing en banc identifying these and other errors in the panel majority's decision. On September 6, 2024, the Federal Circuit denied both petitions. Pet.App. 93a.

This petition follows.

REASONS FOR GRANTING THE PETITION

This case provides an opportunity for the Court to clarify the proper reach of the abstract-idea exception to patent eligibility under 35 U.S.C. § 101. That exception does not encompass quintessentially technological innovations, like Impact Engine's improved way to create, update, and distribute media-rich online ads that use less bandwidth and are far more customizable and reusable. The judicially created abstract-idea exception is instead narrowly cabined to exclude patent claims that would tie up too much future use of the basic building blocks of scientific or technological work.

The Federal Circuit has strayed from this preemption principle that animates this Court’s § 101 jurisprudence. In its place, the Federal Circuit has taken a standardless approach—unmoored from any guiding principles—to determine whether a patent claim recites an abstract idea. Eligibility under that approach turns entirely on the subjective views of the judge and the level of generality at which the judge decides to describe the invention. The majority below at one point described Impact Engine’s detailed technological invention as directed to nothing more than “the abstract idea of processing information.” Pet.App 16a. That is like saying the blueprint for the Guggenheim is nothing more than a generic plan for a building, and yet the Federal Circuit routinely describes concrete inventions at similarly abstract levels of generality.

The uncertainty engendered by the Federal Circuit’s approach undermines the patent system. Uncertainty in patent eligibility under § 101 has led to reports of “inconsistent results in patent prosecution” and “across district courts, decreased investment in certain technology sectors, increased concentration in certain industries as patent-driven startups disappear, and greater reliance on alternative forms of protection” other than patents. Matthew G. Sipe, *Patent Law 101: I Know It When I See It*, 37 Harv. J.L. & Tech. 447, 483-84 (2024) (footnotes omitted). Inventors who cannot reliably predict whether they can obtain patent protection for their inventions will choose to instead protect them through other means, such as treating them as trade secrets, that keeps their innovations secret. That

restrains rather than “promote[s] the Progress of Science and useful Arts.” U.S. Const., art. I, § 8, cl. 8.

Making matters worse, the Federal Circuit’s approach sets § 101 and § 112(f) on a collision course. The majority’s decision rests solely on the supposedly functional language in the claims. For those claims that include a “project viewer,” the majority did not mention—much less analyze in any meaningful way—the extensive corresponding structure in the specification. If that is the standard, virtually all § 112(f) means-plus-function patent claims are not patent eligible. A function divorced from its corresponding structure is inherently abstract. Congress could not have intended to authorize a type of patent claim in § 112(f) that is virtually *per se* ineligible under § 101. The Court should grant certiorari to restore § 101 to its limited domain.

I. The Federal Circuit Has Adopted An Overly Broad Interpretation Of The “Abstract Idea” Exception.

A. The Federal Circuit Abandoned The Preemption Principles That Undergird This Court’s § 101 Jurisprudence.

Section 101 of the Patent Act permits anyone who “invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof” to obtain a patent. 35 U.S.C. § 101. This Court has recognized, consistent with that plain statutory text, that the scope of subject matter eligible for patenting under § 101 is “extremely broad.” *J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int’l, Inc.*, 534 U.S. 124, 130 (2001); *see also Diamond v. Chakrabarty*, 447 U.S. 303, 309

(1980) (“Congress intended statutory subject matter to ‘include anything under the sun that is made by man.’” (citation omitted)).

But § 101 is not limitless. This Court has “long held that this provision contains an important implicit exception” that “[l]aws of nature, natural phenomena, and abstract ideas are not patentable.” *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 589 (2013). This judicially crafted exception, the Court has explained, is animated by a single core concern: preemption. *E.g.*, *Mayo Collaborative Servs. v. Prometheus Lab’s, Inc.*, 566 U.S. 66, 73 (2012). Particularly, patents covering these concepts—like “mental processes,” “abstract intellectual concepts,” and “[p]henomena of nature”—would cover “basic tools of scientific and technological work.” *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972). Allowing limited monopolies on these basic building blocks to purported inventors through patents “would risk disproportionately tying up the use of the underlying” idea by others for future inventions and technological advancements. *Mayo*, 566 U.S. at 73.

The Court reaffirmed a decade ago this animating concern that “drives” the judicially crafted exceptions to § 101’s otherwise broad scope. *Alice*, 573 U.S. at 216. In *Alice*, the Court reiterated in clear terms the same point it had consistently recognized for decades: Section 101 cannot allow patents to cover “building blocks of human ingenuity,” which would “improperly t[ie] up the future use of” those fundamental tools. *Id.* (quoting *Mayo*, 566 U.S. at 85). Otherwise, patent law would “inhibit further discovery” and “tend to impede innovation more than it would tend to promote it,”

which would “thwart[]” its “primary object.” *Id.* The Court stated “mathematical formula[s]” and algorithms, “[t]he concept of risk hedging” or similar “longstanding commercial practice[s],” and other “method[s] of organizing human activity” were the types of basic building blocks the “abstract idea” exception was intended to bar from patenting, absent something more. *Id.*

But at the same time, *Alice* emphasized that application of the “abstract idea” exception needed to be judiciously guarded to avoid having the exception swallow the rule. The Court recognized an invention does not fall into disfavor simply because it *incorporates* an abstract idea, including because application of abstract concepts in a “new and useful” way is exactly the kind of invention that patents are aimed to protect. *Id.* at 217. The Court recognized that, at some level, “all inventions ... embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.” *Id.* For that reason, the Court explained, lower courts must “tread carefully in construing th[e] exclusionary principle lest it swallow all of patent law.” *Id.*; *see also Myriad*, 569 U.S. at 590 (“[T]oo broad an interpretation of this exclusionary principle could eviscerate patent law.”).

As guidance for applying the judicially crafted exceptions in a way that strikes the delicate balance required between implementing § 101’s intended broad scope and guarding against the Court’s preemption concerns, the *Alice* Court provided a two-part test for assessing whether a claimed invention is patent eligible: *first*, “determine whether the claims at issue are directed to one of [the] patent-ineligible

concepts”; and if so, *second*, assess whether the elements of each claim considered “individually” and “as an ordered combination” supply an “inventive concept” that “transform the nature of the claim’ into a patent-eligible application.” *Alice*, 573 U.S. at 217. The Court made clear that, in applying this test, “the concern that drives this exclusionary principle” and “undergirds [its] § 101 jurisprudence” remains what it always has been: “one of pre-emption.” *Id.* at 216, 223.

But the Federal Circuit has turned *Alice* on its head, disregarding the Court’s preemption concerns emphasized repeatedly in the Court’s precedent. The Federal Circuit has continually held patent claims are not eligible for patenting despite the lack of preemption concerns. In *Roche Molecular Systems, Inc. v. Cepheid*, for instance, the court held patent claims “limited to specific signature nucleotides” were not patent eligible because, among other things, “the absence of complete preemption does not demonstrate patent eligibility.” 905 F.3d 1363, 1374 (Fed. Cir. 2018). The Federal Circuit similarly held patent claims narrowed “to specific database structures” ineligible in *BSG Tech LLC v. Buyseasons, Inc.*, despite acknowledging the absence of preemption concerns. 899 F.3d 1281, 1291 (Fed. Cir. 2018). The same was true in *Synopsys, Inc. v. Mentor Graphics Corp.*, where the Federal Circuit held patent-ineligible a specific method for converting “functional descriptions of logic circuits to hardware component descriptions of logic circuits.” 839 F.3d 1138, 1150 (Fed. Cir. 2016). In the Federal Circuit’s view, it need not even consider preemption because “when a patent’s claims ‘disclose patent ineligible subject matter, preemption concerns are fully addressed and

made moot.” *Smart Sys. Innovations, LLC v. Chi. Transit Auth.*, 873 F.3d 1364, 1374 n.9, 1375 (Fed. Cir. 2017) (editorial marks and citation omitted).

Like the decision here, many other Federal Circuit decisions do not discuss preemption at all. *See, e.g., AI Visualize, Inc. v. Nuance Commc’ns, Inc.*, 97 F.4th 1371 (Fed. Cir. 2024); *Broadband iTV, Inc. v. Amazon.com, Inc.*, 113 F.4th 1359 (Fed. Cir. 2024); *Int’l Bus. Machs. Corp. v. Zillow Grp., Inc.*, 50 F.4th 1371 (Fed. Cir. 2022). Thus, despite *Alice*’s clear directives, the Federal Circuit has effectively relegated preemption to a mere afterthought in the patent-eligibility analysis under § 101. Where this Court stated that courts “must distinguish” between inventions claiming basic building blocks of human ingenuity and those that do not, *Alice*, 573 U.S. at 216-17, the Federal Circuit rejects such an analysis as “not necessary.” *INO Therapeutics LLC v. Praxair Distrib. Inc.*, 782 F. App’x 1001, 1012 (Fed. Cir. 2019). That is wrong and should no longer be left standing.

B. The Federal Circuit’s Standardless Approach Has Expanded The “Abstract Idea” Exception Beyond Its Intended Reach.

The Federal Circuit’s approach is an arbitrary exercise. There is no governing standard or guideposts that the Federal Circuit applies. The “test” is instead an entirely subjective assessment left to judicial whim. Absent correction, the Federal Circuit’s § 101 precedent will continue to impede rather than foster the pursuit and development of quintessential technological advancements. Indeed, the Federal Circuit’s broadening of the judicially crafted

exceptions has already allowed it to extinguish technological advancements, which was never the aim of this Court's § 101 carveouts.

The Court has described the judicially crafted exceptions as having narrow scope and seeking to root out patent claims directed to purely “intellectual concepts” themselves. *Gottschalk*, 409 U.S. at 67; *see also Alice*, 573 U.S. at 218 (“an idea of itself is not patentable”); *Mayo*, 566 U.S. at 71 (“abstract intellectual concepts”); *Le Roy v. Tatham*, 55 U.S. (14 How.) 156, 175 (1852) (“A principal, in the abstract is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right.”). As a result, this Court's § 101 cases have narrowly carved out things such as mathematical algorithms and formulas, *Parker v. Flook*, 437 U.S. 584 (1978), the concept of hedging risk or other basic financial concepts, *Bilski v. Kappos*, 561 U.S. 593 (2010), and other “method[s] of organizing human activity,” *Alice*, 573 U.S. at 220. Essentially, innovations in non-technological fields that are not the aim of § 101, but rather simply reflect the “basic tools of scientific and technological work,” do not warrant patent protection even if they satisfy other patentability requirements such as novelty (§ 102), nonobviousness (§ 103), and adequate written description and enablement by the patent specification (§ 112(a)).

Even though the judicially crafted exceptions to the threshold patentability question were never intended to encompass quintessentially technological innovations, the Federal Circuit has repeatedly applied its standardless approach over the past decade

since *Alice* to extinguish such technological advancements under § 101. The court impermissibly describes nearly every claimed invention at such a high level of generality that nearly everything looks like an abstract idea. Here are just a few examples:

- *Mobile Acuity Ltd. v. Blippar Ltd.*, 110 F.4th 1280, 1292 (Fed. Cir. 2024): The court concluded patent claims reciting a particular server and method for storing user-defined information for future access by multiple parties on that server were directed to the “abstract idea” of “receiving information, associating information with images, comparing the images, and presenting information based on that comparison.”
- *Yu v. Apple Inc.*, 1 F.4th 1040, 1042-43 (Fed. Cir. 2021): The court held patent claims directed to a particular “improved digital camera” with specific components were directed to the “abstract idea” of “taking two pictures (which may be at different exposures) and using one picture to enhance the other in some way.”
- *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 768 (Fed. Cir. 2019): The court held patent claims relating to electric vehicle charging stations were directed to “the abstract idea of communication over a network for interacting with a device.”

Compounding these problems, the Federal Circuit’s standardless approach leads to inconsistent

decisions. The Federal Circuit has repeatedly reached different holdings on similar facts while purporting to analyze patent eligibility under § 101 using the two-step *Alice* framework. In *Trading Technologies International, Inc. v. CQG, Inc.*, for example, the Federal Circuit held a patented “method for displaying market information relating to and facilitating trading of a commodity” was not directed to an abstract idea because the method claims “require a specific, structured graphical user interface paired with a prescribed functionality directly related to the graphical user interface’s structure that is addressed to and resolves a specifically identified problem in the prior state of the art.” 675 F. App’x 1001, 1003-04 (Fed. Cir. 2017). Two years later, that court held substantially similar method claims were “directed to the abstract idea of graphing bids and offers to assist a trader to make an order.” *Trading Techs. Int’l, Inc. v. IBG LLC*, 921 F.3d 1084, 1092-94 (Fed. Cir. 2019).

The Federal Circuit’s conflicting decisions in *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016) and *SRI International, Inc. v. Cisco Systems, Inc.*, 930 F.3d 1295 (Fed. Cir. 2019) provide another example. In *Electric Power*, the court held patent claims reciting a method for monitoring real-time performance of an electric power grid were directed to a combination of abstract ideas involving “gathering and analyzing information of a specified content, then displaying the results, and not any particular assertedly inventive technology for performing those functions.” 830 F.3d at 1354. Three years later, in *Cisco*, the court held patent claims reciting a computer-automated method of event monitoring and analysis on a network were *not*

directed to an abstract idea. 930 F.3d at 1303-04. The only distinction the Federal Circuit offered was that *Electric Power* involved “a power grid” and *Cisco* involved “computers and computer networks.” *Id.* at 1304.

The Federal Circuit’s inconsistent approach to application of this Court’s two-step *Alice* framework to assess patent eligibility under § 101—as exemplified by the court’s decisions above and here—threatens innovation. Inventors who cannot reasonably predict in any meaningful way whether disclosure of their inventions will receive patent protection will either withhold their inventions from public disclosure or refrain from investing in innovation all together.

This Court has repeatedly criticized this same type of standardless inquiry that leads to inconsistent results in other contexts. *See, e.g., Dobbs v. Jackson Women’s Health Org.*, 597 U.S. 215, 281 (2022) (rejecting *Roe*’s “undue burden” test as “inherently standardless”); *Oregon v. Kennedy*, 456 U.S. 667, 675 n.5 (1982) (rejecting prosecutorial misconduct rule that would have asked whether the prosecutor was “overreaching” as “an essentially standardless rule”); *Shurtleff v. City of Boston*, 596 U.S. 243, 282 & n.9 (2022) (Gorsuch, J., concurring in the judgment) (labeling the *Lemon* test “unworkable in practice,” and noting others had disparaged it as “brain-spun” and a “sisyphean task” to implement its “blurred, indistinct, and variable barrier” to government activity). There is no reason it should get a pass here.

One important lever for shedding the Federal Circuit’s standardless approach is to reestablish the central role of preemption in the two-step *Alice*

analysis. Holding that claims which do not threaten to preempt the building blocks of human ingenuity in the field of the claimed invention are not drawn to an “abstract idea” will provide needed structure to the Federal Circuit’s review of patent claims under that judge-made exception to § 101.

But another, equally important lever is to require that lower courts treat the “abstract idea” exception in the same manner as other aspects of the subject matter deemed patentable under § 101: it should bear its general-purpose “dictionary definition[.]” *Bilski*, 561 U.S. at 603. “Abstract” means “disassociated from any specific instance,” *Abstract*, Merriam-Webster’s Dictionary (11th ed. 2003), “existing as an idea, feeling, or quality, not as a material object,” *Abstract*, Cambridge Dictionary (4th ed. 2013) and “denoting something that is immaterial, conceptual, or nonspecific, as an idea or quality,” *Abstract*, American Heritage Dictionary (5th ed. 2011). And “idea” is defined as “something, such as a thought or conception, that is the product of mental activity.” *Idea*, American Heritage Dictionary (5th ed. 2011). Taken together, an “abstract idea” means a non-physical, non-tangible concept. *See Abstract*, Collins English Dictionary (14th ed. 2023) (“An abstract idea or way of thinking is based on general ideas rather than on real things and events.”). At bottom, reestablishing the central role of preemption as part of the *Alice* framework and grounding the exceptions in their ordinary dictionary definitions will supply much needed structure to the Federal Circuit’s standardless approach to patent eligibility and offer a necessary course correction so the abstract-idea inquiry does not stifle innovation.

C. The Decision In This Case Illustrates The Problems With The Federal Circuit’s Approach.

The majority’s decision in this case vividly illustrates the problems with the Federal Circuit’s approach. Impact Engine’s asserted patent claims—both those with and without a project viewer—are directed to a specific way to create, customize, and distribute online ads. *See, e.g.*, Pet.App. 96a-98a. The claimed inventions accomplish that result through two technological innovations: (1) a data structure that represents an online ad as a series of independent layers built from templates and separate media files, such as videos and animations, *e.g.*, Pet.App. 96a; Pet.App. 43a-44a; and (2) an architecture that takes the software for creating and managing the ads off the desktop and puts it on a server, *e.g.*, Pet.App. 97a-100a.

This specific, concrete solution is not an “abstract intellectual concept[],” *Mayo*, 566 U.S. at 71; an “idea of itself,” *Alice*, 573 U.S. at 218; or a “principle” standing alone, *Le Roy*, 55 U.S. (14 How.) at 175. Nor is there any risk that a specific way to create and distribute media-rich ads will tie up the “building blocks of human ingenuity,” *Alice*, 573 U.S. at 216, or lay claim to the “basic tools of scientific and technological work,” *Flook*, 437 U.S. at 589. Impact Engine did not claim the concept of online ads or seek to preempt all ways of creating and distributing them. It claims a concrete, quintessentially technological solution.

The Federal Circuit invalidated Impact Engine’s patent claims without mentioning preemption. The

court did not consider whether Impact Engine’s patent claims were directed to fundamental technological building blocks or “method[s] of organizing human activity.” *Alice*, 573 U.S. at 220. At *Alice*’s first step, the court instead variously described the claims as directed to “the abstract idea of processing information,” “gathering and analyzing information of a specified content, then displaying the results,” and “the abstract idea of a system for generating customized or tailored computer communications based on user information.” Pet.App. 15a-16a.

The court offered no explanation for how it came up with those characterizations. The first two transform Impact Engine’s inventions into an abstract idea only by summarizing the claims at such a high level of generality as to be meaningless. All software inventions at the end of the day simply process information. The Federal Circuit’s third formulation is not an abstract idea at all. It is a high-level description of Impact Engine’s technological invention.

The court’s analysis at *Alice*’s second step is no better. At that step, the Federal Circuit faulted the claims for being implementable on “generic computer-related components” without “improv[ing]” those “components.” Pet.App. 17a; *see also* Pet.App. 15a (agreeing with district court that claims “recite only generic computer components”). This is a frequent refrain in Federal Circuit decisions. *E.g.*, *Beteiro, LLC v. DraftKings Inc.*, 104 F.4th 1350, 1357-59 (Fed. Cir. 2024); *Sanderling Mgmt. Ltd. v. Snap Inc.*, 65 F.4th 698, 705 (Fed. Cir. 2023); *Hawk Tech. Sys., LLC v. Castle Retail, LLC*, 60 F.4th 1349, 1358-59 (Fed. Cir.

2023); *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1168 (Fed. Cir. 2018). Never mind that Congress authorized patents not just on “machine[s]” and hardware components, but also on “new and useful process[es],” 35 U.S.C. §§ 101, 100 (defining “process”)—even processes implemented in software that runs on conventional computers. *See Bilski*, 561 U.S. at 605 (explaining innovations like “computer programs” are not “unpatentable”). And never mind that the court’s search for improved computer components sounds suspiciously like the machine-or-transformation test this Court rejected in *Bilski*. *See id.* at 602-06. The majority made the subjective decision, over a vigorous dissent, that Impact Engine’s inventions were not worthy of protection, and so its claims were declared ineligible.

II. The Federal Circuit’s Decision Effectively Nullifies § 112(f).

The decision below also brings into stark relief that the Federal Circuit’s standardless approach is well on its way to making a chief fear of this Court a reality by allowing the “abstract idea” exception to “swallow all of patent law.” *Alice*, 573 U.S. at 217; *see also Myriad*, 569 U.S. at 590 (“Too broad an interpretation of this exclusionary principle could eviscerate patent law” (quoting *Mayo*, 566 U.S. at 71)). The first statutory victim from the Federal Circuit’s unmoored approach is means-plus-function claiming under § 112(f).

As explained above, this Court has recognized that patentable subject matter under § 101, despite being extremely broad, is not limitless. In particular, the Court has recognized that claims staking rights to

a mere “function or result” are not eligible for patent protection under § 101. *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 373 (1996); *see also Corning v. Burden*, 56 U.S. (15 How.) 252, 268 (1853) (“It is for the discovery or invention of some practicable method or means of producing a beneficial result or effect, that a patent is granted, and not for the result or effect itself.”); *Le Roy*, 55 U.S. (14 How.) at 175 (“A patent is not good for an effect, or the result of a certain process, as that would prohibit all other persons from making the same thing by any means whatsoever.”).

At the same time, though, the Patent Act contains a statutory provision expressly permitting inventors to claim their inventions in purely functional terms: 35 U.S.C. § 112(f). As a tradeoff for being able to claim an invention in functional terms, § 112(f) restricts such claims solely to “the corresponding structure, material, or acts described in the specification [of the patent] and equivalents thereof.” *Id.* In other words, a claim can stake rights to a function, but the claim is restricted in scope to the particular structures (or software algorithms) in the specification for performing that claimed function.

The Federal Circuit in this case put these two provisions of the Patent Act at war with one another, with the “abstract idea” exception to § 101 threatening to eviscerate § 112(f) altogether. It is undisputed that the asserted “project viewer” claims recited in Impact Engine’s patents are means-plus-function claims governed by § 112(f). Pet.App. 57a-58a. And it similarly is undisputed that the claimed “project viewer” performs different functions in different

patent claims. The district court—ignoring these different functions performed by the “project viewer” in different claims—read every claimed “project viewer” as requiring the same structures described in over 300 lines of the shared patent specification. Pet.App. 58a. The Federal Circuit assessed the patent eligibility of the “project viewer” claims under § 101 without even mentioning, much less analyzing in any meaningful way, the extensive corresponding structure described in the specification that the district court determined was required to perform the “project viewer” functions. Pet.App. 18a.

By ignoring the corresponding structure in its § 101 analysis, the Federal Circuit effectively divorced the claimed function from its corresponding structure. But, as Judge Reyna pointed out, the patent eligibility of a means-plus-function patent claim cannot be determined as a matter of law without first determining its specific scope under § 112(f). Pet.App. 28a-29a. The majority never defined the scope of the means-plus-function claims, and therefore those claims could not be anything other than non-patentable “function[s] or result[s]” under § 101. *Markman*, 517 U.S. at 373.

The Federal Circuit majority’s mode of analysis in the decision below cannot be right. If left undisturbed, virtually all means-plus-function patent claims will be abstract. A function divorced from its corresponding structure is inherently abstract.

That flips the abstract-idea inquiry on its head. A means-plus-function term is the exact opposite of an abstract idea or generically claiming a “result or effect itself.” *Corning*, 56 U.S. (15 How.) at 268; *see also*

Markman, 517 U.S. at 373 (recognizing claims must cover more than mere results). Means-plus-function claims, by definition, stake rights to a specific and “particular manner” of solving a problem, *Gottschalk*, 409 U.S. at 71, because they are limited to the specific structures or algorithms identified by the inventors in the patent specification. The presence of a means-plus-function term in a claim thus should put a heavy thumb on the scale against finding a claim invalid under § 101, not make the claim presumptively abstract.

Means-plus-function claims, when properly tied to the corresponding structure, are also exactly the type of claims that are less likely to implicate the concern driving the exclusionary principle that undergirds this Court’s § 101 jurisprudence: such claims pose “no comparable risk of pre-emption, and therefore remain[] eligible for the monopoly granted under our patent laws,” *Alice*, 573 U.S. at 217, precisely because they almost always must stake rights to “some practicable method or means of producing a beneficial result or effect” rather than the mere “result or effect itself,” *Corning*, 56 U.S. (15 How.) at 268. The specific structures and steps that limit a § 112(f) means-plus-function claim take the claimed invention out of the abstract and root it in particular technologies used to achieve particular advances over what existed earlier.

That aligns with this Court’s decision in *Diamond v. Diehr*, 450 U.S. 175 (1981). In *Diehr*, the Court considered “whether a process for curing synthetic rubber which includes in several of its steps the use of a mathematical formula and a programmed digital

computer” was “patentable subject matter” under § 101. *Id.* at 177. The Court concluded it was, including because the patent claims reciting that invention did not present a preemption problem given the Arrhenius equation was used “in conjunction with all of the other steps in the[] claimed process.” *Id.* at 187. The same logic applies with equal force to means-plus-function claims under § 112(f), including Impact Engine’s “project viewer” claims at issue here, which merely “foreclose from others the use of” the claimed function “in conjunction with all of the other steps in” the asserted claims (i.e., functions achieved using the specific structures identified by the inventors in the specification or their equivalents). *Id.* Just like the patent claims at issue in *Diehr* that went beyond “a mathematical formula” itself by seeking “protection for a process of curing synthetic rubber” based on specific claimed steps, *id.*, Impact Engine’s claims go beyond merely processing information by seeking protection for web-based advertisement systems and processes that are limited to specific structures and steps for making, modifying, and distributing particular types of media-rich online advertisements. *See, e.g.*, Pet.App. 96a, 99a-100a.

The Federal Circuit’s decision placing § 101 and § 112(f) in conflict ignores this Court’s command that courts must “interpret Congress’s statutes as a harmonious whole rather than at war with one another.” *Epic Sys. Corp. v. Lewis*, 584 U.S. 497, 502 (2018). The Court should correct this error by reading these disparate provisions of the Patent Act harmoniously. *See Roberts v. Sea-Land Servs., Inc.*, 566 U.S. 93, 100 (2012) (“[O]ur task is to fit, if possible, all parts [of a statutory scheme] into an harmonious

whole.”). That is particularly important here where the judicially created exceptions to § 101 are “not required by the statutory text,” *Bilski*, 561 U.S. at 601, and thus should not be read in a way to nullify another part of the Patent Act. See *Alice*, 573 U.S. at 217 (stating the Court “tread[s] carefully in construing [the § 101] exclusionary principle”). Congress could not have intended for § 101 to nullify § 112(f) when it simultaneously set the broad scope of patentable subject matter under § 101 and enabled means-plus-function claiming under § 112(f). See *Bilski*, 561 U.S. at 607-08 (rejecting interpretation of § 101 that would render 35 U.S.C. § 273 “superfluous” and “meaningless”). The Federal Circuit’s approach ignoring specific structures in the specification undermines the balance Congress intended between functional claiming and specificity.

The Court should fix the Federal Circuit majority’s error by stating what should have already been obvious: that the patent eligibility under § 101 of a means-plus-function claim under § 112(f) cannot be determined solely by looking at the claimed function. Consistent with the text of § 112(f), a court must also consider the corresponding structure in the patent specification. Any other approach produces the numerous absurdities at play here. Had the Federal Circuit construed the “project viewer” claims to assess their specific corresponding structure (and thus restricted scope) before employing *Alice*’s two-part test for applying the “abstract idea” exception to § 101, it would have reached a different conclusion: that the “project viewer” patent claims here, just like the specific claimed invention at issue in *Diehr*, are patent eligible.

III. The Federal Circuit’s § 101 Jurisprudence Undermines The Constitutional Purpose Behind The Patent System.

The patent laws exist “[t]o promote the Progress of Science and useful Arts.” U.S. Const., art. I, § 8, cl. 8. In striving to ensure the patent laws remain geared toward serving that constitutional purpose, this Court has explained that the gating question of what subject matter should be patentable under § 101 must be applied in a way that “strikes a delicate balance between creating ‘incentives that lead to creation, invention, and discovery’ and ‘imped[ing] the flow of information that might permit, indeed spur, invention.’” *Myriad*, 569 U.S. at 590.

The Federal Circuit’s precedent since *Alice* strikes the wrong balance. By limiting the patentability of inventions and therefore overprotecting the “flow of information” to “spur[] invention,” the Federal Circuit has extinguished the incentives that lead to that invention in the first place. *See id.* Indeed, inventors who cannot reliably predict whether they can obtain patent protection for their inventions will choose to instead protect their innovations through other means, like trade-secret protection. But inventions protected by trade secret law—unlike patent law—are not publicly disclosed. Thus, while trade secret protection may protect an inventor’s property interests, it denies “the public its benefit of the patent bargain by ensuring that, ‘upon the expiration of [the patent], the knowledge of the invention [i]nures to the people, who are thus enabled without restriction to practice it.’” *Amgen*, 598 U.S. at 605 (quoting *United*

States v. Dubilier Condenser Corp., 289 U.S. 178, 187 (1933)).

This concern is borne out by recent empirical evidence. It has been reported that “companies and universities are turning from U.S. patents to other forms of protection, including trade secrets and copyright.” See Philip Hawkyard, *The Collapse of Alice’s Wonderland: Mayo’s Faulty Two-Step Framework and a Possible Solution to Patent-Eligibility Jurisprudence*, 74 *Hastings L.J.* 1221, 1224-25 (2023). As one example, IBM has stated that continued uncertainty about patent eligibility would lead it to “rely more on trade secret and copyright protection” instead. *Id.* Consistent with these empirical datapoints, scholarly voices are increasingly recognizing that the Federal Circuit’s unpredictable approach “disincentiviz[es] innovation and progress” by encouraging innovators “to hold on to the innovative concept as a proprietary trade secret” rather than patents, “thereby depriving the public of knowledge and modern innovation.” See Maxwell H. Terry, *Hello, World? Domestic Software Patent Protection Stands Alone Due to Uncertain Subject Matter Eligibility Jurisprudence*, 108 *Minn. L. Rev.* 403, 410 (2023). Worse yet, other data demonstrates “investors as a whole” view patent eligibility as an important factor in deciding to invest in technology companies, and recent § 101 law has reduced “investment in technological development generally, but particularly in the biotechnology, medical device,” “pharmaceutical,” “software and Internet industries.” David O. Taylor, *Patent Eligibility and Investment*, 41 *Cardozo L. Rev.* 2019, 2029, 2088, 2094 (2020).

Given the stakes, calls for this Court’s guidance have come from every corner. “[E]very judge” on the Federal Circuit has “request[ed] Supreme Court clarification,” as have a diverse group of legal scholars. *Am. Axle & Mfg., Inc. v. Neapco Holdings LLC*, 977 F.3d 1379, 1382 (Fed. Cir. 2020) (Moore, J., concurring).² While waiting for that guidance, § 101 cases have repeatedly divided the Federal Circuit just as the panel here was fractured. *See, e.g., Realtime Data LLC v. Array Networks Inc.*, 2023 WL 4924814 (Fed. Cir. Aug. 2, 2023) (disagreeing over the eligibility of challenged patent claims); *Am. Axle*, 966 F.3d 1347 (denying petition for rehearing en banc of a fractured panel decision, with two concurring and three dissenting opinions); *Athena Diagnostics, Inc. v. Mayo Collaborative Servs., LLC*, 927 F.3d 1333 (Fed. Cir. 2019) (denying petition for rehearing en banc of another fractured panel decision, with four concurring and four dissenting opinions).

The U.S. Patent and Trademark Office, taking its cues from the Federal Circuit, has stated that applying § 101 “in a consistent manner has proven to be difficult” and has made it challenging for “inventors, businesses, and other patent stakeholders to reliably and predictably determine what subject

² *See also Yu*, 1 F.4th at 1049 (Newman, J., dissenting) (stating inconsistency and unpredictability in § 101 jurisprudence has “destabilized technologic development in important fields of commerce”); *CareDx, Inc. v. Natera, Inc.*, 563 F. Supp. 3d 329, 337 (D. Del. 2021) (recognizing § 101 law is “‘fraught,’ ‘incoherent,’ ‘unclear, inconsistent[,] ... and confusing,’ and ‘indeterminate and often lead[ing] to arbitrary results’” (footnotes and citations omitted)); Sipe, *supra*, at 499-500 (calling application of § 101 “hopelessly unpredictable”).

matter is patent-eligible.” 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50, 50 (Jan. 7, 2019).

This case is an excellent vehicle for providing greater clarity and restoring balance in patent law to encourage technological innovations rather than impede them. The § 101 issues were squarely presented and extensively briefed below. The Federal Circuit’s decision is representative of that court’s flawed approach. This case also presents both standard patent claims and claims in means-plus-function format. That provides the opportunity to clarify how the § 101 analysis should be done for both types of claims in a single opinion, including by delimiting more precise contours for the “abstract idea” exception and the proper application of this Court’s two-step eligibility framework laid out in *Alice* in the context of saving other parts of the Patent Act, like § 112(f), from being nullified by the judge-made exceptions to § 101.

CONCLUSION

For the foregoing reasons, this Court should grant the petition.

Respectfully submitted,

JASON M. WILCOX
Counsel of Record
KIRKLAND & ELLIS LLP
1301 Pennsylvania Ave., N.W.
Washington, DC 20004
(202) 389-5000
jason.wilcox@kirkland.com
Counsel for Petitioner

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