No. 20-891

In The Supreme Court of the United States

AMERICAN AXLE & MANUFACTURING, INC.,

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Petitioner,

v.

NEAPCO HOLDINGS LLC and NEAPCO DRIVELINES LLC,

Respondents.

On Petition For A Writ Of Certiorari To The United States Court Of Appeals For The Federal Circuit

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BRIEF OF PROFESSORS JEFFREY A. LEFSTIN AND PETER S. MENELL AS AMICI CURIAE IN SUPPORT OF PETITION FOR A WRIT OF CERTIORARI

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INTERESTS OF AMICI CURIAE¹

The authors of this brief are professors of law at the University of California who study and teach intellectual property law. *Amici* have both explored the patent eligibility doctrine in their scholarship, and submit this brief to assist the Court in interpreting the law of patent-eligible subject matter.

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¹ Pursuant to Sup. Ct. R. 37.6, *amici* note that no counsel for a party authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than *amici curiae* made a monetary contribution to its preparation or submission. Petitioners and Respondents were timely notified of *amici*'s intention to file and have consented to the filing of this brief through direct correspondence.

on intellectual property law and is lead author of a widely used treatise on patent case management.

SUMMARY OF ARGUMENT

Notwithstanding the clarity of the U.S. Constitution's grant of authority to 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, and Congress's directive 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 (emphasis added), current § 101 jurisprudence conflates patent eligibility with the substantive requirements set forth in § 103 and § 112 and is getting more confusing by the day. There is no patent law doctrine more in need of clarification. The Federal Circuit's 6-6 split resulting in the denial of rehearing en banc in American Axle & Manufacturing, Inc. v. Neapco Holdings LLC et al., 966 F.3d 1347 (Fed. Cir. 2020), is just the latest example in a long series of cries for help in interpreting § 101. See, e.g., Berkheimer v. HP Inc., 890 F.3d 1374, 1374 (Fed. Cir. 2018) (Lourie, J., with Newman, J. concurring in denial of rehearing en banc) (expressing that patent eligibility law "needs clarification by higher authority, perhaps by Congress, to work its way out of what so many in the innovation field consider are § 101 problems"). We add our voice to the

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chorus calling for the Supreme Court and/or Congress to clarify and/or reform patent eligibility jurisprudence.

In setting forth a new test of patent eligibility, the panel decision mischaracterized fundamental patent principles and case law on which the modern patent system is built. The claims of the patent in suit present a conventional problem of compliance with the statutory patentability requirements of § 112, which sets forth the requirements of disclosure and claim definiteness. The panel opinion instead forces this case into the § 101 mold, which dispenses with the customary factual predicates for § 112. In so doing, the panel radically altered and expanded the already confused contours of § 101 jurisprudence. Moreover, the panel's holdings were based on a serious misinterpretation of patent law's foundational cases, and run counter to this Court's long insistence that the statutory requirements of § 112 and its predecessor statutes provide the standards to assess whether claims are functional or overbroad. With this latest expansion, the atextual doctrine of patent eligibility threatens to supplant the traditional tests of patentability established by the 1952 Act.

The Federal Circuit's deep split in *American Axle* presents an excellent vehicle for clarifying the interplay of § 101 and § 112 of the Patent Act.

ARGUMENT

This case involves a claim to a method for dampening vibration of an automotive driveshaft, a quintessential mechanical device that has long been eligible for utility patent protection. Claim 22 of U.S. Patent No. 7,774,911 states:

A method for manufacturing a shaft assembly of a driveline system, the driveline system further including a first driveline component and a second driveline component, the shaft assembly being adapted to transmit torque between the first driveline component and the second driveline component, the method comprising:

providing a hollow shaft member;

tuning a mass and a stiffness of at least one liner; and

inserting the at least one liner into the shaft member;

wherein the at least one liner is a tuned resistive absorber for attenuating shell mode vibrations and wherein the at least one liner is a tuned reactive absorber for attenuating bending mode vibrations.

The specification describes how to perform the process steps. For example, one can "tun[e] a mass and a stiffness of at least one liner" by shaping the liner "in a desired manner," including shaping a liner's "fingers"; forming "void spaces" in the liner; adjusting the liner's wall thickness or material; adjusting the location and manner by which the liner is inserted into the hollow driveshaft, and more. C.A.J.A.33-34.

The Federal Circuit's invalidation of American Axle's claim under § 101 demonstrates how far patent eligibility jurisprudence has drifted from the text and structure of the Patent Act and centuries of jurisprudence. The Federal Circuit makes three critical errors: (1) it stretches § 101 to absurd lengths to avoid dealing with essential factual issues necessary to invalidate a patent that the statute presumes is valid; (2) it misconstrues foundational patent cases to turn the § 112 enablement requirement into a subjective § 101 question; and (3) it exacerbates the confusion surrounding patent eligibility.

I. The Federal Circuit Stretches Section 101 to Absurd Lengths to Find that a Claim to a Method for Dampening Driveshaft Vibration Is Ineligible for Patent Protection, Thereby Eviscerating Congress's Clear Structuring of Patent Validity Requirements

In Mayo Collaborative Services v. Prometheus Laboratories, Inc., 566 U.S. 66, 85-87 (2012), this Court justified its limitations on patent eligibility as necessary to prevent patentees from monopolizing laws of nature and other fundamental principles. Allowing the patenting of such scientific truths could unduly impede technological advance. In American Axle & Manufacturing, Inc. v. Neapco Holdings LLC et al., 967 F.3d 1285 (Fed. Cir. 2020), the Federal Circuit invalidated a claim to an improved process for constructing an automobile driveshaft on the ground that it was "directed to" nothing more than a fundamental law of nature, namely Hooke's Law.

Robert Hooke discovered the eponymous scientific approximation relating to the elasticity of springs and other solid bodies 350 years ago. If patent law had permitted a patentee to monopolize Hooke's Law before this Court introduced its extra-statutory "inventive application" test in *Mayo*, one might expect that a patentee would have attempted it by this time. Yet the Federal Circuit's opinion suggests that without its new eligibility doctrine, such a remarkable opportunity was there for the taking.

That, of course, has not been the case. For nearly as long as Hooke's Law has been known, England and the United States granted patents to inventors who claimed *practical applications* of laws of nature, not the laws themselves. As this Court has explained, "[w]hile a scientific truth, or the mathematical expression of it, is not patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be." *Mackay Radio & Tel. Co. v. Radio Corp. of Am.*, 306 U.S. 86, 94 (1939).

The 1952 Patent Act expressed the long-standing precepts of patentable invention as the statutory requirements of patentability. If prior inventors had previously applied Hooke's Law to the problem of vibration in driveshafts, the claims would be invalid under § 102's novelty requirement. If it required no inventive act to do so, then the claims would be invalid under § 103's nonobviousness requirement. And if the patentee had not specified how to apply Hooke's Law to a driveshaft, then the claims would be invalid under § 112's disclosure and definiteness requirements.

In affirming the district court's patent eligibility finding, thereby avoiding the § 102, § 103, and § 112 *factual* inquiries, the Federal Circuit held that a claim may be "directed to" an ineligible law of nature in step one of the *Mayo/Alice* inquiry even though neither the claim nor the specification recites the law of nature directly. Claim 22 neither mentions Hooke's Law nor preempts its use, if at all, beyond the design of a liner for an automobile driveshaft—a putatively novel and useful structure created by the claimed application of a scientific law. It in no way preempts general use of Hooke's Law. Whether this application is in fact novel, nonobvious, or specifically disclosed and claimed should have no bearing on whether the claim is eligible under § 101 for patent protection.

The Federal Circuit shoehorned claim 22 into the § 101 mold by asserting that a claim need not contain "an express claim recitation of a natural law" to be "directed to" a law of nature under *Mayo. See American Axle*, 967 F.3d at 1301. The Federal Circuit explained that "[n]o factual finding was or is required" for a court to determine that a claim is directed to a natural law, *id.* at 1294, while nonetheless relying upon deposition testimony to find Hooke's Law in the asserted claims, *see id.* In contrast, when addressing whether the claimed process included something beyond Hooke's Law that might qualify as a patent-eligible application, see Mayo, 566 U.S. at 77-78, the Federal Circuit held that the inquiry was limited to "the claim on its face." American Axle, 967 F.3d at 1294. In other words, to identify a law of nature that would render a claim *ineligible*, a court is not constrained by findings of fact or the text of the patent. But when assessing Mayo's "something more" that would render the claim *eligible*, the court must confine itself to the words of the claim.

This short-circuiting of the Patent Act's structure through inconsistent standards of proof eviscerates the Patent Act's text and structure as well as the presumption of validity, *see* § 282(a); *Microsoft Corp. v. i4i Ltd. Partnership*, 564 U.S. 91 (2011) (holding that patents have a presumption of validity that can only be invalidated by clear and convincing evidence). It also implicates the right to a jury trial on factual questions. If not corrected, the Federal Circuit's decision will accelerate the extra-statutory and extra-textual metastasis of the patent eligibility doctrine, and supplant the careful statutory framework that Congress codified in the 1952 Act with an I-know-it-when-I-see-it test for patentability under § 101.

II. The Federal Circuit's Expansion of Section 101 Doctrine is Based on a Profound Misunderstanding of *Neilson v. Harford* and *O'Reilly v. Morse*

The *American Axle* panel set forth two major and unprecedented expansions of the law of patent eligibility under § 101. First, the Federal Circuit held that a claim may be deemed ineligible under § 101 even if the patent itself does not refer to a law of nature. Second, the Federal Circuit held that when a patent is challenged because a claim purportedly fails to describe how to carry out an invention, a court may invalidate a claim under § 101-without resorting to the factual inquiries associated with the disclosure and claim definiteness requirements of § 112. The Federal Circuit based these holdings on the Court of Exchequer's 1841 opinion in Neilson v. Harford, Webster's Patent Cases 295 (1841), and this Court's opinion in O'Reilly v. Morse, 56 U.S. (15 How.) 62 (1854), which built directly on Neilson. The Federal Circuit relied on a profound misunderstanding of both of these foundational cases. Contrary to the Federal Circuit's opinion below, these decisions are not based on eligibility; rather they apply the enablement doctrine.

To justify finding a law of nature in a patent that does not refer to one, the Federal Circuit mistakenly asserted that *Neilson* involved an analogous circumstance. According to the Federal Circuit, *Neilson* was also a case "where the patent did not recite the natural law, because the inventor was 'not aware of the nature and principle of his discovery,'" which was that hot air would promote ignition in a blast furnace better than cold. *American Axle*, 967 F.3d at 1301 (quoting *Neilson*). This "principle" was supposedly not in the patent itself, but was nonetheless embodied in the patented machine. The Federal Circuit then asserted that Neilson's patent was held eligible, notwithstanding that it was directed to a law of nature, because it applied that principle in an inventive way. *Id.* at 1301-02.

Neilson was not, however, a case where a patent was challenged on the basis of a "principle" that did not appear in the patent. The "principle" of Neilson's invention was his discovery that hot air was superior to cold air in the blast furnace. It was clear to everyone involved in the case—the patentee, the defendants, and the judges of the Exchequer—that Neilson's patent explicitly disclosed and claimed the advantage of hot air over cold. See Jeffrey A. Lefstin, Inventive Application: A History, 67 FLA. L. REV. 565, 581-87 (2015). Indeed, the problem with Neilson's patent was that Neilson had disclosed almost nothing else except the "principle" that hot air was superior to cold. See id. at 587.

The quotation that Neilson was "not aware of the nature and principle of his discovery" comes not from the Exchequer's opinion, but from the *defendants*' principal argument: that Neilson's patent was invalid because he had failed to describe the refinements necessary to employ the hot blast in a practical iron smelter. *See id.* at 582. The defendants charged that these refinements in the heating apparatus were the real essence of the hot blast as applied to iron smelting. Neilson had not described the shape and form of a heating vessel suitable for iron smelting, and, according to the defendants, "had not the least idea of the important principles that are involved in the extension of this discovery to larger and other matters" when he enrolled his specification. *Neilson*, 1 Web. P.C. at 339-40.

Contrary to the Federal Circuit's assertion in the case below-and contrary to this Court's reliance on Neilson in Parker v. Flook, 437 U.S. 584, 592 (1978), and Mayo, 56 U.S. at 82-84—Neilson's patent was not held eligible because it "explained how the principle could be implemented in an inventive way." Id. at 83. Neilson's patent was sustained precisely because his implementation required nothing beyond routine, wellknown, and conventional activity. See Lefstin, Inventive Application, at 586. The defendants' primary attack on the Neilson patent was enablement: they alleged that Neilson's failure to describe the heating apparatus, as well as other refinements necessary to implement the hot blast in a blast furnace, rendered the specification defective. Both the patentee and the court deflected that attack by pointing out that all of the instrumentalities necessary to implement Neilson's discovery were "perfectly well known" to those of skill in the art. See Neilson, 1 Web. P. C. at 344; id. at 337; Lefstin, Inventive Application, at 586-87. Indeed, in English law, *Neilson* became the primary exemplar for the proposition that applying a new discovery by entirely old and conventional means sufficed for patentability. See Otto v. Linford [1882] 46 LT (N.S.) 35, 39; Lefstin, Inventive Application, at 588-93.

The question of whether Neilson's failure to specify the shape and form of the heating vessel invalidated his patent was ultimately resolved by the special findings of the jury, which determined that "a man of common understanding, of ordinary skill and knowledge of the subject . . . would be enabled to construct, according to the specification alone," an apparatus with beneficial effect—regardless of the shape and form of the heating vessel. *Neilson*, 1 Web. P. C. at 327. In other words, Neilson's patent was challenged on the grounds of inadequate disclosure, and sustained on a finding of fact: that one of ordinary skill in the art could practice the invention without undue experimentation. That is precisely the function of the modern § 112 enablement requirement.

The Federal Circuit's failure to recognize Neilson as an enablement case led to a more profound mistake in American Axle: the court's holding that a claim's alleged failure to recite a means of implementing a desired result renders that claim ineligible under § 101, rather than unpatentable under the disclosure or definiteness requirements of § 112. According to the panel opinion, claim 22, like Morse's eighth claim in O'Reilly v. Morse, was ineligible under § 101 "because it clearly invokes a natural law, and nothing more, to accomplish a desired result." American Axle, 967 F.3d at 1297. The Federal Circuit's opinion is thus premised on the notion that the so-called "O'Reilly test," see American Axle, 966 F.3d at 1354 (Chen, J., concurring in the denial of the petition for rehearing en banc), is a question of patent eligibility under § 101, rather

than a question of enablement under § 112. This interpretation of O'Reilly was the Federal Circuit's justification for treating the patentee's alleged failure to describe a means of implementation as a matter of § 101 rather than § 112.

However, this Court's extensive discussion of *Neilson* in *O'Reilly* makes clear that *O'Reilly* addressed enablement, not patent eligible subject matter. *See O'Reilly*, 56 U.S. at 114-17. The Court premised the invalidity of Morse's eighth claim not on the ground that natural laws in the abstract were unpatentable an old and trite conclusion established well before *O'Reilly* was decided, *see*, *e.g.*, *Whitney v. Emmett*, 29 F. Cas. 1074, 1078 (C.C.E.D. Pa. 1831)—but rather on the ground that Morse had claimed more broadly than the statutory disclosure requirement would permit.

Morse had relied on *Neilson* as the principal support for the validity of his eighth claim. For if Neilson's patent could encompass the use of the hot blast without being bound to any particular apparatus he had disclosed, then why could Morse's patent not encompass the use of electromagnetism for writing at a distance, without being bound to the telegraphic apparatus he had disclosed? In response, this Court pointed out that the *Neilson* jury found that a skilled artisan could, based on Neilson's specification, readily adapt the preheating principle to "all cases of forges, cupolas, and furnaces, where the blast is used." *O'Reilly*, 56 U.S. at 115 (quoting *Neilson*) (emphasis added). Thus Neilson's disclosure enabled the universal application of his discovery, regardless of what form of heating or blowing apparatus was employed. Morse's disclosure, by contrast, did not enable the practice of his invention independent of particular apparatus:

For Neilson discovered, that by interposing a heated receptacle between the blower and the furnace, and conducting the current of air through it, the heat in the furnace was increased. And this effect was always produced, whatever might be the form of the receptacle, or the mechanical contrivances for heating it, or for passing the current of air through it, and into the furnace.

But Professor Morse has not discovered, that the electric or galvanic current will always print at a distance, no matter what may be the form of the machinery or mechanical contrivances through which it passes.... To produce that effect, it must be combined with, and passed through, and operate upon, certain complicated and delicate machinery, adjusted and arranged upon philosophical principles, and prepared by the highest mechanical skill.

O'Reilly, 56 U.S. at 116-17. The difference between Neilson's patent and Morse's patent was that Neilson's disclosure enabled the universal application of his invention: the hot blast could be practiced with any form of heating apparatus. Morse's disclosure did not enable the universal application of his invention. Only particular ways of implementing Morse's telegraph would communicate at a distance. However, the conclusion that *O'Reilly* was based on enablement grounds would be clear even without appreciating that *Neilson* was an enablement case as well. The remainder of this Court's opinion in *O'Reilly* is devoted to showing that Morse's eighth claim was invalid because it did not comply with the *disclosure* provisions of the 1836 Act. Those provisions, in language that parallels § 112, required the inventor to provide a written description of the invention and an enabling disclosure. As the Court summed up when addressing whether a disclaimer could save the remaining claims:

The act of Congress above recited, requires that the invention shall be so described, that a person skilled in the science to which it appertains, or with which it is most nearly connected, shall be able to construct the improvement from the description given by the inventor.

Now, in this case, *there is no description but one, of a process by which signs or letters may be printed at a distance.* And yet he claims the exclusive right to any other mode and any other process, although not described by him, by which the end can be accomplished, if electro-magnetism is used as the motive power. That is to say—he claims a patent, for an effect produced by the use of electro-magnetism distinct from the process or machinery necessary to produce it. The words of the acts of Congress above quoted show that no patent can lawfully issue upon such a claim. *For he*

claims what he has not described in the manner required by law.

O'Reilly, 56 U.S. at 121 (emphases added). The defect in Morse's eighth claim was not that it was directed to a law of nature or natural phenomenon, but that it claimed too far beyond what Morse had disclosed. The Court could not have been more clear that the "*O'Reilly* test" was simply one of compliance with the statutory *disclosure* requirements.

III. The New Doctrine Announced in this Case Conflates Sections 101 and 112 and Exacerbates the Confusion Surrounding Section 101

To say that the claims in this case are not directed to laws of nature is not to say that they are patentable. The Federal Circuit faulted claim 22 for being overly broad, and for failing to define "any physical structure or steps for achieving the claimed result." American Axle, 967 F.3d at 1295. That may or may not be the case. However, in case after case since O'Reilly, this Court has made clear that concerns about vague or overbroad claims, or claims that recite a result rather than a solution, call for measuring the claims against the statutory standards of disclosure and definiteness-not a fact-free judicial hunt for laws of nature, unterhered to the statutory text. See Nautilus, Inc. v. Biosig Instruments, Inc., 572 U.S. 898, 901-12 (2014); Halliburton Oil Well Cementing Co. v. Walker, 329 U.S. 1, 8-9 (1946); United Carbon Co. v. Binney & Smith Co., 317 U.S. 228, 232-34 (1942); Gen. Elec. Co. v. Wabash Appliance Corp., 304 U.S. 364, 368-71 (1938); Holland

Furniture Co. v. Perkins Glue Co., 277 U.S. 245, 256-57 (1928); *Béné v. Jeantet*, 129 U.S. 683, 685-86 (1889).

If the Federal Circuit is correct that the patent at issue in this case fails to define the means by which the desired result is achieved, then the court should have held, consistent with its own jurisprudence, that the claims in suit are invalid for lack of an adequate disclosure under § 112.

For example, in *In re Hyatt*, 708 F.3d 712, 714 (Fed. Cir. 1983), the Federal Circuit held that if a claim "covers every conceivable means for achieving the stated result, while the specification discloses at most only those means known to the inventor," then the claim is invalid under § 112. As the Federal Circuit explained, this rule arises not from any extra-textual prohibition against claiming laws of nature, but from this Court's holding in *O'Reilly* that such claims lack the enabling disclosure required by statute, now § 112(a). See id. at 714 (citing O'Reilly). Likewise, the Federal Circuit's predecessor court held that if a claim fails to recite a step or structure described as essential to the invention by the specification, then the patent also lacks the enabling disclosure required by § 112. See In re Mayhew, 527 F2d. 1229, 1233 (C.C.P.A. 1976).

However, under the new doctrine announced by the panel in this case, a court need not even inquire about what a patent does or does not disclose. According to the panel opinion, features not recited by the claim are "*irrelevant* as to step 1 or step 2 of the *Mayo/Alice* analysis." *American Axle*, 967 F.3d at 1293 (emphasis added). The American Axle panel opinion dispenses with the inquiry prescribed by § 112, which assesses whether a claim is supported by a patent's "specification." See § 112(a) (providing that "[t]he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention." (emphasis added)). In place of the statutory requirement, the panel opinion supplies a new test in which the disclosure is irrelevant. Patentability instead depends on whether, in a court's subjective belief, the *claim* sufficiently explains how to apply a law of nature.

This doctrine expands the reach of the patent eligibility doctrine beyond what any previous court has done and contradicts the clear text, structure, and intent of the 1952 Act. The *American Axle* test short-circuits the tests of patentability mandated by Congress in the 1952 Act, and supplants them with a doctrine having no foundation in the statutory text.

Thus this is not just a case of the Federal Circuit failing to respect its own precedent, or even the precedent of this Court. With its mistaken effort to shoehorn a conventional § 112 case into § 101, the Federal Circuit has not merely muddied the already confused law of patent eligibility. The Federal Circuit's infusion of § 112 into § 101 vastly expands the reach of patent eligibility subjectivity well beyond the field of software and diagnostic patents into all manner of mechanical process and manufacture claims. In so doing, it further supplants the 1952 Act's framework with an amorphous test for patentability disengaged from the statutory text, untethered to factual findings, and removed even from the patent text itself.

It was *precisely* this concern—that courts had become all too likely to invalidate patents based on a vague, unpredictable and extra-statutory doctrine of "invention"—that drove Congress to reform, clarify, and codify the structured patentability requirements set forth in the 1952 Act. The unpredictability of that judicial standard was identified as the most serious weakness of the American patent system by the wartime National Patent Planning Commission, which concluded:

It would be highly desirable and a great step forward if patents could be issued with a greater assurance that their validity would be upheld by the courts. No other feature of our law is more destructive to the purpose of the patent system than this existing uncertainty as to the validity of a patent... The present confusion threatens the usefulness of the whole patent system and calls for an immediate and effective remedy.

78th Congress, 1st Session, House Document No. 239, p.5.

Those concerns over the stability of the patent system are just as pressing today, if not more so, than they were in 1943. We are not advocating that the Court lower the standards that Congress put in place to ensure that patents are granted only for significant technological advances that are adequately disclosed. We are, however, urging the Court to uphold and reinforce the structured framework that Congress established to provide greater clarity and predictability in the granting and enforcement of patents.

CONCLUSION

This case presents a clear error involving a critical issue of patent law and provides an excellent vehicle to clarify the interplay of § 101 and § 112 of the Patent Act. We urge the Court to grant certiorari or, at a minimum, remand for en banc review.

Respectfully submitted,

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