

*In the*  
**United States Court of Appeals**  
*for the*  
**Federal Circuit**

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AMERICAN AXLE & MANUFACTURING, INC.,  
*Plaintiff-Appellant*

v.

NEAPCO HOLDINGS LLC, NEAPCO DRIVELINES LLC,  
*Defendants-Appellees*

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*Appeal from a Decision of the United States District Court for the District of Delaware,  
Case No. 1:15-cv-01168-LPS · Honorable Leonard P. Stark, Chief Judge*

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**BRIEF OF *AMICUS CURIAE* ALLIANCE OF  
U.S. STARTUPS & INVENTORS FOR JOBS (“USIJ”) IN  
SUPPORT OF REQUEST BY APPELLANT AMERICAN AXLE &  
MANUFACTURING, INC. FOR *EN BANC* REVIEW**

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## CERTIFICATE OF INTEREST

Counsel for USIJ certifies the following:

1. The full name of every party or amicus represented by me is:

**ALLIANCE OF U.S. STARTUPS AND INVENTORS FOR JOBS,  
SOMETIMES REFERRED TO AS “USIJ”**

2. The name of the real party in interest represented by me is:

**ALLIANCE OF U.S. STARTUPS AND INVENTORS FOR JOBS,  
SOMETIMES REFERRED TO AS “USIJ”**

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

**NONE**

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

**ROBERT P. TAYLOR and  
RPT LEGAL STRATEGIES PC**

5. I am unaware of any other case currently pending that will affect or be affected by this one, other than the petition for certiorari in *Athena Diagnostics, et al. v. Mayo Collaborative Services et al*, Supreme Court Docket No. 19-430.

Date: December 12, 2019

/s/ Robert P. Taylor  
Robert P. Taylor

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The Alliance of U.S. Startups and Inventors for Jobs (“USIJ”) submits this brief as *amicus curiae* pursuant to Fed. R. App. P. 29(b) in support of the request by Appellant American Axle & Manufacturing, Inc. for reconsideration and/or *en banc* review of the Summary Judgment entered March 2, 2019 in the U.S. District Court for the District of Delaware. The panel decision, if allowed to stand, will add further confusion to a body of jurisprudence regarding patent eligibility that already has proven to be difficult if not wholly impenetrable to apply with any consistency. It is critical that the decision and opinion of the panel majority be vacated.

### **INTEREST OF *AMICUS CURIAE***

*Amicus curiae* USIJ is a coalition of 30 startup companies and their affiliated executives, inventors and investors that depend on stable and reliable patent protection as an essential foundation for making long term investments of capital and time commitments to high risk businesses developing new technologies.<sup>1</sup> USIJ was formed in 2012 to address concerns that legislation, policies and practices adopted by the U.S. Congress, the Federal Judiciary and certain Federal agencies were and are placing individual inventors, entrepreneurs and research-intensive

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<sup>1</sup> No counsel for a party authored this brief in whole or in part, and no such counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than this *amicus curiae* made a monetary contribution to its preparation or submission. Amicus USIJ was unable to obtain the permission of Appellee NEAPCO to file this brief and has submitted a motion seeking its acceptance. Appellant American Axle has given its permission to file.

startups (“the Invention Community”) at an unsustainable disadvantage relative to their larger incumbent rivals, both domestic and foreign, and others that would misappropriate their inventions. A disproportionately large number of strategically critical breakthrough inventions are attributable to individual inventors and small companies.

USIJ’s fundamental mission is to assist and help inform Members of Congress, the Federal Judiciary and leaders in the Executive branch regarding the critical role that patents play in our nation’s economic system and the particular importance of startups and small companies to our country’s continued dominance of strategically critical technologies for more than a century.

### **SUMMARY OF ARGUMENT**

From the standpoint of many entrepreneurs, inventors and investors that comprise the Invention Community, the U.S. Patent System appears to be on life support. Legal protection of inventions and discoveries that once was a defining characteristic of U.S. industrial policy has become increasingly irrelevant, no longer providing adequate comfort to investors willing to make high risk commitments of time and capital or to inventors who would leave secure jobs to pursue visions of breakthrough technologies and challenge entrenched incumbents. Although aggregated investment data might suggest that entrepreneurs and investors continue to be very active in this country, a closer look reveals that much of the current focus

for such activity has shifted away from the invention of strategically critical technologies that are necessary to maintain this country's leadership in science and technology and toward investments such as entertainment, apparel, social media and the like, which either do not depend on patents at all or do not consider enforceable patents to be essential to their businesses. We discuss this trend in Section II, below.

The growing unwillingness of inventors and investors to rely on patents in tackling promising but risky new technologies harbingers badly for the United States. Startups, small companies and individual inventors have been responsible historically for many of our most important breakthrough inventions. These entities need patent protection far more than the large corporate incumbents that own the vast majority of all patents, and yet it is the former group that is most severely affected by the systematic weakening of patent protection that we have witnessed over the last few years.

Although there has been more than one contributor to the growing perception within the Invention Community that patents are no longer relevant to the protection of long term commitments of time and capital, this Court's current jurisprudence on patent eligibility stands at or near the top of the list. We recognize that some of the Court's rulings related to Section 101 have been driven by the belief that the Court was merely implementing rulings by the Supreme Court, but we respectfully suggest that there certainly is no need for this Court to **expand** on what has been prescribed

by the high Court and to search for outcome-oriented theories around which to find ineligibility that would not otherwise exist, as the panel majority appears to have done here.

The Patent Act sets forth the types of inventions and discoveries that Congress intended to be eligible for patent protection as part of our country’s larger industrial policy. 35 U.S.C. §101 states unambiguously:

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

The so-called “judicial exception” to that statutory provision – variously referred to as laws or products of nature, abstract ideas, or mathematical formulas – is in derogation of an act of Congress and therefor to be construed narrowly.<sup>2</sup> To that end, the Supreme Court has emphasized the need for caution in applying this exception to the patent statute. In *Alice Corp. v. CLS Bank*, 573 U.S. 208, 214 (2015), for example, the Court noted:

“[W]e tread carefully in construing this exclusionary principle lest it swallow all of patent law. [citation omitted]. At some level, ‘all inventions ... embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas. ... Thus, an invention is not rendered ineligible for patent simply because it involves an abstract concept.’”

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<sup>2</sup> As noted by the Supreme Court in *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980): “We have cautioned that courts ‘should not read into the patent laws limitations and conditions which the legislature has not expressed.’” citing *United States v. Dubilier Condenser Corp*, 289 U.S. 178 (1933).



The panel majority decision cannot be squared with this caveat. If left standing, the decision has the potential for expanding ineligibility under Section 101 to threaten most every invention for which a patent has ever been granted, thereby ignoring both the constitutional foundations of U.S. patent law, the statutory requirements established by Congress, and the Supreme Court’s two-step legal test for compliance with Section 101. The majority decision, in short, threatens to “swallow all of patent law,” because “[a]t some level, all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.” *Ibid.*

## ARGUMENT

### **I. The Panel Majority Decision Fails to Comply with Precedents Established by the Supreme Court and with Rule 56, F.R.C.P**

The dissenting opinion of Judge Moore identifies many of the numerous points at which the majority opinion is wrong and that cry out for review *en banc*, including the majority’s failure even to acknowledge extensive evidence satisfying the “inventive step” required by *Mayo* and *Alice* (Slip Op. at 5 - 9), the detailed descriptions of the invention found in the dependent claims but ignored by the majority (Slip Op. at 4, fn1), the cavalier dismissal by the majority of disputed issues of fact (Slip Op. at 4 - 5), and the majority’s effort to sidestep the factual foundations required for the grant of summary judgment based upon what is essentially the use of ineligibility as a substitute for a lack of enablement (Slip Op. at 11 - 14).

In addition to Judge Moore’s dissent, Appellant’s Combined Petition for Panel Rehearing and Rehearing En Banc, filed on November 18, 2019, lays out a similarly compelling analysis focused largely on evidence of disputed issues of fact that make summary judgment improper, including particularly the use of the ‘911 patent by Neapco to create the infringing product.

Amicus USIJ cannot add much to these two clearly stated and compelling analyses of the majority opinion described in the foregoing paragraph. We would observe, however, that the ‘911 patent describes and claims a mechanical invention in the form of a hollow shaft that transmits rotary motion within a larger combination of machine components and that includes material of a specified composition, weight and placement within the shaft for reducing unwanted vibrations. Such a structure falls clearly within the “machine” category specified in Section 101 and it is difficult to find a principled basis on which to characterize this invention as simply a conventional, routine and well understood application of a “law of nature” or an “abstract idea.” Numerous calculations (*i.e.*, the application of mathematical formulas and laws of nature) would be required to design and manufacture the drive shaft that that is claimed, not simply those features related to dampening of vibrations. The mass, thickness, torsional strength, and composition of the shaft itself, for example, would require the balancing of multiple engineering tradeoffs that then would be embodied in the shaft. Given the refusal by the majority to

acknowledge the inventor's identification of the "inventive step" in the issued method claim, any of the many other laws of nature or mathematical formulas could just as easily have been tossed out by an accused infringer to form the basis for the majority opinion. That would be true even if the patent itself relied specifically on some scientific principle that could be identified as a law of nature; the majority's analysis is even more questionable because neither the specification nor the claims of the '911 patent refers to anything that properly could be so described.

We respectfully submit that it is dangerously expansive for the majority decision to state:

"Like the claims in *Flook*, the claims of the '911 patent are directed to the utilization of a natural law (here, Hooke's law and possibly other natural laws) in a particular context."

This approach to patent eligibility is an open invitation to infringers to ignore the rights of patent owners and to district judges and other panels of this Court to expand further the ineligibility of inventions under Section 101, contrary to the Supreme Court's cautionary admonition in its *Alice* and *Mayo* decisions. The majority decision presents a genuine threat to those who rely on the U.S patent system for protection of their investments of time and money into developing new technologies. It appears that the majority, following the lead of the district court, set about in search of an underlying principle around which to construct a result-oriented outcome, simply assuming away any inconvenient facts that might preclude the application of

an “exception” to Section 101 or that might militate against the grant of summary judgment.

Furthermore, the unprecedented injection of enablement issues into an eligibility analysis expands the existing ambiguity of this Court’s jurisprudence and increases further the number of possible ways in which this Court’s handling of Section 101 issues can be misconstrued by the lower courts. The Supreme Court’s requirement of an “inventive concept” or “inventive step” can trace its origin to what, at least arguably, is supported by the use of the word “new” in the statutory provision. *E.g., Bilski v. Kappos*, 561 U.S. 593, 602 (“While these [implied] exceptions are not required by the statutory text, they are consistent with the notion that a patentable process must be ‘new and useful.’”). One searches in vain, however, for a similar statutory basis for conflating Section 101 with a factually intensive inquiry into enablement.

## **II. Investments in Technology Startups in Our Country Has Been Declining for More Than a Decade.**

The weakening of patent protection in the United States since 2004 has led to a corresponding decline in the willingness of entrepreneurs and inventors to rely on patents as the foundation for making investments. A recent survey of 475 venture capital investors across a broad variety of industries conducted by David O. Taylor, Associate Professor of Law and Co-Director of the Tsai Center for Law, Science and Innovation, Southern Methodist University, Dedman School of Law, shows that for

those investors who pay attention to patent eligibility and the enforceability of the patents owned by their portfolio companies, there already is a growing unwillingness to commit time and capital to companies that require reliable patents to justify investing. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3340937](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3340937).

Moreover, not all investors are fully aware of the declines in the actual reliability of patents as enforceable property rights; as that reality becomes more fully understood within the Invention Community, it is not unreasonable to expect further shifts away from patent essential industries.

Professor Taylor's survey is consistent with and indeed confirms a similar study last year by amicus USIJ of data collected by PitchBook, Inc. and supplied to the National Venture Capital Association. Venture capital investing trends over the period from 2004 to 2017 show that while the total amount of venture capital invested in the U.S. over that 14-year period increased by a factor of four (from approximately \$20B to \$80B), the portion invested in many of our most important and strategically critical industries suffered substantial declines. In 2004, for example, investments in semiconductors accounted for 1.2% of all the companies that received venture capital funding and 2% of all the venture capital dollars invested. By 2017, the number of companies that received funding for developing new semiconductor technology had fallen by an order of magnitude and the dollar commitment was negligible. <https://www.usij.org/research/2018/7/9/us-startup->

company-formation-and-venture-capital-funding-trends-2004-to-2017. Similar declines can be seen in drug discovery, medical devices, operating systems, core networking technology, etc. At the same time, investments in consumer apparel, hotels, social media and similar market segments increased substantially.

The following chart, which is copied from Page 9 of the USIJ study, provides a somewhat broader view of these significant shifts in venture capital investments:

<p>▪ <b>Exemplary strategic sectors that have declined as a % of total VC funding:</b></p> <ul style="list-style-type: none"> <li>➤ Core internet networking</li> <li>➤ Wireless communications</li> <li>➤ Internet software</li> <li>➤ Operating system software</li> <li>➤ Semiconductors</li> <li>➤ Pharmaceuticals</li> <li>➤ Drug Discovery</li> <li>➤ Surgical Devices</li> <li>➤ Medical Supplies</li> </ul> <p>▪ % of total VC funding in 2004: 20.95%          ▪ % of total VC funding in 2017: 3.22%</p>	<p>▪ <b>Exemplary sectors that have increased as a % of total VC funding:</b></p> <ul style="list-style-type: none"> <li>➤ Social network platforms</li> <li>➤ Software apps</li> <li>➤ Consumer apparel and accessories</li> <li>➤ Food products</li> <li>➤ Restaurants, hotels and leisure</li> <li>➤ B2C companies in general</li> <li>➤ Consumer finance</li> <li>➤ Financial services in general</li> </ul> <p>▪ % of total VC funding in 2004: 11.4%          ▪ % of total VC funding in 2017: 36.3%</p>
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The trends reflected in the foregoing analysis do not bode well for this country. Semiconductor technology, to use but one example, would rank high on almost any list of the most critical technologies for cybersecurity, artificial intelligence, national defense and virtually every other economic activity that depends on computational progress. Investment in startups likely to develop real breakthrough inventions in that field of technology has all but vanished. Although

it may be years before the actual implications of this shift away from strategic technologies become fully apparent, the trend line is readily apparent.

### **III. Conclusion**

USIJ strongly urges this Court to vacate the majority opinion and to establish some clear boundaries on the extent to which district judges are free to rely on the application of natural laws to find that inventions lack patent eligibility. Otherwise, the certainty and reliability required for a viable patent system will be constantly in doubt.

Respectfully submitted,

/s/ Robert P. Taylor  
Robert P. Taylor  
Counsel for *Amicus Curiae* USIJ

Date: December 12, 2019

## CERTIFICATE OF COMPLIANCE

I certify that this brief complies with the type-volume limitation set forth in Federal Circuit Rule 40(g). This brief uses a proportional typeface and 14-point font, and contains 2,570 words.

Respectfully submitted,

/s/ Robert P. Taylor  
Robert P. Taylor  
Counsel for *Amicus Curiae* USIJ

Date: December 12, 2019



## CERTIFICATE OF SERVICE

I hereby certify that on December 12, 2019, I electronically filed the foregoing Brief by *Amicus Curiae* with the Clerk of the Court for the United States Court of Appeals for the Federal Circuit by using the appellate CM/ECF system.

I certify that all participants in the case are registered CM/ECF users and that service will be accomplished by the appellate CM/ECF system.

/s/ Robert P. Taylor  
Robert P. Taylor