

# THE ROLE OF THE COURTS IN SHAPING PATENT LAW & POLICY

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It's a pleasure to be with all of you this afternoon as we discuss "The Role of the Courts in Shaping Patent Law & Policy." And what better to address on this issue than the judicial exceptions to § 101?<sup>1</sup> So, you will forgive me if we get a bit into the weeds today, as this is obviously a complex topic.

"It will be of little avail to the people . . . if the laws be so incoherent that they cannot be understood," James Madison said in 1788.<sup>2</sup> Known as the "Father of the Constitution," Madison also recognized the importance of intellectual property (IP). In Federalist 43, for example, he addressed the constitutional power to create an IP system, stating that "the utility of this power will scarcely be questioned" because "the public good fully coincides . . . with the claims of individuals."<sup>3</sup>

Madison was right. Based on this careful balance between the rights of the individuals and those of the public, IP has been the engine behind America's economic and cultural development from the very start of the republic. But, for the IP system to work as intended, we must ensure that our laws are clear and that the IP rights we issue are predictable, reliable, and of high quality.

Today, however, the law surrounding what subject matter is eligible for patenting under 35 U.S.C. § 101 is anything but clear. There is a general consensus that something needs to be done. Several Federal Circuit judges, for example, have recently filed concurrences or dissents highlighting the uncertain nature of the law and calling for change.<sup>4</sup>

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1. 35 U.S.C. § 101 (2018).
2. THE FEDERALIST NO. 62 (James Madison) (Clinton Rossiter ed., 1961).
3. THE FEDERALIST NO. 43 (James Madison) (Clinton Rossiter ed., 1961).
4. *See, e.g.*, Berkheimer v. HP Inc., 890 F.3d 1369, 1374 (Fed. Cir. 2018) (Lourie, J., concurring); Interval Licensing LLC v. AOL, Inc., 896 F.3d 1335, 1348 (Fed. Cir. 2018)

In order to “work its way out of what so many in the innovation field consider § 101 problems,” Judge Lourie—in an opinion joined by Judge Newman—appealed to a higher authority.<sup>5</sup> “Resolution of patent-eligibility issues requires higher intervention, hopefully with ideas reflective of the best thinking that can be brought to bear on the subject.”<sup>6</sup>

Judge Plager noted that “the state of the law is such as to give little confidence that the outcome is necessarily correct.”<sup>7</sup> Given current § 101 jurisprudence, he explained it is “near impossible to know with any certainty whether the invention is or is not patent eligible.”<sup>8</sup> And he concluded that we currently have an “incoherent body of doctrine.”<sup>9</sup> And Judge Linn said that the abstract idea test is “indeterminate and often leads to arbitrary results.”<sup>10</sup>

Others in the IP community have expressed similar sentiments.<sup>11</sup>

In order to increase the certainty of whether particular subject matter is eligible or not, and to simplify our analysis, the United States Patent and Trademark Office (USPTO) plans to issue guidance to help our examiners and applicants who struggle with these issues every single day.

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(Plager, J., concurring in part and dissenting in part); *Smart Sys. Innovations, LLC v. Chi. Transit Auth.*, 873 F.3d 1364, 1376 (Fed. Cir. 2017) (Linn, J., dissenting in part and concurring in part).

5. *Berkheimer*, 890 F.3d at 1374.

6. *Id.* at 1376.

7. *Interval Licensing*, 896 F.3d at 1348.

8. *Id.*

9. *Id.*

10. *Smart Sys. Innovations, LLC v. Chi. Transit Auth.*, 873 F.3d 1364, 1377 (Fed. Cir. 2017) (Linn, J., dissenting in part and concurring in part).

11. See, e.g., Email from Mark K. Dickson, Chair, Am. Bar Ass’n Section of Intellectual Prop. Law, to Hon. Andrei Iancu, Under Sec’y, Commerce for Intellectual Prop. & Dir., U.S. Patent & Trademark Office (Mar. 7, 2019), [https://www.uspto.gov/sites/default/files/documents/eligibility2019comments\\_a\\_abaipl\\_2019mar07.pdf](https://www.uspto.gov/sites/default/files/documents/eligibility2019comments_a_abaipl_2019mar07.pdf) [<https://perma.cc/C5S4-R2KV>]; Email from Sheldon H. Klein, Am. Intellectual Prop. Law Ass’n (AIPLA), to Hon. Andrei Iancu, Under Sec’y, Commerce for Intellectual Prop. & Dir., U.S. Patent & Trademark Office (Mar. 8, 2019), [https://www.uspto.gov/sites/default/files/documents/eligibility2019comments\\_a\\_aipla\\_2019mar08.pdf](https://www.uspto.gov/sites/default/files/documents/eligibility2019comments_a_aipla_2019mar08.pdf) [<https://perma.cc/65AE-8BCT>]; Email from Henry Hadad, President, Intellectual Prop. Owners Ass’n (IPO), to Hon. Andrei Iancu, Under Sec’y, Commerce for Intellectual Prop. & Dir., U.S. Patent & Trademark Office (Mar. 8, 2019), [https://www.uspto.gov/sites/default/files/documents/eligibility2019comments\\_a\\_ipo\\_2019mar08.pdf](https://www.uspto.gov/sites/default/files/documents/eligibility2019comments_a_ipo_2019mar08.pdf) [<https://perma.cc/BR9N-RDBS>]; see also, e.g., Judge Paul Michel, *Is 2019 the Year Clarity Returns to Section 101? Judge Paul Michel Is Hopeful*, IPWATCHDOG (Jan. 24, 2019), <https://www.ipwatchdog.com/2019/01/24/2019-year-clarity-returns-section-101-judge-paul-michel-hopeful/id=105566/> [<https://perma.cc/33DX-L9E3>] (“[T]he current Section 101 is inherently unclear and therefore could not be consistently administered by patent examiners and judges, much less juries.”).

As a matter of fact, many of you know that we have already issued two new guidance memos to our examiners on § 101: the first dealing with the “conventionality” analysis in the second step of the *Mayo/Alice* framework and the second regarding “method of treatment” claims.<sup>12</sup>

Our data shows that these two memos have already had a positive impact on § 101 analysis during examination. But much more work needs to be done, especially with respect to step one of *Alice/Mayo*. And this is what our forthcoming guidance aims to do.

We start with a principle articulated by Judge Giles Rich in 1979. He said that problems can arise due to the “unfortunate . . . though clear commingling of distinct statutory provisions which are conceptually unrelated, namely, those pertaining to the categories of invention in § 101 which may be patentable, and to the conditions for patentability demanded by the statute.”<sup>13</sup>

In other words, and pursuant to the Patent Act of 1952, we should keep invalidity rejections in their own lanes. If something is not novel or is obvious, we should invalidate it under § 102 or § 103. If something is indefinite, or too broad to be fully enabled or described, we should invalidate it under § 112. We have decades of case law from the courts and decades of experience at the USPTO examining millions of patent applications which guide us in our §§ 102, 103, and 112 analyses. People know these standards and know how to apply these well-defined statutory requirements.

The genius of the 1952 Patent Act<sup>14</sup> was that it clearly categorized the conditions for patentability in addition to, and separate from, the categories of invention. But some recent § 101 findings seem to mix them all up again. As Judge Rich cautioned, this “may lead to distorted legal conclusions.”<sup>15</sup> So, I propose that we stop commingling patent eligibility, on one hand, with the conditions for patentability, on the other.

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12. See Memorandum from Robert W. Bahr, Deputy Comm’r for Patent Examination Policy to the Patent Examining Corps on Changes in Examination Procedure Pertaining to Subject Matter Eligibility, Recent Subject Matter Eligibility Decision (*Berkheimer v. HP, Inc.*) (Apr. 19, 2018), <https://www.uspto.gov/sites/default/files/documents/memo-berkheimer-20180419.PDF> [<https://perma.cc/ZB4N-GE2M>]; Memorandum from Robert W. Bahr, Deputy Comm’r for Patent Examination Policy to the Patent Examining Corps on Recent Subject Matter Eligibility Decision: *Vanda Pharmaceuticals Inc. v. West-Ward Pharmaceuticals* (June 7, 2018), <https://www.uspto.gov/sites/default/files/documents/memo-vanda-20180607.PDF> [<https://perma.cc/8PQ4-54PL>].

13. *In re Bergy*, 596 F.2d 952, 959 (C.C.P.A. 1979).

14. Act of July 19, 1952, Pub. L. 593, 66 Stat. 792 [hereinafter 1952 Patent Act].

15. *Bergy*, 596 F.2d at 959.

Section 101 is about the eligibility of subject matter. To that end, the judicial exceptions should address categories of subject matter that are not eligible per se, or on their own, no matter how inventive or well-claimed they are.

We don't need § 101 to address other problems with the claims. We have §§ 102, 103, and 112 for that purpose.

The exceptions to § 101 are judicially created. In the spirit of judicial restraint, let's apply them only where we have to.

For example, a pure discovery of nature, like gravity or electromagnetism, is per se not eligible, no matter how perfectly drafted the claims might be. This is an example of a subject matter issue. The category itself is problematic, and that cannot be addressed by §§ 102, 103, and 112. In other words, even if the applicants are the very first to have discovered gravity or electromagnetism, and there is zero published prior art, and even if they describe the principle in great detail and claim it well enough to satisfy all § 112 requirements perfectly, even then, the Supreme Court has told us that we should still not issue a patent on the principle itself.<sup>16</sup>

This is an example where a judicial exception to § 101 is arguably necessary under current law. The question then becomes, what are all such categories where a judicial exception to § 101 is necessary?

The Supreme Court has told us that, other than natural phenomena and laws of nature, the only other exception is “abstract ideas.”<sup>17</sup> But what exactly are these prohibited “abstract ideas”?

After detailed studies of all relevant cases, and based on our extensive experience at the USPTO, it appears to us that “abstract ideas” can be synthesized to fall into the following three categories:

Mathematical concepts like mathematical relationships, formulas, and calculations.<sup>18</sup>

Certain methods of organizing human interactions, such as fundamental economic practices; commercial and legal interactions; managing

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16. *See* *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (citing *Le Roy v. Tatham*, 55 U.S. 156, 175 (1852)); *see also* 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 4 (Jan. 7, 2019), <https://www.govinfo.gov/content/pkg/FR-2019-01-07/pdf/2018-28282.pdf> [<https://perma.cc/584S-98HX>] [hereinafter 2019 Guidelines].

17. *See* *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 217–19 (2014) (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 67 (2012)).

18. *See, e.g.*, *Bilski v. Kappos*, 561 U.S. 593, 611 (2010) (“The concept of hedging . . . reduced to a mathematical formula . . . is an unpatentable abstract idea.”); *Diamond v. Diehr*, 450 U.S. 175, 191 (1981); *Parker v. Flook*, 437 U.S. 584, 594 (1978).

relationships or interactions between people; and advertising, marketing, and sales activities.<sup>19</sup>

Mental processes, which are concepts performed in the human mind, such as forming an observation, evaluation, judgment, or opinion.<sup>20</sup>

Specifying the prohibited categories is important, at least for the sake of predictability, so that the public can invent, invest, and transact business with increased confidence.

And again, these are categories of subject matter that are not eligible *per se*, or on their own, irrespective of how inventive or well-claimed they are. That is, regardless of how novel and well-described Newton's calculus may have been, it is still not patentable by itself. Same with hedging or escrow transactions, as in *Alice*<sup>21</sup> and *Bilski*.<sup>22</sup> On their own, this subject matter can be thought of as abstract. Perhaps "inherently" abstract, some might say.

It is important to contrast these categories that the Supreme Court has told us are inherently prohibited on one hand, with examples where subject matter could be eligible on the other.

We are all currently grappling with the eligibility of all sorts of technology, from things like toys that communicate with one another to computer virus screening, from computer databases to methods of treating various diseases. Now I am not expressing any view as to the ultimate validity of any particular claims drawn to these technologies. Such claims, if they are actually "directed to" math or laws of nature or some other matter that the Supreme Court said is *per se* ineligible, might perhaps fail under § 101.<sup>23</sup>

But without more, why would such technology be deemed as ineligible by itself? The Supreme Court has never held such technology, by itself, to be prohibited. And why should it be?

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19. *See, e.g., Alice*, 573 U.S. at 219–20 (concluding that use of a third party to mediate settlement risk is a "fundamental economic practice" and thus an abstract idea); *Bilski*, 561 U.S. at 611–12.

20. *See, e.g., Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318 (Fed. Cir. 2016) ("[W]ith the exception of generic computer-implemented steps, there is nothing in the claims themselves that foreclose them from being performed by a human, mentally or with pen and paper."); *Mortg. Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324 (Fed. Cir. 2016) (holding that computer-implemented method for "anonymous loan shopping" was an abstract idea because it could be "performed by humans without a computer").

21. *Alice*, 573 U.S. at 219–20.

22. *Bilski*, 561 U.S. at 611.

23. *Alice*, 573 U.S. at 217 (citing *Mayo*, 566 U.S. at 77); *see also* 2019 Guidelines, *supra* note 16, at 1.

If claims drawn to such matter are novel and nonobvious, and if they are enabled, well-described and definite, I suspect most would agree that they could be patentable. For example, wouldn't we tend to think that toys that communicate with each other might be patentable—if new, nonobvious, definite, well-described, and the like?

This is in stark contrast to the categories the Supreme Court has identified as per se ineligible, such as math, fundamental economic principles, or mental processes. Those categories, by themselves, are ineligible for patenting regardless of how novel, nonobvious, well-described, or well-claimed they might be.

Of course, as I mentioned, claims drawn to other technologies could actually turn out to be ineligible—if they are ultimately “directed to” matter that is per se ineligible. For example, they might contain math and not much more. But if that is the case, we should so specify in our rejections and identify exactly what matter prohibited by the Supreme Court makes the claim ineligible—math, mental processes, economic practices, etc.

Or, perhaps the real problem with the claim is that it really is vague, unsupported, or impermissibly result-oriented. If so, we should probably reject it under § 112 as appropriate. Or, perhaps the claim is too broad and recites only well-known matter. If so, we should probably reject it under § 102 or § 103.

But by themselves (per se), the Supreme Court has not found these other technologies to be prohibited.

Some believe that recent Supreme Court decisions have left us no choice but to consider the applicability of judicial exceptions to a vast array of technology.<sup>24</sup> Perhaps. But before reaching a final conclusion on this, let us all consider it again with fresh eyes.

And as we do so, we should heed Justice Thomas's warning to “tread carefully in construing this exclusionary principle lest it swallow all of patent law.”<sup>25</sup> Because, as the Court correctly recognized, “at some level, ‘all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.’”<sup>26</sup>

And the fact is, after more than 200 years of Supreme Court precedent regarding § 101 and its predecessors, the Court so far has arguably only identified the few categories I described above as per se ineligible. Why go

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24. *See, e.g.*, *Athena Diagnostics v. Mayo Collaborative Servs., LLC*, 915 F.3d 743, 753 n.4 (2019).

25. *Alice*, 573 U.S. at 217 (citing *Mayo*, 566 U.S. at 77).

26. *Id.* (quoting *Mayo*, 566 U.S. at 71).

beyond these, especially where we don't have to, given the availability of §§ 102, 103, and 112?

Section 101 itself lists four broad categories for patentable subject matter: process, machine, manufacture, and composition of matter.<sup>27</sup> These categories have not substantively changed since our founders wrote them into the Patent Act of 1793.<sup>28</sup>

The Supreme Court has often noted just how broad the statutory language is with regard to the scope of subject matter eligible for patent protection: “In choosing such expansive terms . . . Congress plainly contemplated that the patent laws would be given wide scope.”<sup>29</sup> This is because, the Court stated, “ingenuity should receive a liberal encouragement.”<sup>30</sup>

In contrast, the Court's judicial exceptions are specific, and the Court itself cautioned us to “tread carefully”—in other words, not to apply the exceptions liberally—“lest we swallow all of patent law.”<sup>31</sup>

Indeed, the Supreme Court has made it clear that the judicial exceptions are only meant to cover the “basic tools of scientific and technological work.”<sup>32</sup> And the only such basic tools the Court has identified over time appear to be the ones I mentioned above.

In other words, the Supreme Court has never stated that talking toys or a myriad of other applied technologies—by themselves—are “basic tools of scientific and technological work.” Indeed, there is no reason to think they might be because—as with most technologies—by themselves, they are merely applications of such “basic tools.”

In fact, the Court's jurisprudence taken as a whole makes it clear that a practical application of otherwise excluded subject matter is eligible. The Supreme Court has drawn a clear line that separates mere principles (or “basic tools”) on one hand, from practical applications of such principles on the other.<sup>33</sup>

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27. 35 U.S.C. § 101 (2018).

28. Act of Feb. 21, 1793, ch. 11, 1 Stat. 318 (1793).

29. *Diamond v. Chakrabarty*, 447 U.S. 303, 308 (1980).

30. *Id.* (quoting THOMAS JEFFERSON, 5 WRITINGS OF THOMAS JEFFERSON 75–76 (Washington ed., 1871)).

31. *See Alice*, 573 U.S. at 217.

32. *See, e.g.*, *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972); *Mayo*, 566 U.S. at 71 (citing *Benson*, 409 U.S. at 67); *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 576 (2013) (citing *Mayo*, 566 U.S. at 71); *Alice*, 573 U.S. at 216 (citing *Myriad*, 569 U.S. at 576).

33. *See Alice*, 573 U.S. at 216; *Mayo*, 566 U.S. at 71.

So, for example, for the purpose of § 101, we should be able to differentiate between electromagnetism itself on one hand, and toys that communicate with each other using electromagnetic signals on the other.

Over time, the Supreme Court has reiterated this concept. For example, in 1852 in *Le Roy v. Tatbam*, the Court said that “a new property discovered in matter, when practically applied in the construction of a useful article of commerce or manufacture, is patentable.”<sup>34</sup>

One hundred and twenty-nine years later, in *Diamond v. Diehr*, the Court repeated that “an application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.”<sup>35</sup> And most recently, in *Alice*, the Court explained that “applications of such concepts to a new and useful end . . . remain eligible for patent protection.”<sup>36</sup>

In other words, if the claim integrates the excluded subject matter into a practical application of that matter, then the claim should be eligible. Such a claim is not on the excluded matter itself. Or, in the words of the *Alice/Mayo* line of cases, it should not be interpreted as being “directed to” the prohibited subject matter.

Furthermore, a practical application of otherwise excluded matter is not “directed to” that matter because, among other things, it does not substantially preempt the excluded subject matter itself. Such patents arguably only cover the particular applications claimed. And in any event, any defect in claiming with respect to such practical applications can be addressed with the patentability statutes: §§ 102, 103, and 112.

In short, I think that we can overcome the current § 101 morass if we carefully follow Supreme Court precedent, if we don’t allow the judicial exceptions to swallow the entire statute, and if we allow the rest of the statutes (§§ 102, 103, 112) to do the work they were meant to do.

So, we at the USPTO are preparing revised guidance along these lines. In particular, our guidance will categorize the judicial exceptions and clearly instruct examiners on how to apply them.

Under the first step of the proposed guidance, examiners would first look to see if the claims fall within the four statutory categories: process, machine, manufacture, or composition of matter. This is not new—we always do this.

If so, examiners then determine if the claims recite subject matter within one of the judicial exceptions, categorized as I just described. (This is the

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34. 55 U.S. 156, 176 (1852).

35. *Diamond v. Diehr*, 450 U.S. 175, 187 (1981) (emphasis omitted).

36. *Alice*, 573 U.S. at 217 (citing *Benson*, 409 U.S. at 67) (internal quotations omitted).

new approach.) If the claims at issue do not recite subject matter falling into one of these categories, then the § 101 analysis is essentially concluded, and the claim is deemed patent eligible. If an examiner does not find subject matter within the disallowed categories, then he or she can move on to considering the other conditions for patentability.

However, if the claims do recite subject matter in one of the excluded categories, the Supreme Court demands more analysis. Specifically, the Court instructed us that in such cases, we need to decide whether the claims are “directed to” the excluded categories.<sup>37</sup> To that end, examiners would assess whether the claims integrate the exception into a practical application of the otherwise excluded material.<sup>38</sup> If so, the claim passes the § 101 test, and the eligibility analysis is concluded.

It is important to note what is not a “practical application.” For example, mere performance of excluded subject matter, like math or fundamental economics, on a general-purpose computer is not a practical application, as we learned at least in the *Benson*,<sup>39</sup> *Bilski*,<sup>40</sup> and *Alice*<sup>41</sup> cases. Likewise, insignificant post-solution activity by itself does not create a practical application. Our guidance and training materials will specify these and other such examples.

Furthermore, as stated previously, the examination does not conclude merely because we overcome § 101; we must still examine for patentability under §§ 102, 103, and 112. Indeed, we also plan to issue shortly enhanced guidance for the treatment of § 112 in certain circumstances. So, for claims that do pass § 101 because they don’t recite subject matter in a defined excluded category or integrate the exception subject matter into a practical application, we can rest assured that other sections of the code should still prevent a patent from issuing if the claim is obvious, not novel, not enabled, or indefinite.

In sum, our proposed guidance is meant to simplify the § 101 analysis by synthesizing controlling case law and providing greater clarity for the majority of cases that come before us. And we are in dire need of clarity and simplification. I hope other authorities will join in helping us achieve this goal. For when it comes to the role of the courts in shaping patent law and policy (the theme for this conference), there can hardly be a more significant

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37. *Id.* (citing *Mayo*, 566 U.S. at 77).

38. *Id.*; see also 2019 Guidelines, *supra* note 16, at 50–51.

39. *Benson*, 409 U.S. 63.

40. *Bilski v. Kappos*, 561 U.S. 593 (2010).

41. *Alice*, 573 U.S. 218.

issue today than clarifying our analysis for the judicial exceptions to § 101.

With a clear, predictable, and reliable patent system, I firmly believe that American inventors will continue to—as was said of Thomas Edison in 1877—“push[] the whole world ahead in its march to the highest civilization.”<sup>42</sup>

Thank you again for the opportunity to be with you here today.

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42. EDISON AND HIS INVENTIONS: INCLUDING THE MANY INCIDENTS, ANECDOTES AND INTERESTING PARTICULARS CONNECTED WITH THE EARLY AND LATE LIFE OF THE GREAT INVENTOR 20 (J.B. McClure ed., 1889).