



A UNIFIED PROPOSAL SUPERSEDING THE “IMPLICIT EXCEPTION” TO PATENT ELIGIBILITY
HARMONIZING THE ABA, IPO, AIPLA, AND BANBURY CONFERENCE INITIATIVES ON § 101 REFORM

The ABA IPL Section, IPO, AIPLA, and a group of patent experts at a recent Banbury Center Conference have tabled four different concepts for addressing the Supreme Court’s jurisprudence that imposes an “implicit exception” on subject matter eligible for patenting under 35 U.S.C. § 101. While the four approaches differ in various respects, each shares a common vision. Each would supersede the judicially imposed limitations on subject matter eligibility through new statutory provisions. The ABA IPL Section seeks to render claims patent ineligible that preempt every practical application of a natural/physical phenomenon or abstract idea. The IPO and AIPLA insist that ineligibility should instead be confined to inventions evidencing no human activity or inventions carried out entirely through human thought. The Banbury patent experts urge that patenting be limited to inventions contributing to a field of technology. The statutory text below is an effort to harmonize these four approaches into a unitary statutory framework, with the aim of seeking a broad consensus on a single legislative path forward:

(a) LIMITATIONS ON CLAIM CONSTRUCTION.—Strike section 112(f) and insert:

“(f) CLAIM CONSTRUCTION.—

“(1) NATURAL PRODUCTS AND PROCESSES AND OTHER PHENOMENA OF NATURE.—A claim that would otherwise cover subject matter that exists in nature independently of and prior to any human activity, irrespective of whether or not such subject matter was known to so exist prior to the effective filing date of the claimed invention, shall instead be construed to exclude coverage for all such naturally occurring subject matter.

“(2) MENTAL OR FUNCTIONAL STEPS.—A step in a claim to a process, which step could be construed to cover the performance of the step solely in the human mind, or recites a function without also reciting acts for carrying out the function and would otherwise cover every means for achieving the function, shall instead be construed to exclude coverage for performing the step mentally and to be limited to the corresponding acts described in the specification for carrying out the step and equivalents thereof.

“(3) FUNCTIONAL ELEMENTS IN COMBINATION CLAIMS.—An element in a claim to a combination of elements, other than in a claim to a process, which element recites a function without reciting the structures or materials for achieving the function and would otherwise cover every means for achieving the function, shall instead be construed to cover only the corresponding structures or materials described in the specification and equivalents thereof.

“(4) PREEMPTIVE CLAIMS.—A claim that, notwithstanding the limitations under paragraphs (1) through (3), would nonetheless be construed cover every useful application of a natural law or phenomenon or other abstract idea or concept shall instead be construed to cover only the specific means for implementing the idea or concept that are described in the specification and that otherwise meet each of the limitations in the claim.”

(b) RIGHT TO PATENT ELIGIBLE INVENTIONS.—Strike section 101 and insert:

“§ 101. Right to patent eligible inventions.

“Whoever invents a useful process, machine, manufacture, or composition of matter, or a useful improvement thereto, shall be entitled to a patent on such invention absent a finding that one or more conditions or requirements under this title have not been met. A claimed invention shall be regarded as being useful under this section only if the claimed invention makes a practical contribution to a field of technology.”



A PROPOSED SYNTHESIS OF LEADING PROPOSALS FOR SUPERSEDING THE “IMPLICIT EXCEPTION” TO PATENT ELIGIBILITY WITH NEW STATUTORY LIMITATIONS ON PATENTING¹

Introduction

Recent Federal Circuit decisions² underscore the complexity, subjectivity, unpredictability, and analytical futility of determining subject matter eligibility for patenting under recent Supreme Court precedents.³ Because these decisions reflect a judge-made standard that stands apart from the statutory requirements for patentability (*i.e.*, the court decisions are a judicially imposed “implicit exception” that is not dictated by the statute itself), the jurisprudence is amenable to being superseded through a full codification of the law of patent eligibility. Congress enacted just such a superseding codification in 1952, which mooted the judge-made “invention” requirement through 35 U.S.C. § 103’s statutory non-obviousness requirement.⁴

Over the past year, the ABA IPL Section, IPO, AIPLA, and a group of 18 Banbury Center Conference patent experts have proposed such a § 103-like superseding codification that would add new statutory limitations on patent eligibility, to be placed in 35 U.S.C. § 101.⁵ Under such proposals, the Supreme Court’s two-part test for determining the applicability of the “implicit exception” to patent eligibility would disappear and the new statutory limitations on the availability of valid patents would take their place.⁶ The ABA IPL Section has proposed a preemption-based bar to patent eligibility.⁷ The IPO eligibility resolution was silent on the issue

¹ Robert A. Armitage, Consultant, IP Strategy & Policy, Marco Island, FL 34145 (raarmitage@aol.com).

² See *Smart Systems Innovations, LLC v. Chicago Transit Authority*, App. No. 2016-1233 (October 18, 2017), See particularly the opinion of Judge Linn (dissenting). See also *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371 (Fed. Cir. 2015). See particularly the opinion of Judge Linn (concurring).

³ See *Bilski v. Kappos*, 130 S. Ct. 3218 (2010), *Mayo Collaborative v. Prometheus Labs.*, 132 S. Ct. 1289 (2012), *Ass’n for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107 (2013), and *Alice Corp. Pty. Ltd. v. CLS Bank Intern.*, 134 S. Ct. 2347 (2014).

⁴ In *Hotchkiss v. Greenwood*, 52 U.S. 248, 267 (1851), the Court held that the patent laws contained an implicit requirement that valid patent claims must be sufficiently inventive, in addition to meeting the then-existing statutory requirements. In enacting § 103 as part of the 1952 Patent Act, Congress superseded this implicit requirement with an explicit statutory requirement for non-obviousness; a valid patent cannot be granted if “the claimed invention as a whole would have been obvious.”

⁵ The current statutory requirement for subject matter eligibility is found in 35 U.S.C. § 101:

§ 101. Inventions patentable.

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.

⁶ The “two-part test” assesses first if a claimed invention is *directed to* a law/product of nature, natural/physical phenomenon, or an abstract idea or concept and, if so, then determines if the claimed invention adds *significantly more*, specifically some *inventive concept*. See *Alice* and *Mayo*, *supra*.

⁷ On March 7, 2017, the Council of the ABA IPL Section adopted the following resolution (emphasis supplied):

RESOLVED, that the American Bar Association Section of Intellectual Property Law supports, in principle, amendment of 35 U.S.C. § 101 to clarify that useful inventions as defined by each and every limitation of the claims of a patent satisfy the patent eligibility requirements of section 101 so long as the claims do not preempt the use by others of all practical applications of laws of nature, natural phenomena or abstract ideas, and to clarify that the determination



of whether preemptive claims would be patent ineligible and instead proposed that claims lacking in “human activity” or claims in which only “human thought” was required to carry out the claimed invention should be patent ineligible.⁸ The AIPLA eventually produced a resolution supporting an approach similar to the IPO proposal, but with some notable differences.⁹ Finally

of patent eligibility under Section 101 is independent of patentability under other sections of the patent statute.

FURTHER RESOLVED, the ABA-IPL Section supports, in principle, replacing in its entirety the current statutory language of 35 U.S.C. § 101 with language substantively consistent with the following:

“§ 101. Conditions for patentability: eligible subject matter.

“(a) ELIGIBLE SUBJECT MATTER.—Whoever invents or discovers any useful process, machine, manufacture, or composition of matter, or any useful improvement thereof, shall be entitled to obtain a patent on such invention or discovery, absent a finding that one or more conditions or requirements under this title have not been met.

“(b) EXCEPTION.—A claim for a useful process, machine, manufacture, or composition of matter, or any useful improvement thereof, may be denied eligibility under this section 101 on the ground that *the scope of the exclusive rights under such a claim would preempt the use by others of all practical applications of a law of nature, natural phenomenon, or abstract idea*. Patent eligibility under this section shall not be negated when a practical application of a law of nature, natural phenomenon, or abstract idea is the subject matter of the claims upon consideration of those claims as a whole, whereby each and every limitation of the claims shall be fully considered and none ignored. Eligibility under this section 101 shall not be negated based on considerations of patentability as defined in sections 102, 103 and 112, including whether the claims in whole or in part define an inventive concept.”

On March 27, 2017, the ABA IPL Section resolution was transmitted to Under Secretary Michelle Lee. See <http://patentdocs.typepad.com/files/letter-5.pdf>.

⁸ The Intellectual Property Owners Association proposed to limit patentability under an amended 35 U.S.C. § 101, adopting the following resolution for doing so (emphasis added):

RESOLVED, that IPO supports legislation to amend 35 U.S.C. § 101 as follows:

(a) ELIGIBLE SUBJECT MATTER—Whoever invents or discovers, and claims as an invention, any useful process, machine, manufacture, composition of matter, or any useful improvement thereto, shall be entitled to a patent for a claimed invention thereof, subject only to the exceptions, conditions, and requirements set forth in this Title.

(b) SOLE EXCEPTION TO SUBJECT MATTER ELIGIBILITY—A claimed invention is ineligible under subsection (a) if and only if the *claimed invention as a whole, as understood by a person having ordinary skill in the art to which the claimed invention pertains, exists in nature independently of and prior to any human activity, or exists solely in the human mind*.

(c) SOLE ELIGIBILITY STANDARD—The eligibility of a claimed invention under subsections (a) and (b) shall be determined without regard as to the requirements or conditions of sections 102, 103, and 112 of this Title, the manner in which the claimed invention was made or discovered, or the claimed invention’s inventive concept.

See https://www.ipo.org/index.php/daily_news/31-january-2017/.

⁹ Because the AIPLA proposal can be considered—at least to some extent—an *alter ego* of the IPO resolution, it is not addressed in detail herein. The text of the AIPLA effort can be found at: <http://www.aipla.org/resources2/reports/2017AIPLADirect/Documents/AIPLA%20Report%20on%20101%20Reform-5-19-17-Errata.pdf>.



the proposal by the patent experts from the Banbury Center Conference argued that patent eligibility should be constrained under § 101 only to the extent that a claimed invention failed to contribute to a field of technology.¹⁰

The four proposals from these four entities do not dispute the fundamental premise underlying Supreme Court jurisprudence, namely that valid patent protection should not exist to protect a law or product of nature, a natural or physical phenomenon, or an abstract idea or concept. However, in the same manner that Congress replaced the judge-made requirement for “invention” in 1952 with a statutory non-obviousness requirement, the position taken under each of the four proposals is that the Supreme Court’s *Mayo-Alice* two-part test must be replaced with a § 101-based eligibility limitation as outlined above, leaving no room for an implicit exception.

Since each of the four proposals would make different substantive changes to the patent statute, they stand as a potential obstacle, not an encouragement, to congressional action. If Congress were to ask the patent community today if there were a single legislative proposal that could be advanced as representing common ground—on which Congress could credibly begin a legislative process—the answer would be negative. Self-evidently, for a legislative campaign to move forward to enactment of a new law, these four approaches cannot forever remain as competing alternatives for Congress to consider.

¹⁰ See <https://www.uspto.gov/sites/default/files/documents/Updated%20Banbury%20Statement.pdf>. The Banbury Center Conference proposal was endorsed by a group of 18 IP professionals who attended a November 9-11, 2016 conference devoted to subject matter eligibility for patenting. The proposal that emerged from that conference concluded that the following measures should be taken to address issues of subject matter eligibility for patenting (emphasis in original):

1. Clarify that patent protection shall be available for inventions in all fields of *technology* and better conform U.S. patent law with internationally accepted norms of patentability. To this end, a number of participants recommended that Congress enact a substitute requirement limiting patent eligibility to technological inventions, *i.e.*, inventions contributing to the *technological arts*. Such a measure would codify the standard set out in the concurring opinion in *Kappos v. Bilski* and foster greater harmony between U.S. patent law and the patent law in Europe.
2. Enact a substitute, statutory eligibility standard that overrules the “implicit exception” and the two-part test used to implement it. The Court’s rationale for imposing a judicial exception fails to take full account of the collective effect of the set of statutory requirements that limit the availability of conceptual patents—the possibility that patents can either cover or preclude access to natural materials, laws, or phenomena. Maintaining a judicial exception is, therefore, unnecessary for any articulated constitutional or policy reason.
3. Exempt from patent infringement research uses of patented inventions where the exempted experimentation is limited to activities to better understand or improve the patented subject matter. Such an exemption should be limited and targeted in a manner that is consistent with the 2006 recommendation of the National Academies for doing so. This clarification that research performed on patented inventions is non-infringing would assure that no vestige remains of the Supreme Court’s justification for imposing a judicial eligibility exception.



The solution to this potential dilemma is by no means trivial. Each of these proposals was the product of a serious deliberative process that involved leading members of the IP community.

Anyone looking for a starting point for congressional intervention that would pick one proposal and disregard the others would immediately be confronted with the reality that the separate ABA IPL Section, IPO, and AIPLA § 101 initiatives each reflected truly prodigious, multi-year efforts within each of these organizations. The respective multi-year processes within each organization involved substantial task forces that were constituted with experienced patent practitioners, as well as academics. The task force work product in each case was ultimately adopted by the organization's governing body, the council of the ABA IPL Section and boards of directors of the IPO and AIPLA—composed in each case of senior and respected members of the IP community.

A similar observation can be made with respect to the seriousness of the fourth effort. Following a two-day patent-experts conference held on November 19-20, 2016 at the Banbury Center Conference in Cold Spring Harbor, New York, a group of 18 conference participants from around the world issued a paper outlining a possible legislative approach for defining patent-eligible subject matter. In general, the Banbury patent experts—like the individuals involved from the ABA, IPO, and AIPLA—included notable proponents of strong and effective patent laws.

Finally, while the Banbury patent experts adopted an approach that differed significantly from the work of the other three organizations, the approach urged by the Banbury patent experts was mentioned approvingly by at least some participants in the USPTO Roundtable 2 on patent eligibility.¹¹ In brief, no single approach at this juncture can be said to stand so much taller than the others that all but the one should recede from the policy debate.

Most importantly, however, serious and credible arguments have now been placed on the public record by these four entities, identifying various types of subject matter *for which individuals and organizations noted for being serious and credible advocates for a strong patent system* have urged should be excluded from patent protection. For any legislative effort that seeks a comprehensive codification superseding the “implicit exception” with explicit, statutory limitations on the reach of the U.S. patent system, the four extant proposals must be regarded as consensus limitations on what patents can legitimately protect—and, thus, must be aggregated into a synthetic whole for such a legislative effort to have any hope of being credible.

It appears to be inevitable, therefore, that any near-term legislative strategy for enticing action by Congress must give due regard to each of the four extant proposals and disregard none. If the necessary predicate to congressional action is for these four proposals to be melded together—to form the core of a unitary legislative effort to supersede the judicially imposed restrictions on the availability of enforceable patent rights through new statutory restrictions on

¹¹ See *Patent Eligible Subject Matter: Report on Views and Recommendations from the Public*, USPTO (July 2017), at https://www.uspto.gov/sites/default/files/documents/101-Report_FINAL.pdf, pp. 42-43; see footnote 385 at p. 42.



patent protection—then the important question is how best to construct such a mosaic. The discussion below offers a path forward for weaving these four approaches together in a single, Congress-ready statutory framework.

The Threshold Inquiry: The Choice of Mechanism for Limiting Patent Protection by Statute

Barring patent protection as proposed by the four entities could be accomplished through amendments to the patent statute that would take any one of several forms. While the Supreme Court has indicated that its “implicit exception” limiting patent protection is a patent eligibility-based constraint that represents an uncodified exception under § 101, there is no *a priori* requirement that a codification effort must operate to deny patent protection to certain types of subject matter *on eligibility grounds*—or specifically amend § 101 of the patent statute.

The same end could be accomplished, at least in part, through alternative means, such as amending 35 U.S.C. § 102 addressing the novelty requirement for patentability or 35 U.S.C. § 112(a) setting out the requirement for a sufficient disclosure in the patent specification. For example, the IPO’s “human activity” limitation on available protection could be cast as a § 102 patentability constraint. Notably, a claim directed to a natural product devoid of any human activity could be specifically barred from patenting under a § 102 amendment dealing with inherent anticipation—instead of being declared patent-ineligible subject matter under § 101. Similarly, the bar to a “preemptive” claim covering every means to achieving a useful end—as the ABA IPL Section has proposed to do—could be statutorily addressed under § 112(a) by declaring such claims to be non-enabled relative to the full scope of the protection being sought.

A third approach for denying patent protection through a statutory intervention could take the form of a claim construction limitation—rather than a patentability limitation—for doing so. Congress elected to use this type of limitation on patent protection in crafting the 1952 Patent Act. It enacted what is now 35 U.S.C. § 112(f) in order to respond to the Supreme Court’s *Halliburton v. Walker* holding.¹²

35 U.S.C. § 112(f) effectively superseded the Supreme Court’s invalidity holding in *Halliburton* by mooted the cited ground for invalidity through a claim construction limitation on so-called “means-plus-function” claims. Its statutory claim construction rule must be applied to each element in a claim to a combination of elements that would otherwise be construed as limited only to a function without reciting the structure, material, or acts for performing the function.

Under § 112(f), the type of claim that Supreme Court found invalid in *Halliburton* (*i.e.*, a claim to a combination of elements with an element of the claim expressed in this means-plus-function manner) could henceforth be construed in a sufficiently narrow manner that the Supreme Court’s holding of invalidity would be inapplicable. Specifically, under § 112(f), Walker’s otherwise invalid claim *would have been limited to the corresponding means for performing the function set out in the Walker specification*, as well as any equivalent means.

¹² *Halliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1 (1946).



The congressional approach in 1952 for redressing the Supreme Court’s jurisprudence in *Halliburton* has a clear applicability to recent Supreme Court decisions imposing the *Mayo/Alice* two-part test for defining the “implicit exception” to the subject matter that can be regarded as eligible for patenting under 35 U.S.C. § 101. The Supreme Court holdings establishing the “implicit exception” could be mooted—as well as the two-part test implementing them—were Congress to take the step of enacting a set of comprehensive § 112(f)-like limitations on claim construction, *i.e.*, so that the claim construction limitations on patent protection barred coverage for a law/product of nature, natural/physical phenomenon, or abstract idea or other such concept.

As will be detailed below, the ABA IPL Section, IPO, and AIPLA proposals are ideally suited to codification as claim construction limitations in preference to either subject matter eligibility or other patentability limitations. In contrast, the proposal of the Banbury patent experts is amenable to codification as a patentability limitation on the subject matter that can be regarded as patentably useful, based on making a practical contribution to a field of technology.

Codification of the IPO and AIPLA Proposals: New Claim Construction Limitations

As noted above, the IPO proposed a pair of new statutory grounds on which subject matter could be denied patent protection, *i.e.*, the *human activity* and *human mind* limitations. Taking on the IPO’s proposed “human activity” limitation first, if claimed subject matter fails to reflect any human activity that has altered what otherwise would be a natural product or process, IPO urged that the claimed invention should be patent-ineligible.

This *human activity* limitation, although expressed by the IPO as a proposed § 101 eligibility bar to patenting duplicates—or at a minimum overlaps with—another long-recognized bar to patentability under current law. In *Peters v. Active Mfg. Co.*,¹³ the Supreme Court confirmed the existence of an inherent limitation on inventions that could be considered novel—which includes a natural law, product, or phenomena—under the doctrine of “inherent anticipation. The *Peters* doctrine provides: “That which infringes, if later, would anticipate, if earlier.”¹⁴ For the purpose of applying this doctrine, it matters not whether the natural law/product/ phenomena is newly discovered by the inventor or was long known to exist.¹⁵

The potential overlap between the IPO proposal and existing § 102 novelty requirements suggests looking to a more workable alternative to what could prove to be an esoteric effort to amend § 102 to expressly bar patenting for subject matter that may already be inherently unpatentable under § 102. The *Halliburton* codification effort from 1952 may provide such a model. If Congress were willing to act to define by statute how an otherwise invalid claim could be salvaged as valid—as the Walker claim would have been under § 112(f)—the straightforward

¹³ *Peters v. Active Mfg. Co.*, 129 US 530, 537 (1889).

¹⁴ The above rubric has been restated by the Federal Circuit as “[t]hat which would literally infringe if later in time anticipates if earlier than the date of [the patent filing].” *Lewmar Marine, Inc. v. Bariant, Inc.*, 827 F.2d 744, 747 (Fed. Cir. 1987).

¹⁵ See *Schering Corp. v. Geneva Pharmaceuticals*, 339 F 3d 1373, 1377 (Fed. Cir. 2003), “recognition by a person of ordinary skill in the art ... is not required to show anticipation by inherency.”



route for doing so would be to limit the subject matter covered by an otherwise invalid claim to subject matter that might be valid under the patent statute.

The foregoing, therefore, suggests that the “human activity” limitation on patent protection that was proposed by IPO should be accomplished in a statutory codification that is not based upon subject matter eligibility or some other patentability limitation, but on a new limitation on claim construction. Under such an approach to codification, a properly construed claim would be limited such that it could not cover a law or product of nature or any natural or physical phenomenon. Inspired by § 112(f) under the 1952 Patent Act, and the text developed by the IPO in its proposal, such a new statutory claim construction limitation might read:

NATURAL PRODUCTS AND PROCESSES AND OTHER PHENOMENA OF NATURE.—A claim that would otherwise cover subject matter that exists in nature independently of and prior to any human activity, irrespective of whether or not such subject matter was known to so exist prior to the effective filing date of the claimed invention, shall instead be construed to exclude coverage for all such naturally occurring subject matter.

A similar path exists for codification of IPO’s “human mind” limitation. Although it has been widely seen as a somewhat odd formulation for a statutory limit on patent eligibility, IPO has nonetheless squarely raised a very important issue relating to the availability of patent protection for subject matter that is, at its heart, *metaphysical* in character. While IPO’s proposal only addresses the more narrow issue of barring protection for entirely mental processes, it opens the door to discussing the broader question of the status that should be accorded to “mental steps” more generally in process claims. Among the questions that deserve a careful vetting and a clear answer: *To what extent should the content of human thought be a relevant element of proof to establish that a claim of a patent has been infringed? Should patent protection made available through process claims be confined to non-mental steps, thereby assuring that patent rights can never constrain the thought process of a human being?*

For a claimed invention that could be performed entirely in the human mind, it is at least arguable that a claim to such an invention would fail the § 112(a) disclosure test for patentability. *How can the words in a patent specification possibly both describe and enable every mental means, taking place solely in the human mind, for carrying out the entirely mental invention?* Moreover, if an entirely mental process fails to pass muster under § 112(a), then a process containing one or more steps expressed in terms broadly enough to be carried out mentally would appear to have an identical § 112(a) defect—since sufficiency of disclosure is tested against the full scope of the protection being sought and applies step by step to a process.

Any effort at codification based on the IPO proposal should first address the seminal question of whether patent protection should be unavailable if an individual step of a process claim has been drafted broadly enough to include performance of the step solely in the human mind, *e.g.*, based on non-enablement or other invalidity grounds. Thus far, at least, the Federal Circuit appears to regard claims with “mental steps” as simply patent eligible claims unless the



claim as a whole is to an entirely mental process.¹⁶—with such claims not being subject to the limitations on claim construction under existing § 112(f). If the Federal Circuit’s view is correct, it could mean that a process that was patent-ineligible as an entirely mental process could be revived as patent-eligible by doing nothing more than adding some trivial and conventional step—such a conventional step of “recording” the result of the entirely mental process.

Depending of the answer to the above question, the soundest policy path forward for codification of the “human mind” proposal may be through a limitation on patenting of processes to those with non-mental, physical steps, thereby taking any machinations of the human mind entirely out of the calculus used to determine if a patent claim has been infringed. If so, claims drafted with steps that might be performed by doing nothing more than *thinking* could be confined—through new statutory provisions on claim construction—to the types of physical “acts” to which longstanding Supreme Court precedents suggest that a valid patent claim must be limited: “A process is a mode of treatment of certain materials to produce a given result. It is an *act*, or a *series of acts*, performed upon the subject-matter to be transformed and reduced to a different state or thing.”¹⁷ The *act* or *acts* constituting a “process” under the patent law should, therefore, be of a like non-metaphysical nature, as are the remaining statutory categories.¹⁸

By their nature, claim steps drafted in terms general enough to be capable of being performed by mere thinking might be regarded as sufficiently conceptual/functional in character that the claim may be invalid by analogy to *Halliburton*, absent the applicability of the limitation in existing § 112(f) to limit their construction to non-mental means (*i.e.*, “acts”) for performing such a step. If so, Congress could be justified in specifically cabining the reach of mental steps in patent claims in a manner analogous to § 112(f)’s existing limitation for functional steps to “acts” given the absence of any viable precedents indicating that existing § 112(f) does so.

Finally, under existing § 112(f), multi-step process claims that set out a “step for” performing a particular function without also reciting the “acts” for carrying out the step are to be construed to cover only the “acts” set out in the patent specification for performing the steps of the claim. While § 112(f) covers only multi-step process claims, *i.e.*, combination claims, there is no conceivable policy reason to limit the existing § 112(f) cabining of process claims with steps stated in such functional terms solely to multi-step processes.

This suggests that any addition to using a § 112(f) approach to address the issue of mental processes, a new § 112(f)-like provision should more generally address all process claims limited

¹⁶ See *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F. 3d 1366, 1373 (Fed. Cir. 2011), “Methods which can be performed entirely in the human mind are unpatentable not because there is anything wrong with claiming mental method steps as part of a process containing non-mental steps, but rather because ... methods which can be performed *entirely* in the human mind are the types of methods that embody the ‘basic tools of scientific and technological work’ that are free to all men and reserved exclusively to none.” [Emphasis in original.]

¹⁷ *Cochrane v. Deener*, 94 U.S. at 788.

¹⁸ “The process requires that certain things should be done with certain substances, and in a certain order ...” *Cochrane v. Deener*, 94 U.S. at 788. See also *Tilghman v. Proctor*, 102 U.S. 707, 728 (1881), “A machine is a thing. A process is an *act*, or a *mode of acting*. The one is visible to the eye,— an object of perpetual observation. The other is a conception of the mind, *seen only by its effects* when being *executed or performed*.” [Emphasis added.]



only by functionally expressed steps, irrespective of whether or not the process claims are of a “combination” (*i.e.*, multi-step) character. To this end, the following statutory provision on *claim construction* would assure that the “mental” subject matter IPO would bar from patenting on eligibility grounds would be removed from the scope of protection under a process patent on claim construction grounds—as well as maintain and further amplify the existing provision of § 112(f) addressing functionally defined process steps:

MENTAL OR FUNCTIONAL STEPS.—A step in a claim to a process, which step could be construed to cover the performance of the step solely in the human mind, or recites a function without also reciting acts for carrying out the function and would otherwise cover every means for achieving the function, shall instead be construed to exclude coverage for performing the step mentally and to be limited to the corresponding acts described in the specification for carrying out the step and equivalents thereof.

If the issue of functionally defined process steps were to be addressed in a separate paragraph of § 112(f), as above, that did not deal with machines, manufactures, and compositions of matter claimed with functionally defined elements, then existing § 112(f) would need to be redrafted to set out the claim construction limitations for non-process claims. Redrafting existing § 112(f) for such product claims would then afford Congress the opportunity to address problematic aspects of the current jurisprudence implementing § 112(f) that imposes unneeded presumptions as to the applicability of existing § 112(f) to a particular claim.

A claim element under current § 112(f) is *presumed* to be subject to § 112(f)’s claim construction limitation if the claim element recites the word “means” together with functional language. However, this presumption *can be overcome* if the claim element then recites further structure necessary to perform the stated function.¹⁹ On the other hand, absent literally reciting the word “means” in the claim element, a *rebuttable presumption* is created that § 112(f) is inapplicable. However, this rebuttable presumption can then be *overcome* whenever “the claim term fails to ‘recite sufficiently definite structure’ or else recites ‘function without reciting sufficient structure for performing that function.’”²⁰

Given that the justification for the presumption lies judicial holdings that the word “means” as used in current § 112(f) was intended by Congress to have a presumptive significance if repeated—or not—verbatim in a claim, a redrafted § 112(f) could streamline the current, presumption-laden § 112(f) analysis of a claim element by simply forcing that the claim be construed *in a presumption-free manner* and letting the resulting claim construction determine whether the claim must be construed in the § 112-limited manner based on its functional character. New § 112(f) language to accomplish this end could take the following form:

¹⁹ See *TriMed, Inc. v. Stryker Corp.*, 514 F.3d 1256, 1259-60 (Fed. Cir. 2008), “Sufficient structure exists when the claim language specifies the exact structure that performs the function in question without need to resort to other portions of the specification or extrinsic evidence for an adequate understanding of the structure.”

²⁰ *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc) (quoting *Watts v. XL Systems, Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)).



FUNCTIONAL ELEMENTS IN COMBINATION CLAIMS.—An element in a claim to a combination of elements, other than a claim to a process, which element recites a function without reciting the structures or materials for achieving the function and would otherwise cover every means for achieving the function, shall instead be construed to cover only the corresponding structures or materials described in the specification and equivalents thereof.

Codification of the ABA IPL Section Proposal: A New Claim Construction Limitation

As noted above, the ABA IPL Section resolution addresses the issue of patent ineligibility when the claim as a whole is *preemptive* of a concept, *i.e.*, a natural law or phenomenon or abstract idea or concept otherwise. The ABA IPL Section resolution can be thought of as applying the invalidity ground in *Halliburton* relating to overly broad functional elements in combination claims to any *preemptively broad claim, when considered as a whole*. The parallels between functional and preemptive claiming suggest a potential ease in crafting a § 112(f)-type preemption limitation using existing § 112(f) as its drafting model.

In particular, given the other claim construction limitations set out above, a new ABA IPL Section-inspired § 112(f) “preemption” limitation could apply in situations where the other new § 112(f) claim construction limitations above failed to eliminate the possibility for preemption. Such a situation might arise for any claim construed as a “single means” claim.²¹

To this end, 35 U.S.C. § 112(f) could be amended to additionally include the following paragraph:

PREEMPTIVE CLAIMS.—A claim that, notwithstanding the limitations under the above paragraphs, would nonetheless be construed cover every useful application of a natural law or phenomenon or other abstract idea or concept shall instead be construed to cover only the specific means for implementing the idea or concept that are described in the specification and that otherwise meet each of the limitations in the claim.

This alternative to the ABA IPL Section § 101 eligibility resolution—as is the case with existing provision in § 112(f)—would have the advantage of preserving the validity of a claim that otherwise would have extended protection so expansively as to run afoul of longstanding

²¹ The Massachusetts District Court in *Amgen v. Chugai*, 13 USPQ2d 1737, 1774 (DC Mass. 1989) offered a definition of a “single means” claim:

A “single means claim” is a claim drafted in “means-plus-function” format yet reciting only a single element instead of a combination. *In re Hyatt*, 708 F.2d 712, 713 (Fed. Cir. 1983). Paragraph six of §112 sanctions the use of the means-plus-function format for combination claims only. *Id.* See generally *O’Reilly v. Morse*, 56 U.S. 62, 112-113 (1854); *General Elec. Co. v. Wabash Appl. Corp.*, 304 U.S. 364, 371 (1938) (“A patentee may not broaden his product claims by describing the product in terms of function.”).



“insufficiency of disclosure” principles, *e.g.*, as is the case with the § 112(a) invalidity of “single-means” claims.²² Specifically, claims of this type that would otherwise impermissibly extend to all useful (*i.e.*, practical) applications of a concept are in effect cut down to a “valid” size—just as existing § 112(f) does for combination claim elements defined functionally.

A New 35 U.S.C. § 112(f) Addressing the “Implicit Exception” Through Claim Construction

With new claim construction language used to statutorily address the human mind/human activity limitations, as well as preemptive claims, the existing text of 35 U.S.C. § 112(f)²³ could be expanded by combining the four separate paragraphs detailed above into a comprehensive statutory provision on claim construction that addresses each of the new statutory limits on patenting proposed by the ABA IPL Section, IPO, and AIPLA. In its complete form, such a new § 112(f) would read:

(f) CLAIM CONSTRUCTION.—

(1) NATURAL PRODUCTS AND PROCESSES AND OTHER PHENOMENA OF NATURE.—A claim that would otherwise cover subject matter that exists in nature independently of and prior to any human activity, irrespective of whether or not such subject matter was known to so exist prior to the effective filing date of the claimed invention, shall instead be construed to exclude coverage for all such naturally occurring subject matter.

(2) MENTAL OR FUNCTIONAL STEPS.—A step in a claim to a process, which step could be construed to cover the performance of the step solely in the human mind, or recites a function without also reciting acts for carrying out the function and would otherwise cover every means for achieving the function, shall instead be construed to exclude coverage for performing the step mentally and to be limited to the corresponding acts described in the specification for carrying out the step and equivalents thereof.

(3) FUNCTIONAL ELEMENTS IN COMBINATION CLAIMS.—An element in a claim to a combination of elements, other than in a claim to a process, which element recites a function without reciting the structures or materials for achieving the function and would otherwise cover every means for achieving the function, shall instead be construed to cover only the corresponding

²² See *In re Hyatt*, 708 F. 2d 712, 714 (Fed. Cir. 1983), “The long-recognized problem with a single means claim is that it covers every conceivable means for achieving the stated result, while the specification discloses at most only those means known to the inventor. See *O’Reilly v. Morse*, 56 U.S. 62, 112, (1853). Thus, the claim is properly rejected for what used to be known as ‘undue breadth,’ but has since been appreciated as being, more accurately, based on the first paragraph of § 112.”

²³ The existing statutory text reads:

(f) ELEMENT IN CLAIM FOR A COMBINATION.—An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.



structures or materials described in the specification and equivalents thereof.

(4) PREEMPTIVE CLAIMS.—A claim that, notwithstanding the limitations under paragraphs (1) through (3), would nonetheless be construed cover every useful application of a natural law or phenomenon or other abstract idea or concept shall instead be construed to cover only the specific means for implementing the idea or concept that are described in the specification and that otherwise meet each of the limitations in the claim.

The upshot of the foregoing set of claim construction provisions is two-fold. First, it fully addresses all the issues of patent protection that the ABA IPL Section, IPO, and AIPLA collectively proposed be addressed as patent eligibility bars. The subject matter that these organizations would bar from patenting on eligibility grounds would be efficiently excluded from patent protection as a matter of claim construction, thereby potentially preserving the patentability of the claims so construed.

Second, and most importantly, any possible justification for the Supreme Court’s “implicit exception” to eligibility for patenting under 35 U.S.C. § 101 would be obviated under these new statutory limitations on claim construction. Natural products, processes, laws, and phenomena would be excluded from the scope of patent protection by explicit statutory limitations on what a patent claim might be construed to cover. Similarly, patents could not extend to protect any abstract idea or other concept. The final limitation on presumptive claims would assure claims that might otherwise preempt all practical applications of a concept would be strictly limited to the means described in the patent for implementing the concept. There would remain no possibility that a patent’s protection would extend to cover—or otherwise preclude access to—the basic tools of science and technology.²⁴

Amending 35 U.S.C. § 101 to Conform to the 35 U.S.C. § 112(f) Codification

To further cement this statutory codification and most assuredly moot the judicially imposed “implicit exception” to patent eligibility, existing § 101 could be amended to reflect that

²⁴ As proposed in the Banbury Center Conference statement discussed below, Congress should enact a “research use” exemption to infringement as a further means to this end. The proposed statutory provision for doing so follows (almost verbatim) the National Academies’ recommendation in this respect (see *Reaping the Benefits of Genomic and Proteomic Research: Intellectual Property Rights, Innovation, and Public Health*, <http://www.nap.edu/catalog/11487.html>). It would add a new subsection (j) to 35 U.S.C. § 271:

- (j) EXPERIMENTAL USES OF CLAIMED INVENTIONS.—Notwithstanding subsections (a) and (g), it shall not be an act of infringement to make or use a claimed invention for experimental purposes to discern or discover
- (1) the validity or scope of protection of a patent for the claimed invention;
 - (2) any feature, property, characteristic, advantage, or disadvantage of the claimed invention;
 - (3) any method of making or using the claimed invention;
 - (4) any alternative to, improvement to, or substitute for the claimed invention.



patentability is now exclusively defined through statutorily explicit requirements for patentability. Instead of providing that a patent *may be obtained* subject to the statutory conditions and requirements, an amended § 101 can—and should reflect—the inventor’s right to a patent if such conditions have been met:

Whoever invents a useful process, machine, manufacture, or composition of matter, or a useful improvement thereto, shall be entitled to a patent on such invention absent a finding that one or more conditions or requirements under this title have not been met.

The above text would incorporate into § 101 the same statutory “right to patent” principle that was originally present in § 102’s preamble,²⁵ as enacted under the 1952 Patent Act. Under the 1952 Patent Act, § 102 provided that an inventor has a right to a patent absent some finding that one or more of the conditions and requirements for patentability has not been met. This is best illustrated in the text of now-repealed § 102(f) of the 1952 Patent Act that obligated the United States Patent and Trademark Office to allow a patent to be granted to an inventor on an inventor’s claimed invention.²⁶ Since the enactment of the Leahy-Smith America Invents Act in 2011, there has been no cogent provision in the patent statute providing the inventor the same categorical right to patent formerly appearing in the pre-AIA § 102(f).²⁷ The above text of § 101 would remedy this drafting deficiency in the AIA.²⁸

Codification in 35 U.S.C. § 101 of the Banbury “Contribution to a Field of Technology” Test

To implement the recommendations in the statement of the Banbury Center Conference patent experts in a manner to provide the utmost in clarity for any new statutory framework under amended § 101, it would be optimal if any new statutory language were to clarify that the patent laws are limited to protecting inventions with *the appropriate quantum of usefulness*. In this regard, Supreme Court and Federal Circuit precedents have limited patentable inventions to those evidencing a *practical use*.²⁹

²⁵ Under § 102(f) enacted under the 1952 Patent Act, “A person shall be entitled to a patent unless ... he did not himself invent the subject matter sought to be patented”

²⁶ *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984) and *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992), “If examination at the initial stage does not produce a prima facie case of unpatentability, then without more the applicant is entitled to grant of the patent.”

²⁷ Specifically, in rewriting § 102 as an entirely new provision of title 35, the AIA left the opening clause of subsection (a) of this section unchanged from the text of § 102 as enacted under the 1952 Patent Act. However, under the AIA, each of the loss of right to patent provisions were removed from § 102, including § 102(f). As a result, the current opening clause of § 102(a) has no readily apparent purpose and affords no predicate—including appropriate antecedents—for the substantive text that follows.

²⁸ The amended § 101 set out above allows a conforming and correcting amendment to be made to § 102(a) that aligns its preamble with that of § 103, namely “A patent for a claimed invention may not be obtained if—”. This more apt preamble for § 102(a) provides the necessary antecedent—now missing from § 102(a)’s chapeaux—for the term “claimed invention.”

²⁹ The requirement for a practical use has been extensively developed by the Federal Circuit. See *In re Fisher*, 421 F.3d 1365 (Fed. Cir. 2005), which followed the Supreme Court precedent in *Brenner v. Manson*, 383 U.S. 519 (1966). The Federal Circuit has held that the utility that must specific, practical, and substantial, but with the terms “practical” and “substantial” being considered synonymous. 421 F.3d at 1371, including footnote 4, “this court considered the phrase ‘practical utility’ to be synonymous with the phrase ‘substantial utility.’”



Marrying these utility-related legal precedents with the Banbury Center Conference’s proposal, a full codification of the “usefulness” requirement for patentability should provide that a claimed invention can be regarded as being useful under the patent statute only if it makes *a practical contribution to a field of technology*. Incorporating into § 101 of the reference in the recommendations of the Banbury Center Conference patent experts to a *field of technology* is appropriate both for consonance with international treaty obligations of the United States and for constitutional reasons.

Any restrictions on patenting in the United States—whether limitations on subject matter eligibility, patentability otherwise, or claim construction—should be consistent with the “patent availability” criteria under the TRIPS agreement.³⁰ TRIPS requires availability of patents in all *fields of technology*, without limitation or restriction. Placing a reference in § 101 to practical contributions to a *field of technology* should provide additional assurance that the scope of the U.S. patent system is coextensive with the U.S. treaty obligations under TRIPS.

The reference to *field of technology* should also assure constitutionality—given that Congress has the power under the U.S. Constitution to secure protection for inventors under Article I, Section 8, Clause 8 only for the purpose of promoting progress in the useful arts.³¹ In this regard, “[n]umerous scholars have suggested that the term ‘useful arts’ was widely understood to encompass the fields that we would now describe as relating to technology or ‘technological arts.’”³² In addition, the text of various Federal Circuit opinions have suggested that patent-eligible inventions must have a technological character.³³ This additional statutory specificity could best take the form of a second sentence (*italicized below*) added to the text for § 101 proposed above:

§ 101. Right to patent eligible inventions.

Whoever invents a useful process, machine, manufacture, or composition of matter, or a useful improvement thereto, shall be entitled to a patent on such invention absent a finding that one or more conditions or requirements under this title have not been met.

³⁰ See Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, THE LEGAL TEXTS: THE RESULTS OF THE URUGUAY ROUND OF MULTILATERAL TRADE NEGOTIATIONS 320 (1999), 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994), hereinafter the TRIPS Agreement, Article 27.1: “[P]atents shall be available for any inventions, whether products or processes, *in all fields of technology*, ...patents shall be available and patent rights enjoyable *without discrimination as to ... the field of technology*,” (Emphasis added).

³¹ Article I, Section 8, Clause 8, of the U.S. Constitution, Congress is permitted to act “To promote the Progress of ... useful Arts, by securing for limited Times to ... Inventors the exclusive Right to their respective ... Discoveries....”

³² *Bilski v. Kappos*, 130 S. Ct. 3218, 3244 (2010), J. Stevens, concurring.

³³ “*Alice Corporation v. CLS Bank International*, 134 S.Ct. 2347, 2356-59 (2014), for all intents and purposes, set out a technological arts test for patent eligibility. Because the purported inventive concept in [the adjudicated] asserted claims is an entrepreneurial rather than a technological one, they fall outside section 101.” Judge Mayer, concurring, *Ultramercial, Inc. v. HULU, LLC*, 772 F. 3d 709, 717 (Fed. Cir. 2014). “*Alice* articulated a technological arts test for patent eligibility. 134 S.Ct. at 2359 (explaining that the claimed method fell outside section 101 because it did not ‘improve the functioning of the computer itself’ or ‘effect an improvement in any other technology or technical field’).” Judge Mayer, dissenting, *DdR Holdings, LLC v. Hotels. Com, LP*, 773 F. 3d 1245, 1265 (Fed. Cir. 2014).



A claimed invention shall be regarded as being useful under this title only if it makes a practical contribution to a field of technology.

The inclusion of such a *field of technology* limitation in § 101 should further contribute to reaching the political consensus needed for any successful legislative effort to supersede Supreme Court precedent with a new statutory provision. As noted above, the final report of the United States Patent and Trademark Office following its Roundtable 2 on Patent Eligibility indicates at least some support for such a codification.

Conclusions

The efforts of the ABA IPL Section, IPO, and AIPLA on patent eligibility have provided the opportunity for a constructive dialogue on how best to amend the patent statute to address recent Supreme Court decisions on patent eligibility. While efforts thus far have been focused on amending § 101 of the patent statute, new § 101 eligibility limitations are neither the sole—nor necessarily the preferred—mechanism for codification of such patent-limiting principles. The response by Congress to the 1946 *Halliburton* decision—in enacting what is now § 112(f) of the patent statute—offers a potentially superior approach to codification. Just as § 112(f) was designed to moot the Supreme Court’s *Halliburton* decision as a ground for invalidating patents, an expanded § 112(f) could moot the Supreme Court’s “implicit exception” jurisprudence.

Through concise statutory language using existing § 112(f) as a model, a new claim construction provision could categorically bar patent protection for any law/product of nature, natural/physical phenomenon, or abstract idea or other concept—leaving no remaining rationale for a judicially imposed “implicit exception” that would render subject matter of this ilk patent ineligible. Contemporaneously with the enactment of such a § 112(f)-like remediation, Congress has the opportunity to more fully embed the constitutional foundation of the patent system into the Patent Act. It could do so by adding to § 101 a provision explaining the nature of inventions that can promote progress in the useful arts based on their practical usefulness. Self-evidently, promoting progress in the useful arts exists whenever a claimed invention *makes a practical contribution to a field of technology*.

For the above synthesis of competing proposals to become law, it must survive intense vetting. Any action to amend a statute is fraught with the potential for producing unintended consequences and for failing to achieve its intended ones. The above proposal, however, was designed in a manner to eliminate any realistic possibility for the latter and minimize the likelihood of the former. Also, any change to U.S. patent laws has the potential to move the U.S. patent system away from international norms, making it more difficult for inventors to have common, predictable and effective strategies for securing global patent protection. The above proposal was designed with features that recognize, rather than refute, international norms for patenting, albeit in the context of the constitutionally limited authorization given to Congress to write the domestic patent laws. Lastly, any action by Congress addressing an area of great controversy must be done mindful of the need for it to be recognized and accepted as both principled and palatable to a wide spectrum of diverse interests. The present proposal was conceived with the ambitious purpose that it might be acceptable to all and disdained by none.