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Adapting Alice: How to Formulate a Repeatable Test Based on Alice v. CLS Bank

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ADAPTING ALICE: HOW TO FORMULATE A REPEATABLE
TEST BASED ON *ALICE V. CLS BANK*

KELLY FERMOYLE[†]

I. Introduction	203
ii. Historical development.....	204
A. <i>In re Abrams</i> : point of novelty	205
B. Strengths and weaknesses of the point-of-novelty test.....	207
C. <i>Parker v. Flook</i>	208
D. <i>Diamond v. Diehr</i>	211
iii. Current state of the law: <i>Mayo</i> and <i>Alice</i>	213
A. <i>Mayo v. Prometheus</i>	213
B. <i>Alice v. Cls bank</i>	216
IV. How the federal circuit can adapt the <i>Alice</i> test	221
A. Objective of the <i>Alice</i> test	221
B. How to square <i>Diehr</i> with <i>Alice</i>	224
C. Why the <i>Alice</i> test is flexible.....	226
D. Proposed adaption of <i>Alice</i>	228
V. Analysis of adapted test	234
A. <i>In re Abrams</i>	235
B. <i>Parker v. Flook</i>	235

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C. Diamond v. Diehr236
D. Mayo v. Prometheus236
E. Alice v. Cls bank237
Vi. Conclusion238

I. INTRODUCTION

The Supreme Court's recent decision in *Alice Corp. v. CLS Bank International*¹ has received significant criticism.² Though the outcome the Court reached may be reasonable, the “framework” that the Court uses fails to guide future inquiries of fringe patents such as the claim in *Alice*. The test, originally created in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*,³ essentially determines subject matter eligibility by first determining whether a claim is not subject-matter eligible, and, if it is not, then by determining if it actually is eligible.⁴ That description may be a slight embellishment, but nevertheless, the guidance the test gives for future disputes is minimal.

Subject matter eligibility is broadly defined in 35 U.S.C. § 101 as “any new or useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.”⁵ The Court has created implicit exceptions, found

¹ 134 S. Ct. 2347 (2014).

² See, e.g., *McRO, Inc. v. Valve Corp.*, No. SACV 13–1874–GW(FFMx), 2014 WL 4772200, at *5 (C.D. Cal. Sept. 22, 2014) (comparing the *Alice* test to Justice Stewart’s infamous phrase: “I know it when I see it”); *Eclipse IP, LLC v. McKinley Equip. Corp.*, No. SACV 14–742–GW(AJWx), 2014 WL 4407592, at *3 (C.D. Cal. Sep. 4, 2014); Richard Lloyd, *Alice Decision Makes Software Innovation Landscape Bleaker, Rader Claims*, IAM Blog (Sep. 01, 2014), <http://www.iam-magazine.com/Blog/Detail.aspx?g=32997d05-6cd8-49d9-af8d-4a4888a4fcf2> (quoting former Federal Circuit chief judge Rader, referring to *Mayo* and its application to *Alice*: “It causes me great pain to recognise the worst case in patent law history doesn’t come out of India or Pakistan or Vietnam or China even, it comes from the United States as recently as a few years ago.”).

³ 132 S. Ct. 1289 (2012).

⁴ *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 132 S. Ct. at 1294) (“First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts . . . [S]tep two of this analysis [is] a search for an ‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’”).

⁵ 35 U.S.C. § 101 (2012).

nowhere in the statute, for “laws of nature, natural phenomena, and abstract ideas.”⁶ Since patent claims are composed of elements,⁷ some of which may fall within the implicit exceptions while others may not, a claim that is part statutory and part non-statutory can be difficult to characterize. These claims are a hybrid mixture of statutory and non-statutory elements.⁸ Much of the recent debate about the scope of § 101 involves these hybrid claims.⁹ This article proposes a test to procedurally determine the patentability of a hybrid claim.

This article proceeds as follows. Part II describes the historical development of the law handling hybrid patent claims. Part III explains the current test as created in *Mayo* and *Alice*. Part IV argues that the current test is ambiguous, but also flexible and amenable to a proposed adapted test. In Part V, this article concludes that courts could use the proposed test in determining patentability of difficult hybrid patent claims.

II. HISTORICAL DEVELOPMENT

Since “[a]t some level, ‘all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas,’”¹⁰ examples of hybrid claims that consist of both statutory and non-statutory elements could likely be found throughout the

⁶ *Mayo*, 132 S. Ct. at 1293 (quoting *Diamond v. Diehr*, 450 U.S. 175, 185 (1981)).

⁷ See generally MICHAEL D. SCOTT, SCOTT ON MULTIMEDIA LAW § 8.03 (3d ed. 2014).

⁸ See *Ex parte Lyell*, No. 89-0461, 1990 WL 354583, at *3 (B.P.A.I. Apr. 9, 1990) (“We however do recognize that certain types of claims which appear to be ‘hybrid’ are permitted in U.S. patent practice.”). For a detailed discussion of hybrid claims, see 1 R. CARL MOY, MOY’S WALKER ON PATENTS §§ 5:65–85 (4th ed. 2013).

⁹ See, e.g., *Alice*, 134 S. Ct. at 2354; *Mayo*, 132 S. Ct. at 1293; *Bilski v. Kappos*, 561 U.S. 593, 597–99 (2010); Jacob S. Sherkow, *The Natural Complexity of Patent Eligibility*, 99 IOWA L. REV. 1137, 1139 (2014).

¹⁰ *Alice*, 134 S. Ct. at 2354 (2014) (quoting *Mayo*, 132 S. Ct. at 1289 (2012)).

patent system's history.¹¹ Formal discussion on this topic began in the early 1950s with the judiciary responding to these types of claims by creating the “point-of-novelty” test.¹² This section will explain this test and then examine the later cases of *Parker v. Flook* and *Diamond v. Diehr* and the conflict of law that began to build.¹³

A. In re Abrams: Point of Novelty

The United States Court of Customs and Patent Appeals (CCPA), the predecessor to the Federal Circuit, issued the clearest opinion articulating the point-of-novelty test. *In re Abrams*¹⁴ involved claims “for Petroleum Prospecting Method.”¹⁵ In this case, the non-statutory elements of the claim were objected to as “purely mental in character.”¹⁶ The illustrative claim four recites “a method of prospecting for petroliferous deposits” with six steps; the court determined the last three were “mental steps.”¹⁷ The first three steps were determined to be statutory elements: “*sinking* a number of boreholes,” “*sealing* off each said boreholes from the atmosphere,” and “*reducing* the pressure.”¹⁸ The three mental steps involved “*measuring* the rate of pressure rise,” “*determining* the rate . . . at a standard reference,” and “*comparing* the rates . . . to detect anomalies.”¹⁹

Abrams asserted that analyzing mental-step claims such as this needed a logical rule to follow.²⁰ Abrams's brief proposed a rule, which the court appeared to adopt implicitly, that determines

¹¹ See MOY, *supra* note 8, § 5:65.

¹² See *infra* Parts II.A–B.

¹³ See *infra* Parts II.C–D.

¹⁴ 188 F.2d 165 (C.C.P.A. 1951).

¹⁵ *Id.* at 165.

¹⁶ *Id.*

¹⁷ See *id.*

¹⁸ *Id.* (emphasis added).

¹⁹ *Id.* (emphasis added).

²⁰ *Id.* at 166.

patentability by sorting claims into one of three categories.²¹ The first category is where all method steps “are purely mental in character,”²² which would clearly not be patentable. The second and third are the difficult ones. The second category is where “a method claim embodies both positive and physical steps as well as so-called mental steps,” but the novelty is in the mental steps; “then the claim is considered unpatentable for the same reason that it would be if all the steps were purely mental in character.”²³ The last category is where the novelty “resides in one or more of the positive and physical steps,” and contains patentable subject matter.²⁴

Though the court did not disagree with Abrams’s proposed rule in *Abrams*, it nevertheless found that the claim fell within the second category of claims.²⁵ The court found steps “involving therein such purely mental terms as ‘determining’, ‘registering’, ‘counting’, ‘observing’, ‘measuring’, ‘comparing’, ‘recording’, and ‘computing’” to be non-statutory.²⁶ Since the first two steps were determined to be “old for the purposes of the present application,” the novelty was in the final three steps, which involved measuring, determining, and comparing respectively.²⁷ Since the court determined that these terms were non-statutory, the claim failed the test.²⁸

²¹ *See id.* The court does not expressly state its approval of the test, but the court simply applies the test in making its determination. *See id.* at 167.

²² *Id.* at 166.

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.* at 170 (“[I]t seems to us that they are eliminated from the applicability of appellant's proposed rule 3, and fall within No. 2.”).

²⁶ *Id.* at 167.

²⁷ *Id.* at 168.

²⁸ *Id.*

B. Strengths and Weaknesses of the Point-of-Novelty Test

The point-of-novelty test articulated in *In re Abrams* was prominent in the U.S. Patent and Trademark Office for about two decades before it began to fall out of favor from the courts.²⁹ The strengths of the point-of-novelty test are that it is based on articulated rules and that the required novelty had to be in “both positive and physical steps.”³⁰ But the test suffers from some significant weaknesses. First, it does not evaluate the claim as a whole.³¹ Second, there is some ambiguity about how to handle a claim when there is more than one single point of novelty.³² Third, when “the novelty does rest in the physical steps, the invention can properly be claimed by truncating the claim language to recite only the physical steps.”³³ Largely in response to these shortcomings, the point-of-novelty test gradually fell out of favor.³⁴

In 1972, the Supreme Court decided *Gottschalk v. Benson*, one of its first decisions to establish guidelines for patentability of computer programs.³⁵ The patent at issue was a method for “converting binary-coded decimal numerals into pure binary numerals.”³⁶ The Court found the claims far too broad to be eligible for patent protection.³⁷ The Court declined to use the

²⁹ See Application of Musgrave, 431 F.2d 882, 889 (C.C.P.A. 1970) (“It remains our view that we need not be encumbered in our reasoning by the ‘Rules’ of *Abrams* for the reason that they have never enjoyed the approval of this court.”); MOY, *supra* note 8, § 5:66.

³⁰ *In re Abrams*, 188 F.2d at 166.

³¹ See, e.g., *Diamond v. Diehr*, 450 U.S. 175, 188 (1981) (holding that the claim should be viewed as a whole to determine patentability).

³² Clearly if there is no novelty, the claim should not be considered valid, but it is unclear how the claim should be rejected. Alternatively, if there is more than one point of novelty, the test does not indicate how it should be handled.

³³ 1 DONALD S. CHISUM, CHISUM ON PATENTS § 1.03 (2014).

³⁴ See Application of Musgrave, 431 F.2d 882, 889–92 (C.C.P.A. 1970).

³⁵ *Gottschalk v. Benson*, 409 U.S. 63 (1972).

³⁶ *Id.* at 64.

³⁷ *Id.* at 68.

point-of-novelty test,³⁸ though it could be argued that the claim falls within the first category of *In re Abrams* because all the steps are “purely mental in character.”³⁹ The Court left open the question of patentability of computer programs in general, but said the debate “indicate[s] to [the Court] that considered action by the Congress is needed.”⁴⁰

C. *Parker v. Flook*

The Supreme Court’s next computer program case came six years later in *Parker v. Flook*.⁴¹ Flook applied for a patent for a method of updating alarm limits during catalytic conversion.⁴² According to the majority opinion, “[t]he only novel feature of the method is a mathematical formula,” which is used to calculate the alarm limit that signals the “presence of an abnormal condition indicating either inefficiency or perhaps danger.”⁴³

The examiner rejected Flook’s application because “a patent on this method ‘would in practical effect be a patent on the formula or mathematics itself.’”⁴⁴ The examiner concluded that it was not eligible subject matter.⁴⁵ On appeal, the Board of Appeals of the Patent and Trademark Office (PTAB) determined the application failed the point-of-novelty test⁴⁶ because the novelty was in the non-statutory portion, specifically the algorithm.⁴⁷ The Court of

³⁸ See CHISUM, *supra* note 33, § 1.03.

³⁹ *In re Abrams*, 188 F.2d 165, 166 (C.C.P.A. 1951). The steps are not purely mental in the sense that they are performed on a computer, but “[t]he mathematical formula involved here has no substantial practical application except in connection with a digital computer.” *Benson*, 409 U.S. at 71.

⁴⁰ *Benson*, 409 U.S. at 73.

⁴¹ 437 U.S. 584 (1978).

⁴² See *id.* at 585.

⁴³ *Id.*

⁴⁴ *Id.* at 587.

⁴⁵ See *id.*

⁴⁶ See *supra* Part A.

⁴⁷ See *Flook*, 437 U.S. at 587 (“[T]he ‘point of novelty in [respondent’s] claimed method’ lay in the formula or algorithm described in the claims.”).

Customs and Patent Appeals (CCPA) reversed, deciding that the claim's limitation to use only in catalytic conversion would not allow the patent to preempt all uses of the formula.⁴⁸ Parker, the Acting Commissioner of Patents and Trademarks filed a petition for writ of certiorari.⁴⁹ Parker expressed concern about the number of additional applications that would be filed because of the explosion of the software industry.⁵⁰

The Supreme Court explicitly said that the case turned on subject matter eligibility, and “[did] not involve the familiar issues of novelty and obviousness that routinely arise under §§ 102 and 103.”⁵¹ The Court even assumed that Flook's formula was “novel and useful and that he discovered it.”⁵² Though the method was clearly a process in the ordinary meaning of the word, the concern was that “[t]he line between a patentable ‘process’ and an unpatentable ‘principle’ is not always clear.”⁵³ Flook argued that the presence of a “post-solution activity” distinguished his case from cases in which only the algorithm is patented.⁵⁴ In particular, the post-solution activity was the “adjustment of the alarm limit to the figure computed according to the formula.”⁵⁵ The Court rejected the notion that post-solution activity alone could distinguish this case from previous decisions.⁵⁶ The problem, said the majority, was that allowing post-solution activity to establish

⁴⁸ See *Application of Flook*, 559 F.2d 21, 23 (C.C.P.A. 1977), *rev'd sub nom. Flook*, 437 U.S. 584 (“The present claims do not preempt the formula or algorithm contained therein, because solution of the algorithm, per se, would not infringe the claims.”).

⁴⁹ *Flook*, 437 U.S. at 587.

⁵⁰ See *id.* at 587–88.

⁵¹ *Id.* at 588.

⁵² *Id.*

⁵³ *Id.* at 589.

⁵⁴ *Id.* at 589–90.

⁵⁵ *Id.* at 590.

⁵⁶ See *id.*

patentability creates an incentive to append the broadest limitation after the formula.⁵⁷

In a six-to-three decision, the majority opinion held that “it is absolutely clear that respondent's application contains no claim of patentable invention.”⁵⁸ The majority determined that every element of the claim besides the formula was well-known in the art, and therefore “the claimed method [was] nonstatutory.”⁵⁹ The opinion rejected the argument that the determination could be made under §§ 102 and 103, stating that these were not “the kind of ‘discoveries’ that the statute was enacted to protect.”⁶⁰ Though the Court said the conclusion was “based on reasoning derived from opinions written before the modern business of developing programs for computers was conceived,”⁶¹ it appears they felt compelled to prevent this type of claim from entering the patent system.

The dissent acknowledged that although “it may well be that under the criteria of §§ 102 and 103 no patent should issue on the process claimed in this case,” the method did fit under the process requirement of § 101.⁶² According to the dissent, the problem with the majority’s formulation was that “it strikes what seems to me an equally damaging blow at basic principles of patent law by importing into its inquiry under 35 U.S.C. § 101 the criteria of novelty and inventiveness.”⁶³ The dissent was referring to the

⁵⁷ *See id.*

⁵⁸ *Id.* at 594.

⁵⁹ *Id.* at 595 (quoting *In re Richman*, 563 F.2d 1026, 1030 (C.C.P.A. 1977)).

⁶⁰ *Id.* at 593.

⁶¹ *Id.* at 595.

⁶² *Id.* at 600 (Stewart, J., dissenting).

⁶³ *Id.*

concept that determining whether the claim is novel must wait until later consideration under § 102.⁶⁴

D. Diamond v. Diehr

Less than three years after *Flook*, the Supreme Court addressed subject matter eligibility again in *Diamond v. Diehr*.⁶⁵ The Court, in a five-to-four decision, seemingly reached the opposite outcome as *Flook*.⁶⁶

Diehr addressed subject matter eligibility for “a process for curing synthetic rubber which includes in several of its steps the use of a mathematical formula and a programmed digital computer.”⁶⁷ Rather than updating an alarm limit as in *Flook*,⁶⁸ the formula in *Diehr*'s method was used to calculate the appropriate cure time for the rubber.⁶⁹ Also unlike *Flook*, the formula was well-known in the art.⁷⁰ The procedural posture in *Diehr* was

⁶⁴ Jeffrey A. Simenauer, Note, *Patentability of Computer-Related Inventions: A Criticism of the PTO's View on Algorithms*, 54 GEO. WASH. L. REV. 871, 902 (1986).

⁶⁵ *Diamond v. Diehr*, 450 U.S. 175 (1981).

⁶⁶ *Compare Diehr*, 450 U.S. at 190 (“The question therefore of whether a particular invention is novel is ‘wholly apart from whether the invention falls into a category of statutory subject matter.’” (quoting *In re Bergy*, 596 F.2d 952, 961 (C.C.P.A. 1979))), *with Flook*, 437 U.S. at 594 (“Here it is absolutely clear that respondent’s application contains no claim of patentable invention. The chemical processes involved in catalytic conversion of hydrocarbons are well known, as are the practice of monitoring the chemical process variables, the use of alarm limits to trigger alarms, the notion that alarm limit values must be recomputed and readjusted, and the use of computers for automatic monitoring-alarming.”).

⁶⁷ *Diehr*, 450 U.S. at 177.

⁶⁸ *Flook*, 437 U.S. at 587.

⁶⁹ *Diehr*, 450 U.S. at 177.

⁷⁰ *Id.* at 177 n.2. The method used the Arrhenius' equation expresses the dependence of the rate constant of a reaction on temperature. JULIA BURDGE & JASON OVERBY, CHEMISTRY: ATOMS FIRST 576 (2nd ed., 2011).

almost identical to *Flook*.⁷¹ The patent examiner rejected the claims on the grounds they were drawn to nonstatutory subject matter.⁷² The PTAB, relying on *Flook*, affirmed the examiner's decision.⁷³ Noting that “[n]ovelty considerations have no bearing on whether claims define statutory subject matter under § 101,” the CCPA reversed.⁷⁴ Diamond, the Commissioner of Patents and Trademarks, sought certiorari from the Supreme Court.⁷⁵

Despite the glaring similarities, the majority opinion explained that the difference between this case and *Flook* was that the Court did not view the claims “as an attempt to patent a mathematical formula, but rather to be drawn to an industrial process for the molding of rubber products.”⁷⁶ The limitations in the claim other than the formula (e.g., “installing rubber in a press,” “closing the mold,” and “automatically opening the press at the appropriate time”) were significant enough to compel the majority that the patent was for the entire process, not just the formula.⁷⁷

In dissent, Justice Stevens, author of the majority opinion in *Flook*,⁷⁸ believed the patent was truly for an “improved method of

⁷¹ In both cases, the patent examiner rejected the application, which was affirmed by the PTAB and later reversed by the CCPA. This was followed by a petition for certiorari from the commissioner of Patents and Trademarks. *Compare Diehr*, 450 U.S. at 180, *with Flook*, 437 U.S. at 587.

⁷² Application of Diehr, 602 F.2d 982, 984 (C.C.P.A. 1979) *aff'd sub nom.* *Diamond v. Diehr*, 450 U.S. 175 (1981).

⁷³ *Id.* (“It is our view that the only difference between the conventional methods of operating a molding press and that claimed in appellants’ application rests in those steps of the claims which related to the calculation incident to the solution of the mathematical problem or formula used to control the mold heater and the automatic opening of the press.”).

⁷⁴ *Id.* at 989.

⁷⁵ *Diehr*, 450 U.S. at 181.

⁷⁶ *Id.* at 192.

⁷⁷ *See id.* at 191-92.

⁷⁸ *Flook*, 437 U.S. at 585. The four dissenters, Stevens, J., Brennan, J., Marshall, J., Blackmun, J. were all in the majority opinion of *Flook*. *Compare id.* at 585, 598 (dissenting opinion), *with Diehr*, 450 U.S. at 193 (dissenting opinion).

calculating the time that the mold should remain closed during the curing process.”⁷⁹ As such, he believed that it was non-statutory for the same reasons as *Flook*.⁸⁰ In dissent, Stevens went even further by proposing “an unequivocal holding that no program-related invention is a patentable process under § 101 unless it makes a contribution to the art that is not dependent entirely on the utilization of a computer.”⁸¹

III. CURRENT STATE OF THE LAW: MAYO AND ALICE

Though *Mayo*⁸² did not involve a computer-related invention, a discussion of the framework used by the Court in *Mayo* is necessary because this framework was explicitly adopted in *Alice*.⁸³ It appears that the Supreme Court has chosen to use the following test in *Mayo* for all inventions involving “laws of nature, natural phenomena, and abstract idea[s].”⁸⁴

A. *Mayo v. Prometheus*

The patent at issue in *Mayo* claimed a process for determining whether a given dosage level of thiopurine drugs is too low or too high for patients with autoimmune diseases.⁸⁵ The representative patent claim consists of steps of (1) “administering” the drug, (2) “determining” the level of the drug present in the patient’s body, and then using the level to “indicate” if it is too low or too high.⁸⁶

⁷⁹ *Diehr*, 450 U.S. at 206–07 (Stevens, J., dissenting).

⁸⁰ *See id.* at 219.

⁸¹ *Id.*

⁸² *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 132 S. Ct. 1289 (2012).

⁸³ *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014) (“In [*Mayo*] we set forth a framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.”).

⁸⁴ *Compare Mayo*, 132 S. Ct. 1289 *with Alice*, 134 S. Ct. 2347.

⁸⁵ *Mayo*, 132 S. Ct. at 1294.

⁸⁶ The Federal Circuit and the Supreme Court took claim 1 as representative. U.S. Patent No. 6,355,623 (filed Apr. 8, 1999) (“A method of optimizing

Prometheus Laboratories was the sole and exclusive licensee of the patent.⁸⁷ Prometheus sold diagnostic tests utilizing the patented claim to Mayo, but Mayo stopped purchasing from Prometheus and decided to make its own tests.⁸⁸

In a unanimous opinion, the Court reiterated a concern about “upholding patents that claim processes that too broadly preempt the use of a natural law.”⁸⁹ Rather, the Court would only uphold those patents that have “transformed these unpatentable natural laws into patent-eligible applications of those laws.”⁹⁰ The Court first determined that the patent describes a law of nature, specifically the relationship between the concentration of the drug and the likelihood that the drug administration is appropriate.⁹¹ The Court then asked, do the “claims add *enough* to their statements of the correlations to allow the processes they describe to qualify as patent-eligible processes that *apply* natural laws?”⁹²

In answering the foregoing question in the negative, the Court looked to the content outside the elements that claimed a law of nature.⁹³ The patent claim was separated into the “administering” step, the “determining” step, and the “wherein” clause that tells

therapeutic efficacy for treatment of an immune-mediated gastrointestinal disorder, comprising: (a) administering a drug providing 6-thioguanine to a subject having said immune-mediated gastrointestinal disorder; and (b) determining the level of 6-thioguanine in said subject having said immune-mediated gastrointestinal disorder, wherein the level of 6-thioguanine less than about 230 pmol per 8×10^8 red blood cells indicates a need to increase the amount of said drug subsequently administered to said subject and wherein the level of 6-thioguanine greater than about 400 pmol per 8×10^8 red blood cells indicates a need to decrease the amount of said drug subsequently administered to said subject.”).

⁸⁷ *Mayo*, 132 S. Ct. at 1295.

⁸⁸ *Id.* at 1295–96.

⁸⁹ *Id.* at 1294 (citing *O’Reilly v. Morse*, 56 U.S. 62 (1853)).

⁹⁰ *Id.*

⁹¹ *Id.* at 1296.

⁹² *Id.* at 1297.

⁹³ *See id.* at 1297–1305.

what the test “indicates.”⁹⁴ The Court gave no weight to the physical process of administering, instead saying it “simply refers to the relevant audience.”⁹⁵ The opinion further said that the relevant audience was already familiar with administering the particular drug and compared the administering step to a claim element that limits the scope to a particular technological environment.⁹⁶

Similar to the administering step, the Court did not consider “determining” to be anything more than a mental process.⁹⁷ Again, the Court said the step was already practiced.⁹⁸ Comparing the determining step to the post-solution activity of *Parker*,⁹⁹ this pre-solution activity was not significant enough to make the concept patentable.¹⁰⁰ Finally, the “indicates” clause was said to merely “tell the relevant audience about the laws.”¹⁰¹ It did not apply the law of nature in a way that went beyond the law itself. Accordingly, the Court held that the patent claims were invalid because they “effectively claim[ed] the underlying laws of nature themselves.”¹⁰²

Following *Mayo*, it was unclear whether this new two-part test applied just to claims involving “laws of nature” or to more than that.¹⁰³ In fact, following the Supreme Court’s decision in *Mayo*,

⁹⁴ The third step includes the two “wherein” clauses that describe the relationship between the level obtained and what should be done. *See id.* at 1297–98.

⁹⁵ *Id.* at 1297.

⁹⁶ *Id.* (quoting *Bilski v. Kappos*, 130 S. Ct. 3218, 3230 (2010)).

⁹⁷ *Id.* at 1297–98.

⁹⁸ *Id.* at 1297.

⁹⁹ *See supra* note 50 and related text.

¹⁰⁰ *See Mayo*, 132 S. Ct. at 1298.

¹⁰¹ *Id.* at 1297 (“[R]ather like Einstein telling linear accelerator operators about his basic law and then trusting them to use it where relevant.”).

¹⁰² *Id.* at 1305.

¹⁰³ *See* Joshua A. Kresh, *Patent Eligibility After Mayo: How Did We Get Here and Where Do We Go?*, 22 FED. CIR. B.J. 521, 521–22 (2013).

the USPTO created a test for determining subject eligibility for methods that use natural laws and did not consider computer programs to be affected.¹⁰⁴ This uncertainty remained for more than two years until the Supreme Court again addressed software patentability.

B. Alice v. CLS Bank

In 2014, the Supreme Court granted certiorari on a patent involving computer programs to explain that the *Mayo* framework should be used to determine subject matter eligibility.¹⁰⁵ Alice was the assignee of several patents that disclose schemes to manage certain forms of financial risk.¹⁰⁶ Put simply, the patents claim

¹⁰⁴ MPEP § 2106.01 (8th ed. Rev. 9, Aug. 2012); see Bryan Wisecup, *Mayo v. Prometheus: Reorganizing the Toolbox for Patent Eligible Subject Matter and Uses of Natural Laws*, 81 U. CIN. L. REV. 1651, 1666 (2013).

¹⁰⁵ Alice Corp. v. CLS Bank Int'l, 134 S. Ct. 2347, 2354 (2014).

¹⁰⁶ *Id.* at 2352. The patents at issue were U. S. Patent Nos. 5,970,479 ('479 patent), 6,912,510, 7,149,720, and 7,725,375. The parties agreed that claim 33 of the '479 patent was representative of the method claim.

33. A method of exchanging obligations as between parties, each party holding a credit record and a debit record with an exchange institution, the credit records and debit records for exchange of predetermined obligations, the method comprising the steps of:

(a) creating a shadow credit record and a shadow debit record for each stakeholder party to be held independently by a supervisory institution from the exchange institutions;

(b) obtaining from each exchange institution a start-of-day balance for each shadow credit record and shadow debit record;

(c) for every transaction resulting in an exchange obligation, the supervisory institution adjusting each respective party's shadow credit record or shadow debit record, allowing only these transactions that do not result in the value of the shadow debit record being less than the value of the shadow credit

using a computer to track financial data of two parties to determine if the parties would fulfill their obligations. The claims were drafted as method, system, and computer-readable medium claims, but Alice conceded that the “media claims rise or fall with [the] method claims,”¹⁰⁷ and the Court gave no extra weight to the system claims.¹⁰⁸ The dispute began in 2007, when CLS Bank filed suit against Alice seeking declaratory judgment that the claims in four of Alice’s patents were invalid, unenforceable, or not infringed.¹⁰⁹ Alice counterclaimed, alleging infringement.¹¹⁰

In 2011, shortly after the Supreme Court decided *Bilski*,¹¹¹ the district court granted CLS Bank’s motion for summary judgment, holding that claims were not patentable because they were directed to an abstract concept.¹¹² A divided panel of the Federal Circuit

record at any time, each said adjustment taking place in chronological order; and

(d) at the end-of-day, the supervisory institution instructing ones of the exchange institutions to exchange credits or debits to the credit record and debit record of the respective parties in accordance with the adjustments of the said permitted transactions, the credits and debits being irrevocable, time invariant obligations placed on the exchange institutions.

Id. at n.2.

¹⁰⁷ *Id.* at 2360.

¹⁰⁸ *Id.* (“Put another way, the system claims are no different from the method claims in substance.”).

¹⁰⁹ *Id.* at 2353.

¹¹⁰ *Id.*

¹¹¹ *Bilski v. Kappos*, 130 S. Ct. 3218 (2010). In *Bilski*, the Court held that applicants’ business method patent was an unpatentable abstract idea, “just like the algorithms in *Benson* and *Flook*.” *Id.* at 3231.

¹¹² *CLS Bank Int’l v. Alice Corp. Pty.*, 768 F. Supp. 2d 221, 255 (D.D.C. 2011) (“The Court finds claims 33 and 34 of the ‘479 Patent and each claim of the ‘510 Patent, ‘720 Patent, and ‘375 Patent to be directed to an abstract idea under the *Benson*, *Flook*, *Diehr*, and *Bilski* Supreme Court line of precedent. Accordingly, these claims are invalid as being directed to patent-ineligible subject matter under § 101 of the Patent Act.”).

reversed, holding that it was not “manifestly evident” that Alice’s claims were directed to an abstract idea.¹¹³ The Federal Circuit then granted rehearing en banc, vacated the opinion,¹¹⁴ and affirmed the judgment of the district court.¹¹⁵ Seven of the ten Federal Circuit judges concluded that Alice’s “method and computer-readable medium claims are patent ineligible.”¹¹⁶ Five judges concluded that the system claims are patent ineligible.¹¹⁷ The Supreme Court granted certiorari and affirmed.¹¹⁸ Justice Thomas delivered the opinion of the Court¹¹⁹ and Justice Sotomayor wrote a concurring opinion joined by Justice Ginsburg and Justice Breyer.¹²⁰

Justice Thomas declared that the *Mayo* two-part test distinguishes “patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.”¹²¹ The *Mayo* test first establishes whether or not the claims are directed to a patent-ineligible concept.¹²² Part two of the *Mayo* test requires that the

¹¹³ Alice Corp. v. CLS Bank Int’l, 685 F.3d 1341, 1352 (2012) (“In light of the foregoing, this court holds that when—after taking all of the claim recitations into consideration—it is not manifestly evident that a claim is directed to a patent ineligible abstract idea, that claim must not be deemed for that reason to be inadequate under § 101.”) *vacated en banc*, 484 Fed. Appx. 559 (Fed. Cir. 2012).

¹¹⁴ Alice Corp. v. CLS Bank Int’l, 484 Fed. Appx. 559, 559 (Fed. Cir. 2012).

¹¹⁵ Alice Corp. v. CLS Bank Int’l, 717 F.3d 1269, 1273 (Fed. Cir. 2013) *cert. granted*, 134 S. Ct. 734 (2013) *and aff’d*, 134 S. Ct. 2347 (2014).

¹¹⁶ *Alice*, 134 S. Ct. at 2353 (citing Alice Corp. v. CLS Bank Int’l, 717 F.3d 1269, 1273 (Fed. Cir. 2013)).

¹¹⁷ *Id.*

¹¹⁸ *Id.* at 2354.

¹¹⁹ *Id.* at 2351.

¹²⁰ *Id.* at 2360–61.

¹²¹ *Id.* at 2355.

¹²² *Id.*

claims “contain[] an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.”¹²³

Thomas applied part one of the *Mayo* test to Alice’s claims and determined that they were “drawn to the abstract idea of intermediated settlement.”¹²⁴ Thomas compared the claims at issue to the risk hedging claims in *Bilski* and determined that “intermediated settlement, like hedging [in *Bilski*], is an ‘abstract idea’ beyond the scope of § 101.”¹²⁵ The opinion, however, does not elaborate on a definition of abstract concept¹²⁶:

In any event, we need not labor to delimit the precise contours of the “abstract ideas” category in this case. It is enough to recognize that there is no meaningful distinction between the concept of risk hedging in *Bilski* and the concept of intermediated settlement at issue here. Both are squarely within the realm of “abstract ideas” as we have used that term.¹²⁷

Regarding part two of the test, which requires an inventive concept, the majority held that “the claims at issue amount to ‘nothing significantly more’ than an instruction to apply the abstract idea of intermediated settlement using some unspecified, generic computer.”¹²⁸ The opinion describes previous applications of part two of the *Mayo* test, in which *Mayo*,¹²⁹ *Benson*,¹³⁰ and *Flook*¹³¹ claims failed because they did not have an inventive

¹²³ *Id.* at 2357 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1298 (2012)).

¹²⁴ *Id.* at 2355.

¹²⁵ *Id.* at 2356.

¹²⁶ *Id.* at 2357.

¹²⁷ *Id.*

¹²⁸ *Id.* at 2360 (quoting *Mayo*, 132 S. Ct. at 1298).

¹²⁹ *Mayo*, 132 S. Ct. at 1298.

¹³⁰ *Gottschalk v. Benson*, 409 U.S. 63 (1972).

¹³¹ *Parker v. Flook*, 437 U.S. 584 (1978).

concept.¹³² The exception was the inventive application of an abstract concept in *Diehr*.¹³³ Thomas asserts that the claims that failed part two merely say “apply it with a computer,”¹³⁴ or limit the use of an abstract idea “to a particular technological environment.”¹³⁵ He concluded that the claims at issue were no different.¹³⁶

After determining that the method claims failed the *Mayo* test, the Court stated that the computer-readable medium and system claims were also unpatentable subject matter for “substantially the same reasons.”¹³⁷ *Alice* conceded that its media claims rose and fell with its method claims.¹³⁸ As for the system claims, the Court held that “none of the hardware recited by the system claims ‘offer[ed] a meaningful limitation beyond generally linking the use of the method to a particular technological environment.’”¹³⁹ Accordingly, the Court held that these claims were also patent-ineligible subject matter under § 101.¹⁴⁰

In a one-paragraph concurrence, Justice Sotomayor, joined by Justice Ginsburg and Justice Breyer, said that “any ‘claim that merely describes a method of doing business’” is not a “process”

¹³² *Alice*, 134 S. Ct. at 2357–58.

¹³³ *Diamond v. Diehr*, 450 U.S. 175 (1981); *Alice*, 134 S. Ct. at 2358 (“The temperature measurements were then fed into a computer, which repeatedly recalculated the remaining cure time by using the mathematical equation. These additional steps, we recently explained, ‘transformed the process into into an inventive application of the formula.’” (internal citations omitted)).

¹³⁴ *Alice*, 134 S. Ct. at 2350.

¹³⁵ *Id.* (quoting *Bilski v. Kappos* 130 S. Ct. 3218, 3230 (2010)).

¹³⁶ *Id.* at 2351.

¹³⁷ *Id.* at 2360.

¹³⁸ *Id.*

¹³⁹ *Id.* (quoting *Bilski*, 130 S. Ct. at 3230) (alteration in original).

¹⁴⁰ *Id.*

under § 101.¹⁴¹ Accordingly, they too consider the claims at issue patent ineligible under § 101.¹⁴²

IV. HOW THE FEDERAL CIRCUIT CAN ADAPT THE ALICE TEST

Though the Supreme Court left some uncertainty in *how* to apply the test,¹⁴³ the Court was clear *when* it should be followed.¹⁴⁴ The Federal Circuit is bound by *stare decisis* principles¹⁴⁵ to apply the “framework” articulated in *Mayo* and *Alice* to cases involving “laws of nature, natural phenomena, and abstract ideas.”¹⁴⁶ While commentators may protest the *Alice* and *Mayo* opinions, the reality is that courts must follow the Court’s analysis. However, because of the ambiguity in the framework articulated by the Supreme Court, the Federal Circuit can formulate a new test as long as it still contains the principles laid out in *Alice*; the new test should be administrable by both lower courts and the patent office.

A. Objective of the Alice Test

In the *Alice* and *Mayo* opinions, the Court repeatedly reiterated concern about allowing patents to claim the “building blocks of

¹⁴¹ *Id.* at 2360–61 (Sotomayor, J., concurring) (quoting *Bilski*, 130 S. Ct. at 3222).

¹⁴² *Id.*

¹⁴³ *See, e.g.*, *McRO, Inc. v. Valve Corp.*, No. SACV 13-1874-GW(FFMx), 2014 WL 4772200, at *5 (C.D. Cal. Sept. 22, 2014) (“So, the two-step test may be more like a one step test evocative of Justice Stewart’s most famous phrase. . . . ‘I shall not today attempt further to define the kinds of material I understand to be embraced within that shorthand description; and perhaps I could never succeed in intelligibly doing so. But I know it when I see it’” (quoting *Jacobellis v. State of Ohio*, 378 U.S. 184, 197 (1964) (Stewart, J., concurring))).

¹⁴⁴ *Id.* (“[B]efore *Alice*, it was unclear to some, including the USPTO, that the framework set forth in *Mayo* applied to abstract ideas as well as to the law of nature/natural phenomena at issue in *Mayo*.”).

¹⁴⁵ *See, e.g.*, *Lighting Ballast Control, LLC v. Philips Elecs. N. Am. Corp.*, 744 F.3d 1272, 1288 (Fed. Cir. 2014) (“Federal Circuit review, and in particular this Court’s application of *stare decisis*, is critical to such uniformity.”).

¹⁴⁶ *Alice*, 134 S. Ct. at 2355.

human ingenuity.”¹⁴⁷ Therefore, when evaluating claims involving algorithms like those described previously, the Court has declared the claims unpatentable according to § 101,¹⁴⁸ rather than invalidating the claims for lack of novelty or obviousness. It may be that the patent claims at issue in each of the cases detailed in depth are invalid due to lack of novelty or obviousness.¹⁴⁹ However, the Court’s grant of the writ of certiorari in these cases limited to the issue to the scope of patentable subject matter.¹⁵⁰ The question presented to the Court limits its holding¹⁵¹ to § 101 and delays the question of § 102 and § 103 to remand. Though that is a possible explanation, it seems more likely that the Court chose to use § 101 subject matter eligibility to rein in the boundaries of the patent system.¹⁵²

¹⁴⁷ See *Alice*, 134 S. Ct. at 2354; *Mayo*, 132 S. Ct. at 1301.

¹⁴⁸ See, e.g., *Parker v. Flook*, 98 S. Ct. 2522, 2524 (1978) (“This case turns entirely on the proper construction of § 101 of the Patent Act, which describes the subject matter that is eligible for patent protection.”); *Diamond v. Diehr*, 450 U.S. 175, 210–11 (1981) (“What I believe does explain today’s holding is a misunderstanding of the applicants’ claimed invention and a failure to recognize the critical difference between the ‘discovery’ requirement in § 101 and the ‘novelty’ requirement in § 102.”).

¹⁴⁹ See, e.g., *Diehr*, 450 U.S. at 191 (“[I]t may later be determined that the respondents’ process is not deserving of patent protection because it fails to satisfy the statutory conditions of novelty under § 102 or nonobviousness under § 103.”).

¹⁵⁰ See, e.g., *Alice*, 134 S. Ct. at 2352 (“The question presented is whether these claims are patent eligible under 35 U.S.C. § 101 . . .”).

¹⁵¹ See *Mazer v. Stein*, 347 U.S. 201, 208 (1954) (“The Court’s consideration will be limited to the question presented by the petition for the writ of certiorari.”).

¹⁵² See *Bilski v. Kappos*, 561 U.S. 593, 650 (2010) (Stevens, J., concurring) (“[T]he functional case that patents promote progress generally is stronger for subject matter that has ‘historically been eligible to receive the protection of our patent laws’ than for methods of doing business.”) (quoting *Diehr*, 450 U.S. at 184); George R. McGuire & Blaine T. Bettinger, *How the Supreme Court Got It Right in Mayo v. Prometheus*, 10 NO. 1 ABA SCITECH LAW. 12, 15 (2013).

The Constitution grants Congress the authority to develop patent and copyright laws.¹⁵³ Congress has passed legislation directing what is patentable.¹⁵⁴ The statute for subject matter eligibility lists only certain categories that can be patented.¹⁵⁵ The remaining things and concepts in the universe that are not included in Congress's choice of subject matter eligibility consequently are not eligible for patent protection.¹⁵⁶ The categories designated by Congress have been further limited by judicial interpretation.¹⁵⁷ Though Congress did not make the "implicit exceptions,"¹⁵⁸ Congress also has not overruled the continuing precedent of the Supreme Court.¹⁵⁹

The goal of these exceptions to patentability is to stop those who try to acquire exclusive rights over more than they have

¹⁵³ U.S. CONST. art. I, § 8, cl. 8 ("The Congress shall have Power . . . [t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.").

¹⁵⁴ See 35 U.S.C. § 101 (2012).

¹⁵⁵ See *id.* ("[A]ny new and useful process, machine, manufacture, or composition of matter.").

¹⁵⁶ See *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 151 (1989) ("To a limited extent, the federal patent laws must determine not only what is protected, but also what is free for all to use."). See generally MOY, *supra* note 8, § 5:1.

¹⁵⁷ See *e.g.*, *Le Roy v. Tatham*, 55 U.S. 156, 175 (1852) ("A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right.").

¹⁵⁸ See Wesley D. Markham, *How to Explain the "Implicit Exceptions" to Patent-Eligible Subject Matter*, 16 VAND. J. ENT. & TECH. L. 353, 355 (2014).

¹⁵⁹ See, *e.g.*, CHISUM, *supra* note 33, § 1.01 ("Despite the controversies at that time [of the America Invents Act] concerning the 'exceptions' to Section 101 for abstract ideas and natural phenomena as applied to subject matter such as business methods, computer software, and isolated DNA, including human genes, Congress chose not to address directly questions regarding patent eligible subject matter.").

actually invented.¹⁶⁰ This occurs when patents are granted for a law of nature, for example. The Court, in multiple opinions, has used Einstein's discovery of $E = MC^2$ as an example of an unpatentable abstract idea.¹⁶¹ If Einstein could obtain a patent on the formula, simply because he discovered the laws that it obeys, it could be used to stop any innovation that harnesses those laws.¹⁶² This outcome would have a deleterious effect on innovation.¹⁶³ Harmful outcomes like this are also why the Supreme Court has articulated the implicit exceptions to § 101.¹⁶⁴

B. How to Square Diehr with Alice

The holding in *Diehr* seems directly contrary to *Alice*,¹⁶⁵ yet the majority opinion in *Alice* took the stance that the outcome of

¹⁶⁰ See *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (“If there is to be invention from . . . a discovery, it must come from the application of the law of nature to a new and useful end.” (quoting *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948))).

¹⁶¹ See, e.g., *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012); *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980).

¹⁶² See *Mayo*, 132 S. Ct. at 1297.

¹⁶³ See generally The Federal Trade Commission, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy Executive Summary*, 19 BERKELEY TECH. L.J. 861, 864 (2004) (“[I]f patent law were to allow patent on ‘obvious’ inventions, it could thwart competition that might have developed based on the obvious technology.”).

¹⁶⁴ See *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354-55 (“[Claiming] the building blocks of human ingenuity . . . would risk disproportionately tying up the use of the underlying ideas, and [is] therefore ineligible for patent protection.” (quoting *Mayo*, 132 S. Ct. at 1294) (internal quotation marks omitted)).

¹⁶⁵ Compare *Diamond v. Diehr*, 450 U.S. 175, 182 (1981) (“It is [‘process’] which we confront today, and in order to determine its meaning we may not be unmindful of the Committee Reports accompanying the 1952 Act which inform us that Congress intended statutory subject matter to ‘include anything under the sun that is made by man.’” (quoting S. Rep. No. 82-1979, at 2399 (1952))), with *Alice*, 134 S. Ct. at 2352 (“We hold that . . . merely requiring generic computer implementation fails to transform that abstract idea into a patent-eligible invention.”).

Diehr is consistent.¹⁶⁶ A closer look at the language of *Diehr* shows that it actually succeeds on the first step of the framework in *Alice* because, as characterized by the majority, it is not directed to an abstract idea.¹⁶⁷ The *Alice* majority said “[f]irst, we determine whether the claims at issue are *directed to* [a] patent-ineligible concept.”¹⁶⁸ According to the Court, the claims in *Diehr* are not directed to a patent-ineligible concept.¹⁶⁹ In *Diehr*, the opinion states the claims are a “process of curing synthetic rubber.”¹⁷⁰ Curing synthetic rubber, though probably well-known in the art,¹⁷¹ is certainly a patent eligible concept.¹⁷² Since step one of the *Alice* test is concerned with the “concept” the claim is “directed to,”¹⁷³ the adjudicator need not move on to step two of the framework, which searches for an inventive concept for the process in *Diehr*. Indeed, the opinion in *Diehr* even says it considers the claim “to be drawn to an industrial process.”¹⁷⁴ However, according to the dissent’s formulation of the claim in *Diehr*, an “improved method of calculating the time that the mold should remain closed during the curing process,” the subject matter is likely *directed to* a patent-ineligible concept, specifically calculating time.¹⁷⁵ The

¹⁶⁶ *Alice*, 134 S. Ct. at 2358 (“These additional steps, we recently explained, ‘transformed the process into an inventive application of the formula.’”) (quoting *Mayo*, 132 S. Ct. at 1299).

¹⁶⁷ See generally Robert R. Sachs, *How to Correctly Apply the Alice Examination Guidance*, BILSKI BLOG (Sept. 5, 2014), <http://www.bilskiblog.com/blog/2014/09/applying-alice-guidelines.html>.

¹⁶⁸ *Alice*, 134 S. Ct. at 2355 (emphasis added).

¹⁶⁹ See *Diehr*, 450 U.S. at 187.

¹⁷⁰ *Id.*

¹⁷¹ The majority conceded that the claims may later be found to be anticipated. *Diehr*, 450 U.S. at 191 (“[I]t may later be determined that the respondents’ process is not deserving of patent protection because it fails to satisfy the statutory conditions of novelty under § 102 or nonobviousness under § 103.”).

¹⁷² See, e.g., Self-Curing Synthetic Rubber, U.S. Patent No. 2,776,269 (filed Dec. 19, 1952).

¹⁷³ *Alice*, 134 S. Ct. at 2355.

¹⁷⁴ *Diehr*, 450 U.S. at 192.

¹⁷⁵ *Id.* at 207 (Stevens, J., dissenting).

Diehr claim is a prime example of the ambiguity associated with the first inquiry of the *Alice* test. Additionally, once an adjudicator determines what the claim is directed toward, the adjudicator may ignore potential claim limitations.¹⁷⁶

C. Why the *Alice* Test is Flexible

The framework handed down in *Mayo* and *Alice* leaves significant room for interpretation.¹⁷⁷ The ambiguity of the test's first step, to “determine whether the claims at issue are directed to a patent-ineligible concept,”¹⁷⁸ creates two questions. First, what is the claim *directed to*? And second, is that concept patent ineligible? The previous discussion regarding *Diehr*¹⁷⁹ illustrates an issue with the first question: the same claim could be interpreted in multiple ways.¹⁸⁰ To determine the second question of this first step, one must know which patent concepts are ineligible. The *Alice* opinion itself gives some guidance on ineligible concepts,¹⁸¹ but declines to “delimit the precise contours of the ‘abstract ideas’ category.”¹⁸²

The second step of the *Alice* test, “a search for an inventive concept—i.e., an element or combination of elements that is

¹⁷⁶ See generally *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995) *aff'd* 517 U.S. 370 (1996) (describing claim construction and the use of claim limitations).

¹⁷⁷ See generally Eric W. Gutttag, *The Broken Patent-Eligibility Test of Alice and Mayo: Why We Urgently Need to Return to Principles of Diehr and Chakrabarty*, IP WATCHDOG (Sept. 25, 2014), <http://www.ipwatchdog.com/2014/9/25/broken-patent-eligibility-test-of-alice-and-mayo/id=51370/>; Kresh, *supra* note 103.

¹⁷⁸ *Alice*, 134 S. Ct. at 2355.

¹⁷⁹ See *supra* Part IV.B.

¹⁸⁰ With the result that the characterization of the claim is outcome determinative.

¹⁸¹ See *Alice*, 134 S. Ct. at 2355–57 (holding computing alarm limits, and hedging risk, intermediated settlement as abstract ideas outside the scope of 35 U.S.C. § 101).

¹⁸² *Id.* at 2357.

sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself”—leaves open the inquiry about what constitutes “significantly more.”¹⁸³ The guidance for step two lies in *Mayo*,¹⁸⁴ *Benson*,¹⁸⁵ *Flook*,¹⁸⁶ *Diehr*,¹⁸⁷ and *Alice*.¹⁸⁸ Of these five representative cases, only *Diehr* can illustrate what the Supreme Court considers “significantly more” because *Diehr* was the only case that the Court says succeeded in the second step.¹⁸⁹ Further confounding the problem, the claims in *Diehr* could be considered outside the scope of step two of the *Alice* test since they are directed to curing rubber.¹⁹⁰ Accordingly, the guidance to be gained from *Alice* amounts to “‘apply it’ [on a computer] is not enough” and “limiting the use . . . ‘to a particular technological environment’” is not enough.¹⁹¹ What is enough? Based on the guidance *Alice* provided, perhaps anything more than “apply it on a computer” or limitation “to a particular technological environment” would be enough.¹⁹²

The ambiguity illustrated by the foregoing analysis of the *Alice* framework presents an opportunity for the judiciary to adapt the existing test for statutory subject matter based on interpretation.¹⁹³ According to basic patent law principles, claim evaluation should

¹⁸³ *Id.* at 2355 (internal punctuation omitted) (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1294 (2011)).

¹⁸⁴ *Mayo*, 132 S. Ct. 1289 (treatment of autoimmune diseases).

¹⁸⁵ *Gottschalk v. Benson*, 409 U.S. 63 (1972) (computer implementation of algorithm).

¹⁸⁶ *Parker v. Flook*, 437 U.S. 584 (1978) (updating alarm limits).

¹⁸⁷ *Diamond v. Diehr*, 450 U.S. 175 (1981) (curing synthetic rubber).

¹⁸⁸ *Alice*, 134 S. Ct. 2347 (intermediated settlement performed by a generic computer).

¹⁸⁹ *See id.* at 2358.

¹⁹⁰ *See Diehr*, 450 U.S. at 192. (discussion in step one defining the method as directed to an industrial process versus calculating time for curing rubber).

¹⁹¹ *Alice*, 134 S. Ct. at 2358 (citations omitted).

¹⁹² *See generally* Kresh, *supra* note 103.

¹⁹³ *See infra* Part IV.D.

avoid intermixing the consideration of novelty and non-obviousness with the determination of eligible subject matter.¹⁹⁴ The rest of this section sets forth a proposed flow of examination that utilizes the *Alice* test for subject matter eligibility but is in “conformity with the basic principles of patent law.”¹⁹⁵ The proposed test postpones the novelty and obviousness inquiry until after a determination of subject matter eligibility has been made.

D. Proposed Adaption of Alice

This author proposes a test that could be adopted by the Federal Circuit that is compliant with *Alice*,¹⁹⁶ yet administrable by lower courts and patent examiners. In the proposed test, the first step to determine subject matter eligibility under § 101, similar to the *Alice* framework, is to identify *elements in the claim* that are covered by the implicit exceptions: “[l]aws of nature, natural phenomena, [or] abstract ideas,”¹⁹⁷ or those that are otherwise non-statutory under § 101.¹⁹⁸ Note that this is not at all the same as the claim being “directed toward” ineligible subject matter¹⁹⁹ because the proposed test evaluates each of the claim elements independently to identify whether *each* individual element of the claim is statutory or non-statutory. This extra step accounts for the fact that the claim as a whole may not be “directed toward” one

¹⁹⁴ See CHISUM, *supra* note 33, § 1.03.

¹⁹⁵ Parker v. Flook, 437 U.S. 584, 599 (1978) (Stewart, J., dissenting).

¹⁹⁶ See *supra* Part B.

¹⁹⁷ Alice Corp. v. CLS Bank Int’l, 134 S. Ct. 2347, 2354 (2014) (quoting Ass’n for Molecular Pathology v. Myriad Genetics, Inc., 133 S. Ct. 2107, 2116 (2013)).

¹⁹⁸ For example, a poem is non-statutory under § 101 and should instead be the subject of copyright protection. See, e.g., CHISUM, *supra* note 33, § 1.01 (“The general purpose of the statutory classes of subject matter is to limit patent protection to the field of applied technology, what the United States Constitution calls ‘the useful arts.’” (quoting U.S. CONST. art I, § 8, cl. 8.)).

¹⁹⁹ See *Alice*, 134 S. Ct. at 2355.

single concept.²⁰⁰ Additionally, determining what an entire claim is “directed toward” can be very subjective and ignores claim limitations,²⁰¹ which is contrary to the principles of peripheral claiming. The outcome of determining what a claim is “directed toward” could determine the test’s final result. For example, in *Diehr*, the majority asserted that the claim was directed toward curing rubber,²⁰² whereas the dissent characterized the invention as an improved method of calculating time for the curing of rubber.²⁰³ Both sides made good arguments, but this shows how the characterization of what a claim is “directed towards” can be dispositive.

Under the proposed test, an adjudicator would classify elements as either non-statutory or statutory. When an element of a claim is classified non-statutory, the offending element, for the purpose of subject matter eligibility under § 101, is classified “known in the art.” The Supreme Court has long implicitly used this step.²⁰⁴ Another way of saying that an element is “known in the art” is that the element should be left within the public domain.²⁰⁵ The objective of the proposed test is to avoid granting exclusivity to an invention comprised solely of these abstract

²⁰⁰ See generally Mark A. Litman, *Deficiencies in the Design and USPTO Application of Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 95 J. PAT. & TRADEMARK OFF. SOC’Y 47 (2013) (noting the difficulty in determining when a claim is directed toward laws of nature).

²⁰¹ See *Freedman Seating Co. v. Am. Seating Co.*, 420 F.3d 1350, 1358 (Fed. Cir. 2005) (discussing the “all limitations” rule).

²⁰² *Diamond v. Diehr*, 450 U.S. 175, 177 (1981).

²⁰³ *Id.* at 207 (Stevens, J., dissenting).

²⁰⁴ See, e.g., *Parker v. Flook*, 437 U.S. 584, 591–92 (1978) (“Whether the algorithm was in fact known or unknown at the time of the claimed invention . . . it is treated as though it were a familiar part of the prior art.”); *O’Reilly v. Morse*, 56 U.S. 62, 116 (1853) (“But after much consideration, it was finally decided that this principle must be regarded as well known. . .”).

²⁰⁵ See generally *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 231 (1964) (“An unpatentable article, like an article on which the patent has expired, is in the public domain. . .”).

elements. As in *Alice*, with enough “additional features” the invention as a whole may be transformed into an “inventive concept” that is eligible for patent protection.²⁰⁶ The test provides a procedure to determine what precisely is required for this transformation.

After the claim’s non-statutory elements are identified and classified, the next step of the proposed test is to determine if there are statutory elements to the claim that are necessary to the invention.²⁰⁷ This check is meant to prevent patentability from “depend[ing] simply on the draftsman’s art.”²⁰⁸ The necessity determination rules out limitations that are merely “[pre- or] post-solution activity”²⁰⁹ or are not required for the operation of the overall invention. An adjudicator would then deem these necessary statutory elements to be “known in the art.” After all the claim elements have been classified statutory or non-statutory, *Mayo* describes the conclusion of the test for § 101 eligibility: “What else is there in the claims before us?”²¹⁰ If there are any remaining statutory elements (i.e. not deemed “known in the art”), then the claim passes the test for statutory eligibility under § 101. Indeed, this can be a low bar for subject matter, but it is far from the end of the test.

Although it is unclear how the *Alice* framework would continue upon a finding that the claimed matter is eligible subject matter,²¹¹ using this test, an adjudicator must evaluate novelty

²⁰⁶ See *Alice*, 134 S. Ct. at 2357.

²⁰⁷ This determination could be considered subjective depending on the technology area. The question to answer is: Can the invention accomplish its purpose without this element? If it cannot, the element is necessary.

²⁰⁸ *Alice*, 134 S. Ct. at 2359 (quoting *Flook*, 437 U.S. at 593).

²⁰⁹ *Flook*, 437 U.S. at 590 (holding that post-solution activity including “adjustment of the alarm limit to the figure computed according to the formula” did not make the process patentable).

²¹⁰ *Mayo*, 132 S. Ct. at 1297.

²¹¹ See Samantak Ghosh, Article, *Prometheus and the Natural Phenomenon Doctrine: Let's Not Lose Sight of the Forest for the Trees*, 94 J. PAT. &

under § 102²¹² and non-obviousness under § 103.²¹³ The test for subject matter eligibility under § 101 merely disregarded the elements that the test considers in the public domain—it does not establish novelty of the invention. The test sets a low threshold for subject matter eligibility,²¹⁴ instead using the other sections of the patent code to block inappropriate claims.

The elements of the claim that are squarely in the public domain, according to the test's § 101 determination are not considered in further examination under §§ 102 and 103. This may seem like a violation of the “all elements” rule,²¹⁵ but these elements are still considered if combined with statutory elements in a novel, non-obvious way. Without novel application or combination, these elements should not be protected by the patent system²¹⁶ because alone they may “inhibit further discovery by improperly tying up the future use of laws of nature.”²¹⁷ An adjudicator would consider, for purposes of novelty, the previously excluded elements if those elements add to the functioning of the invention. An example of this is the second step of the 623 patent

TRADEMARK OFF. SOC'Y 330, 356-57 (2012) (discussing the boundaries between sections 101, 102, and 103 in determining patentability).

²¹² 35 U.S.C. § 102 (2012); see *Microsoft Corp. v. i4i Ltd.*, 131 S. Ct. 2238, 2253 (2011) (Breyer, J., concurring) (“Do the given facts show that the product was previously ‘in public use?’”) (quoting 35 U.S.C. § 102(b) (2012)).

²¹³ 35 U.S.C. § 103 (2012); see *Microsoft*, 131 S. Ct. at 2253 (Breyer, J., concurring) (“Do [the facts] show that the invention was . . . ‘non-obvious?’”) (quoting 35 U.S.C. § 103).

²¹⁴ Any statutory provisions necessary to the invention would be sufficient for proper subject matter eligibility.

²¹⁵ See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997) (“Each element contained in a patent claim is deemed material to defining the scope of the patented invention. . . .”).

²¹⁶ *In re Comiskey*, 554 F.3d 967, 979 (Fed. Cir. 2009) (“[M]ental processes—or processes of human thinking—standing alone are not patentable even if they have practical application.”). *But see Warner-Jenkinson*, 520 U.S. at 29.

²¹⁷ *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1301 (2012).

in *Mayo*, in which a determination is made of the concentration of 6-thioguanine in the blood.²¹⁸ This determination step can be used to orchestrate further statutory steps so it contributes toward the claim's novelty.

The test then proceeds by determining novelty under § 102 and non-obviousness under § 103, which require an examination of the prior art for the statutory elements and a comparison of the invention as a whole against the prior art. Other than this difference, the §§ 102 and 103 inquiries proceed as they normally would. Accordingly, a novel, non-obvious application of an algorithm may be appropriate. But simply applying the algorithm on a computer is not sufficient.²¹⁹ The steps below sum up the test.

§ 101: Eligible Subject Matter

1. Classify elements that are naturally occurring, abstract, or not technology as “known in the art.”
2. Classify elements that are not necessary to the invention “known in the art.”
3. If there exist elements not “known in the art,” continue to step 4.

§ 102: Novelty, § 103: Non-obviousness

4. The elements classified “known in the art” are *per se* anticipated, but the novelty and obviousness inquiry can be satisfied by novel combination or application using all the elements.

²¹⁸ *See id.* at 1295.

²¹⁹ *Alice Corp. v. CLS Bank Int'l, Inc.*, 134 S. Ct. 2347, 2358 (“Stating an abstract idea while adding the words ‘apply it with a computer’ simply combines those two steps, with the same deficient result.”).

The proposed test is similar to what is sometimes referred to as the “blue pencil rule,” which conceptually removes all non-statutory elements of the claim.²²⁰ The examination would then proceed with this purified form of the claim.²²¹ The difference between the proposed test and the “blue pencil rule” is that the proposed test allows for the non-statutory elements to still be considered, if used in a novel combination or application. In contrast with the “blue pencil rule,” no matter how novel the combination of non-statutory elements is, the proposed test will never reconsider an element once it is removed.²²² Another significant difference is that the proposed test does not give weight to unnecessary elements in the § 101 analysis.

To illustrate how the proposed test actually works, consider the following hybrid claim examples. The first example is a novel application of cryptographic security in software.²²³ Whether or not the algorithm truly is new, the proposed test would deem the algorithm element to be “known in the art” because it is an abstract concept. The computer system would not be classified “known in the art” since the computer and networking components are statutory and necessary to the invention. The test then continues to

²²⁰ For detailed discussion of the “blue pencil rule,” see MOY, *supra* note 8, § 5:67–72. See also *Diamond v. Diehr*, 450 U.S. 175, 189 n.12 (rejecting petitioner’s argument that *Flook* requires the “mathematical algorithm [to] be assumed to be within the ‘prior art,’” and instead saying that the “fallacy in this argument is that we did not hold in *Flook* that the mathematical algorithm could not be considered at all when making the § 101 determination”).

²²¹ See, e.g., Brief for the United States as Amicus Curiae Supporting Neither Party at 28–29, *Mayo*, 132 S. Ct. 1289 (No. 10-1150), 2011 WL 4040414, at *28–29 (arguing that “[b]ecause the “wherein” clauses of respondent’s claims do not recite any physical step to be performed by a doctor (or anyone else), they add no patentable weight to the “administering” and “determining” steps”).

²²² Indeed, under this analysis, the draftsman would have no reason to include non-statutory elements because the only effect they could have is to limit the scope of the claim in an infringement action.

²²³ See, e.g., System, Method, & Software for Cyber Threat Analysis, U.S. Patent No. 8,601,587 (filed Sept. 3, 2010).

the novelty and non-obviousness inquiries. For novelty purposes, the application of the algorithm on the system would be considered since it enhances the functioning of the computer. Evaluating only the allowed elements, the software as a whole would be considered for novelty and non-obviousness. Accordingly, if the entire invention in cryptographic security is novel and non-obvious against prior art, it would be patentable. The second example, which intuitively would be expected to be unpatentable, is a song (or book or poem) on a typical storage medium.²²⁴ The song, novel or otherwise, is not eligible subject matter. Rather it should be protected by copyright. An adjudicator should consider the song “known in the art” for § 101 criteria. The storage medium is deemed “known in the art under the test’s necessity inquiry because the song could be stored in some other medium without changing its function, so it fails subject matter eligibility.

V. ANALYSIS OF ADAPTED TEST

The new test should render the same outcome as the Supreme Court’s opinions in previous cases; this will ensure that the proposed test is effective and fits the legal landscape as it exists.²²⁵ This section evaluates how each of the previously discussed cases would be analyzed using the proposed test.

²²⁴ See, e.g., Compact Disk Musical Jukebox with Digital Music Library Access, U.S. Patent App. Pub. No. 2006/0153020 (filed Sept. 26, 2003).

²²⁵ See generally Douglas Lind, *A Matter of Utility: Dworkin on Morality, Integrity, and Making Law the Best It Can Be*, 6 SETON HALL CONST. L.J. 631, 648–49 (1996) (discussing Dworkin’s theory of interpretive fit and justification). “Any plausible working theory of legal interpretation . . . must be able to disqualify an interpretation that fails to satisfy the threshold requirement of fit.” *Id.* at 648 (quoting RONALD DWORKIN, *LAW’S EMPIRE* 255 (1986)) (internal punctuation omitted).

A. *In re Abrams*

In re Abrams involved “petroleum prospecting.”²²⁶ The CCPA held that *In re Abrams* failed the point-of-novelty test because the novelty was in the non-statutory elements of “measuring,” “determining,” and “comparing.”²²⁷ Under the first step of the proposed test, these mental-step elements would be considered “known in the art.” The remaining elements involving “sinking,” “sealing,” and “reducing the pressure” are necessary to the invention because the mental steps cannot be performed without them. Because these elements of the claim are considered statutory, an adjudicator should continue the test with the novelty and non-obviousness inquiries. An adjudicator should continue to deem the first three elements “known in the art” for these inquiries, but a novel application may be possible. However, using prior art, it is unlikely that one would consider the application of “measuring,” “determining,” and “comparing” to the statutory elements as novel. Using the proposed test, one would at least consider this composition of elements obvious because at the time of the invention it was likely known that those steps would reach the expected outcome.

B. *Parker v. Flook*

Flook involved “updating alarm limits” based on the calculation using an algorithm.²²⁸ Here, the three elements of the claim involve “measuring,” “calculating,” and “updating.”²²⁹ Under the proposed test, since all three elements are abstract and therefore deemed “known in the art,” further examination is unnecessary. The claim fails the test under § 101 because each element of the claim is classified “known in the art.” The absence of any statutory elements automatically dooms this patent claim.

²²⁶ *In re Abrams*, 188 F.2d 165 (C.C.P.A. 1951).

²²⁷ *See id.* at 169–70.

²²⁸ *Parker v. Flook*, 437 U.S. 584, 585 (1978).

²²⁹ *See id.*

C. Diamond v. Diehr

Using the proposed test for the § 101 analysis, the *Diehr* claim's analysis would be similar to the majority's analysis.²³⁰ The claim elements involving recalculating cure time would be classified "known in the art," but the portions of the claim involving "curing synthetic rubber" would be statutory because they are necessary to the invention as a whole. Since there is at least something necessary and statutory, it is patent-eligible subject matter. As the majority alluded to, the questions of §§ 102 and 103 patentability are "wholly apart from whether the invention falls into a category of statutory subject matter."²³¹ The formula used would be classified as "known in the art," so the remaining elements likely would not be novel because curing synthetic rubber is known.²³² Using § 102 or § 103, an adjudicator could easily come to the conclusion that curing rubber was anticipated by other inventions. Since the Supreme Court left this question open, this analysis will not address the question either.

D. Mayo v. Prometheus

To evaluate *Mayo*, the first step is to determine which elements are statutory. The *Mayo* claim is described in three steps: "administering" the drug, "measuring" the concentration of the drug in the blood stream, and "determining" what the concentration indicates.²³³ The only statutory step of the process is the "administering" step, as the other two are "mental processes," so they would be classified "known in the art." Using the test, an adjudicator should classify the "administering" step necessary to

²³⁰ *Diamond v. Diehr*, 450 U.S. 175, 185-87 (1981).

²³¹ *Id.* at 190 (quoting *In re Bergy*, 596 F.2d 952, 961 (C.C.P.A. 1979)).

²³² *See id.* at 191 ("In this case, it may later be determined that the respondents' process is not deserving of patent protection because it fails to satisfy the statutory conditions of novelty under § 102 or nonobviousness under § 103.").

²³³ *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1295 (2012).

the invention and not merely “[pre-]solution activity.”²³⁴ Therefore, the claim survives the § 101 eligibility test. However, this step is the only statutory element, and the addition of two steps that are classified “known in the art” is not enough to create patentability under § 102 or § 103. Note that unlike the majority opinion, using this analysis, the “administering” step is not merely referring to the relevant audience.²³⁵ Using the test, an adjudicator should treat it as a legitimate step because, for eligibility purposes, it can be assumed that it is required in order to make the determinations of the rest of the process. The end result likely would turn out the same because the Supreme Court is correct that the claims at issue “effectively claim the underlying laws of nature themselves.”²³⁶ This validates the test because it reaches the same outcome as the Supreme Court, but the proposed test provides more guidance and structure about how to come to that conclusion.

E. Alice v. CLS Bank

Finally, the analysis comes to the most recent case, *Alice*.²³⁷ Technically, the method claim in *Alice* does not recite a computer, but assuming the algorithm is run on a computer as the parties stipulated, one would consider the computer statutory using the new proposed test.²³⁸ The computer is necessary, again by stipulation of the parties, so the claim is statutory subject matter.²³⁹ For the sake of § 101, the algorithm steps would be classified “known in the art.” For the novelty inquiry, an adjudicator using the proposed test searches for novel and nonobvious application of known elements on a computer. However, the most likely outcome

²³⁴ *Id.* at 1298 (quoting *Parker v. Flook*, 437 U.S. 584, 585 (1978)).

²³⁵ *See id.* at 1297.

²³⁶ The determination step merely indicates a meaning of the data and does not command any action. *Id.* at 1305.

²³⁷ 134 S. Ct. 2347 (2014).

²³⁸ *Id.* at 2353 (noting that “the parties have stipulated that the method claims require a computer”).

²³⁹ *See id.*

is that with the new proposed test, one would find the use of the algorithm on the computer obvious because there is no other practical use of the algorithm besides “applying it on a computer.”

The preceding analysis is not a complete examination of these claims, but rather it is intended to illustrate how the test functions. Though the test appears to predict the same outcome as was adjudicated, the test proceeds with a logical and replicable path. A repeatable procedure is necessary because the examination procedures need to be exercised by thousands of examiners at the USPTO.²⁴⁰

VI. CONCLUSION

The Supreme Court’s decision in *Alice Corp. v. CLS Bank International*²⁴¹ indicates the Court’s desire to prevent patentees from obtaining monopoly rights on abstract ideas.²⁴² The holding in *Alice* may align with the greater needs in the patent system, but the “framework” identified in *Mayo*²⁴³ and reiterated in *Alice*²⁴⁴ gives little guidance for lower courts and patent examiners about *how* to apply the framework factors. This article proposed a test that harnesses the strong points of the framework in a way that guides future examination with articulated steps.

The Federal Circuit will have to follow the framework in *Alice*, and the proposed test is one way to follow it and attain a

²⁴⁰ See John M. Golden, *Patentable Subject Matter and Institutional Choice*, 89 TEX. L. REV. 1041, 1047 (2011) (“No matter how incoherent or tortured relevant judicial precedent is, the USPTO must try to distill it into a set of comprehensible guidelines for several thousand patent examiners. . .”).

²⁴¹ 134 S. Ct. 2347, 2352 (2014).

²⁴² *Id.* at 2354 (“[M]onopolization of those tools through the grant of a patent might tend to impede innovation more than it would tend to promote it, thereby thwarting the primary object of the patent laws. . . .”) (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012)).

²⁴³ The *Mayo* opinion never actually refers to its methodology as either “framework” or “test.” See *Mayo*, 132 S. Ct. at 1296–97.

²⁴⁴ *Alice*, 134 S. Ct. at 2355.

predictable result. The proposed test is straightforward to follow; it checks each element to determine whether it is statutory and then evaluates whether it is necessary to the invention. The test allows patents for non-statutory elements only when they “transform the nature of the claim’ into a patent-eligible application.”²⁴⁵ Finally, the test isolates the issues of subject matter, novelty, and nonobviousness into three distinct questions.²⁴⁶

²⁴⁵ *Id.* (quoting *Mayo*, 132 S. Ct. at 1297).

²⁴⁶ *See* *Diamond v. Diehr*, 450 U.S. 175, 190 (1981).