Alice – Dumber Than A Doorstop

Re-Framing the Patent-Eligible Subject Matter Analysis

By:Sean D. Detweiler
October 18, 2021

I've written a number of different versions of this article since *Alice Corp. v. CLS Bank Int'l* [1] ("*Alice*") was decided by the U.S. Supreme Court in 2014, but I never published any of them. As the world sits and waits for the Supreme Court to act on the petition for a writ of certiorari (filed in December of 2020) in *American Axle & Manufacturing, Inc. v. Neapco Holdings LLC, et al.* ("*American Axle*") asking the Court to address the major problems created by Alice, motivation struck me again. (And yes, I know the phrase is dumber than a doornail, but a doornail didn't provide the necessary example and a doorstop did…).

Most patent practitioners will agree that the determination of patent-eligible subject matter has been inconsistently implemented by the United States Patent Office (USPTO) and by the courts since *Alice* was decided. This inconsistency is simply – dumb. We have been forced by this decision to ignore the fact that a basic or generic computer, while once innovative, has now become a mere building block that like many other generic components can be arranged or configured in new and different ways to perform a desired function in what many consider to be a patent-eligible way. Just because it is a generic building block, does not mean that everything a computer is configured to do should be rejected as ineligible because it is "an abstract idea merely implemented on a generic computer" as so many patent examiners proclaim. This form of rejection is based on *Alice* and states claims that, "merely require generic computer implementation, fail to transform that abstract idea into a patent-eligible invention")[2]. The *Alice* decision has caused an extensive amount of wasted time, substantial cost, and an overall weakening of the patent system.

Why was the computer invented?

According to one source, "[t]he computer was invented in order to automate mathematical calculations that were previously completed by people. Charles Babbage is considered to be the "father" of the computer. Babbage was a mathematician, philosopher, inventor and mechanical engineer who saw a need for an automated system that would negate human error in computation."[3] There may be differences of opinion on this, and I acknowledge that computers do a lot more today, but it does make sense that at their core computers are tools with a primary purpose of performing mathematical calculations that were previously performed by humans as "mental steps."

To many, the notion that "necessity is the mother of invention" is well-known. But what does that mean? I understand it to mean that the primary driving force for most new inventions is a need. A need by who? Presumably, a human looking for a simpler and faster way to complete a task correctly so they do not have to do it themselves. There are many different categories of invention, but many of those categories involve replacing a human behavior or task with an invention that takes the place of the human, and potentially perform better than the human. For example, humans used to have to do mathematical calculations to determine answers to problems, now a computer can do those calculations, without any errors, and much faster than

anyone might have believed in Babbage's day.

What is it that the Alice decision has done to identify most software inventions as patent in-eligible subject matter?

According to the statute that was the basis for the *Alice* decision, patent-eligible subject matter is defined as, "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."[4] This statute has been interpreted, post-*Alice*, to be assessible using the infamous two-part test. Step 1 of the test is "determin[ing] whether the claims at issue are directed to one of [the] patent-ineligible concepts" of laws of nature, natural phenomena, and abstract ideas. If yes, then Step 2 requires us to, "consider the elements of each claim both individually and 'as an ordered combination' to determine whether the additional elements transform the nature of the claim into a patent-eligible application," which has been interpreted to require the claim language be "sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself."

What is an "abstract idea" as referred to in the statute? The enumerated groupings of abstract ideas are defined as:

1. Mathematical concepts – mathematical relationships, mathematical formulas or equations, mathematical calculations;[5]
2. Certain methods of organizing human activity – fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions);[6] and
3. Mental processes – concepts performed in the human mind (including an observation, evaluation, judgment, opinion).[7]

How does Alice appear in patent prosecution?

I most often run into §101 rejections when trying to patent software-related inventions. The typical language applied by patent examiners and derived from *Alice* is:

"[M]ere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention. Stating an abstract idea while adding the words 'apply it' is not enough for patent eligibility. Nor is limiting the use of an abstract idea to a particular technological environment. Stating an abstract idea while adding the words 'apply it with a computer' simply combines those two steps, with the same deficient result. Thus, if a patent's recitation of a computer amounts to a mere instruction to implement an abstract idea on . . . a computer, that addition cannot impart patent eligibility."

This has been somewhat better defined by the USPTO with its own guidance, which states:

"Accordingly, after determining that a claim recites a judicial exception in Step 2A Prong One, examiners should evaluate whether the claim as a whole integrates the recited judicial exception into a practical application of the exception in Step 2A Prong Two. A claim that integrates a judicial exception into a practical application will apply, rely on, or use the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception."[8]

Still, with all of this, inconsistent interpretations of the statute make it very difficult to assess whether a claimed invention meets the requirements of §101.

What if we re-framed the abstract idea analysis?

To remove the apparent biases related to computers and software, is there a way we can assess whether a claim is ineligible because it is abstract using something much simpler?

Instead of a computer, let's use a block of wood. Instead of software, let's use a list of angles and dimensions for configuring a device to be made from the block of wood.

Now what?

Let's find a need. How about the need to hold open a door that is biased to close? One way of holding open a door is for a human to stand near the door and perhaps put their foot against the bottom edge of the door while it is in an open position.

Is there an abstract idea involved here? One might argue this is a method of organizing human activity, specifically, managing personal behavior where the human behavior is to stand near the door with their foot in front of it holding open the door for another person.

Okay, now what if we could invent something that could hold open the door without requiring the human to stand there? How about…a doorstop?

To make a doorstop, we need a generic building block, such as a rectangular block of wood. If we place the rectangular block of wood in front of the door where the human's foot was, depending on how heavy the block of wood is and how strong the closing force of the door is, it may or may not hold the door open. However, if we configure the rectangular block into a triangular wedge shape, we can slide the wedge under the edge of the door and create a friction force against the floor in addition to the weight of the block, thereby holding the door in place.

How do we capture this configuration and functionality in a patent claim?

To achieve this doorstop functionality, we can take the abstract idea of holding open the door, and we merely implement it by configuring a generic block of wood in a specific way. Here is a potential method claim (the following claim is for the benefit of those who are adept at reading patent claims – for those who prefer not to read patent claims, it is okay to skip to the next section):

1. A method of holding open a door, comprising:

providing a rectangular block of wood having a height dimension and a width dimension;

configuring the rectangular block of wood into a wedge-shaped doorstop, comprising:

determining a first edge vertically oriented along the height dimension;

determining a second edge horizontally oriented along the width dimension and intersecting with the first edge at a first angle of 90 degrees; and

cutting the block of wood to form a third edge having a first end and a second end and intersecting with the first edge at the first end with a second angle therebetween and the second edge at the second end with a third angle therebetween;

wherein the second angle and the third angle sum to a total of 90 degrees and a sum of the first angle, the second angle, and the third angle is 180 degrees;

positioning the door in a desired open configuration; and

pushing the doorstop into a gap between a bottom edge of the door and a floor beneath the door, with the second edge against the floor and the third edge against the bottom edge of the door;

wherein the doorstop is frictionally held in place between the bottom edge of the door and the floor, and the door is held open by the doorstop.

Is this claim directed to patent-eligible subject matter?

To summarize the above claim language, the claim is directed to a method of taking a rectangular block of wood, shaping it into a triangle, and wedging it under the bottom edge of the open door to hold the door open using weight and friction.

Let's apply the analysis required by *Alice* do determine whether it may be directed to patent-eligible subject matter.

Step 1: Is the claim to a process, machine, manufacture, or composition of matter? Yes, the claim is directed to a process that is not naturally occurring, i.e., holding open a door. On to the next step.

Step 2A: Is the claim "directed to" a law of nature, a natural phenomenon, or an abstract idea? Some would say yes, the claim is "directed to" the abstract idea of holding open a door in terms of its overall focus, and this alleged abstract idea is merely implemented using a generic block of wood, and according to *Alice*, mere implementation of an abstract idea on a generic component does not transform the claim into patent-eligible subject matter. It's not looking good for eligibility…on to the next step. (Note: if the above analysis causes any form of cognitive dissonance[9] for you, then welcome to the club of those of us patent attorneys who read §101 rejections issued by patent examiners on a regular basis and repeatedly have the same feelings of unease and tension.)

Step 2B: Does the claim recite additional elements that amount to significantly more than the judicial exception? If this were a software invention and the rectangular block of wood were a generic computer, I would suggest that a patent examiner would take the position that, "all the computer (block of wood) functions were well-understood, routine, conventional activities previously known to the industry" and that "each step does no more than require a generic computer (block of wood) to perform generic computer (block of wood) functions, and the recited hardware was purely functional and generic." Therefore, the patent examiner would likely conclude the additional elements do not amount to significantly more and reject the claim as being directed to ineligible subject matter.

Under *Alice*, consistent with how I've witnessed many patent examiners apply it, this claim is not patent-eligible. We don't even get to the question of whether the claimed invention is novel and nonobvious (which, admittedly in present day it would not be novel and would certainly be obvious based on prior known devices, but before doorstops existed it could be novel and nonobvious). For any experienced practitioners reading this, you likely can find a flaw in the logic as laid out for this rejection, but that is somewhat intentional because wouldn't you have to admit you have similar experiences with Office Actions? As such, please bear with me.

What if a generic computer is no different from other building blocks that exist and result in patent-eligible subject matter?

Refocusing on the question of patent-eligible subject matter, where does this leave us? It leaves us in a place where patent attorneys fight regularly with patent examiners about patent-eligible subject matter. Perhaps "dumb" was not a strong enough word…but I digress.

What if a generic computer is no different from other building blocks that exist that when

combined or reconfigured do result in patent-eligible subject matter? To arrive at the result that a method of holding open a door using a doorstop is not patent-eligible under *Alice* because it is merely implementing an abstract idea (a method of organizing human activity, specifically the human behavior of placing a foot against a door to hold it open) using a generic block of wood is simply – dumb (again, keeping this a G-rated article). It is as dumb as the assertion that reconfiguring a generic computer with software to perform a useful process is not patent-eligible subject matter simply because it combines an abstract idea with a generic building block (aka, a computer) to do something that otherwise would have to be done by a human in a new and different way. A computer is a tangible machine, it requires software to make it work, and software is written based on an abstract idea. This means the end result is a machine that operates with desired functionality. Sound familiar? "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."[10] Because a computer is a tangible machine that outputs a result, it qualifies as a "useful machine" whether the computer is "generic" or not. The software converts the "generic" computer to something more – satisfying this eligibility requirement. That's all that should be required to meet the §101 patent-eligible subject matter burden.

Let me be abundantly clear and re-state this point slightly differently – reconfiguring a generic rectangular block of wood into a wedge-shaped doorstop based on an abstract idea is the same as reconfiguring a generic computer using software based on an abstract idea into a machine that does a specific operation or task – and while I urge the interpretation that they are both patent-eligible subject matter, many interpretations based on Alice come to the different conclusion that the software invention is not.

One problem with the Alice decision is that it relied on the wrong statute

The confusion around this point since *Alice* in 2014 needs to be rectified by addressing a fundamental problem with the *Alice* decision. The issue with the invention in *Alice* is that the invention was an escrow process implemented by a computer, and escrow processes were known. Therefore, the claimed invention was not patentable because it was not novel under 35 U.S.C §102 and was obvious under 35 U.S.C.§103. If the process of a third party (i.e., escrow agent) receiving items of value from multiple parties and only releasing those items to the proper party once predetermined conditions are met is a well-known process, then it is not patentable for other reasons. It had nothing to do with whether the claimed invention was a useful process implemented on a computer/machine. This is the core of my frustration stemming from the *Alice* decision. The Supreme Court used the wrong statute to invalidate the claim. Instead of stating mere implementation of an *abstract* idea on a generic component does not transform the claim into *patent-eligible subject matter (under §101)*, the Supreme Court should have said mere implementation of a well-known idea using a generic component does not transform the claim into novel and nonobvious patentable subject matter (under §102 and §103. Famously, the Court did not get far enough into the analysis to consider novelty or obviousness. They stopped at eligibility under §101.

Efforts by the USPTO to involve a practical application

Former Director of the United States Patent Office (USPTO) Andrei Iancu, thankfully, did try to address this problem to the extent possible without having the ability to overturn a Supreme Court decision. His recent administration required the additional question as to whether the combined claim resulted in a "practical application" and if it did, that would satisfy the "significantly more" requirement under *Alice*.

Looking at the above step-wise analysis, if we continue with the one additional question and ask whether there is a practical application, the answer is Yes – the method results in the door being held open, which allows the human to go off and do other things, like write articles ranting about

the detrimental effects of the *Alice* decision!

Yet the practical application analysis is also not crystal clear

The difficulty with this "practical application" question is that, even though it has been used in a number of different court decisions[11] over the years and was included as part of a new set of administrative guidelines issued by the USPTO, the language "practical application" was not used by the Supreme Court. Further, there is not clear guidance about what exactly is a practical application (thus making it essentially an "I'll know it when I see it" situation). This gives patent examiners far too much leeway to interpret whether claims include a practical application or not and perpetuates the inconsistent determinations of patent eligibility under §101 to the frustration of many inventors.

As a further aside, I have had countless debates with patent examiners on the topic of whether a claimed software invention contains a practical application and whether that makes it eligible. For some odd reason, the practical application requirement has morphed into a requirement that the practical application affect the tangible world in all instances and not just the virtual/computer world. This is most likely because of the requirement in *Alappat* that the invention include a "useful, concrete and tangible result" and despite the decision in *State Street Bank* that this was satisfied with output of a final share price momentarily fixed for recording and reporting, patent examiners continue to require something beyond the output of data or information from a computer.[12] Momentary storage in memory has in recent times been unofficially deemed insufficient.

What this means is if the invention involves a computer outputting information that is the result of a novel process, that output or calculation is often ignored as not being a practical application. Why? I have no idea. To circle back to the beginning of this article, the computer was invented to automate mathematical calculations that were previously completed by people. If a computer automates or performs some process and provides the "output" in the form of data or other information, why are we continuing to question whether that is a "useful process" with a "practical application" time and again based on whether the output is, e.g., displayed on a monitor? Computers regularly produce copious amounts of "outputs" that are enormously beneficial whether they directly impact the tangible world or not. And as noted in *State Street Bank*, the output of something like a share price that was fixed in memory briefly was tangible-enough. Round and round we go.

It is long past time to overturn or at least distinguish the Alice caselaw

Alice has done more than enough damage to the world of software patents. Despite the difficulty in obtaining patent protection, innovation is pushing ahead and arguably leaving patent law behind. "In 2020, 63.2% of issued U.S utility patents were "software-related" (a slight uptick from 63.0% in 2019)!"[13] There is clearly a demand. We are seeing incredible advances with artificial intelligence and robots run by software, as well as new ways to handle data and information more efficiently. We cannot afford to continue to question whether a software invention is eligible, or else we will lose all ability for inventors to invest their time and money in something that can be reliably protected and not stolen. In our present *Alice*-induced state, inventors are faced with the challenge of deciding whether to file a patent application today, knowing that by the time a patent examiner reviews it in 2 or 3 years the law pertaining to *Alice* may have significantly changed, the invention may or may not qualify as patent-eligible subject matter, and the determination may be different depending on which examiner reviews the claims. Would you bet $25,000-$50,000 on pursuing a patent when you cannot even get a clear answer on whether you can meet the basic rules for eligibility and therefore are at risk of giving your invention away for free when your application publishes at 18 months after filing? *Alice* demands that you do just that. It is time for a change.

How will change happen?

The U.S. Supreme Court has the opportunity in *American Axle* to right this wrong. In this case, the Federal Circuit has indicated that claim 22 of U.S. Patent No. 7774911 is directed to ineligible subject matter. Paraphrased here, the claim states a method for manufacturing a shaft assembly of a driveline system comprising, providing a hollow shaft member, tuning a mass and a stiffness of at least one liner, and inserting the at least one liner into the shaft member, wherein the at least one liner is a tuned resistive absorber for attenuating shell mode vibrations and wherein the at least one liner is a tuned reactive absorber for attenuating bending mode vibrations.

Seems fairly straightforward that this is a useful, concrete and tangible driveshaft that results, despite the Federal Circuit indicating otherwise. Yet another surprising decision springing from *Alice* that probably requires its own separate analysis – but it took me all these years to write about *Alice*, so we'll have to let some time pass before I get around to writing about *American Axle*. Hopefully by then the Supreme Court, which has been sitting on this request for review for a year, will have finally acted. Even more hopefully, the Court will have acted in a way that does not require me to use the following title for my next article about eligible subject matter: "*Alice and American Axle Meet Dumb and Dumber*."

Please contact Sean Detweiler at sdetweiler@morse.law with any questions or to discuss pursuit of a patent for your invention.

1. *Alice Corp. v. CLS Bank International*, 573 U.S. 208 (2014 [?]
2. *See Alice*, Page 1 [?]
3. https://zipitclean.com/invention-news/why-was-the-computer-invented/ [?]
4. 35 U.S.C. §101 [?]
5. *See* MPEP § 2106.04(a)(2), subsection I [?]
6. *See* MPEP § 2106.04(a)(2), subsection II [?]
7. *See* MPEP § 2106.04(a)(2), subsection III [?]
8. MPEP 2106.04(d) [?]
9. Definition: Cognitive dissonance causes feelings of unease and tension, and people attempt to relieve this discomfort in different ways. Examples include "explaining things away" or rejecting new information that conflicts with their existing beliefs. *See* https://www.medicalnewstoday.com/articles/326738 [?]
10. 35 U.S.C. §101 [?]
11. *See State Street Bank & Trust Co. v. Signature Financial Group*, 149 F.3d 1368 (Fed. Cir. Jul. 23, 1998); *In re Alappat*, 33 F.3d 1526, USPQ2d 1545 (Fed. Cir. 1994); *Arrhythmia Research Technology Inc. v. Corazonix Corp.*, 958 F.2d 1053, 22 USPQ2d 1033 (Fed.Cir.1992); *Diamond v. Diehr*, 450 U.S. 175 (1981) [?]
12. "The standard for this practical application has been, and remains, the production of "a useful, concrete and tangible result." *Alappat*, 33 F.3d at 1544. The Federal Circuit in ***State Street*** holds that the production of "a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades, " *State Street*, 149 F.3d at 1373, is indeed the production of a useful, concrete and tangible result." See State Street Bank. [?]
13. See https://www.ipwatchdog.com/2021/03/17/seven-years-after-alice-63-2-of-the-u-s-patents-issued-in-2020-were-software-related/id=130978/ [?]